New technologies for teaching children English as a Foreign Language (EFL): A mixed-method exploration of teachers' views about tablet applications and children as EFL learners, the design of tablet applications for EFL, and their integration in primary classrooms in Thailand

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Abstract

Recognising the global significance of English for individual and social prosperity, many non-English speaking countries have introduced English as a foreign language (EFL) as a compulsory school subject for children as young as 6 years of age. This trend has been accompanied by initiatives designed to help their citizens meet international English language proficiency standards and overcome the key challenges of foreign language teaching and learning such as large class sizes and a paucity of teachers with high foreign language proficiency.

Among these initiatives, many involve heavy investment in new educational technologies and learning materials. Thailand's One Tablet Per Child (OTPC) project, which involved the distribution of a tablet PC to primary school students and the development of apps to be included in the tablet, and which to date has cost over 5 billion baht (or more than 152.8 million Australian dollars), is a prominent example of a government promoting new technology as a means of promoting equity and quality in education, including in teaching children foreign languages. Little is known, however, about the potential of such initiatives to fulfil this promise.

Using Thailand's OTPC as a case study, this research expands existing knowledge of the implications of such projects for teachers, educational policy makers and material designers by examining (1) the multimodal design of EFL multimedia learning materials (or apps) distributed through the OTPC tablet, (2) factors that influence teachers' decisions whether and how to use the technology, (3) teachers' views about children as EFL learners and users of new technologies, and (4) the ways teachers employ speech, gesture and pedagogic space to integrate the EFL app in their classroom. This mixed-method exploration combines diverse data and analytical tools: content and statistical analysis of 213 Grade 2 EFL teacher questionnaires; critical systemic functional linguistic analysis of interviews with seven Grade 2 EFL teachers; and multimodal discourse analysis of the Grade 1 and 2 EFL apps provided through the OTPC project and two classroom interactions that integrate the Grade 2 app.

The study's key findings highlight: the potential and limitations of new technologies and multimedia apps to address the challenges of teaching children EFL in particular and achieving equity in education in general; factors that influence teachers' decisions whether and how to adopt new technologies (teachers' age, confidence in particular target language skills, training in using the new technology, beliefs about its benefits for supporting children's EFL learning, and language teaching approach); and the important role teachers play in implementing new technologies in the classroom.

Statement of Originality

This is to declare that this thesis entitled “New technologies for teaching children English as a Foreign Language (EFL): A mixed-method exploration of teachers' views about tablet applications and children as EFL learners, the design of tablet applications for EFL, and their integration in primary classrooms in Thailand” has not been submitted for a higher or any other degree to any other university or institution. I also certify that this thesis is an original piece of research; all data, references and other sources of information, including co-authored journal publications, have been acknowledged.

I declare that the research presented in this thesis complies with requirements of academic ethics. This research was approved by the Human Research Ethics Committee of Macquarie University (Reference number: 5201300758).

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Chapter 1

Introduction

1.1 Introduction

As a global language, English has become the most widely taught foreign language across the world (European Commission, 2015; Chan, Chin, & Suthiwan, 2011; Crystal, 2003). Most non-English speaking countries acknowledge the significance of English proficiency for both individual and social prosperity. In many Asian countries, such as Korea, Japan and Thailand, English is seen as a fundamental requirement for academic and professional success. This is reflected in English proficiency tests being part of university entrance exam systems and essential criteria for job applications and promotion (Choi & Lee, 2008). Offering all citizens access to opportunities for learning English is also increasingly recognised as an important step towards improving equity in education. In addition, English is considered the global language of business (Neeley, 2012), and most non-English speaking countries tend to view their citizens' collective English proficiency as essential for competitive advantage in the world economy.

A key sign of the ever growing recognition of the importance of English as a global language is the introduction of English as a foreign language (EFL) as a core curriculum subject in many primary school systems across the world. This occurs as early as Grade 1 in Thailand and the United Arab Emirates, when children are as young as 6 years of age, and from Grade 3, or the age of 8, in Korea and China (Choi & Lee, 2008).

Despite heavy investment in EFL teaching worldwide, the English proficiency rates of many non-English speaking countries, including Japan, Thailand and Taiwan, are yet to meet international standards (EF EPI, 2015; Bolton, 2008). Meeting or exceeding these standards is contingent on addressing the key challenges associated with the teaching of EFL, which include large class sizes, limited study hours and opportunities for authentic communication in English, and shortage of qualified teachers with high English language proficiency (Choi & Lee, 2008; Henrichsen, 2010; Krieger, 2005; Longcope, 2010; Riley, 2003; Pinter, 2011).

New digital technologies with quality learning materials have often been presented as a promising solution to address problems such as EFL students' lack of exposure to English and a paucity of qualified teachers. For example, the One Tablet per Child initiative in Ethiopia aims to support children's English language learning in this context, where there are no teachers or traditional classroom facilities (OLPC, 2012). In the broader context of foreign language teaching, the Early Learning Languages Australia (ELLA) Programme in Australia has recently been deployed in order to solve the problem of a lack of qualified teachers of foreign languages, through the funding of tablet applications for children, as documented below:

> The Australian Government provided $9.8 million to trial ELLA in 41 preschool services in 2015 to determine the effectiveness of children learning a language through applications (apps) without a proficient language teacher. A total of 35 apps, consisting of seven unique apps for each of the five languages, Arabic, Chinese, Indonesian, French and Japanese, were developed. (Department of Education and Training, Australia, 2016)

In the midst of the global phenomenon of using new technology for foreign language teaching and learning, it is important to critically examine the potential of any new technology and its learning materials to overcome the challenges that foreign language teaching and learning present.

The present thesis uses the national tablet project in Thailand to exemplify this global phenomenon. The large-scale project, One Tablet per Child (OTPC), which was introduced in 2011 in Thailand, aims to equip every Thai primary student with a computer tablet embedded with learning materials for the key school subjects, including English. The OTPC initiative brings the promise of offering EFL learners an opportunity to individually interact with the tablet and learn English through multimedia. This potential, however, is yet to be examined; and the mere provision of the technology may not be enough to guarantee its successful implementation in teaching and learning. Such an examination needs to consider the potential and limitations of learning materials provided in the technology to support learning, factors that influence teachers' decision whether to adopt the technology, their views about the technology, and how teachers actually implement the technology in classrooms. The research project presented here explored these questions with the aim of understanding the implications of the use of new technology for educational policy and practice.

1.2 Dimensions in the implications and use of a new technology for EFL teaching and learning

Studies of the use of new technologies for language teaching and learning have highlighted the significance of understanding learning material designs, factors influencing teachers' decisions to integrate a new technology into their instructional practices, teachers' attitudes towards a technology, and implementation of a technology in classrooms (e.g. Bret & Nash, 1999; Park & Son, 2009; Li, 2014; Mollaei & Riasati, 2013; Celik, 2013; Zhong & Shen, 2002; Khan, 2013). However, research has so far tended to examine these aspects in isolation from each other. The present research, by contrast, explores these various dimensions from a holistic perspective. The investigation of these dimensions enables the exploration of the implications of relying on new technology as a solution for addressing the challenges of EFL teaching and learning, and these implications to be related to the broader context of pedagogy and education policy.

The present research also contributes to research on the use of new technology for EFL teaching and learning in terms of the following aspects. Firstly, although language teaching and learning are enabled through the complex interplay of various modes of communication at work, few studies focus on multimodal interactions in both learning materials and the classrooms that incorporate them, and the potential of these interactions to support children's EFL learning. In order to explore the learning materials in the technology as well as the classroom interactions, we need to adopt a multimodal perspective, or the notion of multimodality, the independent and combined meaning potentials of different modes (e.g. language; images; sound), which enables the exploration of the contributions and interactions of various modes both beyond and also including language (Kress & Van Leeuwen, 2001). Secondly, despite the considerable body of research into teachers' uptake of technologies in EFL classrooms, the focus has been on secondary school and university teachers (e.g. Park & Son, 2009; Li, 2014; Mai & Hong, 2014), whereas early childhood and primary school teachers' attitudes towards technology for EFL learning have not received much attention. In addition, there is little research on teachers' views about children as EFL learners, and even less on children learning EFL through a new technology; although research suggests the benefits of learning a second language, including EFL, at a young age (e.g. Larson-Hall, 2008; Nikolov, 2009; Gilakjani & Ahmadi, 2011;

Sun, Zhou & Zhu, 2013). Meanwhile, as mentioned above, EFL is formally taught in many countries, including Thailand, from Grade 1. Thirdly, most research focuses on new technology in general (e.g. Park & Son, 2009); however, the quality of a specific technology itself (e.g. the specifications of different computer models) can also affect whether and how it is implemented.

The present thesis aims to contribute to existing research by (1) investigating, through a multimodal perspective, the underexplored issue of how various modes of communication in learning material design in a technology, as well as in classroom interactions involving the technology used, help support children's EFL learning; (2) addressing the early primary school level; (3) focusing on a specific type of computer tablet, in the One Tablet Per Child (OTPC) project in Thailand, as well as EFL learning materials (apps) embedded in it; and (4) exploring different aspects involved in the use of the technology, with the learning materials, in EFL classrooms.

1.3 Context of the research project

This section presents an orientation to the context of the research project presented in this thesis. Specifically, it briefly overviews the Thai education system and the place of English in it, highlighting the key challenges for EFL teaching and learning in Thailand. This section also briefly discusses studies on computer-assisted language learning (CALL) in Thailand, and introduces the One Tablet Per Child (OTPC) project, as one of the biggest CALL projects in Thailand.

1.3.1 The Thai education system

Thai formal education is categorised into two main levels: basic education, and higher education (Office of the National Education Commission (ONEC), Thailand, 2003, p. 17). Basic education covers nine years of compulsory education (six years of primary and three years of lower secondary school education) and three years of higher secondary school education. Higher education (the university level) is divided into diploma level and degree level. In Thailand, Grade 1 is the beginning of primary education, which consists of Grade 1 – Grade 6. Education prior to this is called pre-primary education or the kindergarten level, and caters for children aged from 3 to 5 years (Ministry of Education, Thailand, 2008). All Thai citizens are entitled to "equal

rights and opportunities to receive basic education" for at least 12 years free of charge (Grade 1 to Grade 12) (Office of the National Education Commission (ONEC), Thailand, 1999, p. 8), and in 2007 free basic education has been extended to include the pre-primary level (Ministry of Education, Thailand, 2007).

The compulsory subjects for primary education, the latter which is the focus of this thesis, include basic knowledge for future career and technology, Thai Language, EFL, mathematics, science, sociology, physical education, and art. The Thai government has also addressed the importance of learning media in the basic education core curriculum (Ministry of Education, Thailand, 2008):

> Learning media serve as tools for promoting and supporting management of the learning process, enabling learners to efficiently acquire knowledge, skills, processes and characteristics as prescribed in the curriculum standards. There are several kinds of learning media, i.e. natural media, print media, technological media and various local learning networks. (p. 29).

The Thai education system is marked by a top-down approach to education policy. In other words, the government develops and imposes education policy for the lower levels (e.g. teachers) to implement. However, there is significant discrepancy between policy and practice in the Thai education system (e.g. Baker, 2008; Hayes, 2010; Kulsirisawad, 2012). For example, despite the shift towards a learner-centred approach evident in the basic education core curriculum documents (Ministry of Education, Thailand, 2008), most Thai primary and secondary school EFL teachers still conform to the traditional teacher-centred approach, with emphasis on rote learning and memorisation of target language rules (Kulsirisawad, 2012). The reasons for this discrepancy in the context of EFL teaching include a lack of teaching and learning resources, teachers' high workload, large class sizes, and a lack of consideration of the teachers' context, especially for those in rural areas (Hayes, 2010; Baker, 2008; Sukamolson, 1998). Given this divergence between policy and practice, the present thesis investigates teachers' perspectives as part of various dimensions involved in the implementation of a large-scale educational technology project. This information on teachers' perspectives can contribute to the success of any large-scale education policy initiated by the government.

1.3.2 EFL in Thailand

1.3.2.1 The importance of English in Thailand

The importance of English has long been recognised in both the education system and workplace in Thailand. In the education system, all Thai students are required to study English as a foreign language (EFL) from Grade 1 (at around six years old) (Ministry of Education, Thailand, 2008). In addition, although English is optional for pre-primary education, it is normal to see kindergarten children learning the English alphabet and some basic English words at school. EFL is allocated at least three hours per week in primary schools. The government also specifies the EFL learning outcomes for students in each grade, and students are required to pass a formal exam at the end of each semester from Grade 1. The university entrance exam also includes English as part of the overall score for entrance to all faculties. Even the graduate programs in Thailand require students to pass a certain level in the English test as part of entrance and graduation requirements. In the realm of the workplace, candidates for most company and government jobs are required to pass the minimum score in the Test of English for International Communication (TOEIC) and the OCSC (Office of the Civil Service Commission) test, respectively, the latter which also includes English. The TOEIC test score is also used in consideration for job promotion in many companies. English in Thailand is therefore necessary for educational and career advancement.

1.3.2.2 Challenges of EFL teaching and learning in Thailand

Despite the long-standing emphasis on EFL's importance in the Thai education system, Thais' English proficiency is far from satisfactory compared to international standards (Noom-ura, 2013). The 2015 Test of English as a Foreign Language (TOEFL) shows that the average score of Thais was lower than the international average (ETS TOEFL, 2015), and in the Education First English Proficiency Index (EF EPI, 2015) Thailand was ranked as 62 out of 70 countries, with an average score of 45.35, and was labeled as having "very low proficiency". In addition, the English proficiency of most university graduates, who have formally learned English for at least 13 years (six years in a primary school, six years in a secondary school, and at least one year in a university), does not meet the demands of the workplace or requirements for studying abroad at the graduate level (Keyurawong, 2002; Wiriyachitra, 2002; Prapphal, 2001). Research has identified this failure as resulting

from two main, interconnected areas of problems regarding the teaching and learning of English in Thailand.

The first area of problems relates to the education system in Thailand. It involves there being a paucity of qualified EFL teachers (Noom-ura, 2013; Dhanasobhon, 2006), a lack of EFL teaching and learning resources (Baker, 2012; Foley, 2005), especially EFL teaching materials for primary school children (Foley, 2005), students' lack of exposure to English (Noom-ura, 2013; Dhanasobhon, 2006), and large classroom size (Noom-ura, 2013; Dhanasobhon, 2006). Research has shown that Thai EFL teachers have low language proficiency and teaching skills (Chittawat, 1995). In particular, various studies have pointed out that many Thai EFL teachers still have limited English proficiency and are unable to provide communicative activities in their classes (Wongsothorn, 2002; Prapaisit, 2003; Nonkuketkhong, 2006). It is also difficult or even impossible for students to develop communicative competence or to learn English in meaningful contexts, when there are insufficient resources (e.g. learning materials; educational technologies), students do not have access to English outside classrooms, and teachers need to teach too many students in each class (typically around 40 students per class). Some of these problems are even more serious in rural areas of Thailand (Hayes, 2010; Atagi, 2002; Prasongsook, 2010).

The second area of problems is pedagogy-related. Most teachers subscribe to the traditional approach to language teaching which focuses on rote learning (Atagi, 2002; Foley, 2005; Fry, 2002; Payaprom, 2012; Punthumasen, 2007); and the instructional practices are oriented towards the grammar-translation method, in which the focus is on memorisation of vocabulary and grammar rules. Thai is typically used as the medium of instruction in EFL classrooms (Noom-ura, 2013; Nonkukhetkhong, Baldauf, & Moni, 2006). In addition, Thai EFL classrooms are dominated by teacher-centred pedagogic practices, in which teachers are typically considered authoritative imparters of knowledge, whereas students are considered passive recipients (Kulsirisawad, 2012; Keyuravong & Maneekhao, 2006; Chatranonth, 2008; Noom-Ura, 2013). This prevents teachers from engaging students in active English conversation to promote their communicative competence and to develop meaningful English learning. Furthermore, there is a tendency to focus on high-stakes English testing and preparation for such testing, rather than on

English language teaching oriented to developing students' skills in English beyond those required to pass tests.

In terms of instructional practices, Thai EFL teachers tend to focus on accuracy rather than fluency. For example, Worthington points out that the problem of English writing in Thailand is a result of teachers' "insatiable desire to write every word perfectly" (2009, p. 6). The pedagogic focus on accuracy is emphasised in what Foley (2007) calls "the native-speaker syndrome" (p. 7), or the obsession with native speaker-like models and the implications of 'accuracy' and 'correctness' with which this notion is accompanied. With the underlying belief that the native-speakers will use correct or standard English and can provide their students with accurate linguistic models, there is a tendency in many Asian countries, including Thailand, to recruit "untrained native-speakers of English" rather than "trained non-native speakers" as EFL teachers (Foley, 2007, pp. 8-9). However, the problem is that some untrained native speakers may not be able to teach effectively because of a lack of knowledge of appropriate teaching approaches. Foley (2007), therefore, argues for the need to go beyond English teaching that has a focus on accuracy and correctness according to the native speaker-like model, to developing the notion of English as a lingua franca that is driven by and suitable for the local context and need (p. 15).

When English is important as a tool for educational and economic advancement, access to quality English teaching and learning has implications beyond equity in education. Such access also has implications for equity in terms of social and economic aspects. When English is taught in an educational setting as part of the basic right of all Thai students (compulsory for Grade 1 – Grade 9), important issues that need to be considered involve how to make English learning effective and how to address the challenges outlined above. The present thesis aims to address these issues by exploring the potential of the government's national tablet initiative to address the challenges involved in EFL teaching and learning in Thailand, especially those in the rural areas where the problems of teachers' quality and a lack of resources are more serious (Hayes, 2010; Baker, 2012).

1.3.3 Computer-assisted language learning (CALL) in Thailand

One of the attempts to address the challenges of EFL teaching and learning in Thailand (e.g. a lack of qualified teachers and of learning material resources; students'

lack of exposure to English) is the use of computer-assisted language learning (CALL). There are various studies on CALL in Thailand, but most of these focus on testing whether the use of a specific computer program is effective in developing students' macro (i.e. listening, talking, reading and writing) and micro (e.g. pronunciation; vocabulary learning) English skills through pre- and post-tests, and/or the comparison of performance between control and experiment groups (Phongnapharak, 2007; Intratat, 2003; Thongtua, 2008; Puakpong, 2005).

Although these studies are useful in confirming that CALL can help support Thai students' EFL learning, they form only one piece of the jigsaw in the big picture perspective. In addition to exploring the potential of the CALL materials for supporting certain aspects of EFL learning, we also need to investigate other aspects of their use, such as limitations of the CALL material design, factors influencing teachers to use CALL in their classroom, teachers' views about the use of CALL, and how CALL is implemented in the classroom. The present research project aims to explore these issues in order to understand the implications of technology use in the EFL classroom, by using the One Tablet Per Child (OTPC) project in Thailand as a case study.

1.3.4 The One Tablet Per Child (OTPC) project

The national One Tablet Per Child (OTPC) project was officially announced in 2011. The Thai government saw the project as enabling Thai students to be ready for new technological advancement in the digital world (OTPC, Thailand, 2012). This project also has implications for increasing both quality and equity in education, the goal at the heart of Thailand's Eleventh National Economic and Social Development Plan (2012-2016) (Office of the National Economic and Social Development Board, 2012), as it aims to enable Thai primary students "to be equally nurtured with quality education by using Tablet PCs as an effective tool in their learning and accessing information of their interests" (Sririsaengtaksin, Praneetpolgrang, & Tubtimhin, 2013, p. 150). Supported by a consortium comprising the Ministry of Education, Ministry of Information and Communication Technology, Ministry of Foreign Affairs, and the Office of the Prime Minister, the project commenced in 2012, and has already cost more than 5 billion baht (or more than 152.8 million Australian dollars) (Ministry of Education, Thailand, 2013). The project involves the distribution of tablet PCs, the development of curriculum contents or apps to be included in the tablets,

professional development for teachers, and the provision of detailed lesson plans. Given the substantial economic investment in this project and its objective of improving quality and equity in education, it is important to explore the various aspects involved in implementing this project.

1.3.4.1 The tablet applications in the OTPC project

The research project reported on here analyses the tablet apps for Grade 1 and Grade 2 EFL in the OTPC project as a starting point. The Grade 1 app includes four main sections: Lessons, Books, Multimedia, and Application (see Figure 1.1 for a tablet screen snapshot of the Grade 2 app). To begin with 'Lessons', there are five subjects to choose from: Thai language, math, science, English, and sociology. For English, the focus of this research project, there are six lessons, which correspond to chapters found in the hard-copy set of English textbooks for Grade 1 students: Myself, My Family, My Friends, My Food, My Things, and My Animals. Each lesson consists of Songs, Games, and Stories. The second section is 'Books'. The contents in the 'Books' section comprise the existing textbooks available as PDF files. The English textbook available in the app has been used since 2009. The third section is 'Multimedia'. It contains only one English song, 'The ASEAN way', the official regional anthem of the Association of Southeast Asian Nations. The last section is 'Application'. This section is not yet available, but would include old exam papers.

Figure 1.1: A tablet screen snapshot of the Grade 1 app

The OTPC app for Grade 2 comprises six subjects: Thai language, math, science, English, sociology, and computer (see Figure 1.2 for a tablet screen snapshot of the

Grade 2 app). The EFL content in the app features 38 lessons, each of which includes eight sections: Vocabulary, Let's listen, Let's read, Let's study, Let's talk, Songs, Exercises, and Games.

Figure 1.2: A tablet screen snapshot of the Grade 2 app

There are two main reasons why the present study focuses on the tablet applications in the OTPC project. On the one hand, as the tablet applications for this study were designed for all primary students in Thailand, they are different from other, commercial apps, and their impact is likely to be on a large scale. The OTPC apps have a large number of users, unlike apps or software programs for education designed for specific courses or learning skills, the latter of which tend to be used by a single class or school (e.g. Udomsate, Churintorn, & Chiannguen, 2011). In addition, the apps developed for the OTPC project in Thailand are quite unique in that they were designed by the Thai government and include official textbooks. Most other apps used for educational purposes on the market, by contrast, are commercially developed and available through online outlets such as the Apple Store and Google Store (Chik, 2014).

On the other hand, the OTPC project provides interesting ground for advancing our currently limited knowledge of children as EFL learners, as the project introduced the apps for the early primary levels at the beginning of the project, starting with Grade 1. Research has shown that this young age is a significant period for second language learning, including EFL (e.g. Larson-Hall, 2008; Nikolov, 2009;

Gilakjani & Ahmadi, 2011; Sun, Zhou, & Zhu, 2013); however, most studies on teaching and learning EFL through new technologies tend to address only the secondary school and university levels (e.g. Li, 2014; Mai & Hong, 2014). The OTPC project, then, allows the present research project to analyse the learning materials in the apps as well as their use in the classroom for young EFL learners.

1.4 Aims of the research project

The research project aims to understand the implications of relying on a new technology as a solution to the challenges of English language teaching and learning in the EFL context, by exploring the EFL material design in the new technology, factors influencing teachers' decision to use the new technology in EFL classrooms, teachers' views about the new technology with learning materials to develop children's EFL learning, and how teachers use the new technology with learning materials in EFL classrooms. In order to explore these implications, the research project uses the OTPC tablet initiative in Thailand as a case study. It specifically asks four main research questions:

(1) What is the potential of the multimodal design of the EFL tablet apps to support language teaching and learning? Specifically, what visual-verbal relations are used in the apps, and what are their potential and limitations for teaching children English vocabulary?

(2) What factors influence teachers' decisions to use the EFL tablet app in the classroom?

(3) What are the views of teachers about the use of the OTPC tablet app for students' EFL learning, and about children as EFL learners?

(4) How do teachers' multimodal choices (speech, gesture and pedagogic space) incorporate the OTPC tablet app and the learning materials provided on it into teaching EFL content and managing classroom interactions?

1.5 Overview of the research project

With the purpose of understanding the implications of the use of a new technology for children's EFL learning, the research project starts with an exploration of learning materials in the technology as a point of departure. The tablet technology, which the research project uses as a point of illustration, does not in itself make changes as a learning tool; its real importance lies in the learning materials or applications installed in it (Chik, 2014). In asking the first research question, "What is the potential of the multimodal design of the EFL tablet apps to support language teaching and learning?", or more specifically, "What visual-verbal relations are used in the apps, and what are their potential and limitations for teaching children English vocabulary?", the research project can explore the potential as well as the limitations of relying on the use of a new technology with ready-made learning materials to teach children EFL. The findings of the analysis of the tablet apps suggest that the apps still have limitations, and the teacher's critical role is highlighted. The initial findings of the tablet apps analysis, and a review of research which has stressed the important role of teachers in implementing the computer initiatives (e.g. Bebell & Kay, 2010; Shapley, Sheehan, Maloney, & Caranikas-Walker, 2010), prompted the exploration of the teachers' perspective. Teachers play a significant role in whether and how to integrate new technology into their instructional practices in an effective way (Bebell & Kay, 2010; Shapley et al., 2010).

The research project then further investigates the teachers' perspective through a teacher survey. Specifically, in asking the questions, "What factors influence teachers' decisions to use the EFL tablet app in the classroom?" and "What are the views of teachers about the use of the OTPC tablet app for students' EFL learning, and about children as EFL learners?", this project explores, using the questionnaire survey, factors influencing their decision to use a new technology in a classroom, as well as presenting a broad overview of the teachers' views about the use of a new technology with learning materials to promote children's EFL learning. The survey in this research project also reveals one important factor that influences EFL teachers' technology use: that is, the teachers' attitudes towards the technology. Although the survey can provide an overview of the teachers' attitudes, it does not provide sufficient detail. There is thus a need to further explore the teachers' views in greater detail, which is done in this research through interviews.

Understanding the teachers' perspective is not a straightforward process. This research project carefully analyses the language choices they make in presenting their views in the interviews, through systemic functional linguistics (SFL)-based critical discourse analysis, with the aim of understanding their underlying beliefs about the use of the technology to teach children EFL. In asking the question, "What are the views of teachers about the use of the OTPC tablet app for students' EFL learning, and about children as EFL learners?", the present research explores the implications of the potential of the technology use to transform EFL teaching and learning, as well as teacher-student relationships in the classroom.

As effective EFL learning cannot be enabled merely through the interaction with the learning materials in the technology, and as teachers' views may not translate into actual practice, there is a need to explore how or whether the teachers' views, which have been explored in the teacher survey and interviews, are realised in the classroom practice. This consideration leads to the analysis of multimodal interactions in the classroom, with the focus on the teachers, through a case study of EFL classroom observations. In asking the question, "How do teachers' multimodal choices (speech, gesture and pedagogic space) incorporate the OTPC tablet app and the learning materials provided on it into teaching EFL content and managing classroom interactions?", the research project enables us to understand the implications of the potential of the technology to help teachers teach certain aspects of EFL, as well as the important role of teachers in adopting an effective teaching approach to the integration of the technology into EFL classrooms.

In the analysis of the tablet apps, teacher survey, teacher interviews and teacher observation, the research project enables us to understand the broader implications of the use of new technology as a solution to the EFL teaching and learning challenges such as a lack of exposure to English and a lack of qualified teachers, and highlights the need to caution against considering the technology use as an easy way of solving these problems.

1.6 Thesis by publication format

This thesis has been granted Approval for Study by Macquarie University Ethics Committee (see Appendix 1) and is in 'thesis by publication' format in accordance

with the Macquarie University Higher Degree Research Thesis by Publication Guidelines (Macquarie University, 2015; see Appendix 2 for more detail):

> A thesis by publication may include relevant papers, including conference presentations, which have been published, accepted, submitted or prepared for publication for which at least half of the research has been undertaken during enrolment. The papers should form a coherent and integrated body of work, which should be focused on a single thesis project or set of related questions or propositions. These papers are one part of the thesis, rather than a separate component (or appendix).

The thesis includes four journal papers, each of which addresses one or two main research questions. These four papers were co-authored with my supervisors (Dr. Emilia Djonov and Associate Professor Jane Torr), and function as an integral part of the thesis. I was responsible for designing and conducting the research, and my supervisors provided me with guidance and insightful advice which helped shape the research. I conducted the data collection in Thailand (learning materials in the technology, survey, interviews, and classroom observation), and my supervisors offered recommendations and comments on data analysis and result presentation. They also gave me detailed feedback and advice in terms of how to revise the papers before submission to the journals. The contribution by co-authors to each of the papers is explained in more detail in the preface to each paper chapter.

Each of the four papers is published, in press, or under consideration for publication. The differences in the format of the papers are attributed to the different requirements of the journals. Some repetition across the thesis chapters and the papers is also unavoidable (e.g. the OTPC project background and some aspects of the literature review). The references at the end of the thesis include the references listed in the four papers.

1.7 Overview of the thesis chapters

This chapter has provided the context of the research project, briefly discussed the studies on CALL in Thailand, which has been seen as a possible solution for addressing some of the EFL teaching and learning challenges, and introduced the OTPC project as a focus of the research project. This chapter has also explained the

aims of the research project, and outlined the four main research questions to address these aims.

Chapter 2 provides a review of literature on the use of new technologies for EFL teaching and learning. It opens with the differences between English as foreign language (EFL) and English as a second language (ESL), and outlines key approaches to EFL teaching. It also reviews research on the use of new technologies for EFL teaching and learning relating to the research project's focus. This includes studies of the design of EFL learning material design embedded in new technologies, factors influencing teachers' decision to use new technologies in their EFL classroom, teachers' views about the use of new technologies for EFL teaching and learning, and teachers' use of technologies in EFL classrooms.

Chapter 3 presents systemic functional theory (SFT) as the theoretical foundation of this thesis. This chapter presents the tenets of SFT and the tools SFT provides for linguistic text analysis. It also explains the applications of SFT principles in critical discourse analysis and multimodal research for analysing educational inquiry.

Chapter 4 outlines the project's methodology. It discusses the participants, data collection, and methods of analysis. This chapter also briefly discusses a mixed methods approach, which the research project adopts, and ethical considerations when conducting research with human participants.

Chapter 5 to Chapter 8 presents the four papers that have been published, accepted for publication, and submitted for review. Each paper addresses one or two main research questions, and includes a review of literature, details of the methodology, the findings, and a discussion of the findings. The details of each paper (publication details, the research question(s) it addresses, and the location of each paper in the thesis) are as indicated in Table 1.1.

Table 1.1: Outline of journal articles, the research question(s) they address, and their location in the thesis

Publication details	**Research Question**	**Location in the thesis**
Vungthong, S, Djonov, E, & Torr, J. (2015). Images as a resource for supporting vocabulary learning: A multimodal analysis of Thai EFL tablet apps for primary school children. *TESOL Quarterly*. doi:10.1002/tesq.274	Research Question 1	Chapter 5 (Page 95-124)
Vungthong, S, Djonov, E, & Torr, J. (in press). Factors contributing to Thai teachers' uptake of tablet technology in EFL primary classrooms. *19*(2), *Asian EFL Journal*.	Research Question 2 & 3	Chapter 6 (Page 125-151)
Vungthong, S, Djonov, E, & Torr, J. Children learning English as a foreign language (EFL) using a tablet technology: A critical discourse analysis of interviews with Thai primary school teachers.	Research Question 3	Chapter 7 (Page 152-181)
Vungthong, S, Djonov, E, & Torr, J. What really matters in EFL classrooms using a tablet technology?: A critical multimodal analysis of pedagogic discourse.	Research Question 4	Chapter 8 (Page 182-211)

Chapter 5 addresses an analysis of the content embedded in the OTPC tablet apps from a multimodal social semiotic perspective. It investigates how one section of the OTPC tablet apps (song videos) uses images and language to create meaning, and considers the potential of visual-verbal relations to support vocabulary teaching and learning. The chapter concludes with a discussion of related pedagogical implications for the use and design of EFL materials integrated into multimedia technologies.

Chapter 6 presents the findings of the analysis of 213 questionnaires completed by Grade 2 EFL teachers in Thailand, which reveal various factors influencing teachers to use and in their use of the OTPC tablet app in their EFL classrooms, as well as how they view its potential to develop children's EFL learning. It also discusses the implications for policy makers and other stakeholders involved in the design and implementation of similar educational technology projects in the future.

Chapter 7 focuses on a more detailed analysis of teachers' views about the use of a technology for children's EFL learning. It involves an analysis of how teachers use

language to construct ideas about children as foreign language learners and as users learning EFL through the OTPC tablet app, based on SFL-based critical discourse analysis of the interviews with seven Grade 2 EFL teachers. It also discusses the implications for pedagogy and education policy.

Chapter 8 reports the findings of the analysis of teachers' use of a technology in EFL classrooms. Through a multimodal social semiotic perspective, it investigates the pedagogic discourse embedded in EFL classrooms, to explore how teachers use speech, gesture and pedagogic space to teach and manage their students in an EFL class using the tablet app, based on the video-recording of two Grade 2 EFL classrooms from two different schools. The pedagogical implications of the use of new technologies in EFL classrooms for children are discussed.

Chapter 9 discusses the findings of the four papers in relation to important issues in the use of technology in EFL classrooms. In particular, it discusses the results in relation to the use of new technology to support EFL teaching and learning in primary schools, the potential of new technology to promote equity in education and learner-centred approaches, and the roles of teachers and parents in guiding children's learning through new technology.

Chapter 10, the concluding chapter, provides a brief summary of the research project's aims and findings. It then discusses implications of the findings for stakeholders involved in the implementation of a new technology in EFL classrooms in primary schools, including education policy-makers, designers of computer technologies and teaching materials for language learning, and teachers. This chapter also explains the limitations of the research project, and discusses recommendations for future research.

Chapter 2

Literature Review

2.1 Introduction

With the global trend of using new technology for foreign language teaching and learning, there has been an assumption underlying many educational technology projects that the technology use would itself guarantee more effective learning (e.g. Department of Education and Training, Australia, 2016; OLPC, 2012). A large body of research has also confirmed that a new technology can help develop various foreign language skills (e.g. Huang, 2013; Khoii & Aghabei, 2009; Yeh, Liou, & Li, 2007; Shamir & Johnson, 2012). However, the technology itself cannot really make significant changes. Especially in the classroom setting, there are many other aspects that need to be taken into consideration, such as the potential and limitations of the learning materials in the technology to develop learning, factors influencing teachers to decide to use it the classroom, teachers' views about the technology use for developing students' foreign language learning, and how teachers would use the technology to teach foreign languages to their students. In addition, what is yet to be well understood are the implications of relying on technology use for foreign language teaching and learning as a promising solution to various challenges, such as a paucity of qualified teachers and learners' lack of exposure to the target language. In order to contribute to knowledge about this important area, the present research project analyses various dimensions of technology use in foreign language classrooms by using the One Tablet Per Child (OTPC) project in Thailand in the context of English as a foreign language (EFL) as a point of illustration.

In order to contextualise the research project, this chapter, firstly, outlines the context of English as a foreign language (EFL) as opposed to English as a second language (ESL), and explains foreign language teaching approaches. It also discusses computer-assisted language learning (CALL), its benefits for EFL teaching and learning, 1:1 computing models, and CALL in Thailand. In addition, as the research project analyses various dimensions of the technology use (EFL learning material design in the technology, factors influencing teachers to use the technology in their

EFL classroom, teachers' views about the use of technology for EFL teaching and learning, and teachers' use of the technology in the EFL classroom) with the aim of understanding the implications of the technology use for EFL teaching and learning, this chapter also reviews research that examines each of these dimensions.

2.2 English as a foreign language (EFL)

It is useful to firstly identify the distinction between English as a foreign language (EFL) and English as a second language (ESL), as this distinction enables a better understanding of the EFL context in Thailand, in which the research project is situated. As an important area of English language teaching, EFL has been defined in contrast to ESL. Whereas EFL is typically defined as "English in countries where it does not have a significant role as a language of communication in the major state institutions (such as government, the law, education)" (Williams & Williams, 2007, p. 3), such as English in Thailand and Japan, ESL generally refers to the roles of English for minorities and immigrants in English-speaking countries (Richards, Platt, & Weber, 1985), such as English for minorities in England, and for those in countries where it is not the first language but has an important role in the major institutions and in society (Williams & Williams, 2007), such as English in India, Singapore and Nigeria.

Although many guidebooks (e.g. Celce-Murcia & Larsen-Freeman, 2015; Nasr, 1997) and studies (e.g. Oxford & Burry-Stock, 1995; Carrell, Gajdusek & Wise, 1998) use these two terms interchangeably without this specific distinction, research reveals some differences between the second language (SL) and foreign language (FL) contexts for learners of English (Longcope, 2010; Anderson, 2003; Riley & Harsch, 1999; Riley, 2003), and cautions against the credibility of EFL research that draws solely upon second language acquisition (SLA) literature (Sadeghi & Arkani, 2012).

Research has identified seven main differences between ESL and EFL teaching and learning. The first difference is the levels and types of motivation between ESL and EFL learners (Krieger, 2005; Riley & Harsch, 1999; Henrichsen, 2010). ESL students typically have integrative motivation (Krieger, 2005; Henrichsen, 2010), which can be defined as "a desire to assimilate into the target language community" (Irie, 2003, p. 88). They also tend to have higher intrinsic motivation, because

English is relevant to and used in their daily lives (Krieger, 2005). On the other hand, EFL students are likely to have lower intrinsic motivation as English does not play an important role as a language of communication in their everyday lives (Henrichsen, 2010). They tend to have instrumental motivation, or in other words, learn English for a practical reason, such as to pass examinations because English language is a compulsory part of their education (Henrichsen, 2010). This is also applicable to the Thai context, where English is not a medium of communication for the majority of the population, and students study English for practical reasons such as passing an English test for entrance to a university or to meet job application requirements.

Another difference, which closely relates to the first one, lies in the objectives of English learning and expectations for ESL and EFL learners. Henrichsen (2010) points out that ESL students generally need to learn English in order to be able to use it for various purposes in their everyday lives (e.g. buying food; writing a school assignment report), and they are required to have higher English proficiency than EFL students as they live in an English speaking country in which English is essential for educational and career advancement. The ESL teaching they experience tends to focus on oral language skills in order to facilitate their daily communication (Henrichsen, 2010). In contrast, the main purpose of studying English for EFL students is to pass a test, and the focus of EFL teaching is more on reading and writing skills (Henrichsen, 2010). This matches the nature of teaching and learning of English in Thailand. The English teaching in Thailand generally focuses on testing grammar and vocabulary knowledge (Watson Todd, 2008). The English tests in primary and secondary education in Thailand do not typically include speaking, writing or listening skills. The TOEIC test for a job application in Thailand also includes only grammar, reading and listening. The English teaching in Thailand, which reflects the content of the English tests, largely ignores the aim to develop students' active skills (speaking and writing), as these skills are not typically used in their everyday lives.

The use of the first language (L1) in classrooms is another notable difference between ESL and EFL (Henrichsen, 2010; Krieger, 2005). ESL students tend to come from a variety of backgrounds and speak various home languages, and it is unlikely that teachers can speak the students' home languages. English is therefore often the main medium for communication in classrooms (Henrichsen, 2010; Krieger, 2005).

In the ESL context, teachers generally thus require students to use only English, not their first language, when they communicate in the classroom (Krieger, 2005). In contrast, students in the EFL classes are likely to be linguistically homogeneous. In other words, EFL students typically speak the same native language and naturally use L1 when communicating with each other (Henrichsen, 2010). Teachers also tend to use L1 in their EFL class. This phenomenon is also typically seen in the EFL classroom in Thailand, where teachers mostly use Thai to teach English classes and students speak Thai with their friends and teacher. The reliance of L1 in EFL classrooms has been cautioned against in various studies, with the underlying notion that more exposure to English would help students better learn English (e.g. Auerbach, 1993). However, research has shown that the teacher's use of L1 in an EFL context can support the teaching and learning of English if L1 is used moderately (Tang, 2002). For example, teachers can use L1 to explain difficult English concepts for students (e.g. Schweers, 1999; Rose, 1999). Similarly, Rose (1999) points out that it is impossible to forbid the use of L1, and recommends the appropriate use of both L1 and L2 in an EFL classroom.

Learners in ESL and EFL contexts are also different in terms of their exposure to English in their everyday lives (Krieger, 2005; Longcope, 2010; Riley, 2003; Pinter, 2011). Students in the ESL context have more opportunities to use English outside the classroom than those in the EFL context (Pinter, 2011; Riley, 2003). The survey implemented by Krieger (2005) reveals that most of his EFL students did not have interactive exposure to English, beyond movies and music, which do not encourage two-way communication. Thai students also face the problem of a lack of exposure to English, as Thai is always used for interaction both inside and outside the classroom (Noom-ura, 2013; Dhanasobhon, 2006; Nonkukhetkhong et al., 2006). In order to address the problem of a lack of exposure to English for EFL learners, Krieger (2005) argues for the "need to maximise fluency practice, getting the students to use the language as much as possible in class and reducing emphasis on accuracy" (pp. 10-11); and Henrichsen (2010) recommends that EFL teachers introduce some realia (ie. objects from real life) and English guest speakers, which help create a simulating English environment, into their classrooms.

Teachers' English proficiency is the fifth main difference between the ESL and EFL contexts identified in the research. Henrichsen (2010) observes that most ESL

teachers are native speakers of English or have native-like proficiency, whereas EFL teachers tend to be local educators whose first language is not English and who may have lower English proficiency, especially in speaking skills. This applies to the Thai EFL context, in which a lack of qualified teachers has been identified in research as the main problem of English teaching in Thailand (Noom-ura, 2013; Dhanasobhon, 2006). However, Henrichsen (2010) points out that, as EFL teachers have learned English as a foreign language (EFL) and understand the EFL learning processes, they can help teach students based on this experience.

Class size and class meeting frequency are also cited as major differences between ESL and EFL (Krieger, 2005; Henrichsen, 2010; Pinter, 2011). ESL classrooms tend to be small (around 10-15 students per class) whereas EFL classes tend to be large (generally more than 30) (Henrichsen, 2010). In addition, ESL learners typically attend 8-25 hours of class per week whereas EFL students generally study English once or twice a week (Henrichsen, 2010). In Thailand, the class size is also large (typically more than 30 students per class) (Noom-ura, 2013; Dhanasobhon, 2006), and students study English around three times a week. These two limitations are also seen as challenges of English teaching in Thailand.

These seven differences between ESL and EFL contexts reveal the challenges of the teaching and learning of EFL, which can be summarised in Table 2.1. The distinction between the two contexts should be taken into consideration in order to better address the need and problems of English teaching in EFL classrooms.

Table 2.1: Summary of the challenges of the teaching and learning of EFL as opposed to ESL

	EFL	ESL
1	Students have low intrinsic motivation.	Students have high intrinsic motivation.
2	Students learn English for exams.	Students learn English for general purposes in everyday lives.
3	Teachers rely on L1 in the classroom.	Teachers typically use L2 in the classroom.
4	Students rarely have exposure to English.	Students have exposure to English in their everyday lives.
5	Teachers have low English proficiency.	Teachers are typically native speakers or have native-like proficiency.
6	Class size is large.	Class size is small.
7	Students study English a few hours a week.	Students study English longer hours.

2.3 Approaches to foreign language teaching

Mainly based on the work of Richards and Rodgers (2001), Larsen-Freeman and Anderson (2013), and Richards (2006), this section briefly discusses four main foreign language teaching approaches: the grammar-translation method, the direct method, the audio-lingual method, and communicative language teaching (CLT). In each classroom, however, different teaching approaches can coexist; and although some of these approaches emerged a long time ago, they still persist in some foreign language classrooms.

2.3.1 The grammar-translation method

Although the grammar-translation method, whose main proponents include J. Seidenstucker, K. Plots, H. S. Ollendorf, and J. Meidinger, dominated the teaching of foreign languages from the 1840s to the 1940s (Richards & Rodgers, 2001), it continues to be employed in some foreign language classes, including those in Thailand (Nonkukhetkhong et al., 2006). The grammar-translation method focuses on students learning the grammatical rules and vocabulary of the target language

with the purpose to be able to read literature written in the target language, rather than encouraging them to communicate in the target language (Larsen-Freeman & Anderson, 2013; Richards & Rodgers, 2001).

The main principles of this method are as follows (Richards & Rodgers, 2001). Firstly, students are required to approach a language through learning grammar rules. This method involves a deductive approach of teaching grammar, in which teachers teach students the rules, which are then practised through translation exercises. It involves memorisation of vocabulary items, which are presented with translation. In addition, the focus is on reading and writing skills; listening and speaking are paid little or no systematic attention. The medium of instruction is the students' native language. In this method, teachers are the authority in classrooms, and students may be seen as passive recipients completing exercises set by the teachers (Larsen-Freeman & Anderson, 2013).

This method, however, has received criticism. It is viewed as "the method for which there is no theory" to justify its use (Richards & Rodgers, 2001, p. 7). It views language learning as memorisation of "rules and facts in order to understand and manipulate the morphology and syntax of the foreign language" (Richards & Rodgers, 2001, p. 5); yet the memorisation of grammar rules and vocabulary cannot necessarily enable students to communicate effectively. In the mid-nineteenth century, in opposition to the grammar-translation method, new beliefs about principles for foreign language learning arose, which included the focus on spoken language, the need to hear the language before seeing it in written form, that words should be learned in meaningful contexts, translation should be avoided, and grammar be taught inductively by presenting examples for learners to notice patterns and work out a rule by themselves. These beliefs led to the development of the direct method (Richards & Rodgers, 2001).

2.3.2 The direct method

The direct method, which started from the reform movement in terms of language teaching from the 1880s, was a radical reaction to the grammar-translation method. Its name is derived from the fact that, in this method, meanings are conveyed directly in the target language (L2) through the use of demonstration and visual aids without being translated into the students' native language (L1) (Diller, 1978). This method

draws upon naturalistic principles of language learning, whose main exponents were F. Gouin and L. Sauveur (Richards & Rodgers, 2001). This method is based on the observation of children's language learning and the assumption that second language learning is similar to first language learning. The main goal of the direct method is for students to learn how to communicate in the target language (Larsen-Freeman & Anderson, 2013).

The main principles of the direct method comprise (1) using the target language as a means of instruction and communication in language classrooms, (2) avoiding the use of the first language translation, (3) teaching concrete vocabulary through demonstration, objects and pictures and abstract vocabulary through association of ideas, (4) using the inductive approach to teaching grammar, and (5) focusing on oral communication in small classes (Richards & Rodgers, 2001). The focus of this method is on listening and speaking skills, rather than on reading and writing. Although the class activities are directed by teachers, the students' role is more active than in the grammar-translation method (Larsen-Freeman & Anderson, 2013).

Some of this method's major problems include overemphasising the similarities between first and foreign language learning (Richards & Rodgers, 2001), students' misunderstanding of some abstract ideas as a result of avoidance of the use of the first language, and the difficulty in recruiting qualified teachers to meet the requirement of native-like fluency in the foreign language that is needed for this method (Qing-xue & Jin-fang, 2007).

2.3.3 The audio-lingual method

Like the direct method, the audio-lingual method, which emerged during the 1950s, is considered a reaction to the drawbacks of the grammar-translation method. It is also an oral-based approach as it discards the use of the mother tongue in developing foreign language speaking and listening skills. However, whereas the direct method focuses on the acquisition of vocabulary through its use in situations, the audio-lingual approach focuses on grammatical sentence pattern drills (Larsen-Freeman & Anderson, 2013). The audio-lingual method draws upon the behaviourist learning theory, in which foreign language learning is viewed as "a process of mechanical habit formation", and upon structural linguistics, according to which "the primary medium

of language is oral: Speech is language" (Richards & Rodgers, 2001, pp. 55-57). The main advocates of this method include L. Bloomfield and C. Fries.

The main goal of the audio-lingual method is to encourage students to use the target language communicatively by using it automatically without stopping to think (Larsen-Freeman & Anderson, 2013). The main principles of this method are presenting new vocabulary and structural patterns through dialogues, learning the dialogues through imitation and repetition, and focusing more on listening and speaking skills (Larsen-Freeman & Anderson, 2013). This method is considered a teacher-dominated one, in which a teacher "models the target language, controls the direction and pace of learning, and monitors and corrects the learners' performance", whereas students play a more passive role in responding to stimuli and becoming imitators of the model provided by teachers (Richards & Rodgers, 2001, p. 62).

Criticism of this method came with the proposal of an alternative theory of language learning to the behaviourist one in which the audio-lingual method is situated (Richards & Rodgers, 2001). According to this alternative view, language learning should not be achieved through mere imitation and repetition; rather, language learning should be meaningful and involve language in use. The audio-lingual method does not consider the social and communicative aspects of language use as necessary for language proficiency.

2.3.4 Communicative language teaching (CLT)

The communicative language teaching (CLT) approach, which emerged in the late 1960s, presents a change to the traditional views of foreign language learning processes in which students are expected to acquire lexis and grammatical competence through habit formation (Richards & Rodgers, 2001). The goal of the CLT approach is, by contrast, to develop what Hymes (1972) referred to as 'communicative competence', which can be defined as knowing how to use language for different purposes, in different settings, and with different participants (Richards, 2006). CLT emphasises "the need to focus in language teaching on communicative proficiency rather than on mere mastery of structures" (Richards & Rodgers, 2001, p. 153). The main proponents of this method have included C. Candlin and H. Widdowson, who draw upon the work of functional linguists such as J. Firth and M. A. K. Halliday (Richards & Rodgers, 2001). In particular, CLT draws upon Halliday's

theory of language (1970), which focuses on the nature and function of language as it is used in speech and writing (Richards & Rodgers, 2001, p. 159).

In CLT, students are required to communicate in the target language (Larsen-Freeman & Anderson, 2013; Richards & Rodgers, 2001). A wide range of teaching and learning activities in this approach are implemented to engage learners in communication (Richards & Rodgers, 2001, p. 165). For example, they are encouraged to use the language through communicative activities such as games, role plays and problem-solving tasks (Larsen-Freeman & Anderson, 2013). This approach involves the development of procedures for teaching the four skills (listening, reading, speaking and writing) that acknowledge the interdependence of language as a resource and its use in communication (Larsen-Freeman & Anderson, 2013). When learning a language, students are encouraged to focus on meaning rather than on form.

The roles of a teacher in CLT, as Breen and Candlin (1980) explain, include initiating and facilitating communication between all participants in the classroom, and acting as a participant within the learning-teaching group. The roles of teachers in CLT are less dominant than those in the other three approaches. The main role of students is that of communicators who are actively involved in meaning negotiation, that is, trying to understand others as well as make themselves understood (Larsen-Freeman & Anderson, 2013). CLT is more oriented towards a learner-centred approach when compared with the other three approaches discussed earlier.

The CLT movement encompasses two main approaches: the process-based, and product-based approaches (Richards, 2006). The process-based approaches include content-based instruction (CBI) and task-based instruction (TBI). According to Richards (2006), content-based instruction (CBI) draws on the assumptions about language learning that we learn a language more effectively when we use the language as a means of obtaining information or knowledge, and that, through the process of learning content, we can link and develop all main language skills; whereas task-based instruction (TBI) is based on the claim that we can learn a language more successfully through the tasks that are specially designed. The second group of approaches extending from CLT is product-based approaches, which features text-based instruction and competency-based instruction. Text-based instruction, or a genre-based approach, seeks to enable students to use the text types typical in and

suitable for specific contexts (Richards, 2006). Genre-based pedagogy is seen as "an outcome of communicative approaches to language teaching" (Hyland, 2007, p. 150). It encourages the development of communicative competence through the support of the use of various types of spoken and written texts in the specific contexts of language use (Richards, 2006). As for competency-based instruction, it aims to equip learners with the basic skills required for their everyday lives (Richards, 2006). Table 2.2 presents a summary of the four foreign language teaching approaches

2.4 Computer-assisted language learning (CALL)

Computer technology has been presented as a tool assisting the teaching and learning of languages, including EFL. This notion is conceptualised in the term computer-assisted language learning (CALL), which is derived from computer-assisted language instruction (CALI) (Davies & Higgins, 1982). CALL can be defined as "the search for and study of applications of the computer in language teaching and learning" (Levy, 1997, p. 1).

2.4.1 A brief history of CALL

In relation to the language teaching approaches, three stages in the history of CALL can be identified, as behaviourist, communicative, and integrative (Warschauer & Healey, 1998; Warschauer, 2004). However, at present, in some parts of the world, such as in many EFL classrooms in Thailand, teaching still conforms to the first stage of the use of CALL, that is, according to the behaviourist model (e.g. using a computer programme for repetitive drills and practices) (Khamkhien, 2012).

The first stage of the use of CALL is behaviourist CALL, which emerged in the 1950s and was largely used in the 1960s and 1970s. The use of CALL in this stage was influenced by the behaviourist learning model, which involves the use of computer technologies for repetitive language drills and views a computer as a mechanical tutor, which allows students to learn at their own pace (Beatty, 2012; Warschauer, 2004; Warschauer & Healey, 1998).

Table 2.2: Summary of the four foreign language teaching approaches

Approach	Goal	Focus on macro skills	Types of activities	Language/learning theory	The roles of teachers and students
The grammar-translation method	Students learn the grammatical rules and vocabulary of the target language in order to be able to read literature in the target language.	Reading and writing skills	- Memorisation of vocabulary items which are presented with translation - Teachers teaching the grammatical rules which are then practised through translation exercises	- No specific language/learning theory	Teachers as providers of knowledge and students as passive recipients of knowledge
The direct method	Students can communicate in the target language.	Listening and speaking skills	- Using the target language as a means of instruction and communication - Avoiding the use of the first language translation - Teaching concrete vocabulary through demonstration, objects and pictures and abstract vocabulary through association of ideas - Using the inductive approach to teaching grammar - Focusing on oral communication in small classes	- Naturalistic principles of language learning	Teachers directing class activities that students complete but students being less passive than those in the grammar-translation method
The audio-lingual method	Students use the target language communicatively by using it without stopping to think.	Listening and speaking skills	- Presenting new vocabulary and structural patterns through dialogues - Learning the dialogues through imitation and repetition	- Behaviourist learning theory (language learning as a process of mechanical habit formation) - Structural linguistics	Teachers as modeling the target language and correcting students' performance and students as passive imitators of teachers
Communicative language teaching	Students develop communicative competence.	The integration of the four macro skills for communication	- Students engaging in communicative activities such as games, role plays and problem-solving tasks	- Halliday's theory of language (1970) which focuses on the language in use	Teachers as being less dominant and students as communicators

The second stage, pointed out by Warschauer and Healey (1998), is communicative CALL, which emerged in the late 1970s and early 1980s. During this time, the behaviourist model of language teaching was criticised and rejected for its theory and pedagogy. Communicative CALL is based on cognitive theories which view learning as "a process of discovery, expression, and development" (Warschauer & Healey, 1998, p. 57). It involves the use of computer programmes to encourage students to initiate and participate in conversation in the target language in order to develop fluency and to stimulate them to practise language use in non-drill format (Warschauer, 2004; Warschauer & Healey, 1998).

The third stage is integrative CALL, which emerged in the late 1980s and early 1990s. Integrative CALL draws upon socio-cognitive views which focus on the use of language in authentic contexts (Warschauer & Healey, 1998). It involves the use of task-based, project-based, and content-based approaches to encourage students to use various language skills in authentic environments (Warschauer, 2004; Warschauer & Healey, 1998).

2.4.2 Benefits of CALL for EFL teaching and learning

CALL has been used as a solution to some of the challenges of English language teaching and learning in the EFL context. Research has indicated that the use of computer technology can help enhance EFL students' macro skills (Huang, 2013; Khoii & Aghabei, 2009; Yeh et al., 2007, Shamir & Johnson, 2012), motivate EFL students to learn English (Skinner & Austin, 1999; Gilakjani, 2012; Wu, Yen, & Marek, 2011), and increase EFL students' exposure to English (Sadeghi & Dousti, 2014; Uzun, 2012; Chen, 2005).

Firstly, various studies have shown that the use of computer programmes can help develop all four language skills of EFL students – speaking (Huang, 2013), listening (Khoii & Aghabei, 2009), writing (Yeh et al., 2007), and reading (Shamir & Johnson, 2012; Marzban, 2011); as well as, more specifically, students' grammar knowledge (Swann, 1992; Kılıckaya, 2013).

Secondly, a computer technology can be used to increase EFL students' motivation (Skinner & Austin, 1999; Gilakjani, 2012; Wu et al., 2011). For example, the work of Skinner and Austin (1999) reveals that computer conferencing helps improve students' motivation for language learning, because it allows students to

participate in real communication, boosts their confidence, and relieves their worry when writing. As another example, the study of Wu, Yen and Marek (2011) shows that authentic English interaction in English provided through computer technology use motivates EFL students to use their skills and communicate across cultures and different parts of the world.

Thirdly, CALL can help increase EFL students' exposure to English (Sadeghi & Dousti, 2014; Uzun, 2012; Chen, 2005). The Internet, for example, offers easy access to written passages, songs and other materials in the target language, and opportunities for voice and message chat with native speakers (Uzun, 2012). Chen (2005) also recommends the use of computer-mediated communication (CMC) for EFL teaching to promote EFL students' communicative competence, as they do not have the chance to interact in English in their daily lives. CMC, for example, can increase the exposure to the target language through the use of emails and audio or video communications (Chen, 2005, p. 141). In addition, research reveals that more exposure to English leads to better language performance. For example, the study of Sadeghi and Dousti (2014) demonstrates that the students who are exposed to computer-based vocabulary activities learn more vocabulary than those who do not.

These benefits of CALL can be seen as a way to partly address the EFL teaching and learning challenges discussed earlier, in terms of the EFL contexts where EFL students' motivation is low compared to that of ESL students, teachers' English proficiency is not high, and students have little or no exposure to English.

2.4.3 CALL and 1:1 computing models

With the introduction of portable tablet PCs and laptop computers, there has been an increase in tablet and laptop initiatives that enable language learners' one-on-one interaction with the computer. For example, in order to address the problem of a lack of qualified foreign language teachers, the Australian government has implemented the Early Learning Languages Australia (ELLA) Programme, which involves the funding of tablet applications for preschool children learning foreign languages, as well as educator support networks, and aims to make all preschools in Australia able to access the ELLA Programme by 2017 (Department of Education and Training, Australia, 2016).

Similarly, the One Tablet per Child initiative was conducted in Ethiopia with the aim of supporting children's learning to read without a teacher or traditional classroom structure (OLPC, 2012). The Thai government has also implemented a similar tablet project, although the focus is not only on language learning. As discussed in Chapter 1, the Thai One Tablet Per Child initiative was introduced in 2011 with the aim of developing children's learning in a digital world, by equipping all Grade 1 students with a tablet embedded with learning materials for various subjects, including English.

With the prevalence of 1:1 computing models enabled through the use of tablets and laptops, various studies have explored 1:1 environments and their effects on students' learning. Bebell and Kay (2010), for example, analysed students' and teachers' technology use, and found that the 1:1 computing model contributed to improvement in terms of teacher practices, student performance, student engagement, and students' research skills. In particular, the study of Bebell and Kay (2010) reveals that Grade 7 students in their second year of the 1:1 programme had better English Language Arts (ELA) state assessment scores compared to those who did not attend the programme. The work of Shapley, Sheehan, Maloney and Caranikas-Walker (2010) also shows that students who participated in a 1:1 laptop programme outperformed those who did not, in the ELA test.

However, there has also been criticism of computer and 1:1 initiatives. The key criticism is the argument that the technology itself cannot transform or improve teaching and learning. The better performance of students from using computers, as demonstrated in various studies on 1:1 computer projects (e.g. Bebell & Kay, 2010; Shapley et al., 2010), is likely to be a result of innovative teaching such as individualised and problem-based instructions, rather than because of the use of technology (Cuban, 2006a, 2006b; Weston & Bain, 2010). What is really important and needs to be taken into consideration is the culture of teaching and learning or the educational paradigm in a particular classroom setting (November, 2013; Weston & Bain, 2010). Weston and Bain (2010), for example, criticise research on the effectiveness of the 1:1 computing in increasing students' test scores, and argue for a shift in the educational paradigm from teaching students to pass a test to encouraging learners to develop the cognitive tools that enable them to learn effectively on their own, even outside the classroom. These studies highlight the need for research to

move away from focusing on the technology itself to considering the pedagogy. Pedagogy can be reflected through the teachers' views and practices, which are explored in the present thesis through the questionnaire, interviews, and classroom observation.

2.5 Key dimensions of technology use in EFL classrooms

This research project aims to understand the implications of using a new technology as a solution to address the challenges of EFL teaching and learning, by analysing various dimensions involved in technology use in EFL classrooms, which include (1) EFL learning material design in a new technology, (2) factors influencing teachers' decision to use a new technology in EFL classrooms, (3) teachers' views about the use of a new technology for EFL teaching and learning, and (4) teachers' use of a new technology in EFL classrooms. Although these main areas are related, research tends to focus only on one discrete dimension. The present thesis, by contrast, aims to address all of these four aspects.

2.5.1 EFL learning material design in a new technology

Various studies have explored language learning materials embedded in a technology, but few of them focus on EFL in particular. These studies can be divided into three main groups. The first group is research that aims to develop evaluation criteria for CALL materials (e.g. Jamieson & Chapelle, 2010; Murray & Barnes, 1998; Martins, Levis, & Borges, 2016; Reeder et al., 2004). For example, the work of Jamieson and Chapelle (2010) analyses an approach to evaluating CALL materials based on a survey completed by teachers and students, in a multiple case study in 12 English language classes in four countries, and yields six different criteria for evaluating CALL materials across different contexts.

The second group is the studies that involve production of CALL materials (e.g. Bret & Nash, 1999; Udomsate et al., 2011). For example, the work of Bret and Nash (1999) concerns the production of six multimedia CD-ROMs for learners of Business English, and describes the rationale for learning material design (e.g. considering learning design such as the user interface on a screen, and students' different ability levels).

The third group is research that explores language software programmes through content analysis (Chik, 2014; Deng & Trainin, 2015; Nesselhauf & Tschichold, 2002; De Jong & Bus, 2003). Examples of research on EFL software programmes through content analysis include Chik (2014) and Deng and Trainin (2015). Chik (2014) analyses the features of 90 English learning applications (apps) for young learners available in the Apple App Store, and reveals that learning tended to be represented as a fun game, and that most of the apps were not designed for EFL learners and did not encourage social interactions as part of the learning process (Chik, 2014). While Chik (2014) does not focus on specific aspects of language learning, the work of Deng and Trainin (2015) focuses on vocabulary learning software. Deng and Trainin's (2015) study explores the apps available on tablet platforms, and relates research-validated approaches to vocabulary learning to the affordances of various apps. This work discusses how a variety of apps can be used to support vocabulary acquisition, with four vocabulary learning strategies: dictionary use, phonological analysis, morphological analysis, and contextual analysis. Whereas research in this group tends to analyse the description of EFL software and relates that to the representation of learning in general or specific aspects of EFL learning, different modes of communication and their interactions that are embedded in software programmes are largely neglected.

Contributing to the third group of research, the present thesis aims to analyse the contents of EFL tablet applications through multimodal discourse analysis (MDA), which enables the analysis of these learning materials in relation to the broader issues of EFL such as pedagogy and policy (see more detail about MDA in Chapter 3). In particular, it explores the interaction between different modes of communication embedded in the apps and the contribution of such interaction to vocabulary learning. The focus on different modes of communication is motivated by research that indicates the benefits of multimodality in CALL materials (Brett, 1995). Brett (1995), for example, points out various advantages of using a multimedia technology for developing listening skills; one of these advantages is the use of various modes of communication in one platform. He states that:

The ability to devise and deliver learning opportunities based on the integration of various media, in one interface, is unique. All accoutrements to facilitate learning are in one place. The combinations of tasks, subtitles, video or audio can be easily

selected and quickly varied to accommodate individual preferences and learning styles. Combinations of written and aural media may provide input that is more comprehensible and as such be more likely to become intake. (Brett, 1995, p. 83)

In addition, research (Brett, 1997; Guichona & McLornan, 2008) has shown that the use of multiple modes in CALL materials is more effective in developing students' language learning than is the use of an individual mode alone. For example, the (1997) study by Brett analyses the use of computer-based multimedia to develop listening performance, and reveals that learners perform comprehension and language recall tasks better when using multimedia than when using audio or video alone. Similarly, the work of Guichona and McLornan (2008) explores the effects of multimodality on second language comprehension by comparing the understanding of a BBC audiovisual recording by French undergraduate students who are exposed to different modes of communication: (1) sound alone, (2) image and sound, (3) image, sound and L1 subtitles, and (4) image, sound and L2 subtitles. It reveals that "comprehension improves when learners are exposed to a text in several modalities" (Guichona & McLornan, 2008, p. 85).

2.5.2 Factors influencing teachers' decision to use a new technology in EFL classrooms

Factors influencing secondary school and university teachers' decisions as to whether or not to use computer technologies in EFL classrooms can be divided into two main groups: institution-related, and teacher-related factors. Institution-related factors include availability of computer resources (e.g. Li, 2014; Shin & Son, 2007) and administrative support (e.g. Park & Son, 2009; Shin & Son, 2007). Teacher-related factors involve teachers' personal interest in a given technology (e.g. Shin & Son, 2007), teachers' perception of the usefulness of a given technology for teaching and learning (e.g. Li, 2014; Mai & Hong, 2014), teachers' training (e.g. Chen, 2008), and teachers' confidence and competence in using computer technologies (e.g. Li, 2014).

Various barriers to teachers' successful implementation of computer technologies in the EFL classroom have also been explored, for example, time constraints (e.g. Park & Son, 2009; Chen, 2008), insufficient training and technical support (e.g. Dashtestani, 2012; Chen, 2008; Aydin, 2013), rigid school curricula (e.g. Park & Son, 2009), teachers' lack of knowledge about computer software (Aydin, 2013), and a lack

of computer-based facilities and resources (e.g. Dashtestani, 2012; Celik & Aytin, 2014; Park & Son, 2009; Chen, 2008).

Despite the considerable body of research into factors affecting teachers' uptake of computer technologies in EFL classrooms, there are two significant gaps in our understanding of this area. Firstly, the teacher participants in these studies tend to be secondary school and university teachers (e.g. Park & Son, 2009; Dashtestani, 2012; Shin & Son, 2007; Chen, 2008), whereas early childhood and primary school teachers have rarely been addressed (e.g. Aydin (2013), which addresses 157 EFL teachers from primary and secondary schools in Turkey, rather than only the primary school level). As discussed in detail earlier, there is a need to explore the early primary levels for EFL learning, as research has pointed out the benefits of learning a foreign language at a young age, and English as a foreign language is a compulsory subject from the early primary grades in many countries.

Secondly, most research focuses on computer technologies in general (e.g. Park & Son, 2009; Dashtestani, 2012; Li, 2014; Mai & Hong, 2014). For instance, Park and Son's (2009) analysis of questionnaires completed by and interviews with 12 EFL secondary school teachers in Korea explored teachers' views about CALL and factors affecting their use of CALL. While this study points out the role of teachers' perceptions of CALL and lack of time and computer facilities as important factors, it is based on a very small number of participants, and considers neither specific types of computer technologies and their functions, nor variations in the quality of different brands of the same technology.

The present thesis aims to contribute to research in this area by exploring factors influencing early primary school EFL teachers' uptake of a specific technology - the OTPC tablet device with EFL learning materials - in their classroom.

2.5.3 Teachers' views about the use of new technologies for EFL teaching and learning

Research has shown that teachers' views about technologies for teaching and learning influence successful technology integration into classroom practices (Ertmer, Addison, Lane, Ross & Woods, 1999; Blankenship, 1998; Bullock, 2004; Liu, Theodore & Lavelle, 2004; Atkins & Vasu, 2000; Becker, 1991; Campoy, 1992). With this recognised importance of the teachers' perspectives, many studies have been

conducted to explore secondary school and university teachers' attitudes towards technology use in EFL classrooms (e.g. Mollaei & Riasati, 2013; Celik, 2013; Albilirini, 2006; Lau & Sim, 2008; Park & Son, 2009; Bordbar, 2010; Kim, 2011). Most of these studies use surveys (questionnaires and interviews) to address this topic, and tend to generate findings that are general in nature (e.g. teachers having positive attitudes towards technology use).

The findings from studies on teachers' views about the use of new technology for EFL teaching and learning can be categorised into two main groups. The first group concerns teachers' positive attitudes towards technology use for EFL teaching and learning (Başöz, & Çubukçu, 2014; Mollaei & Riasati, 2013; Aydin, 2013; Celik, 2013; Li & Ni, 2011; Albilirini, 2006; Lau & Sim, 2008; Park & Son, 2009; Bordbar, 2010; Kim, 2011). For example, Mollaei and Riasati's (2013) analysis of questionnaires filled in by 40 EFL teachers working in English language institutes in Iran and interviews with seven of them reveal that most teachers had a positive attitude towards technology in implementation their classes, without a gender difference, and viewed the use of computer-oriented technology as enhancing language teaching and learning.

The second group of findings involves specific benefits regarding technology use as pointed out by EFL teachers (Mollaei & Riasati, 2013; Aydin, 2013; Celik & Aytin, 2014). Through a thematic analysis of interviews with six EFL teachers from elementary and high schools in Turkey, the work of Celik and Aytin (2014) reveals that EFL teachers viewed digital technologies as motivating students to learn language and as increasing their proficiency. The teachers in Mollaei and Riasati's study (2013) also cited benefits of technologies for EFL teaching and learning, such as providing visual support for students and encouraging a learner-centered approach.

However, like studies on factors influencing teachers' technology uptake, research on EFL teachers' views about technology has rarely addressed teachers of early childhood education or early primary levels, and has seldom considered specific or different types of computer or learning materials in a computer technology. In addition, no research on teachers' views about children learning EFL through technology has been found. The present thesis addresses these underexplored issues by investigating EFL teachers' views about the potential of the OTPC tablet with an

EFL app to support children's EFL learning, and by exploring how EFL teachers use language to construct ideas about children as foreign language learners and as users learning EFL through the OTPC tablet app.

2.5.4 Teachers' use of technology in EFL classrooms

Whereas there is a large body of research on factors influencing teachers' technology uptake in EFL classrooms and on EFL teachers' views about technology for EFL teaching and learning, the topic of teachers' use of technology in EFL classrooms is currently underexplored. Most of the existing studies on the use of technology in EFL classrooms involve the use of surveys in which EFL teachers are asked to report or talk about its use in classrooms, not the observation of classroom interactions (Li & Walsh, 2011a; Li & Ni, 2011; Celik, 2013). For example, Li and Walsh's study (2011a) analyses a survey of 400 EFL teachers from different types of schools in China about the use of ICT in EFL classes, as well as focus group interviews, and reveals that the teachers' main use of computers was PowerPoint presentations of pictures, grammar and sentence structures. Drawing on survey data of 72 EFL teachers in China, Li and Ni's work (2011) explores the patterns of the teachers' technology use, and reveals that they used technology mainly for teacher-centered purposes, such as teaching preparation, and rarely for student-centered activities (e.g. allowing students to interact with the computer technology). As another example, the work of Kim (2008) analyses interviews with 10 ESL/EFL teachers, and reveals that they tended to use a computer in their classrooms through a teacher-centred approach and considered the computer as an instructional tool, such as a tool for material presentation, tutoring, and motivating students, rather than allowing the students to have interactions with the computer.

Few studies use an observation of teachers' actual implementation of technologies in ESL classrooms (Hsieh, 2012; Prinsloo & Sasman, 2015), and even fewer in EFL classes (Zhong & Shen, 2002; Khan, 2013). This kind of research can complement the studies on teachers' views, as what teachers report may not translate into their actual practice. The presence of technologies alone may not guarantee the effective use of technologies in EFL classrooms or pedagogical changes, as indicated in Zhong and Shen's research (2002). The (2002) study by Zhong and Shen analyses two multimedia secondary EFL classrooms in China, with the aim of identifying pedagogical changes in technologically integrated classroom practice, based on the

data of classroom observations, videotapes and teacher's lesson plans. It reveals that the integration of computers into the language class did not bring about pedagogical changes. The use of technologies was teacher-driven, with the focus on language form rather than the use of the language, and oriented to the combined approach of grammar translation and audio-lingual methods.

Like Zhong and Shen (2013), the present study analyses the video-recording of two EFL classrooms using a technology, with the focus on teachers' actual pedagogical practices. However, this thesis focuses on teachers' use of three modes of communication (language, gesture and space) in managing and teaching the EFL classrooms using a tablet device, rather than describing different phases of classroom activities as in Zhong and Shen (2013).

2.6 Conclusion

This chapter reviewed various areas of research that are relevant to the aim of the present thesis, to analyse implications of technology use for EFL teaching and learning. It first discussed the main differences between English as a foreign language (EFL) and English as a second language (ESL), most of which (e.g. students' exposure to English and teachers' English proficiency) can be seen as the typical challenges for the teaching and learning of English in the EFL context, including Thailand. The review of literature has shown that, in order to understand the implications of relying on a new technology to overcome these challenges, there is a need to: (1) go beyond the focus on the effectiveness of the 1:1 computing model in increasing test scores, which has been prevalent in research in this area, and move towards a focus on pedagogy; (2) consider different dimensions of technology use instead of focusing on one discrete aspect only, as has been done in most studies; (3) focus on early primary EFL, which has been underexplored; and (4) adopt a multimodal perspective, or to be more specific, multimodal discourse analysis (MDA), which enables us to analyse various communication modes in learning materials in a technology and in classroom interactions, in relation to the broader contexts of pedagogy and education policy.

Chapter 3

Systemic Functional Theory (SFT) as a Theoretical Foundation

A social reality (or a 'culture') is itself an edifice of meanings - a semiotic construct [and] language is one of the semiotic systems that constitute a culture...

Halliday (1978, p. 2)

The previous chapter presented a review of research on technology use in English as a foreign language (EFL) classrooms. This chapter outlines systemic functional theory (SFT) as the theoretical foundation for this research project. The origins of the theory lie in Halliday's (1978) theory of language as a social semiotic and his model of language as a resource, a system of choices, for making meaning in society, known as systemic functional linguistics (SFL). According to Halliday (1989[1985], p. 4), semiotics is "the study of sign systems" or "the study of meaning in its most general sense", and the term "social" indicates the focus of social semiotics on the relationships between language as a semiotic resource and social structure. SFT also views language as one among various modes for making meaning. This has motivated researchers to extend SFT's theoretical principles to the study of languages other than English as well as modes of communication other than language. This chapter outlines the key tenets of SFT and then presents those SFT principles and tools that underpin the analyses of Thai grammar, critical and multimodal discourse presented in this thesis.

3.1 Key tenets of SFT

This section discusses four main tenets of SFT that make SFT a suitable, overarching framework for examining the role of language and other modes in making meaning in contexts of education such as the one investigated in the present research.

3.1.1 Language and social context

SFT is concerned both with language as system, as a resource for making meaning, and with language as behaviour, that is, the use of language resources in communication. SFT models language and social context as dynamically related. Language as a system evolves in response to the functions it serves in social contexts; and the choices it provides also have the potential to change those social contexts. Language is used in particular interactions or texts; and text in SFT is defined as "a social exchange of meanings" (Halliday, 1989[1985], p. 11). Halliday (1978, pp. 136-137) explains the relationship between text, system and context as follows:

> A text is [both] a product of its environment and it functions in that environment [and] the process of continuous movement through the system, a process which both expresses the higher orders of meaning that constitute the 'social semiotic', the meaning systems of the culture, and at the same time changes and modifies the system itself.

SFT views language as having developed in response to the functions it serves in society both in particular *situational contexts* and in the *context of culture* overall. Drawing on Malinowski's concept of *context of situation*, Halliday (1989[1985]) defines *context of situation* as the aspects of every interaction that shape the meanings users construct by making choices from language or other modes, and *register* as the reflection of these aspects in patterns of choice in every social interaction and text. According to Halliday (1989[1985]), register comprises three variables – field, tenor and mode. *Field* concerns the activities the participants are engaged in, or "the nature of the social action that is taking place" (Halliday, 1989[1985], p. 12). *Tenor* involves the roles and the relationships of the participants who participate in the dialogue (Halliday, 1989[1985]). *Mode* concerns the role the language plays, the symbolic organisation of the text, and the channel (spoken or written or some combination of the two) (Halliday, 1989[1985]).

Different contexts of situation, or configurations of field, tenor and mode, are theorised as instances of the meaning making potential of the context of culture, which is defined as "a broader background against which the text has to be interpreted" (Halliday, 1989[1985], p. 48). Halliday (Halliday, 1989[1985]) specifically provides examples of the context of culture in a school setting that are relevant to this research project. In the case of texts as teachers' talk in the classroom or a passage from a textbook, the context of situation can be the specific relationships

between teachers and students or the textbook writer and the reader, and the context of culture can be, more broadly "the concept of education, and of educational knowledge as distinct from commonsense knowledge; the notion of the curriculum and of school 'subjects'; the complex role structures of teaching staff" (Halliday, 1989[1985], pp. 46-47). The SFT model of text and context allows this research project to consider aspects of the context of culture such as EFL knowledge and EFL teaching approaches, and how they shape and are shaped by variables of the context of situation (e.g. the relationships between teachers and students (tenor)) when analysing texts.

3.1.2 Language as system and structure

SFT views language as a social semiotic or a resource for making meaning in society. This entails studying both language as a resource as well as studying its use in meaning-making processes. SFT studies and models language both as a system of available choices and as structure the output of choices made from the system in the process of making meaning. While SFT gives priority to modeling language as a system of choices, and hence is called "systemic", it is based on the understanding, following Saussure (1983[1916]), that we must study both system and structure in order to understand language.

3.1.2.1 System

SFT models language as a network of systems, or interrelated sets of choices for making meaning, and prioritises the relations between language elements that can be substituted for one another within a particular context, or paradigmatic relations (Halliday, 1994; Halliday & Matthiessen, 2004). These choices, and their relations within language as a system, are represented through system networks. The system network is used to represent the meaning potential or interrelated sets of options available in language, as well as in other semiotic resources. Figure 3.1 is an example of a simplified system network of MOOD types.

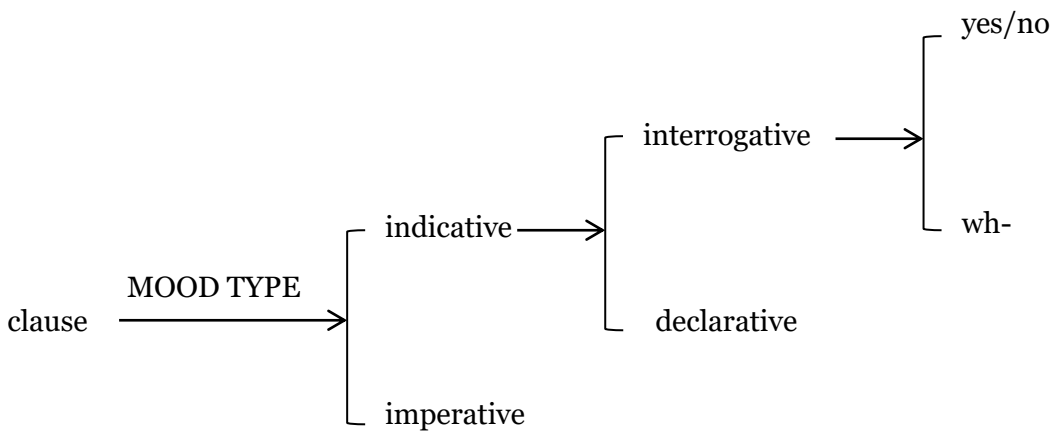

Figure 3.1: System network of MOOD types

This system network presents the options for MOOD types. The entry condition is clause, and the system name, which is typically capitalised, is MOOD TYPE. This system, firstly, presents one set of options (indicative and imperative); and the indicative type offers two further, more delicate, options (interrogative and declarative). These system options are called *terms* or *features*. The square bracket that connects these two terms means that only one of the terms must be chosen: a clause can be either indicative or imperative. The system network has a left-to-right dimension with an increase in *delicacy*, which signifies a relation from more general (on the left) to more specific terms (on the right). The system network is also considered a typological model of choice and agnation, which concerns "what options are available to a language user, how they are related (agnate), and how they are realised" (Martin & Matthiessen, 1991, p. 346). The system network presents choices *typologically,* as different types.

3.1.2.2 Structure

Structure is the output of the selections from a system network, and involves syntagmatic relations, or the obligatory order of linguistic elements within a larger unit (Halliday, 1994; Halliday & Matthiessen, 2004). Although SFT places an emphasis on language as a system of options or paradigmatic relations, language can be investigated only through also analysing language as structure. Each option in a system network has a distinct realisation in structure. This is represented using arrows pointing to realisation statements, as can be seen in Figure 3.2.

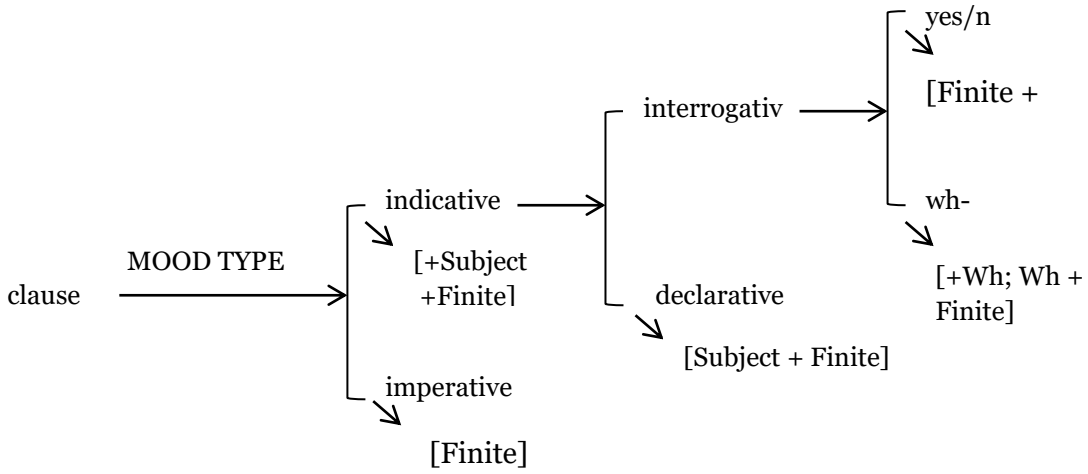

Figure 3.2: System network of MOOD types with realisation statements

Structures are organised on a rank scale based on a hierarchy of constituency. Constituency is "an extremely simple but powerful device, whereby parts are built up into wholes, and these again as parts into larger wholes, but with different organic configurations at each step" (Halliday, 1994, p. 16); and each of these steps is called a rank. The principle of rank is that of exhaustiveness: for example, in the writing system, "a word consists of a whole number of letters, a sub-sentence of a whole number of words, a sentence of a whole number of sub-sentences; the number may be more than one, or just one" (Halliday & Matthiessen, 2004, p. 21).

In syntagmatic or grammatical structure, traditional grammar typically assigns a label of *class* (a set of items that are similar in some respect) to each item in a syntagm (Halliday & Matthiessen, 2004). Examples of classes of words include verb, noun, adjective, adverb, pronoun, preposition, and conjunction. However, the class label does not show the role the item is playing or reveal its meaning in the structure. SFL, therefore, assigns *function* labels, which, in contrast to class labels, provide "an interpretation of grammatical structure in terms of the overall meaning potential of the language" (Halliday & Matthiessen, 2004, p. 52). An example in Table 3.1 illustrates the differences between class and function labels in the analysis of a clause, with the function labels signifying each item's transitivity role in the clause.

Table 3.1: Class and function labels in the analysis of a clause

	John	bought	flowers
Class	noun	verb	noun
Function	Actor	Process: material	Goal

SFT models language as a network of systems, or interrelated sets of choices, and as structure, or a configuration of elements, which can be analysed in functional terms.

3.1.3 Language as a tri-stratal system

SFT views language as a system of three strata, or layers, which are organised into two planes: *expression* and *content*. The content plane consists of two strata or layers: *semantics* (meaning) and *lexico-grammar* (wording); the expression plane features *phonology* or *graphology* (sounding). Figure 3.3 presents language as a system of three strata.

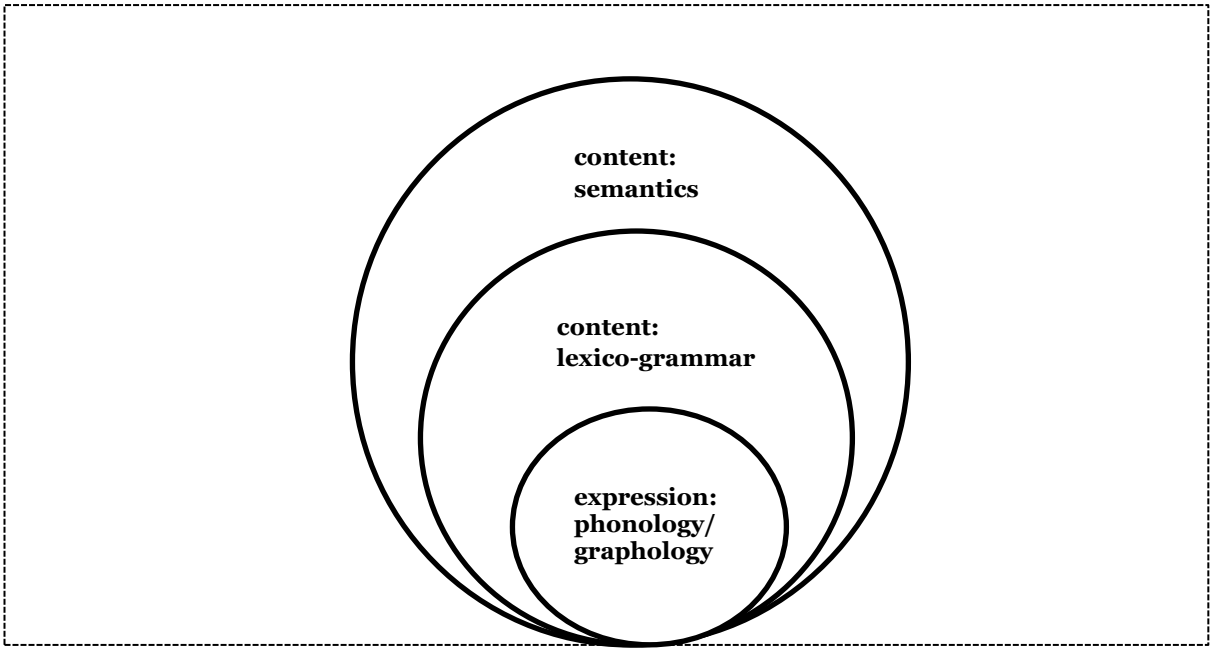

Figure 3.3: Language as a system of three strata

Each stratum of language can be divided into ranks based on a hierarchy of constituency. The largest unit in the rank scale of lexico-grammar is the clause, which consists of at least one 'group or phrase', which consists of at least one 'word', which consists of at least one 'mopheme', the smallest unit in that rank scale (Halliday &

Matthiessen, 2004). The unit of 'clause complex' is not included above the clause on the rank scale as the relationship between clauses in clause complexes is not one of constituency but one of (inter)dependency (Eggins, 2004).

A hierarchy of constituency also operates across strata. The key unit of analysis at the level of semantics is text, which is made of at least one clause; the key unit of analysis at the level of lexico-grammar is the clause, which consists of at least one syllable; the key unit of analysis at the level of phonology is the syllable (Matthiessen, 1995).

Each stratum carries responsibility for constructing meaning. The relationship among the strata is that of realisation. The lower stratum realises the higher one: that is, semantics is realised by lexico-grammar, which is realised by phonology or graphology. In other words, "meaning is realised by the realisation of wording in sound" (Halliday, 2002[1992], p. 357).

The SFT model of language as a tri-strata system, in which meanings made in the semantics are realised by choices in the lexico-grammar that are realised by choices in the phonology, enables us to analyse how meaning is realised in texts, which are typically made of clauses.

3.1.4 The metafunctional hypothesis

The understanding that language has evolved to fulfill functions it serves in the social context is reflected in the metafunctional hypothesis that all languages have ideational, interpersonal and textual components, or metafunctions (Halliday, 1994). Metafunction is one of the "general, inherent properties of language as a social semiotic system" (Halliday, 1994, p. F60), the part of the language system (the semantic and lexico-grammatical resources) "which has evolved to perform the function in question"; it refers to "the functional organisation of language" as a system (Halliday, 1989[1985], pp. 44-45).

SFT views language as interacting with the social context, in which it functions by simultaneously constructing patterns of experience to represent the world around and inside us (ideational meanings), enacting social relations between participants (interpersonal meanings), and construing cohesion and coherence within a text and relating a text to its situational and cultural context (textual meanings) (Halliday,

1978). In SFT, texts are made of at least one clause, and the clause is the smallest unit within which these three types of meanings are simultaneously realised (Halliday & Matthiessen, 2004).

The **ideational** metafunction provides resources for construing our experience of the world around and inside us, and has two components: *experiential* and *logical* (Halliday & Matthiessen, 2004). In the experiential metafunction, meaning is communicated "as organisation of experience"; and in the logical metafunction, meaning is communicated as the expression of "general logical relations" (Halliday, 1994, p. 179). This research project draws upon both these metafunctions. The ideational choices in a text thus reflect the text's **field**.

The first component of the ideational metafunction involves resources for construing experience. A key resource for this is the system of TRANSITIVITY, which enables language users to represent their experiences as configurations of types of processes, participants in those processes, and associated circumstances (Halliday, 1994; Halliday & Matthiessen, 2004). In this project, the system of TRANSITIVITY (introduced in more detail in Section 3.3.1.1) was employed for analysing the lexico-grammatical choices teachers made when interviewed by the researcher on their views about young children's learning of EFL through tablet technology and when teaching EFL in the classroom. The analysis of classroom discourse considers how the construal of experiential meanings is supported through teachers' use of gesture as well.

The second component of the ideational metafunction comprises resources for logical meaning. This involves the relations that make up the logic of natural language (Halliday, 1994; Halliday & Matthiessen, 2004). There are two systems involved in such logical relations: TAXIS and LOGICO-SEMANTICS. This thesis develops a visual-verbal framework based on existing frameworks that mainly draw upon the linguistic systems of logical relations (see Section 3.4.2.1 for more detail about the visual-verbal frameworks based on the logical metafunction). In particular, this research project draws upon the logico-semantic system of expansion and projection, which allows the development of a variety of visual-verbal categories for analysing visual-verbal relations.

The logico-semantic system concerns an inter-clausal relation that is expressed in the grammar as a complex of clauses (Halliday, 1994; Halliday & Matthiessen, 2004). The two main types of relationship that can connect two clauses are *expansion* and *projection*. Expansion refers to the relationship in which a secondary clause expands a primary clause by elaborating (*elaboration*), extending (*extension*), or enhancing (*enhancement*) it. Projection refers to the relation in which a secondary clause is projected through a primary clause, which establishes it as a *locution* or an *idea* (Halliday, 1994). *Locution*, which involves 'saying', means "one clause is projected through another, which presents it as a locution, a construction of wording"; while *idea*, which involves 'thinking', means "one clause is projected through another, which presents it as an idea, a construction of meaning" (Halliday, 1994, p. 220). Examples of these five types of logical relation are presented in Table 3.2.

Table 3.2: Examples of logical relations

Types of logical relations		Example
Expansion	Elaboration	John bought his mother a present, and this caused him a lot of money.
	Extension	John bought his mother a present and she was very happy.
	Enhancement	John bought his mother a present after he had won the lottery.
Projection	Locution	John said he wanted to buy a present for his mother.
	Idea	John thought that he wanted to buy a present for his mother.

The **interpersonal** metafunction provides resources for maintaining and (re)negotiating social relations, as well as conveying emotions and attitudes (Halliday, 1994; Halliday & Matthiessen, 2004). Interpersonal choices reflect and shape the **tenor** of communicative events. Key resources for realising interpersonal meanings include MOOD (see Section 3.4.2.2 for more detail about the system of MOOD), and MODALITY, or the degree of certainty or obligation. In this research project, teachers' talk to the class is analysed in terms of their lexico-grammatical choices of MOOD so as to shed light on the relationships between teachers and students as well as the roles of teachers and students in the classroom, for example in giving or demanding

information. In addition to analysing the interpersonal dimension of language use, this research project investigates the teachers' use of space and gesture to make interpersonal meaning.

The **textual** metafunction provides resources for creating relevance to situational and cultural contexts (Halliday, 1994; Halliday & Matthiessen, 2004). The **mode** of a text is realised in its textual meanings, which can be realised in grammatical systems such as the system of THEME (see section 3.4.2.3 for more detail about the system of THEME). This research project explores the system of THEME in teachers' talk to the class in order to shed light on how they teach EFL and organise or sequence the lessons (e.g. how teachers' THEME choices enable the pacing of the class as well as children's EFL learning). It also draws upon the textual metafunction to develop a functional description of teachers' gestures in the classroom (e.g. maintaining rhythm and orchestrating classroom interactions).

3.2 Systemic functional theory (SFT) principles and tools in this research project

Three key ideas that SFT provides, and which have inspired the application of SFT principles to modeling the grammar of other languages as well as other modes of communication in the educational context in this research project, are SFT's modeling of the relationship between text and social context, its focus on meaning, and its metafunctional hypothesis.

3.2.1 Tools for analysing Thai grammar

SFT's focus on meaning and its metafunctional hypothesis have allowed its principles to be adapted to other languages such as Thai. Halliday (1994) introduces functional grammar by using English as the language of illustration. He also states that all languages share general properties, but at an abstract level, one of which is the notion of metafunction:

> This is not to deny that they may be 'universal' features of language. But such universality has to be built into the theory at a very abstract level: the categories in question are not so much 'universal' (which suggests descriptive features that happen to occur in all languages) as 'general', inherence properties of language as a semiotic system. An example of

> this is the 'metafunctional' hypothesis: it is postulated that in all languages the content systems are organised into ideational, interpersonal and textual components. (Halliday, 1994, pp. F59-F60)

While much work within SFT has focused on developing systems for describing discourse-semantic choices for making meaning beyond the stratum of lexico-grammar, i.e. 'beyond the clause' (e.g. Martin, 1992; Martin & Rose 2007, 2008), existing SFT models of the Thai language have concentrated exclusively on lexico-grammar. As further explained in Section 4.5.3, the availability of these frameworks was an important, though not the only, factor in deciding to focus on lexico-grammar in the analyses of teachers' use of language in interview and classroom discourse data collected for this research project.

This section will introduce Thai grammatical systems employed to analyse the use of Thai language in this research project, and where relevant will highlight differences between these and English grammatical systems.

3.2.1.1 The system of TRANSITIVITY

The system of Transitivity offers choices for construing experience as configurations, of process type, one or more participants, and circumstances (Halliday & Matthiessen, 2004). In the Thai TRANSITIVITY system, as in English, there are six main process types: material, behavioural, mental, verbal, relational, and existential (Yiemkuntitavorn, 2005; Patpong, 2006). Figure 3.4 shows the scale of delicacy of the TRANSITIVITY system network in the Thai language.

Material processes represent "doing, usually concrete, tangible actions" (Eggins, 2004, p. 215). The main participant in a material process is the *Actor*, the participant performing the action. The processes can also involve other participants such as *Goal*, "the participant at whom the process is directed", and *Range*, which restates the process itself or expresses the content of the process (Eggins, 2004, p. 216). An example of a material process is presented in Table 3.3.

Table 3.3: Example of a material process

เด็ก	ถือ	แทบเบล็ท
children	hold	the tablet
Actor	Pr: material	Goal

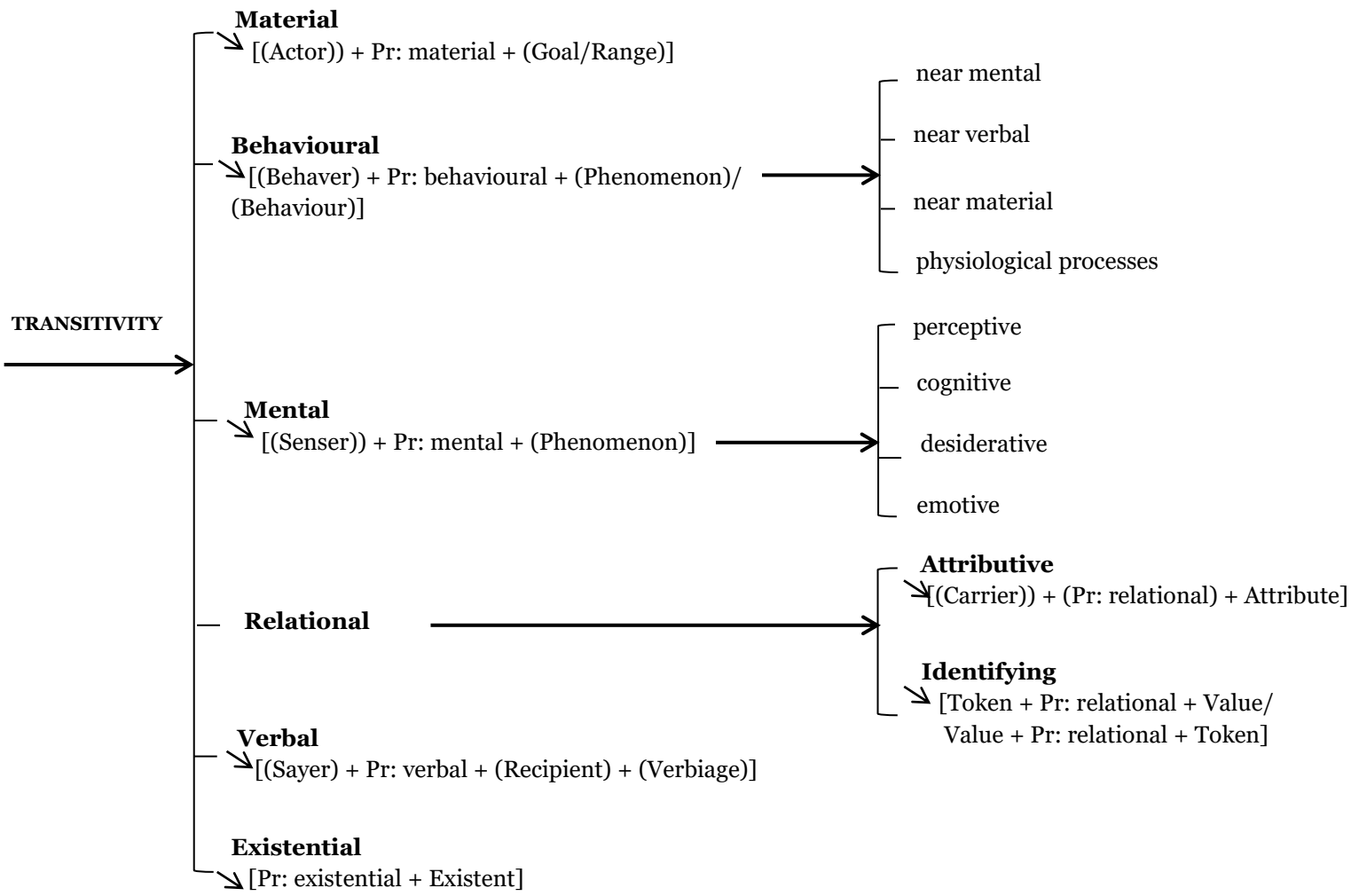

Figure 3.4: System network for TRANSITIVITY in Thai language (Adapted from Patpong, 2006; Halliday & Matthiessen, 2004)

There are, however, two main differences between clauses with material processes in English and Thai. Firstly, Thai verbal groups in material processes can be discontinuous, or split into two parts, with the *Goal* coming between them (Patpong, 2006, p. 135) (see Table 3.4 for an example). Secondly, the Thai word order in some cases is different from English (Yiemkuntitavorn, 2005, p. 116). For example, the word order "I gave John a present." (Subject + Verb + Indirect Object + Direct Object), as can be found in English, is not found in Thai. These two differences also apply to Thai syntax in general, and are not limited to material clauses.

Table 3.4: Example of the discontinuous material processes in Thai, adapted from Patpong (2006, p. 135)

เขา	มอบ	อำนาจ	ให้	หล่อน
He	gave	power	gave	her.
Actor	Pr: material	Goal		Beneficiary: recipient

*English translation: He gave her power.

Behavioural processes concern "physiological and psychological behaviour" and are "partly like the material and partly like the mental" (Halliday & Matthiessen, 2004, p. 301). The central participant is the *Behaver*, "the participant who is behaving" (Eggins, 2004, p. 234). The behavioural processes can also involve a *Behaviour*, ("a restatement of the process"), and *Phenomenon*, "another participant which is not a restatement of the process" (Eggins, 2004, p. 234). Behavioural processes can be near mental (e.g. look, watch, listen, think), near verbal (e.g. talk, argue), near material (e.g. sing, dance, sit), or physiological processes (e.g. cry, smile, sneeze) (Halliday & Matthiessen, 2004, p. 301). The typical structure of behavioural processes in Thai is "Behaver + Process: Behavioural + (Phenomenon) (Circumstance) (Behaviour)" (Yiemkuntitavorn, 2005, p. 133). An example of a behavioural process is presented in Table 3.5.

Table 3.5: Example of a behavioural process

เค้า	ได้ฟัง	เพลง
They	can listen	to the songs
Behaver	Pr: behavioural: near mental	Circumstance

Mental processes can be categorised into four main groups: perceptive (e.g. see, hear, smell), cognitive (e.g. think, believe, know, understand, forget), desiderative (e.g. want, hope, refuse), and emotive (e.g. like, love, hate) (Halliday & Matthiessen, 2004, p. 257). A mental process involves a *Senser* (human or anthropomorphised non-human who feels, thinks, perceives or desires) and a *Phenomenon* (what is felt, thought, perceived or desired by *Senser*) (Halliday & Matthiessen, 2004, p. 257; Eggins, 2004, p. 227). Like English, the unmarked present tense in Thai mental processes is the Simple Present (Yiemkuntitavorn, 2005, pp. 143-144). An example of a mental process is presented in Table 3.6.

Table 3.6: Example of a mental process

เค้า	เข้าใจ	หมด
They	can understand	all
Senser	Pr: mental: cognitive	Phenomenon

Relational processes "serve to characterise and identify" (Halliday & Matthiessen, 2004, p. 259), and encompass "various ways in which being can be expressed" (Eggins, 2004, p. 239). They may constitute two distinct modes of being (attributive and identifying) (Halliday & Matthiessen, 2004, p. 259). The main participant of relational processes is a *Carrier* in attributive processes, and a Token, "that which stands for what is being defined", in identifying processes (Eggins, 2004, pp. 239-242). Relational processes also involve an *Attribute* ("a quality, classification or descriptive epithet") in attributive processes and a *Value* ("that which defines") in identifying processes (Eggins, 2004, pp. 239-242).

In Thai, the *Carrier* in attributive relational clauses is realised by a nominal group, and the *Attribute* is realised by a nominal group or an adjectival group. Identifying relational clauses in Thai can also be expressed without a verb explicitly realising the process (Patpong, 20006, pp. 145-149). An example of a relational process is offered in Table 3.7.

Table 3.7: Example of a relational process

เด็ก		คุ้นเคยกับการใช้แท็ปเลต
Children	are	familiar with the use of tablet
Carrier	Pr: relational: attributive	Circumstantial attribute

Verbal processes construe actions of saying. The main participant in verbal processes is a *Sayer* ("the participant responsible for the verbal process") (Eggins, 2004, p. 235). The processes can also involve a *Receiver* ("the one to whom the verbal process is directed") and *Verbiage* ("a nominalised statement of the verbal process") (Eggins, 2004, p. 235). Verbal processes in Thai are typically realised by "พูด" (say) for reported statements and, less frequently, by verbs such as "ถาม" (ask) for projected questions and "สั่ง" (order) for projected commands (Patpong, 2006, p. 143). An example of a verbal process is presented in Table 3.8.

Table 3.8: Example of a verbal process

เด็ก	ออกเสียง	ได้ถูกต้อง
Children	pronounce	correctly
Sayer	Pr: verbal	Circumstance

Existential processes "represent experience by positing that there was/is something" (Eggins, 2004, p. 238). They have only one obligatory participant, the *Existent* (Eggins, 2004, p. 238). In Thai, existential processes are mainly realised by the verb "มี" (exist or there is) and, less frequently, by other verbs such as "เกิด" (occur) and "ปรากฏ"

(exist/happen) (Patpong, 2006, pp. 148-151). An example of an existential process is presented in Table 3.9.

Table 3.9: Example of an existential process

	ต้องมี	ลิมิตในการใช้
There	must be	the limit of use
	Pr: existential	Existent

In Thai language, secondary participants can occur across processes. *Circumstances*, which can be divided into *Extent*, *Cause*, *Location*, *Matter*, *Manner*, *Role* and *Accompaniment*, can appear with all process types (Eggins, 2004, pp. 222-223). Table 3.10 provides examples of *Circumstances*.

In this thesis, *Beneficiary*, which can be divided into two types (*Recipient* or "the participant to whom something is given", and *Client* or "the one for whom something is done") (Eggins, 2004, p. 220), is found in material, relational and verbal processes.

Table 3.10: Examples of Circumstances

	Type of Circumstance	Example				
1	Extent	เด็ก Children Actor	ใช้ use Pr: material	แทบเบล็ท the tablet Goal	ตลอดเลย all the time Cir: extent	
2	Cause	แทบเบล็ท The tablet Actor	แตก breaks Pr: material	เพราะเด็ก because of children Cir: cause		
3	Location	เด็ก Childre n Actor	ก็เล่นได้ can play Pr: material	ไม่ว่าจะเกมส์ games Scope	ในแท็ปเลต ในไอแพด ในคอมพิวเตอร์ either in tablets, iPads or computer Cir: location	
4	Matter	เด็กเรา our children Carrier	are Pr: relational attributive	ขี้เกียจท่องมาก very idle attribute	in terms of memorising vocabulary Cir: matter	
5	Manner	เด็ก Children Behaver	พูด can speak Pr: behavioural: near verbal	รู้เรื่อง understandably Cir: manner		
6	Role	พี่ I Actor	ใช้ use) Pr: material	app the app Goal	เสริม as a supplement Cir: role	
7	Accompaniment	(They) (Initiator)	ให้ let Pr:	ลูกหลาน children Actor	อยู่ stay Pr: material	กับคอมพิวเตอร์ with computer Cir: accompaniment

3.2.1.2 The system of MOOD

The system of *Mood* provides key resources for negotiating interpersonal meanings. The MOOD structure of the clause consists of *Mood block* and *Residue*. The elements of the Mood block feature the *Subject*, which is a nominal group, and the *Finite*, which is part of the verbal group expressing tense (e.g. is, had) or modality (e.g. can, must) (Halliday & Matthiessen, 2004, p. 111). *Subject* and *Finite* combine to form one constituent of clause structure, which can be called the Mood block (p. 113). The remainder of the clause is called the *Residue* (p. 114). The *Residue* includes a *Predicator* ("the lexical or content part of the verbal group"), *Complement(s)* ("a non-essential participant in the clause, a participant somehow affected by the main argument of the proposition"), and different types of *Adjunct*s ("clause elements which contribute some additional (but non-essential) information to the clause") such as circumstantial and modal adjuncts (Eggins, 2004, pp. 155-158). An example of MOOD analysis is presented in Table 3.11.

Table 3.11: Example of MOOD analysis (Eggins, 2004, p. 159)

They	can't	do	that	these days.
Subject	Finite: negative	Predicator	Complement	Adjunct: circumstantial
Mood		Residue		

All languages, including Thai, appear to have MOOD systems, but there are differences in terms of the structural realisation of terms and the organisation of the MOOD systems (Matthiessen, 2004). For example, Thai is different from English in terms of marking for politeness and the use of a *Negotiator* for getting desired responses (Patpong, 2006, p. 315).

Similar to English, three main types of MOOD can be found in Thai language: the declarative (as a subtype of the indicative), the interrogative (as a subtype of the indicative), and the imperative (Patpong, 2006, pp. 82-94). Figure 3.5 shows the scale of delicacy of the MOOD system network in Thai language.

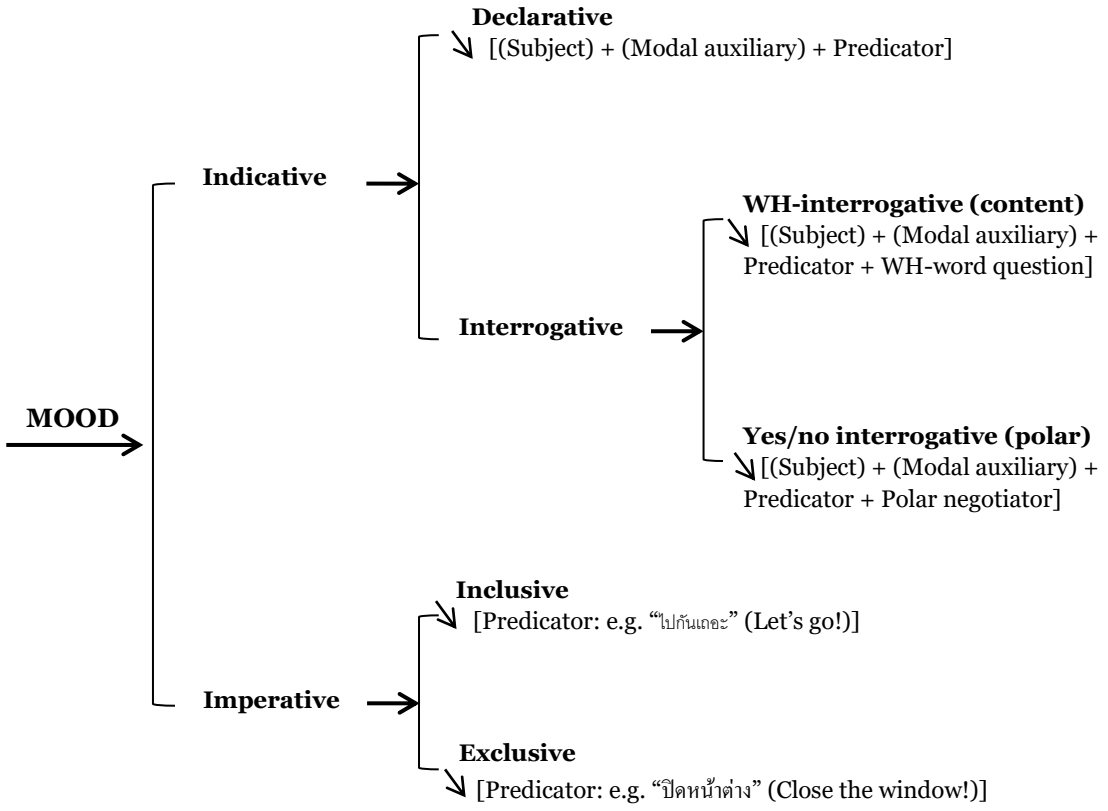

Figure 3.5: System network for MOOD in Thai language (Adapted from Patpong, 2006; Halliday & Matthiessen, 2004)

The first option is the declarative (Halliday & Matthiessen, 2004). In declarative clauses in Thai, *Subject* comes before *Predicator*, and the *Predicator* can be preceded by a modal auxiliary such as "ต้อง" (must) and "จะ" (will) (p. 305). In addition, the *Subject* is optional, as Thai clauses can function without the *Subject* (p. 305). An example of a declarative in Thai is presented in Table 3.12.

Table 3.12: Example of a declarative in Thai

(เด็ก)	จะจำ	คำศัพท์ได้
(Children)	will be able to remember	vocabulary
(Subject)	Predicator	Complement

The second option is the imperative (Halliday & Matthiessen, 2004). Imperatives in Thai are realised by a verbal group that includes the *Predicator*, which appears at the beginning of the clause. Patpong (2006) divides the imperative into three main

groups: jussive, oblative, and suggestive (p. 113). For the imperative (jussive), a Thai example is "ปิดหน้าต่าง" or "Close the window!"; for the imperative (oblative), an example is "ให้ฉันปิดหน้าต่างให้นะ" or "Let me close the window!"; for the imperative (suggestive), an example is "ปิดหน้าต่างกันเถอะ" or "Let's close the window!" (Patpong, 2006, p. 113). However, the present thesis focuses only the imperative (jussive) or the imperative (exclusive) and the imperative (suggestive) or the imperative (inclusive), as the imperative (oblative) is not found in the data of this research.

The third option is the interrogative, which can be subcategorised into the WH-interrogative, or the elemental interrogative, and the yes/no interrogative, or the polar interrogative (Halliday & Matthiessen, 2004). For the WH- interrogative, the difference between Thai and English is that, whereas WH-question words in English tend to appear at the beginning of the clause, those in Thai occur in the same place as they do in the declarative *Mood* (Patpong, 2006, p. 110). An example of a WH-interrogative in Thai is presented in Table 3.13.

Table 3.13: Example of a WH- interrogative in Thai

นักเรียน	ซื้อ	อะไร
Students	bought	what
Subject	Predicator	WH-element

The yes/no interrogative is realised by an interrogative *Negotiator* such as "ไหม" at the end of the clause (Patpong, 2006, p. 306). An example of a yes/no interrogative in Thai is presented in Table 3.14.

Table 3.14: Example of a yes/no interrogative in Thai

(คุณ)	จำได้	ไหม
(You)	can remember	Polar negotiator
(Subject)	Predicator	Polar negotiator

The MOOD system provides resources to realise speech functions (one of the semantic systems). When we use the language to interact or exchange information or a commodity, we also establish an interpersonal relationship. The basic speech roles

are giving and demanding, and the nature of the commodity being exchanged may be either goods/services or information (Halliday & Matthiessen, 2004; Halliday, 1994), as can be seen in Table 3.15.

Table 3.15: Giving or demanding, goods-&-services or information (Taken from Halliday & Matthiessen, 2004, p. 107)

role in exchange	Commodity exchanged	
	(a) goods-&-services	(b) information
(i) giving	'offer' would you like this teapot?	'statement' he's giving her the teapot
(ii) demanding	'command' give me that teapot!	'question' what is he giving her?

The four basic speech functions of offer, command, statement, and question, as indicated in Table 3.15, are matched by a set of four desired responses, of accepting an offer (accept), carrying out a command (compliance), acknowledging a statement (accept), and answering a question (answer). Except for 'offer', these speech functions are realised by MOOD types in a clause, as shown in Table 3.16; while there is no direct ('congruent') realisation of an 'offer', its typical realization is through a modulated interrogative Mood.

Table 3.16: Speech function and typical Mood in a clause (Eggins, 2004, p. 147)

Speech function	**Typical MOOD type in a clause**
Statement	Declarative Mood
Question	Interrogative Mood
Command	Imperative Mood
Offer	Modulated interrogative Mood
Answer	Elliptical declarative Mood
Acknowledgement	Elliptical declarative Mood
Accept	Minor clause
Compliance	Minor clause

The present research project analyses some of these speech functions in relation to the mood types used in teachers' talk to the class, with the aim of shedding light on how teachers enact social relationships with their students.

3.2.1.3 The system of THEME

The system of THEME provides resources for creating relevance to social contexts. The *Theme* can be defined as "the element which serves as the point of departure of the message; it is that which locates and orients the clause within its context"; and the *Rheme* is the "remainder of the message" (Halliday & Matthiessen, 2004, p. 64). A clause, then, structurally contains a *Theme* which is followed by a *Rheme*.

According to Patpong (2006), the characteristics in English language of *Theme*, which "provides the local context for the information in the rest of the clause", and *Rheme*, which "elaborates the information", are applicable to Thai text organisation (p. 180). To illustrate, like English, the *Theme* in Thai is realised by an initial position in the clause and the *Rheme* is the remainder of the clause. The *Theme* in English extends up to and includes the first topical (experiential) element (Halliday & Matthiessen, 2004). The Thai language also conforms to this structure of *Theme* expansion (Patpong, 2006). It is mandatory that each clause of the Thai language includes a Topical *Theme*; but like English, the clause can optionally also feature an interpersonal and/or textual *Theme* (Patpong, 2006). That is, like in English, there are three main types of *Theme* in Thai: topical, interpersonal, and textual. Figure 3.6 shows the scale of delicacy of the THEME system network in Thai language.

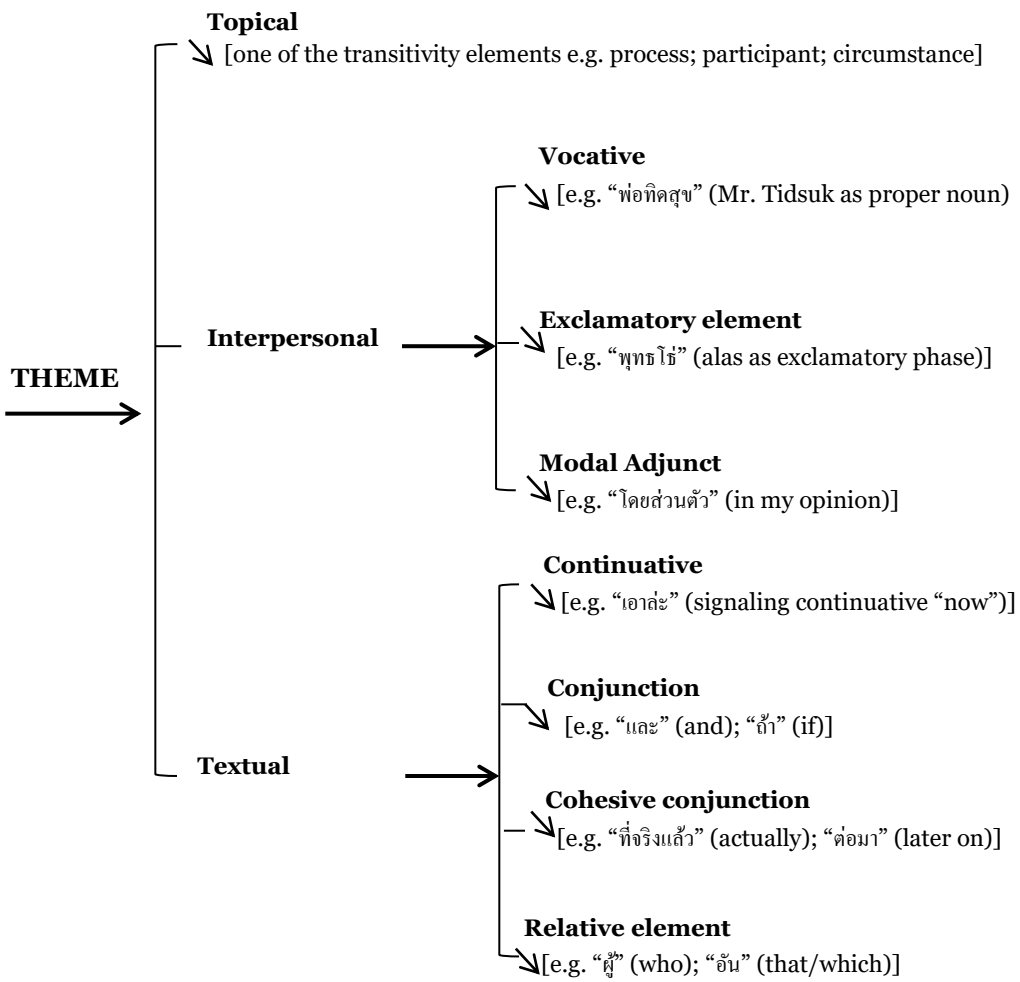

Figure 3.6: System network for THEME in Thai language (Adapted from Patpong, 2006)

A topical *Theme* can be defined as the first clause constituent, as follows: "the first constituent in the clause is a constituent to which we can attach a transitivity role, such as *Actor*, *Behaver*, *Senser* or *Circumstance*" (Eggins, 2004, p. 302). Every clause must contain only one topical *Theme*. The topical *Theme* in Thai is chosen from one of the transitivity elements in the clause (e.g. a participant; a process) (Patpong, 2006, p. 212).

An interpersonal Theme can be realised through Mood Adjuncts, vocative Adjuncts, polarity Adjuncts, comment Adjuncts, and the unfused Finite (in interrogative structures) (Eggins, 2004, pp. 302-305). The interpersonal Theme in Thai can include one or more of the following components: vocative (e.g. "พ่อทิดสุข" (Mr.

Tidsuk as proper noun)), exclamatory element (e.g. "พุทธโธ่" (alas as exclamatory phase)), and modal Adjunct (e.g. "โดยส่วนตัว" (in my opinion)) (Patpong, 2006, p. 207).

A textual *Theme* does "important cohesive work in relating the clause to its context" (Eggins, 2004, p. 305). The textual *Theme* in Thai includes continuative (e.g. "เอาล่ะ" signaling continuative "now"), and "เอ่อ" (maintaining continuative "well")), conjunction (e.g. "และ" (and) and "ถ้า" (if)), cohesive conjunction (e.g. "ที่จริงแล้ว" (actually) and "ต่อมา" (later on)), and relative element (e.g. "ผู้" (who) and "อัน" (that/which)) (Patpong, 2006, pp. 188-203).

Typically, in the Thai WH-interrogative, "the *Theme* can be either *Subject* (participant), *Complement* (participant) or *Adjunct* (circumstance)" (Patpong, 2006, p. 214, italics added). In the Thai polar interrogative, the *Theme* is the *Subject*, and the unmarked *Theme* (*Subject*) can come after the textual *Theme* (Patpong, 2006) (see Table 3.17 for an example). Like in English, in Thai imperative clauses, the unmarked *Theme* is the *Predicator* (Patpong, 2006).

Table 3.17: Example of the Theme-Rheme analysis of Thai polar interrogatives

<table>
<tr><td>เอาล่ะ</td><td>นักเรียน</td><td>เห็น</td><td>(มัน)</td><td>ไหม</td></tr>
<tr><td>Now</td><td>students (you)</td><td>can see</td><td>(it)</td><td>Polar negotiator</td></tr>
<tr><td>textual: continuative</td><td>unmarked topical</td><td colspan="3" rowspan="2">Rheme</td></tr>
<tr><td colspan="2">Theme</td></tr>
</table>

3.2.2. SF-MDA

Multimodal discourse analysis (MDA) is a field of academic research that has been informed by various disciplines such as anthropology, philosophy, psychology, linguistics and social semiotics (Jewitt, 2009; Djonov & Zhao, 2014). Within the field of social semiotics, systemic functional multimodal discourse analysis (SF-MDA) is an analytic practice that involves the application of SFT to an analysis of semiotic systems, or modes of communication, other than language, as well as interactions between different modes.

3.2.2.1 Key tenets of SF-MDA that are informed by SFT principles

Halliday's theory of language as a social semiotic is the understanding that language is one resource among many for making meaning as pointed out by Saussure (1983[1916]), as Halliday (1989[1985], p. 4) states:

> But there are many other modes of meaning, in any culture, which are outside the realm of language. These will include both art forms such as painting, sculpture, music, the dance, and so forth, and other modes of cultural behaviour that are not classified under the heading of forms of art, such as modes of exchange, modes of dress, structures of the family, and so forth. These are all bearers of meaning in the culture. Indeed we can define a culture as a set of semiotic systems, as a set of systems of meaning, all of which interrelate.

This has inspired researchers to apply SFT to the modeling of various modes other than language as well as their interactions.

SF-MDA draws upon two key principles of SFT: the SFT focus on how meaning is made; and the metafunctional hypothesis. The focus of SFT on meaning has allowed SFT principles to be applied to modes other than language as well to multimodal interaction. Drawing on SFT, SF-MDA views meaning making as a result of the selections from the systems of choices, which are represented in system networks. Examples of SF-MDA studies that map the meaning-making potential of individual modes include Kress and Van Leeuwen (2006[1996]) for image analysis, Stenglin (2004, 2009) for analysing the 3D space, and Martinec (1998, 2000, 2001, 2004) for exploring the use of gesture. Examples of studies that map multimodal interactions are Royce (1998, 2007), Martinec and Salway (2005), Unsworth (2006, 2007), and Painter, Martin, and Unsworth (2013), for visual-verbal interactions.

The SFT metafunctional hypothesis has also inspired SF-MDA studies to model semiotic systems or modes other than language as well as their interactions. As modes other than language have been much less explored than has language, various SF-MDA studies use the metafunctions of language as a thinking tool to explore the meanings other modes construct. SFT views text as "a social exchange of meanings" (Halliday, 1989[1985], p. 11), and this enables us to analyse the modes of communication other than language, or multimodal interaction, as texts based on the three metafunctions, or on how they simultaneously exchange three different types of meaning. A key example of SF-MDA studies that mainly draw upon the SFT

metafunctional hypothesis is Kress and Van Leeuwen ([2006]1996), which proposes a framework for analysing visual design, although different terms for the three types of meaning are used: representational (ideational); interactional (interpersonal); and compositional (textual).

3.2.2.2 Two main directions of SF-MDA studies

Drawing on SFT principles, SF-MDA studies can be situated in terms of two main directions: one that maps the meaning potential of an individual mode; and the other that analyses multimodal interactions.

(1) Mapping the meaning potential of an individual mode

The first direction involves SF-MDA studies that focus on mapping the meaning potential of individual modes other than language, such as Kress and Van Leeuwen's grammar of visual design (2006[1996]), Van Leeuwen's speech/music/sound (1999), Stenglin's 3D space (2004, 2009), and Martinec's gesture (1998, 2000, 2001, 2004). This section briefly discusses SF-MDA research on gesture and space, as these resources are important in exploring the multimodal construction of classroom interactions, incorporating the apps in the One Tablet Per Child (OTPC) project which was introduced in Chapter 1.

Gesture

Gesture in SF-MDA studies tends to be modelled as a semiotic resource realising ideational, interpersonal, and textual meanings in tandem with language. While some of these studies (e.g. Martinec, 1998, 2000, 2001, 2004) focus on gesture and its meaning potential in general, others (e.g. Hood, 2011) define this potential in relation to particular semiotic contexts. Martinec (1998, 2000, 2001, 2004), for example, proposes a framework for analysing gestures in general as realisations of the ideational, interpersonal and textual meanings. In distinction to Martinec (1998, 2000, 2001, 2004), Hood (2011) presents system networks for analysing teachers' gestures that are used with spoken language based on the interpersonal and textual meanings made in a specific context, that is, in a classroom setting.

Similar to Hood's approach, the present research project explores the pedagogic functions of gesture in a specific context, an early primary EFL classroom, and

develops various categories of the functions of the teachers' gestures based on metafunctions.

Space

In SF-MDA studies, space has been modeled through two main perspectives: space as constructing three types of meanings based on the SFT metafunctional hypothesis; and space as being used in a specific context.

The first perspective is the focus on how space has been modeled based on the SFT metafunctional hypothesis. The work of Stenglin (2004, 2009), for example, views three-dimensional (3D) space as a semiotic resource, or a mode, like language, which operates according to three metafunctions, and proposes a more general framework for space analysis, by using a museum as an example. For example, Stenglin (2009) analyses different types of structure as realising ideational meanings in space, proposes categories for exploring interpersonal relationships between a space and its user, and investigates the textual function of space in terms of information value, Theme-Rheme, and framing.

The second perspective concerns how space is used in a specific context, which is exemplified by the work of Lim, O'Halloran and Podlasov (2012), who study the role of space in the pedagogic practices of teachers in classroom interactions. Lim, O'Halloran and Podlasov's (2012) research specifically analyses pedagogical space in a classroom setting in relation to the pedagogic practices of teachers. In their (2012) study, four types of classroom space (authoritative, personal, supervisory and interactional) are described. *Authoritative Space* refers to the front centre of the classroom and the space in front of the teacher's desk; it is the place where teachers conduct teaching and give instructions. *Personal Space* can be defined as the space behind the teacher's desk where a teacher performs activities such as packing and preparing for the next stage of the lesson. This space, however, can be categorised as *Authoritative Space* if a teacher uses it for teaching. *Supervisory Space* refers to the rows of the students' desks and the side of the classroom, to where a teacher paces to supervise students performing activities. *Interactional Space* is where a teacher stands alongside the student's desk and offers help and guidance for students.

Lim, O'Halloran and Podlasov (2012) provide suitable frameworks for space analysis for the present research, as the classroom spaces analysed in their work and

in the present research have similar, traditional Western-style classroom organisation: each space includes a whiteboard/blackboard, a teacher's desk at the front of the room, and students' desks arranged in rows with space between the rows.

(2) Multimodal interactions

The second direction of SFL-MDA study involves studies that analyse multimodal interactions, or how different modes are used together. The present research project is situated within this group of studies. In analysing the content of EFL teaching materials in the technology, this research project focuses on visual-verbal relations for language learning. In analysing classroom interaction data, it analyses how gesture, space and speech are used together to contribute to pedagogic discourse, the teaching and managing of the classroom.

The SF-MDA studies analysing multimodal interactions can be categorised into two groups: bi-modal (studies that specifically theorise the interactions between two different modes) and inter-modal (studies that explore how different modes are used together to achieve goals). The first group is represented by the works on visual-verbal relations. The second group is represented in various kinds of discourse and fields of study; but this section uses the studies in the field of education, which are most relevant to the present research project, to exemplify this group.

Bi-modal: Visual-verbal relations

SF-MDA studies on the relations between image and verbal text fall into the area of multimodality or "the investigation of diverse modes of expression and their combinations" (Bateman, 2014, p. 6). One important tenet in SF-MDA studies on visual-verbal relation is the understanding that meanings created through a combination of different modes are multiplicative or, in other words, are greater than the sum of the meanings created from the modes when they are used alone (Lemke, 1998; Bateman, 2014). This implies that each mode has internal properties that enable the multiplication of meanings to take place, and leads to the theoretical challenge to explain the interactions between visuals and language in a systematic way. However, there is a need to take into consideration the different potentials of image and language, and to caution against the simplified notion of transferring language theory to image analysis (Kress & Van Leeuwen, 2006[1996]; Bateman, 2014).

In addition to the problem of the simplified application of linguistic theory to image analysis, Bateman also points out that some work on visual-verbal relations is decontexualised and does not reveal useful distinctions (Bateman, 2014). This sheds light on the challenges of developing visual-verbal frameworks. This section will explain visual-verbal frameworks of Martinec and Salway (2005) and Unsworth (2006, 2007), as the research project develops a visual-verbal framework to analyse the content in the tablet apps based on Martinec and Salway's (2005) and Unsworth's (2006, 2007) works.

Martinec and Salway (2005): The visual-verbal framework based on the logical metafunction

Drawing upon the two systems of logical relations in the logical metafunction in SFT (the system of interdependency, and the logico-semantic system), as well as on Barthes's visual-verbal relations, Martinec and Salway (2005) develop a visual-verbal framework that involves two main aspects of clause combination: *status* and *logico-semantic* relations. Martinec and Salway (2005) consider the *status* relationships between language and image. If the relations are equal, they can be further categorised into *independent* or *complementary*. However, if the relations are unequal, they can be either image subordinate to (verbal) text or (verbal) text subordinate to image.

Martinec and Salway (2005) also divide the *logico-semantic* relations between the verbal text and image into *expansion* and *projection*. *Expansion* is then divided into *enhancement*, *elaboration* and *extension*. *Enhancement* is related to the circumstantial relations of time, place and reason. One example of *enhancement* is the image of dead bodies lying on the floor with the verbal text "a short circuit set fire to the hall's thatch roof" (p. 351). In this example, it is *enhancement by reason*: that is, the image (death) is the result of the verbal text (a short circuit). The second type of *expansion* is *elaboration*, which is divided into *exposition* (the relation in which the image and the text are of the same level of generality) and *exemplification* (the relation in which the image and the text are of the different level of generality), the latter which is divided into two subtypes of *image as being more general* and *texts as being more general*. The last category of *expansion* is *extension*, which is defined as a

visual-verbal relation in which one mode adds new but related information to the other mode.

In addition to *expansion*, the other type of *logico-semantic* relation between verbal text and image proposed by Martinec and Salway (2005) is *projection*. *Projection* can be divided into *locution* and *idea*. *Locution* involves the speech process that is realised by speech bubbles, and *idea* involves the thought process that is realised by thought bubbles. Their framework can be shown as a system network in Figure 3.7.

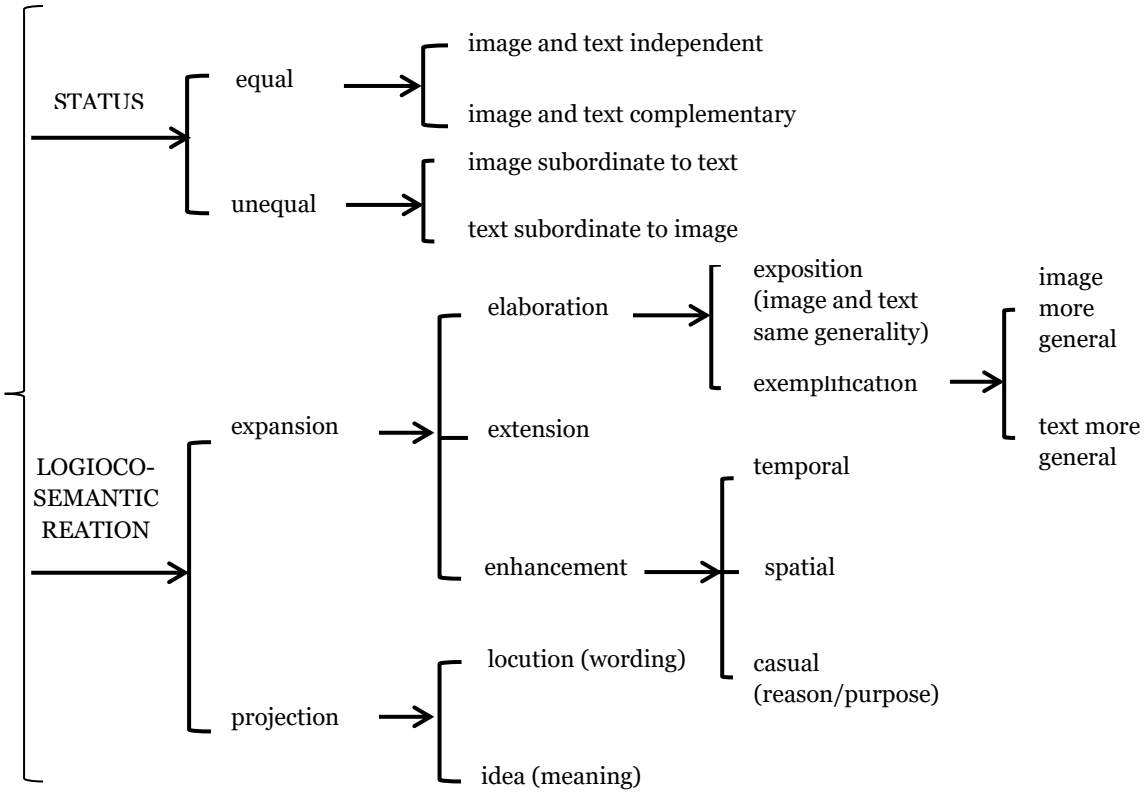

Figure 3.7: Visual-verbal relations by Martinec and Salway (2005, p. 358)

Unsworth (2006, 2007): Building on Martinec and Salway's visual-verbal framework

Unsworth (2006, 2007) proposes a visual-verbal framework based on Martinec and Salway's visual-verbal model (2005), and applies the visual-verbal relations to an analysis of educational materials. He provides three main additions to Martinec and Salway's model. Firstly, there is a change of the label from *elaboration* to *concurrence*, and the inclusion of two new types (*clarification* (the relation in which image clarifies or explains verbal text) and *homospatiality* (the relation in which

language and image appear in "one specially bonded homogenous entity" (Unsworth, 2007, p. 1,176)), under this category. Secondly, Unsworth's *complementarity* is broader than Martinec and Salway's *extension*. Unsworth's *complementarity* refers to the visual-verbal relation in which what is represented in one mode is different from what is represented in the other, and both modes contribute to an overall meaning that is more than the meaning conveyed by each separately. *Complementarity* has the subtypes of *augmentation* (which is similar to Martinec and Salway's *extension*) and *divergence* (in which "the ideational content of text and image is at variance" (Unsworth, 2007, p. 1,189)). Thirdly, Unsworth adds the relations of *manner* (in which language and image relate by means or manner) and *condition* (in which "the verbiage constructs the conditions and the image the consequence") under the category of *enhancement*, as well as *perception* and *cognition* under the relation of *idea* (Unsworth, 2007, pp. 1,194-1,200). Unsworth's visual-verbal network is shown in Figure 3.8 (colour emphasis added for the changes from Martinec and Salway's model).

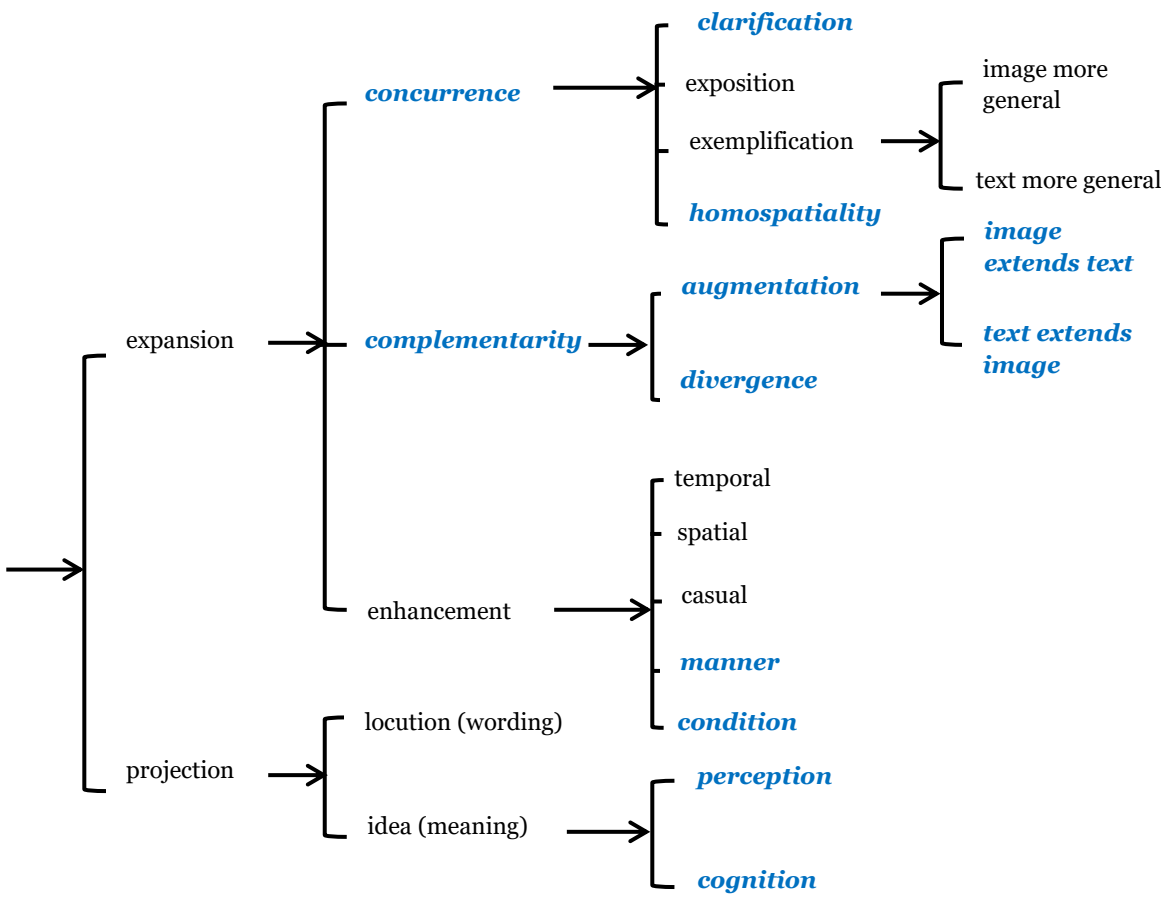

Figure 3.8: Unsworth's visual-verbal network (Adapted from Unsworth, 2007, p. 1175)

The present research project draws upon the frameworks of Martinec and Salway (2005) and Unsworth (2006, 2007) in developing a framework for analysing visual-verbal relations for vocabulary learning. However, in developing the framework, some of their categories were not relevant to the research project's data (EFL teaching materials for children) and are not included, and there is also a need to develop some new categories based on the data.

Inter-modal: The use of different modes

SFT principles have also been adopted for studying inter-modal interactions in communication events such as classroom teaching and learning. Based on the understanding that language is one semiotic resource among many for meaning making and that all interactions are multimodal, various SF-MDA studies analyse how different modes of communication are used together to achieve goals in certain communication events but do not aim to theorise the relations between them or represent the relations in the system networks (e.g. Kress et al., 2001; Jewitt, 2006). In the field of education, the use of different modes can be explored as in classroom interactions or learning materials. For example, Kress et al. (2001) analyse how each of the modes is used by the teacher in a science classroom to realise meaning, and highlight the complex ways in which various modes of communication such as image, gesture, gaze, speech and writing interact in the classroom and contribute to student's science learning. As another example, Jewitt (2006) investigates how multimodal meaning-making resources provided by books on CD-ROMs and other educational software affect students' process of constructing particular aspects of knowledge, by using the metafunctions as a tool to think about how the modes in a text (e.g. image, gesture, voice and speech) are arranged to realise different kinds of meanings (ideational, interpersonal and textual).

The present research project also analyses the use of different modes of communication in classroom interactions. In particular, it explores how teachers' use of language, gesture and space in the EFL classroom contributes to teaching and learning, based on the focus on the three metafunctions.

3.2.3 SFL-based critical discourse analysis (CDA) and SF-MDA for analysing educational inquiry

The interest of SFT in relationships between context and language is reflected in Hasan's exotropic theory, or a theory which "is not confined within the bounds of its object of study" but "is cosmoramic, typically embedding its central problematic in a context" (Hasan, 2005[1999], p. 51). Both Bernstein's theory of the social, including pedagogic discourse in the educational context, and Halliday's SFL theory, are considered instances of an exotropic theory that approaches the object of study by not isolating it from its context (Hasan, 2005[1999]).

3.2.3.1 SFL-based CDA and SF-MDA in the field of education

The SFT principles (e.g. the dynamic relationships between text and context, language as system and structure, language as a tri-statral system, and the metafunctional hypothesis) have provided the theoretical basis for critical discourse analysis (CDA) applications of SFL and SF-MDA (systemic functional multimodal discourse analysis) in the field of education. Critical discourse analysis (CDA) involves the relationships between discourse and power (Djonov & Zhao, 2014). A central focus of CDA is on the role language and other communication modes play in establishing and maintaining or negotiating and subverting social relations of power. CDA aims to uncover how the choices people make in communication reflect their ideological stance on issues of social significance and may influence their audience (Fairclough, 1989).

SFT has proven to be an important tool for conducting critical discourse analysis of linguistics texts and communicative interactions. Through the SFT model of dynamic relationships between text and context, texts, or acts of communication, reflect and shape the social contexts in which they operate by simultaneously construing the three types of meaning of the metafunctions. In the field of education, some CDA research analyses speakers' or authors' ideological stance on significant issues, through an analysis of the language choices they make in communication (e.g. Moltsaar, 2014), or reveal how language choices can shape the educational context (e.g. Christie, 1995, 2005; Davis, Torr, & Degotardi, 2015).

SF-MDA has also applied SFT principles to the analysis of non-verbal modes, or multimodal interactions, in the field of education. Drawing upon SFT concepts and

tools such as the metafunctional hypothesis and system networks, SF-MDA studies analyse multimodal interactions in various educational settings (e.g. Jewitt, 2006; Kress et al., 2005), as well as multimodal teaching and learning materials or multimodal affordances in educational technologies (e.g. Maher, 2011; Jewitt, 2002; Unsworth, 2014).

The present research project investigates the language choices teachers make in communication (e.g. their interviews or their talk to the class), as well as their use of other resources such as gesture and space, which shed light on teachers' ideological stance on significant issues (e.g. children's EFL learning and EFL teaching), and reveal how their choices shape the learning environment for students. It also analyses the multimodal interactions in the teaching materials in the technology.

3.2.3.2 Pedagogic discourse

Various SFL-based CDA and SF-MDA studies have drawn upon the concept of pedagogic discourse for analysing educational inquiry (e.g. Christie, 1995, 2005; Martin & Rose, 2013; Zhao & Van Leeuwen, 2014; Lim, 2011). According to Bernstein (1990), pedagogic discourse comprises two kinds of discourse: instructional and regulative:

> We shall define pedagogic discourse as the rule which embeds a discourse of competence (skills of various kinds) into a discourse of social order in such a way that the latter always dominates the former. We shall call the discourse transmitting specialised competences and their relation to each other *instructional* discourse, and the discourse creating specialised order, relation, and identity *regulative* discourse (p. 158, emphasis in original).

Bernstein defines instructional discourse as the discourse of transmitting or acquiring "specific competences", and regulative discourse as the discourse of transmitting "principles of order, relation and identity" (Bernstein, 1990, p. 183). Christie (1995, 2005) reconceptualises these two aspects of pedagogic discourse as registers (i.e. configurations of field, tenor and mode), and explores language choices that enable the instructional register to construct knowledge or the subject that is being taught, and the regulative register to manage classroom interactions, which includes the goals of the activity or classroom lesson and the sequencing of teaching and learning (Christie, 1995). Christie (1995, 2005) shows how each of these two registers both reflects and shapes the social context of a classroom interaction by

simultaneously constructing three broad types of meaning or the metafunctions of language. In analysing pedagogic discourse, Christie (1995, 2005) adopts the SFL lexico-grammatical systems of TRANSITIVITY, MOOD, and THEME. The present research project also uses these three systems to analyse teachers' speech, and explores how teachers' multimodal choices (speech, gesture and pedagogic space) contribute to the pedagogic discourse, through the lens of the three metafunctions.

3.3 Conclusion

SFT has provided the theoretical basis for CDA and SF-MDA for educational inquiry, the focus of the research project. In particular, the metafunctional hypothesis enables SFT applications to the analysis of the languages other English and modes other than language. Each of the three metafunctions has its own systems of choice (lexico-grammatical and semantic systems), that are used for analysing linguistic texts in the present research project; and each metafunction becomes a thinking tool for modeling and analysing other modes of communication.

Chapter 4

Methodology

4.1 Introduction

This project aims to critically examine the potential of projects such as the One Tablet Per Child (OTPC) in Thailand to address the challenges associated with EFL teaching and learning, and thereby to support the teaching of EFL in primary schools. To do that, it addresses the following questions:

(1) What is the potential of the multimodal design of the EFL tablet apps to support language teaching and learning? Specifically, what visual-verbal relations are used in the apps, and what are their potential and limitations for teaching children English vocabulary?

(2) What factors influence teachers' decisions to use the EFL tablet app in the classroom?

(3) What are the views of teachers about the use of the OTPC tablet app for students' EFL learning, and about children as EFL learners?

(4) How do teachers' multimodal choices (speech, gesture and pedagogic space) incorporate the OTPC tablet app and the learning materials provided on it into teaching EFL content and managing classroom interactions?

The literature review in Chapter 2 identified the differences between English as a foreign language (EFL) and English as a second language (ESL), which in turn reveals the challenges associated with EFL teaching (e.g. a paucity of qualified teachers, large class sizes, and limited opportunities to use the target language in authentic communicative contexts), approaches to foreign language teaching, and key trends and gaps in research on the use of technology in language teaching and on children as additional language learners. Chapter 3 then presented the argument that systemic functional theory (SFT) provides a suitable theoretical foundation for this research project, and outlined the key SFT principles that make it valuable for the critical linguistic and multimodal discourse analysis of communication in educational

contexts. This chapter presents the project's design - its participants, data, methods of analysis, and ethical considerations - and explains the relationship between these elements and the project's research questions.

4.2 Participants

The participants in this research project were 213 teachers who teach EFL to Grade 2 students (around 7 years of age) at primary schools in Bangkok, Thailand. This research project focused on Grade 2 teachers because it aimed to contribute to research on the use of technology in language classrooms, which has rarely addressed early primary teachers and Grade 2 teachers. These Grade 2 teachers, in the present research, at the time of data collection had the chance to explore the OTPC tablet app and decide whether and how to use it in their classroom. They completed a questionnaire distributed to 500 primary schools in Bangkok. Their responses enabled this project to explore the research questions, "What factors influence teachers' decisions to use the Grade 2 EFL tablet app in the classroom?" and "What are the views of teachers about the use of the OTPC tablet app for students' EFL learning, and about children as EFL learners". Of these 213 survey respondents, 42 were male and 171 female, and 181 worked in public and 32 in private schools. Their age ranged from 20 to over 55, and their teaching qualifications varied from a diploma to a master's degree, with the majority holding a bachelor's degree.

Out of the 213 teachers who filled in the questionnaire, seven agreed to be interviewed for this project. These interviews supported a more in-depth exploration of teachers' perspectives on children as foreign language learners and as users learning EFL through the OTPC tablet app; the research literature and responses to the questionnaire identified the teachers' belief or perspectives as one of the factors that may influence the uptake of a technology in language teaching. The interviewed teachers were one male and six female participants, aged from 29 to 48, six with a bachelor's and one with a master's degree, and all employed at seven different public primary schools. Four had experience using the OTPC tablet app in their EFL class, while three did not but were familiar with its contents and design. All seven teachers were interviewed and their responses analysed with the aim of identifying a wider range of perspectives that teachers may have on the use of the OTPC tablet app for students' EFL learning and on children as foreign language learners.

Of the seven interviewed teachers, two agreed to be observed when teaching the EFL class with the OTPC tablet app: a 30-year-old female teacher with one-year teaching experience; and a 48-year-old male teacher with 13 years teaching experience; both with bachelor degree qualifications, and teaching at two different public primary schools in Bangkok. These two classroom observations, which were video-recorded with a focus on the teacher in each classroom, supported an investigation into the role teachers' use of language, gesture and classroom space played in integrating the OTPC tablet app into teaching EFL content and managing classroom interactions.

4.3 Data

This research project features four different types of data: the Grade 1 and Grade 2 EFL apps on the OTPC tablet; teacher survey responses; interviews with teachers; and video-recordings of classroom interactions.

4.3.1 The OTPC tablet apps

The research project analysed the OTPC tablet apps for EFL in Grade 1 and Grade 2. This analysis was a suitable point of departure for this project as much of the value of new technology for teaching and learning rests on the teaching and learning materials that can be accessed through them (cf. Chik, 2014). The analysis of the EFL tablet apps enabled the examination of the potential and limitations of multimodal materials to support the teaching of EFL content. Specifically, this analysis considered the potential of the app to support the teaching of vocabulary, which is one of the most important aspects in teaching children foreign languages (e.g. Nation, 2001; Folse, 2004) and a central EFL learning outcome in the basic core curriculum for early primary levels in Thailand (Ministry of Education, Thailand, 2008). The song videos found in the Grade 1 and 2 apps were selected for analysis for three main reasons: (1) the songs section was identified by teachers in the questionnaire survey as the second most useful section of the Grade 2 EFL app; (2) the song videos were included in both Grade 1 and 2 apps, whereas "Vocabulary", the section the teachers cited as the most useful, was found only in the Grade 2 app; and (3) songs have been acknowledged by research as an important tool in helping children learn vocabulary (e.g. Medina, 1993; Li & Brand, 2009; Coyle & Gracia, 2014).

The research project's focus on the multimodal design in the apps to develop children's vocabulary learning was motivated by research that has shown that the use of various modes of communication in learning materials in new technology helps students learn language more effectively (e.g. Brett, 1997; Guichona & McLornan, 2008). This research project specifically explored visual-verbal relations in the EFL applications in the OTPC tablet for vocabulary learning. The data that were used to address this question included 23 song videos: 16 from the Grade 1 EFL app and seven from the Grade 2 EFL app.

The findings of the analysis of the apps revealed the potential and limitations of learning materials in the apps, and highlighted the important role of teachers in educational technology initiatives, as well as the need to understand the factors that influence teachers' decisions on whether and how to incorporate the OTPC tablet and the EFL app in their teaching.

4.3.2 Teacher survey

The teacher survey was designed to examine the factors that impact teachers' decisions on whether and how to integrate new technology and associated teaching materials in their classroom. It consisted of five sections: (1) yes/no and multiple choice questions that focused on teachers' demographic information, (2) yes/no questions that asked teachers about the OTPC project information, (3) multiple choice questions that focused on teachers' views about the use of the OTPC tablet app and children's learning of English, (4) open-ended questions that asked teachers about their views on the use of the tablet app and children's learning of English, and (5) ranking-order, open-ended, and yes/no questions that focused on teachers' views about the OTPC tablet app. The survey was also used as a tool to recruit participants for interviews and classroom observation.

The teacher survey data comprise 213 questionnaires completed by Grade 2 teachers in Thailand. The analysis of the survey data revealed that one of the important factors that influenced EFL teachers' technology use was the teachers' attitudes towards the technology. However, although the survey can reveal the overview of the teachers' attitudes, it is not effective in eliciting the subtle details for analysis. The teacher interviews were also needed in order to analyse their views in more detail.

4.3.3 Teacher interviews

While the analysis of survey data offered an initial overview of teachers' attitudes towards the OTPC tablet app for EFL learning, the interviews with seven of the teachers enabled the exploration of their views on children as foreign language learners and as users learning EFL through the OTPC tablet app in greater depth. The interview questions were designed to encourage teachers to talk about children as foreign language learners and children's use of tablet technology in and beyond the classroom. Other questions focused on the EFL app in particular. For example, some questions specifically asked teachers to evaluate the tablet app in terms of supporting children's EFL learning, and to consider the benefits and problems of using the tablet app to teach children in the EFL classroom (see Chapter 6 for more detail about the interview questions, and Appendix 3 for the list of interview questions).

Each interview was conducted and audio-recorded at each teacher's school, and lasted around 30 minutes. The interviews were conducted in Thai language, with the purpose of gaining more detailed information. From the interview data, clauses that refer to children and their learning (both explicitly and implicitly) were selected for close systemic functional linguistic analysis, with the aim to develop a deeper understanding of teachers' views about children using new technology to learn EFL. Examples of clauses that were not chosen include those concerning the teachers' demographic information (e.g. "I've been teaching for twenty years.") and school policy (e.g. "The homeroom teacher is responsible for the tablets that were handed out.").

4.3.4 Teacher observation: A video-recording of classroom interactions

The observation of the teachers' practices in the EFL classroom using the tablet technology enabled the analysis of their approaches to EFL teaching and insights into the potential of the technology's use, to address some of the challenges associated with teaching children EFL. The data for teacher observation consisted of a video-recording of two Grade 2 EFL classes using the OTPC tablet app (one for each teacher), with the camera's focus on the teacher. Each recording lasted about 40 minutes. The data enabled the exploration of how teachers' multimodal choices (speech, gesture and pedagogic space) incorporate the OTPC tablet app and the learning materials provided on it into teaching EFL and managing classroom interactions, and shed light on the implications of the potential of new technology to

help teachers teach some aspects of EFL, the important role of teachers in adopting an effective teaching approach to the integration of technology into EFL classrooms, and teacher-student relationships in the classroom.

4.4 Transcription and translation

The four types of data used in this project were transcribed and translated accordingly. The data were transcribed according to three main types of transcription: statistical, verbal, and multimodal. The statistical transcription involved the data used for analysing factors influencing the teachers' decision to use the OTPC tablet app (responses to the close-ended questions in the questionnaire survey), which were labeled with a number or a code representing a different categorical variable and put into the SPSS program for the statistical analysis. Teacher participants' interviews and speech were transcribed verbatim. The multimodal transcription concerned non-verbal and non-statistical data, which included the song video data, teachers' use of gesture, and their use of pedagogical space. Each video consists of various frames, and each frame features a static picture and one or two lines of lyrics. Appendix 4 is the multimodal transcription of the song videos for this research project. Teachers' use of gesture was transcribed in terms of its functions in the classroom and its interaction with speech (see Chapter 9 for functions of the teachers' gestures based on the data in this research project). The teachers' use of the classroom space was transcribed in terms of the amount of time they spent in each part of the classroom (see Appendix 5).

The translation was done by the researcher and/or an accredited translator. Some songs in the Grade 1 and Grade 2 apps that featured a combination of English and Thai languages, teacher's responses to the open-ended questions in the questionnaire survey, their interviews, and their speech in the classroom, were translated from Thai to English. The translation was as literal as possible in terms of word order and meanings, with the aim of capturing all the delicate details involving teachers' views about children using a tablet to learn EFL.

4.5 Methods of analysis

The research project drew upon various analytical methods in order to analyse the four types of data with the aim of understanding the implications of using new technology as a solution addressing EFL teaching and learning challenges.

4.5.1 Content analysis of visual-verbal relations in the EFL tablet app

The song videos in the Grade 1 and Grade 2 EFL tablet apps were analysed using content analysis, or to be more specific, systemic functional multimodal discourse analysis (SF-MDA). They were analysed according to a visual-verbal framework (see Chapter 5 for more detail), with the aim of understanding the relationships between images and language for vocabulary learning. The framework focused on ideational meanings constructed through visual-verbal relations, based on the expectation that EFL materials for young students would use images that relate closely to the ideational meanings of words used in the apps, and the assumption that the EFL apps in this project are designed for children who can already use their native language to represent their existing experience and knowledge of the world.

The analysis of the tablet apps was performed in two stages. Firstly, all the frames in the song videos in the Grade 1 and Grade 2 apps (145 frames for Grade 1 and 106 for Grade 2) were analysed using categories for defining ideational visual-verbal relations proposed by Martinec and Salway (2005) and Unsworth (2006), which are dominant in SF-MDA. This analysis revealed the inability of these two frameworks, developed for analysing visual-verbal interaction across a range of different types of texts and media, to capture the nature of some visual-verbal relations used in the video frames and the potential of those visual-verbal relations to reveal the meaning of particular vocabulary items. To address this challenge, I developed a framework for analysing the potential of ideational meaning in visual-verbal relations to support vocabulary teaching and learning, based on the song video data. In stage two, each frame was coded using the most appropriate visual-verbal category in the proposed framework; and the results were represented using descriptive statistics principles, with the number of frames representing each type of visual-verbal relation converted into a percentage of the total number of analysed frames, in order to explore the frequency of different types of visual-verbal relations

in the song videos. The findings of this analysis are reported and discussed in Chapter 5.

4.5.2 Inferential statistics and content analysis of survey data

The teacher survey data consisted of responses to closed (multiple choice or yes-no) and open-ended questions. The responses of the first type were analysed quantitatively, using the inferential statistics method of the chi-square test of independence, in order to explore which factors influence teachers' technology uptake in EFL classrooms. This method is discussed further in Chapter 6, which also presents the findings of this analysis and a discussion of their implications for language teaching pedagogy and policy.

Teachers' responses to open-ended questions, which were designed to explore the teachers' overall views about the technology use for EFL teaching and learning, were analysed using content analysis, which involved identifying and counting themes. The data were first analysed in order to identify themes, which can be in the form of sentences or sentence fragments, and then the number of people who identified each theme was counted and then converted into a percentage. This analysis and the findings are reported in Chapter 6.

4.5.3 Systemic functional linguistics (SFL)-based critical discourse analysis (CDA) of teacher interview data

Developing a sophisticated understanding of teachers' views requires a deeper exploration than that afforded by thematic content analysis: as Li and Walsh (2011b) state, "[u]nderstanding language teachers' beliefs cannot be achieved by simple recourse to what they say or do at face value" (p. 41). To achieve this, the present research project analysed the teacher interview data using SFL-based critical discourse analysis (CDA). As discussed in Chapter 3 and Chapter 7, CDA involves the analysis of the choices people make in communication, which can reflect their ideological stance on important issues and which can thereby influence their audience (Fairclough, 1989). It enables us to understand the role communication modes, including language, play in establishing or negotiating social relations of power. Systemic functional linguistics (SFL) has offered various tools for critical discourse analysis. The tool employed in this, and many CDA projects powered by SFL, is the lexico-grammatical system of TRANSITIVITY, which operates at the rank

of clause. There are several reasons for this choice. Following Halliday and Matthiessen (2004), "[t]he clause is the central processing unit the lexicogrammar – in the sense that it is in the clause that meanings of different kinds are mapped into an integrated grammatical structure" (p. 10); and the system of TRANSITIVITY provides choices for construing ideas and experiences as configurations of Process, Participants and Circumstances. In this project, interview data were analysed with a focus on teachers' ideas about children as foreign language learners, and on the potential of the OTPC tablet and the EFL app to support children's learning. In addition, as a unit of analysis the clause can be applied even to very short responses to interview questions. Finally, as the interview data were in Thai, another factor motivating this decision was the availability of SFL frameworks for analysing Thai grammar (Yiemkuntitavorn, 2005; Patpong, 2006). This study would contribute to the SFL-informed work on analysing and describing the use of the Thai language.

The interview data analysis unfolded in two phases. Firstly, the selected clauses (total of 496) were coded according to the six main process types in the system of TRANSITIVITY (material, behavioural, mental, verbal, relational, and existential) (see Appendix 6 for the TRANSITIVITY analysis of 496 clauses). Next, the number of instances of each process type was converted into a percentage of the total number of analysed clauses, in order to explore the frequency of each type of process in the data. The findings of this analysis are reported and discussed in Chapter 7.

4.5.4 Multimodal analysis of EFL classroom interactions incorporating the OTPC tablet

To explore how the OTPC tablet is employed for teaching children EFL, this research project included a multimodal analysis of two teachers' use of language, gesture and classroom space in two classroom interactions, in different schools in Bangkok, that incorporated the Grade 2 EFL app. This analysis also extended understanding of the ways teachers' perspectives on children as EFL learners, revealed through the analysis of interview data, allow an insight into how these perspectives may be reflected in their pedagogic practice (cf. Li & Walsh, 2011b).

The video recordings of the two classroom interactions were first divided into phases, in order to compare the two lessons' overall structure. Phase boundaries were defined according to Baldry and Thibault's (2006) concept of "transition points" (p.

47). To illustrate, boundaries between phases in two classroom interactions in this study were identified through the observation of differences in terms of the lesson's content and a pause in the teacher's use of speech and body movement. The next step in the analysis of the video data employed SF-MDA to explore the ideational, interpersonal and textual meanings realised through teachers' use of language, gesture and classroom space in each phase of the lesson. The teachers' speech was divided into ranking clauses (491 in total); and each clause was analysed through the perspective of each metafunction: ideational (focusing on a teacher's TRANSITIVITY choices), interpersonal (through MOOD analysis at the level of lexico-grammar and speech function analysis at level of semantics) and textual (through THEME analysis at rank of clause); as presented in Appendix 7. This analysis supported an exploration of the role of teachers' language choices in representing EFL content, enacting social relations and interacting with their students, and sequencing/pacing the lesson. This analysis was supported through systemic functional frameworks for analysing Thai grammar (Yiemkuntitavorn, 2005; Patpong, 2006).

For the purposes of this project, gesture was defined as the movement of arms, hands, fingers and head, and described and categorised using the three metafunctions and according to its pedagogical functions in the classroom observation data (See more detail in Chapter 8).

The analysis of teachers' use of classroom space employed the four categories for describing classroom space (authoritative, personal, supervisory, and interactional) developed by Lim, O'Halloran and Podlasov (2012). These categories, described in detail in Chapter 3, were developed on the basis of Lim's (2011) analysis of pedagogic choices in classrooms that resembled the two in this project, having a traditional structure that includes a whiteboard/blackboard, a teacher's desk at the front of the room, and students' desks arranged in rows with space between the rows.

The multimodal interaction of each of the teacher's choices from the resources of language/speech, gesture and classroom space was then interpreted in terms of its contribution to realising the regulative and/or the instructional registers of pedagogic discourse, as re-conceptualised by Christie (1995, 2005), on the basis of Bernstein's (1990) theory of pedagogic discourse. The analysis of classroom observation data, its

findings and their implications for teaching children EFL through the use of new technologies, are reported in Chapter 8.

4.6 Ensuring research reliability

In order to ensure research reliability, the research project employs three main methods. First is statistical reliability. Inter-coder reliability, which refers to the degree to which two coders agree in evaluating a characteristic of a message (Lombard, Snyder-Duch & Bracken, 2010), was used in this research project. In particular, Cohen's Kappa inter-coder reliability test was conducted for the content analysis of the tablet apps and teacher survey data. For the tablet apps data, a second coder coded a random sample of 50 frames of the song videos, or around 20% of all the data, as part of an inter-coder reliability test. The test produced a coefficient of 0.977, revealing the coding as highly reliable. For the teacher survey data, the test was conducted on the responses to open-ended questions. A second coder coded a random sample of 42 questionnaires, or around 20% of data, according to a coding scheme with themes as the coding units. The test revealed a coefficient of 0.941, showing the coding to be highly reliable.

A certified translator was also used in this research project in order to ensure research reliability. To illustrate, all the interviews in the research project were first translated into English by the researcher, and then by a NAATI certified translator in Australia (see Appendix 8 for interview scripts translated by a NAATI certified translator). Then the comparison was made to see whether the literal translation conducted by the researcher differs from the translated work of the NAATI certified translator in terms of ideational meanings. For example, for the transcription 'คำศัพท์ เกมส์ เด็กจะชอบ', the translation was done as shown in Table 4.1.

Table 4.1: Example of literal translation from the study's data

คำศัพท์ เกมส์	เด็ก	จะชอบ
vocabulary and games	children	will like
Phenomenon	Senser	Pr: mental: emotive

This was then compared to the work of the NAATI translator, which is "Children like vocabulary and games". Although the word order and the use of tense are different, the ideational meanings are essentially the same, with the same mental process type, as well as children as *Senser* and vocabulary and games as *Phenomenon*.

The research project also used an expert in SFL to check the grammatical analysis of the teachers' interviews and speech based on the SFL framework(s). To explain, I first conducted the TRANSITIVITY analysis of the teacher interview data and the TRANSITIVITY, Mood and THEME analysis of the teachers' speech in the classroom. Then, 180 clauses, or 35% of the interview data (496 clauses), and all the 491 clauses of the teachers' speech, were checked by a second coder who is an expert in SFL in Australia.

4.7 Adopting a mixed methods approach for the research project

This research project design, which drew upon four main types of data and a variety of methods (both quantitative and qualitative), matches the mixed methods approach. Mixed methods research can be defined as a type of research in which a researcher or team of researchers mix or combine quantitative and qualitative techniques, methods, approaches or concepts into a single study or set of related studies in a project, for purposes of breadth and depth of understanding of the phenomenon of interest (Johnson & Onwuegbuzie, 2004; Johnson, Onwuegbuzie & Turner, 2007; Creswell & Plano Clark, 2011).

The mixed methods approach benefits this research project in two main respects. Firstly, the combination of qualitative and quantitative approaches offered the researcher an opportunity to use all the available tools of data collection and analysis to address the topic of new technology use for EFL teaching, not being restricted to those within quantitative or qualitative research approaches. To illustrate, this research project explored the qualitative data, including responses to open-ended questions in the questionnaires, interviews, and a video-recording of classroom interactions, and used the inferential statistics to explore factors influencing teachers'

technology use in classrooms, as well as the descriptive statistics for counting and comparing frequency of themes or categories in the qualitative data.

Secondly, mixed methods research offers strengths that offset the limitations of either the quantitative or qualitative approach when each is used on its own. On the one hand, qualitative research has been criticized for subjective interpretation by the researcher and difficulty in generalising the results, and it is argued that quantitative research can help complement this weakness by generalising research outcomes and identifying relationships between variables (Creswell & Plano Clark, 2011; Hesse-Biber, Rodriguez, & Frost, 2015). On the other hand, quantitative research has been criticized for ignoring the context and being unable to answer the questions of how and why, and it is stated that qualitative research can help address this issue by analysing a process or the what, how, and why through in-depth interviews, participant observation and documents (Hesse-Biber et al., 2015). This research project provided both generalisable research outcomes (e.g. factors influencing teachers' technology uptake) through quantitative methods, and deeper exploration of how teachers use new technology through qualitative methods such as interviews and classroom observation.

Mixed methods approaches, however, also have limitations. One is the risk of losing the potential to offer a deep interpretation of qualitative data when such data is quantified (Driscoll et al., 2007). To overcome this limitation, this project largely drew on specific examples of the qualitative data instead of merely presenting the number of themes or categories through_descriptive statistics. In addition, the mixed methods design is considered time-consuming and expensive, a researcher is required to combine the multiple methods effectively, and there is the challenge of interpreting conflicting results (Onwuegbuzie & Johnson, 2004). This research project addressed these challenges by carefully planning research design in advance, for the collection and analysis of different types of data.

4.8 Summary of the research design

Each set of data and analytical methods was designed to address each of the specific research questions, which contribute to the overall research aim. A brief summary of the research design is Table 4.2.

Table 4.2: A brief summary of the research design

	Data	Method	Research Question
1	**The tablet apps**: 16 Grade 1 and 7 Grade 2 song videos	- Content analysis - Systemic functional multimodal discourse analysis (SF-MDA)	(1) What is the potential of the multimodal design of the EFL tablet apps to support language teaching and learning? Specifically, what visual-verbal relations are used in the apps, and what are their potential and limitations for teaching children English vocabulary?
2	**Teacher survey**: 213 questionnaires filled in by Grade 2 EFL teachers	- Chi-square test of independence	(2) What factors influence teachers' decisions to use the Grade 2 EFL tablet app in the classroom?
		- Content analysis	(3) What are the views of teachers about the use of the OTPC tablet app for students' EFL learning, and about children as EFL learners?
3	**Teacher interviews**: Seven teachers' interviews	- Critical discourse analysis (CDA) - TRANSITIVITY Analysis in SFL	(3) What are the views of teachers about the use of the OTPC tablet app for students' EFL learning, and about children as EFL learners?
4	**Teacher observation**: A video-recording of two EFL classrooms using the tablet app	- Systemic functional multimodal discourse analysis (SF-MDA)	(4) How do teachers' multimodal choices (speech, gesture and pedagogic space) incorporate the OTPC tablet app and the learning materials provided on it into teaching EFL and managing classroom interactions?

4.9 Ethical considerations

As this project involved human participants, ethics approval was received from Macquarie University Human Research Ethics Committee (See Appendix 1) prior to inviting primary schools in Bangkok and Grade 2 EFL teachers and students to participate in it. This project also adhered to the ethical requirements for conducting research with teachers and students in Thai primary schools. This section outlines the

ethical considerations of the project, including those related to the collection of data, involving Thai primary school teacher and students. To clarify, data collection for the project included interviews about the OTPC tablet and the EFL app with seven Grade 2 EFL teachers and 14 Grade 2 students in Bangkok, and video-recordings of two teachers and four students using the tablet during the two classroom interactions analysed in this project. The student data, however, remains to be analysed in future studies, as the PhD project presented in this thesis developed a focus on teachers and the potential of projects such as the OTPC in Thailand to support EFL teaching in primary schools.

4.9.1 Recruiting participants and obtaining consent

At first, initial contact was made through school principals, as according to the Thai education system, a questionnaire cannot be sent to individual teachers at their schools directly without permission from their school principal. A package of three documents was then sent to the school principals in Bangkok, Thailand:

(1) a letter in Thai language, which explains the research project and asks for the school principals' assistance in distributing the questionnaire to a Grade 2 EFL teacher at their school (see Appendix 9 for the letter and Appendix 10 for English translation),

(2) an information and consent letter for a school principal in Thai language (see Appendix 11 for the information and consent letter and Appendix 12 for English translation), and

(3) the questionnaire for Grade 2 EFL teachers (see Appendix 13 for the questionnaire and Appendix 14 for English translation).

After the principals distributed the questionnaire to teachers, teachers were entitled to the right to choose whether they would fill in the questionnaire and return it to the researcher. Out of 500 questionnaires, 213 were returned. In the questionnaires, there was no information about the school or the identity of teachers, except for the questionnaire of those who agreed to participate in the interviews and filled out their contact details.

Then, seven Grade 2 EFL teachers, who agreed to be interviewed and audio-recorded and had been granted an approval by their school principal, provided

written consent in Thai language (see Appendix 15 for teacher consent form and Appendix 16 for English translation). The interviewed teachers were then asked to identify Grade 2 students who were suitable for interviews about their experience with the OTPC tablet. The researcher then contacted their parents and explained to them the research project and interview questions. Then parental written consent was obtained (see Appendix 17 for parental consent for the interview and Appendix 18 for English translation). After that, the researcher explained the project to the students and asked for their verbal and written consent before conducting the interviews (see Appendix 17 for students' written consent for the interview and Appendix 18 for English translation). This research project included 14 students for the interviews, each interview lasting about 15-20 minutes.

Then, two Grade 2 EFL teachers who agreed to be video-recorded when using the tablet app in their EFL classroom and had been given an approval by their school principal provided written consent (see Appendix 15 for the teacher's written consent to be video-recorded and Appendix 16 for English translation). They were then asked to nominate two students who represented the class's average English language proficiency and skill in using educational technologies to be observed and video-recorded using the tablet in the classroom. The researcher then contacted the students' parents and explained the aims and data collection procedures of the research project. After parents granted consent for their children to be observed and video-recorded using the tablet in the classroom for the duration of an EFL lesson, of around 40 minutes, by signing the form presented in Appendix 17 (see Appendix 18 for the English translation), the researcher explained the project to the students and what their participation would entail, and obtained their verbal and written consent before video-recording the lessons (see Appendix 17 for the students' written consent and Appendix 18 for the English translation of the form).

4.9.2 Ensuring participants' willingness and minimising coercion

The researcher ensured that fully informed consent was acquired from participants without coercion. Firstly, the information letter and consent form assured potential participants, and in the case of children also their parents/guardians, that the decision not to participate in or to withdraw from the project can be made without giving a reason and without adverse consequences of any kind. It also explained that they can withdraw from the project at any time and at no risk. Potential participants

who had received the invitation and did not wish to participate in the study or allow their children to participate could ignore the invitation, and would not be contacted in relation to this research project again.

Secondly, the written information and consent form for parents and their children, which included an explanation and a signature space for children, did not mention that parents and teachers give approval for the researcher to video-record their child's use of the Grade 1 English tablet application in the classroom and to interview the child on his/her views and experiences with the application. The written information and consent form for parents and their children also explicitly stated in language accessible to most children over five years old that they could choose to stop participating at any time and did not have to explain why. The verbal consent from the children was obtained prior to engaging each child in any data video-recording or interview that was part of the research project, thus reinforcing the message that participation was entirely voluntary and the children themselves had the right to withdraw from the project (or any part of the project) without having to give reasons and without consequences.

4.9.3 Considerations for conducting research involving children

As this research project involved children, it considered the children's right and willingness to participate in the study. Firstly, this research acknowledged that parental and teacher consents do not affect students' assent to participate. The researcher explained to the students the nature and purpose of the project and what it entails for them in the simplified language. They understood that the decision to participate in the project is completely voluntary and that deciding not to participate or to withdraw from the project can be done without giving any reasons and without any consequences. Secondly, as the requirement of working with children under 14 at a school, the permission of the teacher must be obtained and the researcher must work with children under the teacher's supervision (Esomar world research codes & guidelines, 2009). Children in this research project were interviewed and video-recorded under their teacher's supervision. The researcher would not be working with children unsupervised. Thirdly, the language used with children was simplified language comprehensible to children. Fourthly, the children's privacy was protected. Their picture and identity would not be revealed.

4.9.4 Ensuring the confidentiality of data and the identity of participants

The data in this research project were de-identified. The codes or pseudonyms are applied strictly whenever a piece of data is referred to in research presentations and publications, in order to preserve the participants' anonymity. Any identifying features in the transcript are masked. In addition, no snapshots from the video-recording are used. If quotes from the interviews or classroom speech are used for publication, the participants' identity are not revealed.

4.9.5 Ensuring cross-cultural awareness and sensitivity

The recruitment of participants and data collection for this project were conducted in Thailand. The researcher, a Thai citizen and native speaker, ensured cross-cultural awareness and sensitivity in research by observing Thai etiquette and code of conduct during data collection. All information letters and consent forms, questionnaires and interviews were also presented in Thai language.

The methods of research involving students in Thailand and the Western world are quite different, and brought about challenges for the research project. The research involved audio-recording students' interviews and video-recording their use of the tablet, but the teachers in this study at first did not understand the need for the researcher to contact the students' parents and ask for their permission first or the need to ask Grade 2 students (around 7 years old) to sign the consent form. In addition, unlike in the Western world, in the video-recording of the teachers' pedagogical practices, researchers in Thailand do not expect to get the consent from all parents of the students, including those whom they are not going to focus on. This, therefore, led to a process of negotiation and explanation in order to ensure mutual understanding and adherence to necessary requirements for conducting research involving children in Australia.

4.10 Conclusion

The research project drew upon four main types of data (the tablet apps, teacher survey, teacher interviews, and teacher observation) and a variety of methods of analysis, with the aim to understand the broader implications of the use of new

technology as a solution to EFL teaching and learning challenges, such as students' lack of exposure to English and a lack of qualified teachers.

Chapter 5

The potential of multimodal design in new technologies to develop EFL learning

5.1 Introduction

This chapter presents findings of the analysis of EFL learning materials or EFL tablet apps in the One Tablet Per Child (OTPC) project in Thailand. This analysis was selected as a starting point for the project as a whole as a tablet technology is considered a tool for teaching and learning mainly because of the resources that can be accessed through it, rather than the device itself (cf. Chik, 2014). The purpose of this chapter is to explore the potential of the multimodal design of the EFL tablet apps to support language teaching and learning. Specifically, it aims to understand the potential and limitations of visual-verbal relations in the apps for teaching children English vocabulary which research has identified as an important aspect of foreign language learning (e.g. Nation, 2001; Folse, 2004) and which is a central learning outcome for young EFL learners in Thailand's basic core curriculum (Ministry of Education, Thailand, 2008).

As pointed out in Chapter 2, in research on EFL learning materials accessed through new technologies there is a paucity of studies of materials developed for students in the early years of primary school, and a strong need to adopt a multimodal perspective, as the potential of modes combined to improve students' language learning better than their individual use has been well documented (Brett, 1997; Guichona & McLornan, 2008). This chapter analyses the Grade 1 and Grade 2 EFL OTPC tablet apps through content analysis by using systemic functional multimodal discourse analysis (SF-MDA).

The article which is included in this chapter reports on the findings of the analysis of the EFL tablet apps. I took a primary role in conducting the data collection, multimodal transcription, and development of the framework for analysing visual-verbal relations employed in this study, the analysis, management of the statistical reliability test and writing drafts of the article. My supervisors as co-authors made

comments and recommendations on all these aspects and contributed to revisions of the article. The article was published in *TESOL Quarterly* as:

> Vungthong, S, Djonov, E, & Torr, J. (2015). Images as a resource for supporting vocabulary learning: A multimodal analysis of Thai EFL tablet apps for primary school children. *TESOL Quarterly*. doi:10.1002/tesq.274

It is presented in this thesis in its published format.

Pages 97-123 of this thesis have been removed as they contain published material under copyright. Removed contents published as:

Vungthong, S., Djonov, E. and Torr, J. (2017), Images as a Resource for Supporting Vocabulary Learning: A Multimodal Analysis of Thai EFL Tablet Apps for Primary School Children. TESOL Quarterly, vol. 51, no. 1, pp. 32-58. doi.org/10.1002/tesq.274

5.3 Postscript

In this paper, I have analysed the potential of visual-verbal relations in the OTPC tablet apps to develop children's vocabulary learning. The study has shown that the EFL learning materials in the OTPC tablet still have limitations and has highlighted the important role of teachers in addressing these limitations. This suggests that we need to caution against the heavy reliance on new technologies when the aim is to ensure effective teaching and learning. The findings of this chapter prompted this research project to further explore various aspects of the use of the new technology with a focus on teachers, and raised the following questions:

(1) What factors influence teachers' decisions about whether and how to use the EFL tablet app in the classroom?

(2) What are teachers' views about the use of the OTPC tablet app for students' EFL learning, and about children as EFL learners?

(3) How do teachers' multimodal choices (their use of speech, gesture and space in the classroom) incorporate the OTPC tablet app and the learning materials provided on it into teaching EFL and managing classroom interactions?

These questions are addressed in the next three chapters.

Chapter 6

Factors influencing teachers to adopt a new technology and their views about its potential to develop children's EFL learning

It is impossible to overstate the power of individual teachers in the success or failure of 1:1 computing.

Bebell and Kay (2010, p. 48)

6.1 Introduction

This paper reports on findings of the analysis of teacher questionnaire survey with the aim of understanding factors that influence teachers' decisions to use a new technology in the classroom as well as their views about the potential of the new technology to support children's EFL learning. As shown in Chapter 5, teachers are needed in the classroom using a new technology to address the limitations of multimedia materials accessed through it. Various studies have also reported on the important role of teachers in educational technology initiatives (Bebell & Kay, 2010; Shapley et al., 2010). Bebel and Kay, for example, state that:

> It is impossible to overstate the power of individual teachers in the success or failure of 1:1 computing. It is critically important to appreciate the pivotal role that classroom teachers play in the success of 1:1 computing… it is clear that teachers nearly always control how and when students access and use technology during the school day. In addition, teachers must make massive investments in time and effort to adapt their teaching materials and practices to make the 1:1 environment effective and relevant… As such, these results suggest that the burden of change is often greater for teachers than for any other participants in a 1:1 initiative. (Bebell & Kay, 2010, p. 48)

In the OTPC project too teachers had autonomy in deciding whether and how to use the distributed technology in their classroom and could thereby influence the success of the project. This chapter then further explores factors influencing EFL teachers to integrate the OTPC tablet app into their teaching practices through the use of

inferential statistics and their views about its potential to develop children's EFL learning through content analysis.

For this paper, I designed the questionnaire, conducted data collection in Thailand, transcribed the data, employed inferential statistics (the chi-square test) for analysing quantative data using the software SPSS, organised and managed the inter-coder reliability test for the content analysis, and wrote drafts of the article. My supervisors as co-authors provided guidance at each stage of the research, including the design of the questionnaire and revising drafts of the article. This paper has been accepted for publication in 2017 in the *Asian EFL Journal* and will appear as:

> Vungthong, S, Djonov, E, & Torr, J. (in press). Factors contributing to Thai teachers' uptake of tablet technology in EFL primary classrooms. 19(2), *Asian EFL Journal*.

The article has been included in this chapter in the format in which it was submitted, following minor revision, for publication to the journal.

6.2 Factors influencing teachers to adopt a new technology and their views about its potential to develop children's EFL learning

Factors contributing to Thai teachers' uptake of tablet technology in EFL primary classrooms

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Abstract

The enthusiasm for using tablets in education has been witnessed in several countries including Thailand. One Tablet Per Child (OTPC) introduced by the Thai government in 2011 involves tablet distribution to primary school students and application development. English as a foreign language (EFL) applications in OTPC tablets hold much promise to address the challenges of insufficiently qualified EFL teachers and students' limited exposure to English. Despite this potential, little is known about the factors influencing whether and how teachers adopt this technology in EFL classrooms. Through an analysis of 213 questionnaires completed by Grade 2 EFL teachers in Thailand, this study revealed factors influencing teachers' decisions to use the tablets in the classroom, including their views about the potential of the EFL app to support children's language learning. The study's findings have implications for policy makers and other stakeholders involved in the design and implementation of similar projects in the future.

Keywords: primary teachers; EFL; technology in the classroom; Thailand

1. Introduction

Computer technology has the potential to enhance foreign language teaching and learning in various ways (Evans, 2009), such as increasing opportunities for students to interact with native speakers of the target language. Among new technologies,

portable tablet PCs have attracted considerable funding as a means of supporting children's learning (e.g. "One Tablet Per Child" in Ethiopia (OLPC, 2012)), including their learning of English as a foreign language (EFL). Tablets are viewed as particularly suitable for young children due to their portability (McLester, 2012), relatively low cost, stylus interface (deemed more ergonomic for children than a keyboard or a mouse; see Matthews & Seow, 2007; Payton, 2008), and the ease with which various educational applications can be integrated into classroom activities (e.g. Sibley & McKethan, 2012). They may also help promote elementary school students' reading motivation (Lan, Sung & Chang, 2007) and provide an interactive and collaborative environment for language learning (Chen, 2013).

One project involving the development of EFL teaching materials for tablets is Thailand's One Tablet Per Child (OTPC). This large-scale project aims to support students' learning in the digital world. It was introduced in 2011 with the support of the Thai Ministry of Education, the Ministry of Information and Communication Technology, the Ministry of Foreign Affairs and the Office of the Prime Minister. By 2013 OTPC had already cost more than five billion baht (or 152.8 million US dollars) (Ministry of Education, Thailand, 2013). OTPC started with Grade 1 students in 2012 and Grade 2 students in 2013. Tablet PCs were distributed to primary school students, tablet applications were developed and teachers attended tablet-training workshops.

The application (or app) for Grade 2 Thai students embedded in the OTPC tablet features learning materials for various subjects including mathematics, Thai language, science and English. The Grade 2 English app, which is the focus of this study, consists of eight sections: Vocabulary, Let's listen, Let's read, Let's study, Let's talk, Songs, Exercises and Games. Grade 2 teachers were given the freedom to decide whether they would use the app in their teaching.

Recognising the importance of English as a global language (Harumi, 2002), many non-English-speaking countries have devoted significant resources to increasing their citizens' English proficiency, including making English a compulsory school subject. In Thailand, EFL, the focus of this study, has been a compulsory subject for all students from Grade 1 since 1996 (Foley, 2005), and the achievement of certain standards in English proficiency tests such as TOEIC (Test of English for International Communication) is a requirement for most professional job applications. However, partly due to the paucity of qualified EFL teachers and children's limited exposure to English, the English proficiency of many Thai citizens

is quite low (Noom-ura, 2013). Initiatives such as the Thai OTPC project that support the development and implementation of EFL teaching materials incorporated in computer technologies, therefore, hold much promise for addressing these challenges. Nevertheless, significant gaps exist in our understanding of the factors that influence their uptake in the primary classroom. This paper aims to address this question by examining those factors that play a role in whether – and, if so, how – teachers in Thailand use the Grade 2 English app installed on the OTPC tablets.

2. Literature review

The successful uptake and use of computer technologies relies largely on teachers' decisions and actions, which are in turn influenced by their attitudes and beliefs (e.g. Blankenship, 1998; Bullock, 2004). Many studies report secondary school and tertiary teachers' attitudes towards computer use for EFL teaching and learning as predominantly positive (e.g. Dashtestani, 2012; Park & Son, 2009). Yet positive attitudes do not guarantee successful use of the technology in language classrooms (e.g. Dashtestani, 2012). It is therefore important to move beyond the question of positive or negative attitudes and examine the reasons why teachers either adopt or reject computer technologies in their classroom and how those who do embrace computer technologies actually use them.

Factors influencing secondary school and university teachers' decisions on whether or not to use computer technologies in EFL classrooms can be divided into two main groups: institution-related and teacher-related. Institution-related factors include availability of computer resources (e.g. Li, 2014) and administrative support (e.g. Park & Son, 2009). Teacher-related factors involve teachers' perception of the usefulness of a given technology for teaching and learning (e.g. Li, 2014; Mai & Hong, 2014), teachers' training (e.g. Chen, 2008), and teachers' confidence and competence in using computer technologies (Li, 2014).

Various barriers to teachers' successful implementation of computer technologies in the EFL classroom have also been explored, for example, time constraints (e.g. Park & Son, 2009), insufficient training and technical support (e.g. Dashtestani, 2012), rigid school curricula (e.g. Park & Son, 2009) and a lack of computer-based facilities (e.g. Dashtestani, 2012; Park & Son, 2009).

Despite the considerable body of research into factors affecting teachers' uptake of computer technologies in EFL classrooms, there are significant gaps in our

understanding of this area. Firstly, while secondary school and university teachers have received much attention, early childhood and primary school teachers' attitudes towards computer technology for EFL learning have not – even though EFL is introduced in Grade 1 in many countries including Thailand (Foley, 2005) and regularly involves computer-assisted language learning (CALL). Among the few studies addressing teachers of younger EFL students is Li and Ni (2011), whose analysis of questionnaires completed by 72 EFL primary school teachers in China revealed that teachers used computer technology mainly for teaching preparation and presentation, and their attitudes towards technology influenced the frequency of their technology use in the classroom.

Secondly, most research focuses on computer technologies in general. For instance, Park and Son's (2009) analysis of questionnaires completed by and interviews with 12 EFL secondary school teachers in Korea explored teachers' views about CALL and factors affecting their use of CALL. While this study points out the role of teachers' perceptions of CALL and lack of time and computer facilities as important factors, it is based on a very small number of participants and considers neither specific types of computer technologies and their functions, nor variations in the quality of different brands of the same technology.

Similarly, in the field of EFL, in contrast to research on first and second language learning, teachers' views on the potential of different technologies and the teaching materials accessed through them to support specific aspects of language learning have received very limited attention. An example of research into teachers' views of computer-assisted language learning for English as a second language (ESL) and children's English skill development is Al-Awidi and Ismail's (2014) study, in which 145 teachers of children in kindergarten to third grade in government schools in the United Arab Emirates were surveyed, and 16 of them interviewed. The researchers asked teachers to consider the potential of computer technology to support specific aspects of children's English reading proficiency (e.g. phonemic and phonological awareness). Their focus, however, was on computer technology in general, not on a specific type of technology or the teaching materials deployed with it.

The present study will extend existing research into factors influencing EFL teachers' use of new technologies, with a focus on primary school teachers' views on the potential of a specific technology and a specific set of learning materials to support students' EFL learning. Specifically, it examines the factors influencing Thai

teachers' uptake of the Grade 2 English OTPC tablet app and their views about the app's potential to enhance children's EFL learning. In particular, it investigates the following questions:

1. What factors influenced teachers' decisions to use the Grade 2 EFL tablet app in the classroom? Specifically, did the following factors influence this decision, and if so how?
   1.1) Demographic variables: Gender, age, years of teaching, education, type of school and training
   1.2) Teachers' confidence in their own English speaking, writing, listening, and reading skills
   1.3) Beliefs regarding the app: whether it (1) responds to the curriculum, (2) motivates students' involvement in learning activities, (3) helps children develop English speaking, writing, listening and reading skills, (4) is enjoyed by the students and (5) supports teaching.
2. What reasons prevented teachers from using the Grade 2 tablet app in EFL classrooms?
3. What were teachers' views about the potential of the Grade 2 app to support children's EFL learning?

3. Methodology

3.1 Participants

As this study involves human participants, ethics approval is needed and has been granted by the researchers' university. This study focused on 213 Grade 2 teachers teaching EFL in Bangkok, Thailand, who had completed a questionnaire about the OTPC project and the Grade 2 English app. Out of 213 teachers, 42 (19.72%) were male and 171 (80.28%) female. Their age ranged from 20 to over 55 years as indicated in Table 1 and their years of teaching experience varied as can be seen in Table 2.

Table 1: Teacher participants' age

Age	20-24	25-29	30-34	35-39	40-44	45-49	50-54	≥ 55
Number of respondents	2	33	48	47	26	16	23	18
Percentage	0.94	15.49	22.54	22.07	12.21	7.51	10.79	8.45

Table 2: Teacher participants' years of teaching experience

Years	0-2	3-5	6-10	11-15	16-20	≥ 20
Number of respondents	62	45	45	32	13	16
Percentage	29.11	21.13	21.13	15.02	6.1	7.51

The participants' teaching qualifications were: a bachelor's degree (155 respondents/72.77%), a master's degree (46 respondents/21.6%), a graduate diploma (10 respondents/4.69%), and a diploma (2 respondents/0.94%).

The majority of the participants were teaching in government-funded primary schools (181 respondents/84.98%) and the remainder (32 respondents/15.02%) in private schools.

3.2 Data collection

Five hundred questionnaires were sent to Grade 2 EFL teachers working at primary schools in Bangkok, Thailand in early 2014; 213 were completed and returned. The questionnaire was developed to explore factors influencing teachers' decisions to adopt or reject the EFL tablet app for use in the classroom and their views about its potential to support children's EFL learning. The questionnaire was written in Thai (rather than English) with the aim of eliciting both more responses to the survey, and more detailed responses. The questionnaire was divided into five main sections (See Table 3). However, some respondents did not complete all the sections.

Table 3: The five sections of the questionnaire for Grade 2 teachers

Section	Topic		Types of questions
1.	Demographic information		-Yes/No - Multiple choice
2.	OTPC project information		Yes/No
3.	Part I: Views about the use of the OTPC app and children's learning of English Part II: Views about EFL		-Yes/No/Undecided
4.	Views about the use of the app and children's learning of English		Open-ended
5.	Views about the Grade 2 OTPC tablet application	Part I: Ranking the 8 sections in the app	Ranking order
		Part II: Attitudes towards the app	Open-ended
		Part III: Interview agreement	Yes/No

3.3 Data analysis

The questionnaire data analysed for this article comprise responses to three main types of questions: yes-no, multiple choice and open-ended questions. Yes/no and multiple choice answers were designed to encourage teachers to consider some factors identified by previous research as playing a role in teachers' decisions to integrate technology in the classroom such as demographic variables (i.e. gender, age, years of teaching, education, type of school and training) and teachers' beliefs regarding the use of a given technology. This study also explores some factors which have not been investigated in previous studies such as teachers' confidence in their English reading, writing, speaking and listening skills. Open-ended questions, on the other hand, were designed to encourage teachers to share information about additional factors and to provide more detail.

A chi-square test of independence was used to reveal the relationships (if any) between variables from the yes-no and multiple choice questions, with the alpha level of significance (the p value) set at 0.05. It was expected that no more than 20% of cells would have a count of less than 5 and none a count of less than 1. Cross-tabulation was also used to analyse whether and how any two variables relate.

Responses to the open-ended questions were subject to content analysis. Content analysis can be defined as "a research technique for making replicable and valid inferences from texts (or other meaningful matters) to the context of their use" (Krippendorff, 2013, p. 24). Content analysis involves counting textual elements (concepts) and reporting "the frequency with which a concept appears in texts" (Berg, 2007, p. 243) and relies on the coding and categorising of data (Stemler, 2001). Firstly, through our preliminary examination of the data, we looked for repeated textual elements in the open-ended responses in order to identify themes. A theme can be "a simple sentence, a string of words with a subject and a predicate" (Berg, 2007, p. 244) as well as, particularly in responses to survey questions, a sentence fragment (e.g. a single word or phrase). After the development of theme categories, data were coded accordingly. For each question, we counted the number of people who identified each theme.

As a reliability measure, an inter-coder reliability test was conducted on the open-ended questions. A second coder coded a random sample of 42 questionnaires or around 20% of data (each of which included various open-ended questions) according to a coding scheme which featured the categories established through inductive category development with themes as the coding units. The test, which used Cohen's Kappa inter-coder reliability method, revealed a coefficient of 0.941 ($p < .001$), showing the coding to be highly reliable (See table 4).

Table 4: The Cohen's Kappa Inter-coder Reliability Coefficient

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Measure of Agreement	Kappa	.941	.026	20.518	.000
N of Valid Cases		107			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

4. Findings

4.1 What factors influenced teachers' decisions to use the Grade 2 EFL tablet app in the classroom?

4.1.1) Demographic variables: Gender, age, years of teaching, education, type of school and training

A chi-square test revealed that age and training related significantly to the teachers' decision to use the Grade 2 app in the EFL classroom, (1) $\chi^2(7, N = 213) = 14.69, p = .04$ and (2) $\chi^2(1, N = 213) = 12.641, p < .001$ respectively. The cross-tabulation table demonstrated that the younger teachers were more likely to use the tablet app than those aged 40 and over, and that, regardless of age, those who attended the tablet training workshops were more likely to use the app in their classrooms than those who did not.

However, no significant relationship was found between the decision to use the tablet app and the other demographic variables. Gender, years of teaching, education and type of school did not significantly relate to the teachers' decision to use the Grade 2 app in their EFL classrooms, (1) $\chi^2(1, N = 213) = 1.628, p = .202$, (2) $\chi^2(5, N = 213) = 7.703, p = .173$, (3) $\chi^2(3, N = 213) = 5.78, p = .123$ and (4) $\chi^2(1, N = 213) = 0.007, p = .931$ respectively.

4.1.2) Confidence in English skills: Speaking, writing, listening, and reading

Teachers' confidence in English speaking skills had a significant relationship with their decision to use the app in EFL classrooms ($\chi^2(2, N = 170) = 6.252, p = .044$): those confident in their English speaking skills were more likely to use the app than those who were not. Confidence in English writing and English listening, on the other hand, did not relate significantly to this decision. For writing, the relation was $\chi^2(2, N = 170) = 1.559, p = .459$, and for listening $\chi^2(2, N = 170) = 4.138, p = .126$. A significant relationship between the decision to use the app and Grade 2 EFL teachers' confidence in their English reading skills could not be ascertained either, as the chi-square test $\chi^2(2, N = 170) = 9.568, p = .008$) produced 2 cells (33.3%) with a count of less than 5 (exceeding 20%).

4.1.3) Beliefs regarding the use of the tablet app

The EFL teachers' decision to use the app in their classrooms had a significant relationship with the belief that the app responds to the curriculum, $\chi^2(2, N = 170) = 12.366, p = .002$, and the belief that the app supports their teaching, $\chi^2(2, N = 170) =$

14.641, $p < .001$. Cross-tabulation revealed that teachers who agreed that the app responds to the curriculum and/or supports their teaching were more likely to integrate the app into their classroom practice than those who did not.

Teachers' views on whether the app motivates students' engagement in learning activities and supports the development of their EFL speaking, writing or reading skills did not significantly relate to the teachers' decision to use the Grade 2 EFL app: (1) $\chi^2(2, N = 170) = 4.331, p = .115$, (2) $\chi^2(2, N = 170) = 4.067, p = .131$, (3) $\chi^2(2, N = 170) = 1.003, p = .606$, and (4) $\chi^2(2, N = 170) = 2.073, p = .355$ respectively. The decision to use the app did not significantly relate to teachers' beliefs that students enjoy the app and that the app supports their EFL listening skills either: ($\chi^2(2, N = 170) = 17.389, p < .001$ and $\chi^2(2, N = 170) = 8.421, p = .002$) for 33.3% of the cells have expected count less than 5 (exceeding 20%).

4.2 What reasons prevented teachers from using the Grade 2 tablet app in EFL classrooms?

Responses to the questionnaire revealed several problems identified by teachers as barriers to the successful integration of the app in the classroom. One hundred thirty-eight teachers answered this question (some teachers pointing out more than one aspect). Figure 1 shows the frequency of each theme reported by the teachers.

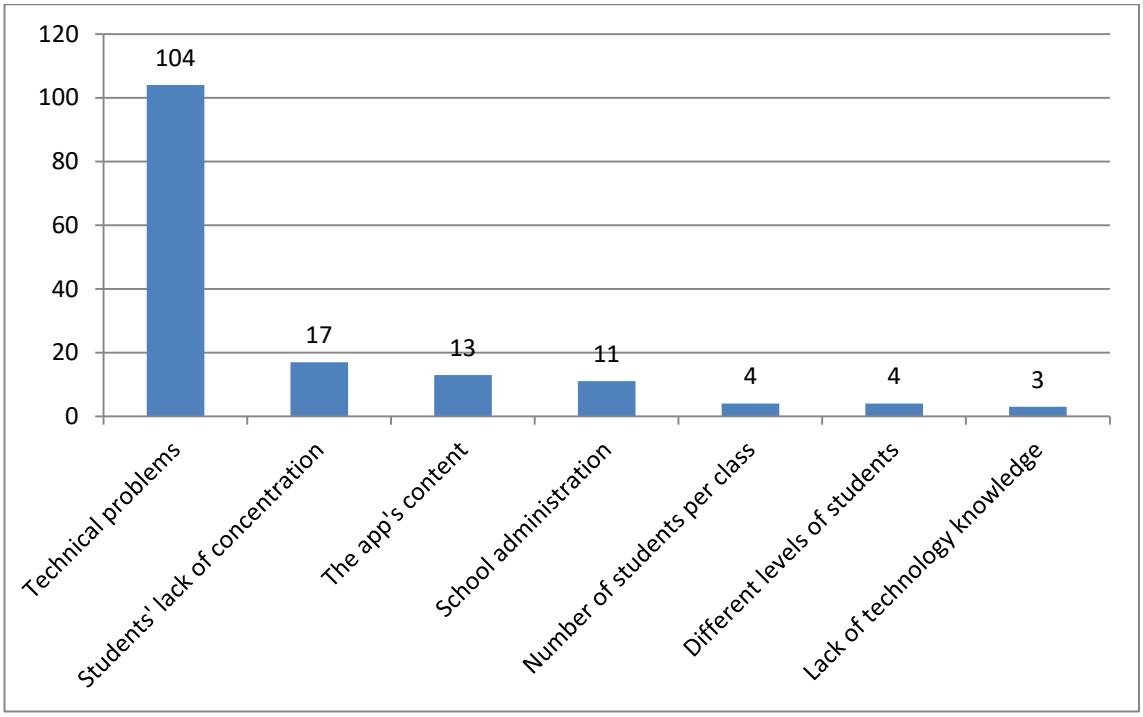

Figure 1: Reasons preventing teachers from using the tablet app in EFL classrooms

The most prominent issue reported by the teachers (75.36%/104 respondents) was the tablet's poor quality, rather than the app itself. The problems cited included: programming errors and slow downloading; short battery life; problems with the headphones and sound system; overheating; and difficulties in connecting to the internet.

Students' lack of concentration emerged as the second most significant problem identified by teachers (12.32%/17 respondents). Teachers explained that this prevented students from successfully following instructions on how to use the app for learning. It also required teachers to supervise students closely so that they stay focused on the relevant lesson or section, rather than switching to the games section, for example.

The third type of problem teachers reported related to the app's content itself (9.42%/13 respondents), with six stating that it does not reflect the curriculum, three explaining that its lack of focus on writing skills meant they would not use the app, and two teachers criticising the lack of a test for speaking skills in the app. One teacher viewed the app's contents as too advanced and another said that it introduces too little vocabulary.

Teachers also cited resourcing and administrative constraints (7.97%/11 respondents). Five stated that insufficient teaching time prevented them from using the app in the classrooms; three did not have direct and easy access to the tablets as they were kept at the school's resource centre; two reported having no projector, which they believed was needed for successfully integrating the app in their teaching; and one stated that the school's IT staff did not install the Grade 2 EFL app on the tablets.

Some teachers reported class management issues: four respondents (2.9%) reported difficulties related to the different pace at which students would complete activities in the app and four reported difficulties with providing effective supervision and instruction for activities involving the app in classes with a large number of students (up to 40 per class).

Finally, three of the respondents (2.17%) viewed their lack of knowledge and skills in using tablet technology as the main hindrance to integrating the app in an EFL classroom.

4.3 What were teachers' views about the potential of the Grade 2 app to support children's EFL learning?

One hundred thirty-eight teachers answered the open-ended question in the questionnaire, "Do you believe the OTPC tablet app for Grade 2 English has the potential to support students' EFL learning? If so, in what ways?" and some of them pointed out more than one aspect. The frequency of each theme (i.e. how many teachers identified the theme) is as shown in Figure 2.

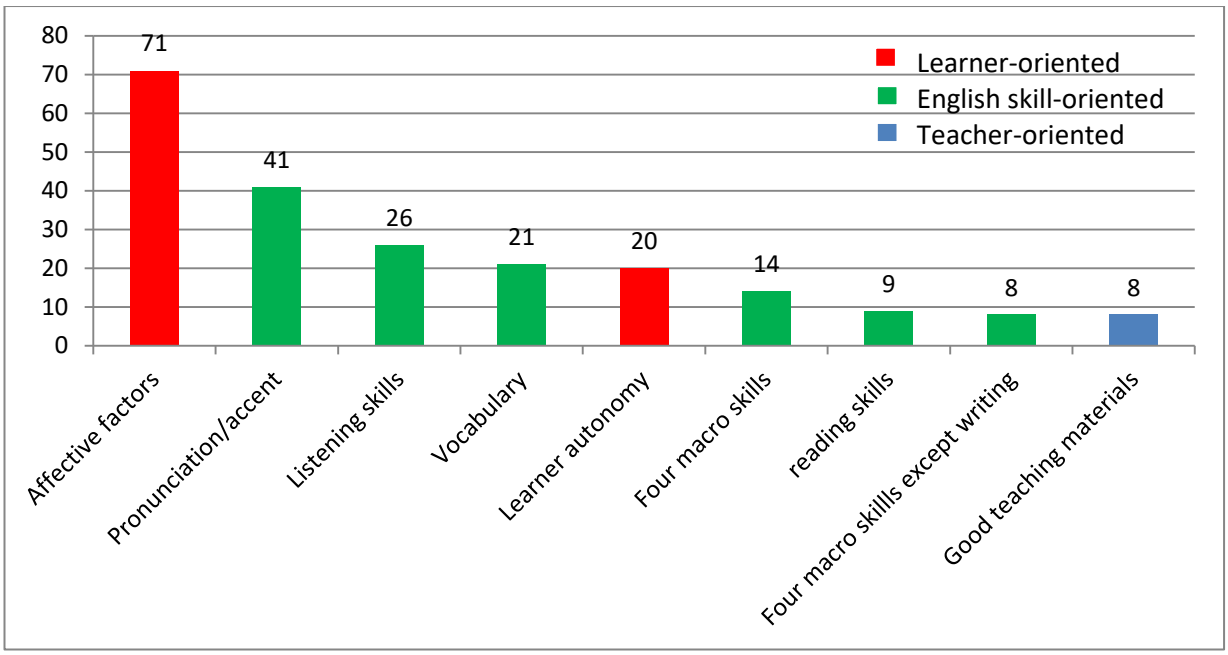

Figure 2: Potentials of the tablet app to support children's EFL learning reported by Grade 2 teachers

The themes can be categorised into three broad groups: learner-oriented, EFL skill-oriented and teacher-oriented. Learner-oriented themes include affective factors and learner autonomy. A small majority of teachers (51.45%/71 respondents) cited affective factors or the potential of the tablet app to motivate children to learn EFL or to develop good attitudes towards EFL learning. Examples of answers that fall into this category are "Children enjoy the app", "Students do not feel bored" and "Children develop a good attitude towards learning". Some teachers specifically stated that (moving) pictures embedded in the app help capture children's attention and make learning interesting. The other learner-oriented theme was learner autonomy. Twenty teachers (14.49%) saw the app as encouraging learner autonomy. They stated, for example, that "Students can learn by themselves", "Students can revise the parts they want themselves" and "Students can choose what they want to practice".

The second group consists of EFL skill-oriented themes. The most prominent theme was the app's potential to help children learn English pronunciation or to emulate a native speaker's accent (29.71%/41 teachers), and is exemplified by answers such as "Students can learn the right accent from a native speaker" and "Students can learn how to pronounce words correctly". Such statements were categorised as a separate theme, despite the obvious connections between pronunciation and accent with the macro skills of speaking and listening. This categorisation highlights the value placed by teachers in this study on pronunciation and accent, and on the app's potential to support this particular aspect of language learning, rather than, for example, on children's English communication skills more generally.

Other EFL skills-oriented themes included listening skills, vocabulary, all four macro skills (speaking, listening, reading and writing), reading skills, and the macro skills except writing (i.e. speaking, listening and reading). The potential of the app to help develop children's listening skills was mentioned by 26 teachers (18.84%). Answers belonging to this theme include "Students learn listening skills from the app" and "Listening skills", and do not refer to specific types of listening skills. Twenty-one teachers (15.22%) also noted the app's potential to support children's vocabulary learning, stating, for example, that "Games and songs in the app make children learn vocabulary better than memorisation" and "Students learn vocabulary and know how to spell the word". Fourteen teachers said that the app could enhance all four macro skills (10.14%), in responses such as "The app helps support children's learning in terms of all four macro skills" and "Students can learn English listening, speaking, reading and writing". Nine teachers stated that the app helps develop reading skills (6.52%), while eight viewed it as having the potential to support all macro skills except writing (5.8%) as evident in responses such as "The app supports listening, speaking and reading" and "Children learn the four skills except for writing".

One theme was categorised as teacher-oriented: eight teachers (5.8%) shared the view that the app is a source of good teaching materials and supports their teaching preparation.

5. Discussion and implications

Motivated by the significant investment in computer-assisted language learning (CALL) worldwide and the potential of computer technologies to support children's EFL learning, this study was designed to explore factors contributing to EFL teachers' uptake of tablet computers distributed through the One Tablet Per Child (OTPC) project in Thai primary schools, including their views about the Grade 2 EFL app. The study's findings highlight the important role teachers play in implementing educational policy at classroom level, and thereby shaping the success or failure of national educational initiatives such as the Thai OTPC project. The teachers in this study had the freedom to decide whether and how to integrate the government-distributed tablet and specific apps provided with it into their teaching. Considering the factors that contribute to teachers' uptake of new technologies in the policy making process could therefore help ensure the success of such initiatives. In this study, we identified several factors that influenced teachers' decisions to adopt the tablet app for use in their classrooms.

The first one is age. This study found that younger teachers tended to integrate technology into their teaching practice more readily than older teachers. Previous research has been ambivalent about whether age influences language teachers' use of computer technologies in the classroom (cf. Blankenship, 1998). This ambivalence can be partly attributed to differences in the settings explored in these studies. Blankenship's study (1998) revealed that age contributes to preschool and Grade 2 teachers' decisions to use computer technologies but does not affect it for other grades. Another explanation for this lack of agreement may lie in differences in the types of computer technology and the content embedded in it. Our study focused on tablets within a particular national project with a specific educational app, rather than on computers in general, and older teachers may not be enthusiastic about embracing tablets as they may feel insufficiently trained in the use of this relatively new technology (see, for example, Roberts, Hutchinson, & Little, 2003).

This interpretation is reinforced by the second factor identified as contributing to teachers' decisions to adopt or reject tablets in the classroom: training. In line with previous research (e.g. Chen, 2008), the present study showed that training can encourage teachers to use a given technology in their classrooms. Teachers in this study who attended the OTPC tablet workshops, which focused on technical aspects of using the tablet and the apps, were more likely to use the tablet in their classrooms.

This finding points to the importance of investing in teacher training, in addition to developing technologies and learning materials, in projects such as OTPC.

The third factor is teachers' beliefs about the technology's potential to support teaching and learning. Teachers who agreed that the app responds to the curriculum and/or that the app supports their teaching were more likely to use the app in classrooms. This finding is in accordance with previous studies showing that the uptake and use of computer technologies is linked to teachers' views about the usefulness of a given technology. At the same time, while such studies focus on computer technology in general (e.g. Li, 2014; Mai & Hong, 2014), the findings reported here highlight the importance of considering the relationship between specific learning materials (e.g. the Grade 2 English app) accessed through specific technologies and the curriculum they are designed to support.

The last factor is teachers' confidence in their English speaking skills. No previous research we have encountered has explored the relationship between language teachers' confidence in their personal skills in one or more of the four macro skills – listening, reading, writing and speaking – and their uptake of computer-assisted language learning (CALL). This study found that teachers who were confident in their English speaking skills reported that they used the tablet app in the classroom. The teachers' answers to the open-ended questions in the questionnaire may offer a partial explanation here. The app's sound affordances were viewed as helping students' English pronunciation and listening skills. Possibly, teachers confident in their own English speaking skills felt able to make the most use of the sound affordances of the app (e.g. English-language input with native-speaker accent or pronunciation) and also to compensate for its limitations through their own English language skills (e.g. engaging children in English conversation).

In addition to these factors, this study identified the quality of computer technologies as a significant factor affecting their integration in the EFL classroom. While previous research has identified the lack of resources as a main reason preventing teachers from adopting the use of computers for teaching (e.g. Dashtestani, 2012), this study found that the *quality* of computer technology should be taken into consideration as well. Most teachers in this study voiced concerns over the OTPC tablet's quality. Despite the fact that each of their students was equipped with a tablet loaded with the Grade 2 EFL learning application, most teachers

reported that the tablet's quality prevented them from realising the app's full potential to enhance EFL teaching and learning.

The poor quality of the tablets has implications beyond the EFL classroom as well. If new technologies are not integrated into every classroom, the digital divide between students from privileged and disadvantaged backgrounds may widen. Students from disadvantaged backgrounds are more likely to have access only to government-distributed technologies such as the OTPC tablet. If the tablet's quality prevents their teachers from integrating it into the classroom and their school – as is often the case – requires that the OTPC tablets are kept and used only at school, such students may not have opportunities to develop skills in using new digital technologies essential for academic and professional growth in the 21st century. The poor quality of the tablet can thus jeopardise the ability of the OTPC project to meet its central aim of allowing all primary school students "to be *equally* nurtured with quality education by using Tablet PCs as an effective tool in their learning and accessing information of their interests" (Sririsaengtaksin, Praneetpolgrang & Tubtimhin, 2013, p. 150, emphasis added), or to contribute to increasing both quality and equity in education, the goal at the heart of Thailand's Eleventh National Economic and Social Development Plan (2012-2016) (Office of the National Economic and Social Development Board, 2012).

The findings of this study suggest that additional funding should be allocated to ensure the quality of both the computer technologies, and the teaching and learning materials designed for use with them, as access alone cannot guarantee successful implementation of the technology in the classroom. In order to fund improvements in the quality of the technology, there may need to be a reduction in the number of tablets which are distributed. Rather than one tablet per child, future projects could be designed to provide shared access to tablets or other technologies of higher quality and to maintain that quality over time (e.g. through leasing, rather than purchase, of tablets and through regular app updates).

Although the survey data cannot reveal teachers' actual classroom practices, the analysis of teachers' views about the app's potential to support children's EFL learning can shed light on their approaches to foreign language teaching. Over the past five decades, language teaching has shifted away from behaviourist models that focus on "learning through repetitive practice" and encompass the grammar-translation and audio-lingual approaches to language teaching (Davies, Otto &

Rüschoff, 2013, p. 21), and towards sociocognitive models that view language as a social and cognitive phenomenon and have a more holistic focus on developing learners' communicative competence and ability to apply it in authentic contexts (Warschauer & Healey, 1998). Yet, the survey responses suggest that the teachers in this study still subscribe to behaviourist views of language teaching and learning.

Many teachers in this study emphasised the app's value for modeling native-speaker accents and correct pronunciation; while in the yes/no/undecided section of the questionnaire most teachers (61.76%) agreed that the app could help improve children's English speaking skills, their responses to the open-ended questions related this potential very closely to opportunities for students to listen to and repeat after words and phrases pronounced by native English speakers in the app, rather than to listening as part of broader conversation skills, for example. Many of the survey's respondents also stated that children learned vocabulary from the app, and some described vocabulary as the most important aspect of children's EFL learning. These views are consistent with the focus of the audio-lingual and grammar-translation approaches to language teaching, which encourage, respectively, listening to and imitating correct pronunciation, and learning words in isolation (Larsen-Freeman & Anderson, 2013).

The discrepancy between currently dominant approaches to language teaching and the views of language teaching and learning shared by teachers in this study may be indicative of a gap in the current professional development available for EFL teachers in Thailand. In addition to the technical skills required to use computer technologies in the classroom, professional development should also strive to improve teachers' ability to integrate computer technologies into holistic approaches to language teaching – ones that promote the learner's overall capacity to participate in authentic everyday and educational activities in English, such as conversation, reading, effective written communication and so on, rather than focusing on pronunciation or other narrowly defined skills in isolation.

Importantly, teachers' views of language teaching and learning may affect not only whether but also how they use a given technology in the EFL classroom. This is why to reveal and understand the factors that influence whether and how a new technology is integrated in the classroom, research must explore not only teachers' views but also their actual classroom practices (see further Vungthong, Djonov and Torr, under review).

In addition, most teachers in this study viewed computer technologies as a tool for motivating young students' learning and improving their attention span rather than developing specific language skills. Considering sound and visual affordances embedded in the app as well as enjoyable learning materials such as interactive games, many teachers stated that their students (around seven years old) are motivated to learn language through the app as they prefer to play rather than study. Although the concept of play-based learning, which is central to success in early childhood education (Wood & Attfield, 2005), was implied in teachers' responses, the teachers did not specify how play could support children's EFL learning. Developing a stronger understanding of children as foreign language learners is a prerequisite for designing effective play-based approaches to computer-assisted foreign language learning for children.

6. Conclusion

The findings of this study have significant implications for educational policy-makers, designers of computer technologies and associated teaching materials for language learning, and stakeholders involved in the implementation of such resources in EFL classrooms in primary schools. These findings shed light on the crucial role teachers play in educational initiatives. Teachers often are the people who decide whether and how to implement educational policies into actual classroom practice, which is why considering the factors that affect teachers' uptake of new technologies early in the policy making process can help ensure success of educational initiatives involving such technologies. This study suggests that many interrelated factors can affect whether and how EFL teachers adopt a computer technology into their classrooms – age, training, teachers' beliefs about the technology's potential to support teaching and learning, teachers' confidence in their English speaking skills, and the quality of the technology. Understanding these factors is key to effectively resourcing CALL projects and providing appropriate professional development for the teachers and designers of learning materials involved in these projects.

To build a stronger understanding of the influence of these and other factors on the ways new technologies and learning materials accessible through them are integrated in teaching children EFL, however, this questionnaire-based study needs to be extended by studies that combine different methods of data collection such as interviews and observations of actual classroom practice. Future research can also

provide deeper insights into teachers' broader views on computer-assisted language learning and on children as learners in general and foreign language learners in particular, and how these views relate to the implementation of computer technologies in the classroom and to student outcomes. Such insights can inform the development of guidelines for the effective design and use of computer technologies for supporting children's EFL learning.

References

Al-Awidi, H. M., & Ismail S. A. (2014). Teachers' perceptions of the use of computer assisted language learning to develop children's reading skills in English as a second language in the United Arab Emirates. *Early Childhood Education Journal*, *42*, 29–37. doi:10.1007/s10643-012-0552-7

Berg, B. L. (2007). *Qualitative research methods for the social sciences* (6th ed.). Boston, MA: Allyn and Bacon.

Blankenship, S. E. (1998). *Factors related to computer use by teachers in classroom* (Doctoral dissertation, Virginia Polytechnic Institute and State University). Retrieved from http://scholar.lib.vt.edu/theses/public/etd-32398-14166/materials/etd.pdf

Bullock, D. (2004). Moving from theory to practice: An examination of the factors that preservice teachers encounter as they attempt to gain experience teaching with technology during field placement experiences. *Journal of Technology and Teacher Education*, *12*(2), 211–237. Retrieved from http://karsenti.ca/pdf/ressources/theoryToPractice.pdf

Chen, X. (2013). Tablets for informal language learning: Student usage and attitudes. *Language Learning & Technology*, *17*(1), 20-36. Retrieved from http://llt.msu.edu/issues/february2013/chenxb.pdf

Chen, Y. L. (2008). Mixed-method study of EFL teachers' internet use in language instruction. *Teaching and Teacher Education*, *24*, 1015–1028. doi:10.1016/j.tate.2007.07.002

Dashtestani, R. (2012). Barriers to the implementation of CALL in EFL courses: Iranian EFL teachers' attitudes and perspectives. *Jaltcalljournal*, *8*(2), 55–70. Retrieved from http://journal.jaltcall.org/articles/8_2_Dashtestani.pdf

Davies, G., Otto, S. E. K., & Rüschoff, B. (2013). Historical perspectives on CALL. In M. Thomas, H. Reinders & M. Warschauer (Eds.), *Contemporary Computer-Assisted Language Learning* (pp. 19-38). London/ New York: Bloomsbury.

Evans, M. (Ed.). (2009). *Foreign language learning with digital technology*. London: Continuum.

Foley, J. A. (2005). English in…Thailand. *RELC Journal*, *36*(2), 223–234. doi:10.1177/0033688205055578

Harumi, I. (2002). A new framework of culture teaching for teaching English as a global language. *RELC Journal*, *33*(2), 36-57. doi: 10.1177/003368820203300202

Krippendorff, K. (2013). *Content analysis: An introduction to its methodology* (3rd ed.). London: Sage Publications.

Lan, Y. J., Sung, Y. T., & Chang, K. E. (2007). A mobile-device-supported peer-assisted learning system for collaborative early EFL reading. *Language Learning & Technology*, *11*(3), 130-151. Retrieved from http://llt.msu.edu/vol11num3/lansungchang/

Larsen-Freeman, D., & Anderson, M. (2013). *Techniques and principles in language teaching* (3rd ed.). New York: Oxford university press.

Li, G., & Ni, Z. (2011). Primary EFL teachers' technology use in China: Patterns and perceptions. *RELC Journal*, *42*(1) 69–85. doi:10.1177/0033688210390783

Li, L. (2014). Understanding language teachers' practice with educational technology: A case from China. *System*, *46*, 105-119. doi:10.1016/j.system.2014.07.016

Mai, L. X, & Hong, V. K. (2014). Factors affecting secondary-school English teachers' adoption of technologies in southwest Vietnam. *Language Education in Asia*, *5*(2), 198-215. Retrieved from http://dx.doi.org/10.5746/LEiA/14/V5/I2/A03/Le_Vo

Matthews, J., & Seow, P. (2007). Electronic paint: Understanding children's representation through their interactions with digital paint. *Journal of Art Design*, *26*(3), 251–263. doi:10.1111/j.1476-8070.2007.00536.x

McLester, S. (2012). One tablet per child? *District Administration*. Retrieved from http://www.districtadministration.com/article/one-tablet-child-0

Ministry of Education, Thailand. (2013). The report on the implementation of government policy. Retrieved from http://www.moe.go.th/moe/th/home/

Noom-ura, S. (2013). English-teaching problems in Thailand and Thai teachers' professional development needs. *English Language Teaching*, *6*(11), 139-147. doi:10.5539/elt.v6n11p139

Office of the National Economic and Social Development Board, Thailand. (2012). The Eleventh National Economic and Social Development Plan (2012-2016). Retrieved from http://eng.nesdb.go.th/Portals/0/news/plan/eng/THE%20ELEVENTH%20NATIONAL%20ECONOMIC%20AND%20SOCIAL%20DEVELOPMENT%20PLAN%282012-2016%29.pdf

OLPC. (2012). Learning to read with One Tablet Per Child. Retrieved from http://blog.laptop.org/tag/otpc/#.UZEqKbUU-z4

Park, C. N., & Son, J. B. (2009). Implementing computer-assisted language learning in the EFL classroom: Teachers' perceptions and perspectives. *International Journal of Pedagogies and Learning*, *5*(2), 80-101. doi:10.5172/ijpl.5.2.80

Payton, M. (2008). Personal productivity for classroom teachers. In M. van Mantgem (Ed.), *Tablet PCs in K–12 education* (pp. 45-85). Eugene, OR: International Society for Technology in Education.

Roberts, S. K., Hutchinson, C. J., & Little, M. (2003). Making the invisible visible and back again: Highlighting technology in an integrated curriculum for preservice teachers. *Journal of Computing in Teacher Education*, *19*, 73-81. doi:10.1080/10402454.2003.10784466

Sibley, B. A., & McKethan, R. (2012). Add up your physical education program. *Journal of Physical Education, Recreation & Dance*, *83*(8), 9-55. doi:10.1080/07303084.2012.10598821

Sririsaengtaksin, J., Praneetpolgrang P., & Tubtimhin, J. (2013). Thailand one tablet pc per first grade student, an efficient tool to leverage education equality. In T. Obi, J. P. Auffret & N. Iwasaki (Eds.), *Aging society and ICT* (pp. 148-157). Amsterdam: IOS Press BV.

Stemler, S. (2001). An overview of content analysis. *Practical Assessment, Research & Evaluation*, *7*(17). Retrieved from http://PAREonline.net/getvn.asp?v=7&n=17

Warschauer, M., & Healey, D. (1998). Computers and language learning: An overview. *Language Teaching*, *31*, 57–71. doi:10.1017/S0261444800012970

Wood, E, & Attfield, J. (2005). *Play, learning and the early childhood curriculum* (2 ed.). London: SAGE.

Appendices

(1) A chi-Square test for the relationships between the teachers' decision to use the Grade 2 app in EFL classrooms and their age

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.690[a]	7	.040
Likelihood Ratio	15.758	7	.027
Linear-by-Linear Association	.885	1	.347
N of Valid Cases	213		

a. 2 cells (12.5%) have expected count less than 5. The minimum expected count is .99.

(2) A chi-Square test for the relationships between the teachers' decision to use the Grade 2 app in EFL classrooms and their attending the OTPC training workshop

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	12.641[a]	1	.000		
Continuity Correction[b]	11.655	1	.001		
Likelihood Ratio	12.789	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	12.582	1	.000		
N of Valid Cases	213				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 39.44.

b. Computed only for a 2x2 table

(3) A chi-Square test for the relationships between the teachers' decision to use the Grade 2 app in EFL classrooms and their confidence in English speaking skills

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.252[a]	2	.044
Likelihood Ratio	6.147	2	.046
Linear-by-Linear Association	3.936	1	.047
N of Valid Cases	170		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.74.

(4) A chi-Square test for the relationships between the teachers' decision to use the Grade 2 app in EFL classrooms and their belief that the app responds to the curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.366[a]	2	.002
Likelihood Ratio	12.392	2	.002
Linear-by-Linear Association	12.243	1	.000
N of Valid Cases	170		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.03.

(5) A chi-Square test for the relationships between the teachers' decision to use the Grade 2 app in EFL classrooms and their belief that the app supports their teaching

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.641[a]	2	.001
Likelihood Ratio	14.444	2	.001
Linear-by-Linear Association	14.554	1	.000
N of Valid Cases	170		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 4.21.

6.3 Postscript

This chapter presented the findings of the analysis of teachers' responses to a questionnaire about their use of and their views about the OTPC tablet app and children's EFL learning. It has explored factors that influence teachers' decisions whether and how to use the EFL tablet app in the classroom and the views of teachers about the use of the OTPC tablet app for students' EFL learning. Some findings of this chapter apply to the use of new technologies for education in general and some to EFL teaching in particular.

The central finding of this chapter, which is relevant to educational technology initiatives in general, is that teachers play an important role in deciding whether and how to use the distributed educational technology in their classrooms. The analysis has identified specific factors that influence this decision such as the teachers' age and whether they had attended OTPC training workshops. I argued that educational policy makers must take these factors into account when implementing expensive, large-scaled educational technology initiatives such as the OTPC project.

Another important finding of this chapter, which is specific to EFL teaching, is that, through the analysis of teachers' responses to open-ended questions of the survey, teachers tended to view the OTPC EFL app as having the potential to support children in developing discrete language skills and did not consider whether it has the potential to support overall communicative competence in EFL. This finding contributes to a better understanding of the ways in which teachers may choose to implement educational technologies in the EFL classroom which can help inform policy making process of educational technology initiatives.

The following two chapters offer deeper insights into whether and how the views teachers shared in the survey may reflect (1) their perspectives on children as foreign language learners and as users learning EFL through the OTPC tablet app (Chapter 7) and (2) the ways EFL teachers implement new technologies in the classroom (Chapter 8).

Chapter 7

Teachers' views about children using new technologies to learn EFL

7.1 Introduction

This chapter presents findings of the analysis of teachers' views about children as foreign language learners and as technology users learning EFL through the OTPC tablet app. In Chapter 6, I explored factors influencing teachers' decisions about whether to use the OTPC tablet app in their EFL classroom and analysed their views about its use to develop children's EFL learning through the analysis of the teacher survey. As discussed in Chapter 4, developing a sophisticated understanding of teachers' perspectives is not an easy task. Research on teachers' views about the use of a new technology for EFL teaching has predominantly relied on the use of Likert-scale questionnaire survey and thematic content analysis of interviews or open-ended responses in a questionnaire (Mollaei & Riasati, 2013; Celik, 2013; Albilirini, 2006; Lau & Sim, 2008; Park & Son, 2009; Bordbar, 2010; Kim, 2011). There is the need to go beyond these methods as Li and Walsh (2011b) state, "[u]nderstanding language teachers' beliefs cannot be achieved by simple recourse to what they say or do at face value" (p. 41).

In this chapter, I investigate teachers' views about children using the OTPC tablet app to learn EFL in more detail through a systemic functional linguistic (SFL) critical discourse analysis (CDA) of data from interviews with seven of the teachers who participated in the survey. As discussed in Chapter 3, SFL-based CDA is a useful method of exploring speakers' or writers' tacit beliefs, through an analysis of the language choices they make in communication. In particular, this chapter uses the system of TRANSITIVITY to analyse how teachers in their interviews construct children as foreign language learners and as technology users learning EFL through the OTPC tablet app. The analysis can shed light on implications for research, pedagogy and educational policy making related to educational technologies and children's foreign language learning.

For this paper, I was responsible for designing the interview questions, conducting interviews, transcribing and translating interview transcripts, analysing data using the SFL system of TRANSITIVITY, writing drafts of the paper and preparing it for submission to a research journal. My supervisors provided guidance in all of these stages and contributed to revising the paper. This paper has been submitted to the journal and under review. It has been presented in this chapter in the format in which it was submitted to the journal.

7.2 Teachers' views about children as foreign language learners and as users learning EFL through the OTPC tablet app

Children learning English as a foreign language (EFL) using a tablet technology: A critical discourse analysis of interviews with Thai primary school teachers

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Abstract

New technologies, especially tablet computers, are increasingly relied on to support children's foreign language learning in educational settings. This article presents a critical discourse analysis (CDA) of the ways Thai primary school teachers use language to construct ideas about children learning English as a foreign language (EFL) through a tablet technology. The data consist of those parts of interviews with seven Grade 2 EFL teachers that refer to children and their learning explicitly or implicitly, comprising a total of 496 clauses. These were analysed using the systemic functional linguistic system of Transitivity. The analysis revealed teachers construed children predominantly as "doers" physically interacting with the tablet rather than as performing cognitive acts typically associated with learning. The findings also shed light on implications for pedagogy, educational policy and the design of educational technologies for children as foreign language learners.

Key words: primary school teachers' views, critical discourse analysis, English as a foreign language, tablet computers

1. Introduction

New technologies are valued for their potential to support children's foreign language learning, specifically by addressing challenges such as limited exposure to opportunities for using the target language in authentic contexts and paucity of teachers proficient in foreign languages (e.g. Chen et al., 2013; Department of Education and Training, Australia, 2016). They have also been found to promote the development of specific skills such as pronunciation and reading (e.g. Liaw, 2014; Shamir & Johnson, 2012) and affect teacher-student relationships (November, 2010; Shuler, 2009), potentially devaluing teachers' subject area knowledge and expertise as educators, as traditional teacher responsibilities are outsourced to new technologies (Vungthong, Djonov & Torr, in press-a).

Tablet computers, in particular, have been embraced for their potential to promote children's learning in a range of curriculum areas, including English as a foreign language (EFL), due to their portability (McLester, 2012), relatively low cost, and child-friendly stylus interface (Matthews & Seow, 2007; Payton, 2008), through which educational multimedia applications (apps) can be accessed (Sibley & McKethan, 2012). The introduction of this technology in education is supported by many large-scale initiatives around the globe such as Thailand's One Tablet Per Child (OTPC) project. Introduced in 2011, the project involved the distribution of tablet PCs to primary school students and the development of tablet applications (apps) that present learning materials for various subjects including mathematics, Thai language, science and English. By 2013, the project had cost more than five billion baht (or around 153 million US dollars) (Ministry of Education, Thailand, 2013), and thus represents a substantial investment in the country's primary school system.

The promise of tablet computers to enhance children's EFL learning and the cost of one-tablet-per-child projects highlight the need to examine factors that could impact on the implementation of this technology in education. One factor that research has demonstrated to have a significant influence over whether and how computer technologies are adopted in EFL classrooms is the attitudes teachers hold towards these technologies and their potential to assist language learning (e.g. Albirini, 2006; Park & Son, 2009; Al-Zaidiyeen, 2010). Yet, little is known about teachers' views on the ways children learn EFL and use new computer technologies

for learning in general and EFL classrooms in particular, despite EFL being a compulsory primary school subject in many countries, including Thailand.

This study takes a step towards addressing this gap in existing knowledge through a critical discourse analysis (CDA) of the ways Thai EFL teachers use language to construct ideas about children as foreign language learners and as users learning EFL through the OTPC tablet app. Knowledge of teachers' views about children as foreign language learners and users of educational technology can help us understand the ways teachers position children as foreign learners in classrooms implementing new technologies and the nature of teacher-student relationships in this context. Such understanding can inform the design and use of technologies and associated foreign language learning materials for children, and the development of effective policies and processes for implementing new technologies in foreign language classrooms.

2. Literature review

2.1 Children and foreign language learning

Research and teaching guidebooks have pointed out a variety of children's characteristics which help them learn foreign languages. Most research stresses the importance of affective factors such as having a positive attitude towards language learning (e.g. Moon, 2006; Phillips, 1993). Others have noted the value of play-based rather than formal teaching and learning for children's success in learning foreign languages, and emphasised the positive contribution of songs and games (Sevik, 2012; Domoney & Harris, 1993; Coyle & Gracia, 2014; Sylvéna1 & Sundqvista, 2012; Lewis & Bedson, 1999; Moon, 2006; Phillips, 1993).

Research has also identified particular aspects of language and language skills that should be given priority in children's second and foreign language learning. Listening has been documented as an important initial focus, rather than writing or reading (e.g. Sevik, 2012; Asher, 2012; Phillips, 1993), reflecting the view that, for children, learning a subsequent language resembles the processes involved in learning their first one. Phillips (1993), for example, stated that language learners at the early stage in both their first and second language understand more than they

can say and recommended activities in which students (around 5 – 12 years old) can participate by listening and responding non-verbally or using short verbal expressions. Other studies noted children's tendency to focus on meaning (rather than forms and accuracy) and interpret foreign language input based on their knowledge of everyday life (Moon, 2006; Cameron, 2001; Phillips, 1993). This understanding informs communicative approaches to language teaching, which stress the importance of meaning and authentic communication rather than accuracy in grammar and spelling (Larsen-Freeman & Anderson, 2013).

Despite the potential of new technologies to support children's learning being commonly acknowledged (Shuler, 2009; Crook, 1998), current understanding of their potential to support children's EFL learning is very limited as research on computer-assisted language learning has concentrated on high school and university contexts (e.g. Yang & Chen, 2007; Hsu, 2013).

2.2 Analysing representations of children learning EFL through a tablet technology through critical discourse analysis (CDA)

In order to explore teachers' ideas about how children learn EFL through a tablet technology, this study adopts the theoretical framework provided by critical discourse analysis (CDA). CDA aims to uncover how the choices people make in communication, the specific linguistic, visual, gestural and other resources they use in discourse, reflect their ideological stance on issues of social significance and may influence their audience (Fairclough, 1989). Language in this perspective is viewed as constructing a particular view of "reality" according to the authors' or the speakers' particular interests in specific contexts and in response to certain social expectations (Fairclough, 2001). In this study, teachers expressed their views through the language choices they made in interviews about how children learn EFL through a tablet device.

A central focus of CDA is the role language and other communication modes play in establishing and maintaining or negotiating and subverting social relations of power (Fairclough, 1989). CDA thus offers a valuable lens through which to examine teachers' views about whether and how new technologies challenge the power that teachers, and adults in general, hold over children.

CDA involves the analysis of texts and communicative interactions (Fairclough, 2003), and Systemic Functional Linguistics (SFL) (Halliday & Matthiessen, 2004; Halliday, 1994) has proven to be an important tool for conducting such analysis. According to SFL, texts, or acts of communication, reflect and shape the social contexts in which they operate by simultaneously construing patterns of experience to represent the world around and inside us (the ideational metafunction), enacting social relations between participants (the interpersonal metafunction) and constructing cohesion and coherence within a text and relating it to its situational and cultural context (the textual metafunction) (Halliday, 1978). To illustrate, Transitivity choices in language allow speakers to represent their ideas about aspects of reality as they make lexical and grammatical choices to construe experiences as configurations of certain types of processes, participants, and circumstances. Teachers may represent children as "doers" doing things such as "pressing the tablet" and "playing games" (assigning them the role of *Actor* in material processes) or as passive target or recipients of the actions of others as *Goal* or *Beneficiary* in material processes performed by teachers as *Actor* (e.g. being "supervised" by teachers), or they may represent children as engaged in thinking and learning by assigning them the role of *Senser* in mental processes or *Behaver* in behavioural processes (e.g. "singing songs"; "listening to the audio in the tablet").

Language choices can shape the immediate learning environment in the classroom. An EFL teacher could open the lesson by asking children to "turn on" the tablet (positioning them as *Actor*), then "watch" a video (as *Behaver*), and finally "retell" what they have seen "in English" (assigning them the role of *Sayer* and construing them as users of the target language). By using language to construct particular perspectives about children learning EFL through new technologies, teachers also have the power to promote certain ideas over others, and over time shape the broader social context of children's foreign language education.

Language can also shape the broader social context of education. A recent CDA study, by Davis, Torr and Degotardi (2015) illustrates the power of language use "in the context of education [to] influence professional identities and social practices" (p. 4). Through a systemic functional linguistic analysis of the *Early Years Learning Framework for Australia*, it exposes the country's first national early childhood curriculum as construing infants and toddlers in terms of "their observable behavior,

rather than as communicators or thinkers" (p. 1). It also draws on an interpretive, thematic analysis of interviews with educators working with children under two years of age, which revealed their difficulties in implementing the framework. Davis et al. (2015) thereby revealed the need for a curriculum that more clearly delineates the pedagogy and learning outcomes and experiences suitable for this particular age group.

3. Methodology

3.1 Participants and setting

This study involves seven teacher participants. They are Thai teachers who teach Grade 2 students (around 7 years old) EFL in a primary school in Bangkok, Thailand. Their demographic details are as indicated in Table 1. Although three teachers in the study did not use the OTPC tablet in their EFL classes, they had seen it and explored the content in it prior to the interviews.

Table 1: Teachers' demographic information

	Gender	Age	Years of teaching	Type of school	Education	Use of the OTPC tablet in class
1	Male	48	13	Public	BA	✓
2	Female	36	1	Public	BA	-
3	Female	42	20	Public	BA	-
4	Female	29	3	Public	BA	-
5	Female	49	25	Public	MA	✓
6	Female	34	3	Public	BA	✓
7	Female	30	1	Public	BA	✓

As this study aims to identify the ways teachers use language to represent children learning EFL through a new technology, comparing the ideas of teachers who fall into different categories (e.g. those who use the technology in their

classrooms versus those who do not; with longer versus shorter teaching experience; younger versus older, etc.) falls outside its scope.

3.2 Data collection

As part of a bigger project that this study belongs to, 500 questionnaires were sent out to Grade 2 EFL teachers in Bangkok, Thailand, and 213 were returned. Seven respondents, from seven different schools, indicated agreement to be interviewed. After obtaining written consent from these seven teachers, one of the researchers conducted and audio-recorded individual interviews with the teachers. Each interview lasted around 30 minutes. The interview was conducted in Thai with the purpose of gaining more detailed information about each teacher's ideas about young students using a tablet for EFL learning. The questions used during these interviews addressed the three main topics indicated in Table 2.

Table 2: Questions for interviewing teacher participants

	Topic	Details
1	Views about the OTPC tablet	Do you like the tablet? Why? Why not? Do children like to use the tablet in classrooms? When students use the tablet, are there any problems? Which section of the tablet app (out of the 8 sections) do you think you would use in classrooms? Why? Is it difficult to integrate the tablet into classroom practices? What are the problems arising from its use? If you could improve the tablet or add a new function to the app, what would you do? Why?
2	Use of the OTPC tablet and young students' EFL learning	Do you think the tablet app content can help children learn English? Why or why not? If the tablet app can help them learn EFL, how can it do that?
3	Teachers' pedagogical beliefs and instructional practices	How do/will you use the tablet in classrooms? Without the tablet, do you think you can use other kinds of material to help children learn English? If yes, what are they? If no, why? Is it better for children to learn with the tablet by themselves or under close supervision?

3.3 Transcription and translation

The interviews were transcribed verbatim and translated into English by one of the authors, as literally as possible. To ensure reliability, the interviews were also translated into English by a NAATI certified translator in Australia. A comparison of the two translations showed that, apart from the researcher's literal translation preserving the Thai word order, both translations conveyed the same ideational meanings.

3.4 Data analysis

As noted above, this study uses critical discourse analysis based on systemic functional linguistics to explore teachers' perspectives on children as foreign language learners and as users learning EFL through the OTPC tablet app. Systemic functional linguistic analysis offers this study three main advantages. First, it provides a systematic and objective method for CDA (e.g. Martin, 2000; Renkema, 2004), thereby overcoming the risk of subjectivity associated with critical discourse studies that rely on text interpretation alone (cf. Breeze, 2011). A related, second strength of such analysis is its capacity to reveal ideologies tacitly promoted through language choices in discourse both at and beyond the level of individual words and expressions. Finally, this approach supports the in-depth exploration of interview data, yielding theory-based results.

Motivated by the aim of exploring teachers' ideas about children using a new technology to learn EFL, only clauses referring to children and their learning (both explicitly and implicitly) were selected from the interview data. A total of 496 clauses were analysed by one of the researchers in terms of the ideational meanings "expressed through the system of Transitivity or process type, with the choice of process implicating associated participant roles and configurations" (Eggins, 2004, p. 206). In order to ensure intercoder reliability, around 35% of the data (180 clauses) were analysed also by a second coder who is an expert in SFL.

In the Thai Transitivity system, as in English (Halliday & Matthiessen, 2004), there are six main process types: material, behavioural, mental, verbal, relational, and existential (Yiemkuntitavorn, 2005; Patpong, 2006). Material processes involve "doing, usually concrete, tangible actions" (Eggins, 2004, p. 215). There are two main differences between clauses with material processes in English and Thai: (1) Thai verbal groups in the material process can be discontinuous or split into two parts with the *Goal* coming between them (Patpong, 2006, p. 135), and (2) the Thai word order in some cases is different from English (Yiemkuntitavorn, 2005, p. 116). These two differences also apply to Thai syntax in general.

Mental processes can be categorised into: perceptive (e.g. see; hear; smell), cognitive (e.g. think; believe; know; understand; forget), desiderative (e.g. want; hope; refuse), and emotive (e.g. like; love; hate) (Halliday & Matthiessen, 2004, p.

257). Like English, the unmarked Present Tense in Thai mental processes is the Simple Present (Yiemkuntitavorn, 2005, p. 143-144).

Behavioural processes concern "physiological and psychological behaviour" and are "partly like the material and partly like the mental" (Halliday & Matthiessen, 2004, p. 301). Following Yiemkuntitavorn's (2005) and Patpong's (2006) systemic functional linguistic accounts of Thai grammar, behavioural and material processes construct the same main domain of experience of doing and happening. Behavioural processes can be near mental (e.g. look; watch; listen; think), near verbal (e.g. talk; argue), near material (e.g. sing; dance; sit) and physiological processes (e.g. cry; smile; sneeze) (Halliday & Matthiessen, 2004, p. 301). The subtle boundaries between behavioural processes and some other process types allow us to build a nuanced picture of the types and degrees of similarities and differences in teachers' views of children as foreign language learners. The typical structure of the behavioural processes in Thai is "*Behaver + Process: behavioural + Phenomenon/ Behaviour/ Circumstance*" (Yiemkuntitavorn, 2005, p. 133).

Relational processes "serve to characterise and identify" (Halliday & Matthiessen, 2004, p. 259) and encompass "various ways in which being can be expressed" (Eggins, 2004, p. 239). They embed two distinct modes of being, attributive and identifying (Halliday & Matthiessen, 2004, p. 259). In Thai, the *Carrier* in the attributive relational clauses is realised by a nominal group and the *Attribute* is realised by a nominal group or an adjectival group; the identifying relational clauses in Thai can also be expressed without a verb explicitly realising the process (Patpong, 20006, p. 145-149).

Verbal processes involve verbal action. The content of the *Sayer*'s words may also be presented as a separate, projected clause. The verbal processes in Thai are typically realised by "พูด" (say) for reported statements and less frequently by the verbs such as "ถาม" (ask) for projected questions and "สั่ง" (order) for projected commands (Patpong, 2006, p. 143).

Finally, existential processes "represent experience by positing that "there was/is something" (Eggins, 2004, p. 238). They involve the use of the word "there" and typically include "the verb be or synonyms such as exist, arise, occur" (p. 238). In

Thai, the existential processes are mainly realised by the verb “มี” (exist or there is) and less frequently by some other verbs such as “เกิด” (occur) and “ปรากฏ” (exist/happen) (Patpong, 2006, p. 148-151).

Circumstances, which can be divided into *Extent*, *Cause*, *Location*, *Matter*, *Manner*, *Role* and *Accompaniment*, can appear with all process types (Eggins, 2004, p. 222-223). In this study, *Beneficiary*, which can be divided into two types (*Recipient* or “the participant to whom something is given”, and *Client* or “the one for whom something is done” (p. 220)), was found in material, relational and verbal processes.

The six process types and key participants each involves are summarised in Table 3, which includes examples from the interview data analysed for this study.

Table 3: Process type and its participant(s) (Halliday & Matthiessen, 2004; Eggins, 2004)

Process type	Participant types	Example
Material processes	*Actor* (the participant doing the action) *Goal* (the participant at whom the process is directed) *Range* (the participant which restates the process itself or expresses the content of the process)	I Actor will turn on Pr: material the songs Goal for the students. Beneficiary: client
Mental processes	*Senser* (human or anthropomorphised non-human who feels, thinks, perceives or desires) *Phenomenon* (what is felt, thought, perceived or desired by the *Senser*)	Children Senser will be able to remember Pr: mental: cognitive vocabulary. Phenomenon
Behavioural processes	*Behaver* (the participant who is behaving) *Behaviour* (a restatement of the process) *Phenomenon* (a participant that is not a restatement of the process)	Children Behaver can listen Pr: behavioural: near mental to the songs. Cir: location
Relational processes	Attributive processes: *Carrier* (the participant) *Attribute* (a quality or classification)	Young children Carrier will not have Pr: relational: attributive responsibility. Attribute
	Identifying processes: *Token* (the participant that stands for what is being defined) *Value* (that which defines)	Vocabulary Token is Pr: relational: identifying the most important. Value
Verbal processes	*Sayer* (the participant who is responsible for the verbal process) *Receiver* (the participant to whom the verbal process is directed) *Verbiage* (a statement of the verbal process)	Children Sayer dare not ask Pr: verbal the teacher. Receiver
Existential processes	*Existent* (the only mandatory participant)	There are Pr: existential exciting activities for children. Existent

4. Findings

The relevant parts of the teachers' interviews, which were selected for an analysis for this study, feature 496 clauses. They were analysed according to the system of Transitivity. The results are shown in Table 4.

Table 4: Results of Transitivity analysis of the teachers' interviews

	Process type		Number of clauses	Total
1	Material	Children as *Actor*	160 (32.26%)	230 (46.37%)
		Children as *Beneficiary*	42 (8.47%)	
		Children as *Goal*	24 (4.84%)	
		Children as/in *Circumstance*	4 (0.81%)	
2	Relational	Children as *Carrier*	42 (8.47%)	88 (17.74%)
		Children as/in *Circumstance*	32 (6.45%)	
		Children as/in *Circumstantial Attribute*	7 (1.41%)	
		Children as/in *Value*	3 (0.6%)	
		Children as *Token*	2 (0.4%)	
		Children as *Beneficiary*	2 (0.4%)	
3	Mental	Children as performing cognitive acts (cognitive)	46 (9.27%)	85 (17.14%)
		Children as having emotions (emotive)	25 (5.04%)	
		Children as having desires (desiderative)	8 (1.61%)	
		Children as being perceptive (perceptive)	6 (1.21%)	
4	Verbal	Children as *Sayer*	30 (6.05%)	45 (9.07%)
		Children as *Receiver*	11 (2.22%)	
		Children as *Beneficiary*	4 (0.8%)	
5	Behavioural	Children as performing near mental acts	23 (4.64%)	38 (7.66%)
		Children as performing near verbal acts	12 (2.42%)	
		Children as performing near material acts	2 (0.4%)	
		Children as having physiological processes	1 (0.2%)	
6	Existential	Children as/in *Circumstance*	6 (1.21%)	10 (2.02%)
		Children as/in *Existent*	4 (0.8%)	
	Total		**496**	**496**

4.1 Material processes

In the interviews, teachers most often construed children as involved in material processes (46.37%), most frequently assigning them the role of *Actor* (32.26%), and less often of *Beneficiary* (8.47%), *Goal* (4.84%) or *Circumstance* (0.81%). When children were represented as *Actor* (32.26%), this involved interacting with the tablet (*Goal*) as a physical object (e.g. "use"; "play"; "hold"; "embrace"; "drop"; "break") or performing lesson-related activities (e.g. reading content in the app; practising speaking; acquiring correct pronunciation/accent). Children featured as *Beneficiary* (8.47%) in material processes which were mostly performed by the teachers as *Actor* (e.g. turning on songs for the children; giving them knowledge; teaching them). When children were construed as *Goal* (4.84%), this was in the context of being controlled and guided by teachers or parents (*Actor*) performing processes such as "supervise", "control", "force", "take care of" and "advise" (e.g. "We must *control* children."). Children were also included, albeit rarely, as part of *Circumstances* (0.81%) of *reason* (e.g. "It drops and breaks *because of children*.") or manner ("The content in the tablet runs *according to children's capacity*.").

4.2 Relational processes

Children also featured in relational processes clauses (17.74%), as *Carrier* (8.47%), *Circumstance* (6.45%), *Circumstantial Attribute* (1.41%), *Value* (0.6%), *Token* (0.4%) or *Beneficiary* (0.4%). As *Carrier* (8.47%), children were assigned various types of *Attribute* such as "happy", "interested", "excited", and "enthusiastic", but also "idle" and "irresponsible". Secondly, children were explicitly mentioned or implied as part of the role of *Circumstance* (6.45%) when teachers represented their professional judgements about what is good or important, easy or difficult, or problematic for children's learning (e.g. "Vocabulary is the most important *for children*."). Children also featured in *Circumstantial Attribute* (1.41%), *Value* (0.6%), *Beneficiary* (0.4%) and *Token* (0.4%). For example, a teacher stated that "It should be Grade 4 upward *because of being young*." (*Circumstantial Attribute*).

4.3 Mental processes

Among the mental processes that included children (17.14%), children were positioned as *Senser* performing cognitive acts (9.27%), having emotions (5.04%) or desires (1.61%), and perceiving things (1.21%). The cognitive mental processes featuring children as *Senser* (9.27%) included "learn", "memorise", "know", "understand" and "remember". A dominant *Phenomenon* in these processes tended to be vocabulary (e.g. "Children must learn *vocabulary* first."). The emotive mental processes representing children's use of the tablet (5.04%) constructed children as foreign language learners who "love", "enjoy" and "like" using the tablet. Of the analysed clauses, 1.61% construed children as having desires (e.g. "Primary school students *want* the songs.") and 1.21% as being perceptive (e.g. "Children *see* the picture/tablet materials.").

4.4 Verbal processes

In verbal process clauses (9.07%), children were constructed as *Sayer* (6.05%), *Receiver* (2.22%) and *Beneficiary* (0.8%). Children were constructed as *Sayer* (6.05%) saying words or pronouncing after the model in the tablet as well as answering their teacher's questions. When in the role of *Receiver* (2.22%), children were represented as being told what to do and asked the questions mainly by their teacher. Children also featured as *Beneficiary* (0.8%) when teachers were represented as "explaining" things for them.

4.5 Behavioural processes

Children were also represented as *Behaver* (7.66%) performing near mental (4.64%), near verbal (2.42%) and near material acts (0.4%) or physiological processes (0.2%). Near-mental acts with children as *Behaver* included "listen" (to a native speaker), "watch" (a cartoon), "look" and "stare" (at pictures/content) and were activities performed with the tablet. The near verbal acts (2.42%) were realised through the verbs "speak" and "talk", accompanied by *Circumstance of manner* such as "clearly", "understandably", and "correctly". The term "speak" in the study mostly refers to speaking English after the model. The near material acts (0.4%) children were

represented as performing were “standing up” and “singing”, and the physiological processes (0.2%) included “vomiting”.

4.6 Existential processes

In existential processes (2.02%), children were construed as/in *Circumstance* (1.21%) and *Existent* (0.8%). Examples of children as *Circumstance* in existential processes (1.21%) include “There must be the limit of [tablet] use/close supervision *for children*.”, “There should not be a problem *for them* [when using the tablet]”, and “There is no use *for them* [if they cannot speak].”. Children were also constructed as part of *Existent* (0.8%); for example, “For songs, there should be *gesture/dance for children*.” and “There are *exciting activities for children*.”.

5. Discussion

The Transitivity analysis of interviews with Thai EFL teachers in this study offers insights on their views of children using a new technology to learn EFL. Overall, teachers construed children predominantly as “doers” physically interacting with the tablet, rather than as performing cognitive acts typically associated with learning. Children were construed as engaged in cognitive acts, however, when teachers referred specifically to children’s use of the learning materials (the EFL app) provided with the OTPC tablet. To examine these views in more depth, this section will focus on three key themes that dominated the interviews: (1) children as users of educational technology, (2) children as foreign language learners and (3) teacher-student relationships in EFL classrooms incorporating use of the tablet.

5.1. Children as users of educational technology

In this study, children’s learning was mainly represented as interacting with the tablet in physical, concrete ways and performing activities using materials accessed through the tablet. To illustrate, children were assigned the active role of “doers” in material and behavioural processes (32.26% of all analysed clauses featured children as *Actor* and 7.66% as *Behaver*), and much more rarely as *Senser* in cognitive mental

processes (9.27%) such as “learn” and “know” that are typically associated with learning. When children were construed as *Actor*, the other participant in the clause tended to be the tablet technology as *Goal* or *Range,* with students portrayed as interacting physically with, “touching” and “pressing”, the tablet or “playing games” and “going to” sections available in the app. In the similar domain of doing, albeit much less frequently than *Actor*, children were described as *Behaver* (7.66%), actively engaged in learning by “watching animation”, “listening to conversations” and “singing along with the songs” included in the tablet’s EFL application.

Notably, teachers rarely assigned children the role of *Goal,* or passive participants, (4.84%) in material processes, marking a departure from the view of children as passive and dependent, which is associated with the traditional Thai classroom (Kulsirisawad, 2012). However, when students were positioned as *Goal*, teachers (and less often parents) occupied the role of *Actor* and were construed as caregivers, supervisors and advisers, helping children learn and controlling their behaviour.

These results are well aligned with previous research showing that new technologies offer children opportunities for hands-on, active learning. At the same time, however, they suggest that teachers and parents still carry a responsibility for guiding children’s behavior and learning through these technologies (e.g. Pricea, Rogers, Scaifea, Stanton, & Neale, 2003; Resnick, 2006).

5. 2 Children as foreign language learners

When teachers construed children as foreign language learners, rather than users of educational technology in general, children were more likely to be represented as “thinkers” rather than “doers”. In these instances, children were typically assigned the role of *Senser* in cognitive mental processes (9.27%) that featured either a particular section of the EFL app in the OTPC tablet or an aspect of language, usually vocabulary, as *Phenomenon*. Children were expected, for example, to “learn” and “remember” vocabulary. The focus on vocabulary in this study is more oriented towards a grammar-translation approach, which involves memorisation of vocabulary items which are presented with translation rather than learning

vocabulary in meaningful contexts or through authentic communication (Larsen-Freeman & Anderson, 2013).

Less frequently, teachers represented children as *Senser* in emotive (5.04%), desiderative (1.61%) and perceptive (1.21%) mental processes. In cases where children were represented as "enjoying" and "wanting" something, that something, the *Phenomenon,* tended to be the tablet device rather than the EFL app. When construed as engaged in perceptive acts such as "seeing", however, the *Phenomenon* was typically content included in the tablet app, such as videos and pictures, which some researchers have argued can support children's EFL learning (Tsoua, Wang & Tzeng, 2006; Verdugo & Belmonte, 2007).

The interviews with the teachers also echoed research on the importance of positive affect in supporting children's foreign language learning (e.g. Moon, 2006; Phillips, 1993; Domoney & Harris, 1993; Coyle & Gracia, 2014; Moon, 2006; Phillips, 1993). This was the case in clauses that positioned children using the tablet in the role of *Carrier* with qualities such as "happy", "interested" and "enthusiastic" as *Attribute*. Teachers thus viewed the tablet as drawing children's attention and motivating them to learn EFL.

A more in-depth look at transitivity roles in clauses describing the potential of the tablet and the app to support children's foreign language learning reveals a tendency for teachers to focus on discrete language skills. Around 30% of the behavioural clauses represented children as "listening" to materials in the EFL app. Listening skills are commonly prioritised in teaching children foreign languages due to their significance for identifying and understanding speech in the target language (e.g. Sevik, 2012; Asher, 2012; Phillips, 1993). The teachers in this study, however, construed these skills more narrowly, focusing on opportunities for children to listen to and repeat after native-speaker pronunciation models offered by the app. Similarly, when children were represented as "speaking" (behavioural: near verbal) English, the teachers' focus was on "pronunciation", as was the case in clauses in which children were assigned the role of *Sayer* in verbal processes such as "pronounce", "say after" and "repeat after" in relation to the audio in the tablet.

The teachers in this study did not represent children as participants in meaningful English conversation. This interpretation is confirmed also by

considering the other participants in clauses construing children as *Behaver* and *Sayer,* which included respectively "a native speaker's accent" or "correct accent" as *Phenomenon* and vocabulary found in the tablet app (e.g. "blue"; "refrigerator") as *Verbiage*. Additionally, such clauses featured adverbs signifying manner such as "correctly" and "clearly" as *Circumstance*, which suggested the teachers placed considerable emphasis on accuracy, rather than on meaning and communicative competence, or focusing on listening and speaking as part of children's broader English communication skills.

The narrow emphasis on speaking and listening as discrete skills and associated focus on accuracy in both was also reflected in the questionnaire responses by 213 Grade 2 EFL teachers collected as part of our larger project on the OTPC tablet's potential to support EFL teaching and learning in Thai primary classrooms (Vungthong, Djonov & Torr, in press-b). Importantly, our critical multimodal discourse analysis of classroom interactions incorporating the EFL app suggest that teachers' ideas about children as EFL learners are closely related to their preference for particular approaches to language teaching and learning in the classroom (Vungthong, Djonov & Torr, in press-a). A heavy focus on narrow language skills such as correct pronunciation may be detrimental to children's language learning as research has indicated that children as foreign and second language learners are more likely to focus on meaning rather than forms and accuracy (e.g. Moon, 2006; Cameron, 2001; Phillips, 1993).

5.3 Teacher-student relationships in EFL classrooms incorporating use of the tablet

In line with previous research (e.g. November, 2010; Shuler, 2009), this study suggests that the use of a new technology potentially empowers students and transforms teacher-student relationships. The fact that children were predominantly construed as *Actor* in material processes that included the tablet device (32.26%) much more often than as *Beneficiary* (8.47%) or *Goal* (4.84%) suggests that children were mainly viewed as "active doers" rather than passive participants who are acted upon or reliant on others. For children as *Beneficiary*, the teachers constructed themselves and the tablet as doing or offering things for children.

The teachers' dominant representation of children learning EFL through performing tangible actions with or through the tablet implies a move away from the view of teachers as carrying sole responsibility for teaching and imparting knowledge, which is traditionally associated with Thai EFL classrooms (e.g. Chatranonth, 2008; Kulsirisawad, 2012). To elaborate, in classrooms that incorporate the use of a portable computer device, students' attention can shift towards the device, and away from the teacher, and they can arguably learn at their own pace and access what interests them the most. This could lead to a shift in perspectives from "teachers [being] typically viewed as knowledgeable authorities and students [as] passive recipients" (Kulsirisawad, 2012, p. 2) to an understanding of the teacher as a facilitator guiding students' use of educational technology and students as more independent, self-directed learners.

6. Implications and conclusion

The findings of the study have implications for research, pedagogy and educational policy making related to educational technologies and children's foreign language learning. Critical discourse analysis based on systemic-functional linguistics has enabled us to pay detailed attention to the teachers' use of language to represent children as foreign language learners using a new technology, and consider the tacit ideologies that underpin their linguistic choices at word and clause levels. In this way, this study has complemented previous studies on teachers' views about educational technology and language teaching and learning, which rely predominantly on the content analysis of questionnaire data and tend to generate useful but rather broad results such as identifying factors that impact on teachers' decisions whether and how to adopt the particular technology (Albirini, 2006; Park & Son, 2009; Al-Zaidiyeen, 2010; Vungthong, Djonov & Torr, in press-b). A functional linguistic CDA, as opposed to an interpretive, thematic CDA, has also been considered as offering a more systematic and impartial method for text analysis (e.g. Martin, 2000; Renkema, 2004) and reducing the risk of subjectivity related to the mere reliance on text interpretation (cf. Breeze, 2011).

The findings of this study also have implications for pedagogy, educational policy making and the design of educational technology. In line with various studies (e.g.

Pricea et al., 2003; Resnick, 2006), this paper revealed that teachers associate new technologies with active, "hands-on" learning as they represented children using the technology as "doers" involved in tangible activities rather than as "thinkers". The findings also highlight teachers' ideas about the potential of the new technology to motivate children to learn English, and support them in developing discrete language skills (pronunciation, vocabulary, listening) and accuracy in these skills. This points to the importance of a more critical understanding of new educational technologies. Technologies alone cannot guarantee effective language learning. Pedagogical approaches for technology integration should also be taken into consideration. The findings imply that the design of new educational technologies for children and their implementation should be driven not only by considerations of their capacity to motivate children's learning, but also by a deep understanding of the ways children learn in general and develop knowledge and skills in specific curriculum areas such as EFL and the pedagogic practices that support that growth.

In addition, a portable computer technology has the potential to transform the teacher-student relationships. Teachers in this study construed children as learning some of the EFL content independently through interaction with the tablet, suggesting that teachers no longer carry exclusive responsibility for teaching children, and that the tablet allows children to select content that matches their interests. This could be interpreted as a shift towards more student-centred pedagogic approaches which have been encouraged in the basic education core curriculum in many countries including Thailand (Ministry of Education, Thailand, 2008). However, as Kress (2005) warns, in evaluating the use of new technologies in education, we need to consider the gains as well as the losses they bring. In particular, it is important to guard against the risk of devaluing teachers' content knowledge and expertise as educators associated with the outsourcing of teachers' responsibilities to new technologies (Vungthong, Djonov & Torr, 2015).

In sum, we presented a systemic functional linguistic critical discourse study of the ways teachers represented children learning EFL through a tablet technology in interview data. This study has contributed to current understanding of the potential and limitations of these technologies and their implementation for the teaching and learning of EFL in the early years of primary school. Future research can be done to analyse the ways children represent themselves and their classrooms in relation to

the use of new technologies in the teaching and learning of EFL, and explore the relationship between teachers' and students' ideas about children learning EFL through new technologies and actual interactions in EFL classrooms that incorporate these technologies.

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References

Al-Zaidiyeen, N. J. (2010). Teachers' attitudes and levels of technology use in classrooms: The case of Jordan schools. *International Education Studies*, *3*(2), 211-218. doi:http://dx.doi.org/10.5539/ies.v3n2p211

Albirini, A. (2006). Teachers' attitudes toward information and communication technologies: The case of Syrian EFL teachers. *Computers & Education*, *47*(4), 373–398. doi:10.1016/j.compedu.2004.10.013

Asher, J. J. (2012). *Learning another language through actions* (7th ed.). Los Gatos: Sky Oaks Productions.

Breeze, R. (2011). Critical discourse analysis and its critics. *Pragmatics*, *21*(4), 493-525. doi:10.1075/prag.21.4.01bre

Cameron, L. (2001). *Teaching languages to young learners*. Cambridge: Cambridge University Press.

Chatranonth, P. (2008). *The impact of teacher feedback on students' grammatical writing accuracy: A case study in Thailand*. (Unpublished doctoral thesis), The University of Manchester, Manchester.

Chen, G. D., Nurkhamid , Wang, C. Y. , Yang , S. H., Lu, W. Y., & Chang, C. K. (2013). Digital Learning Playground: Supporting authentic learning experiences in the classroom. *Interactive Learning Environments*, *21*(2), 172-183. doi:10.1080/10494820.2012.705856

Coyle, Y., & Gracia, R. G. (2014). Using songs to enhance L2 vocabulary acquisition in preschool children. *ELT Journal*, *68*(3), 276–285. doi:10.1093/elt/ccu015

Crook, C. (1998). Children as computer users: The case of collaborative learning. *Computers & Education*, *30*(3-4), 237–247. doi:10.1016/S0360-1315(97)00067-5

Davis, B., Torr, J., & Degotardi, S. (2015). Infants and toddlers: how visible are they in the Early Years Learning Framework?. *International Journal of Child Care and Education Policy*, *9*(12). Retrieved from http://ijccep.springeropen.com/articles/10.1186/s40723-015-0014-ydoi:10.1186/s40723-015-0014-y

Department of Education and Training, Australia. (2016). Early Learning Languages Australia. Retrieved from https://www.education.gov.au/early-learning-languages-australia

Domoney, L., & Harris, S. (1993). Justified and ancient: Pop music in EFL classrooms. *ELT Journal*, *47*(3), 234-241. doi: 10.1093/elt/47.3.234

Eggins, S. (2004). *An introduction to systemic functional linguistics* (2nd ed.). London: Bloomsbury Academic.

Fairclough, N. (1989). *Language and power*. London: Longman.

Fairclough, N. (2001). The discourse of New Labour: Critical discourse analysis. In M. Wetherell, S. Taylor, & S. Yates (Eds.), *Discourse as data: A guide for analysis* (pp. 229–266). London: Sage.

Fairclough, N. (2003). *Analysing discourse: Textual analysis for social research*. London: Routledge.

Halliday, M. A. K. (1978) *Language as a social semiotic: The social interpretation of language and meaning*. London: Edward Arnold.

Halliday, M.A.K. (1994). *Introduction to functional grammar* (2nd ed.). London: Edward Arnold.

Halliday, M. A. K., & Matthiessen, C. M. I. M. (2004). *An introduction to functional grammar* (3rd ed.). London: Edward Arnold.

Hsu, L. (2013). English as a foreign language learners' perception of mobile assisted language learning: A cross-national study. *Computer Assisted Language Learning*, *26*(3), 197-213. doi:10.1080/09588221.2011.649485

Kress, G. (2005). Gains and losses: New forms of texts, knowledge, and learning. *Computers and Composition*, *22*, 5–22. doi:10.1016/j.compcom.2004.12.004

Kulsirisawad, P. (2012). Developing learner autonomy in EFL writing classrooms via peer feedback. In *CULI National Seminar 2012 Proceeding* (pp. 1-10). Bangkok, Thailand: Chulalongkorn University Language Institute. Retrieved from http://www.culi.chula.ac.th/international/conferences/National/national2012/Proceeding/Dr%20Phnita.pdf

Larsen-Freeman, D., & Anderson, M. (2013). *Techniques and principles in language teaching* (3rd ed.). New York: Oxford university press.

Lewis, G., & Bedson, G. (1999). *Games for children*. Oxford: Oxford University Press.

Liaw, M. L. (2014). The affordance of speech recognition technology for EFL learning in an elementary school setting. *Innovation in Language Learning and Teaching*, *8*(1), 79-93. doi:10.1080/17501229.2012.756491

Martin, J. R. (2000). Close reading: Functional linguistics as a tool for critical discourse analysis. In L. Unsworth (Ed.), *Researching language in schools and communities: Functional linguistic perspectives* (pp. 275-304). London: Cassell.

Matthews, J., & Seow, P. (2007). Electronic paint: Understanding children's representation through their interactions with digital paint. *Journal of Art Design*, 26(3), 251–263. doi:10.1111/j.1476-8070.2007.00536.x

McLester, S. (2012). One tablet per child? District Administration. Retrieved from http://www.districtadministration.com/article/one-tablet-child-0

Ministry of Education, Thailand. (2008). The basic education core curriculum. Retrieved from http://www.act.ac.th/document/1741.pdf

Ministry of Education, Thailand. (2013). The report on the implementation of government policy. Retrieved from http://www.moe.go.th/moe/th/home/

Moon, J. (2006). *Children learning English* (2nd ed.). New York: MacMillan.

November, A. C. (2010). *Empowering students with technology* (2nd ed.). California: Corwin.

Park, C. N., & Son, J. B. (2009). Implementing computer-assisted language learning in the EFL classroom: Teachers' perceptions and perspectives. *International Journal of Pedagogies and Learning*, *5*(2), 80-101. doi:10.5172/ijpl.5.2.80

Patpong, P. (2006). *A systemic functional interpretation of Thai grammar: An exploration of Thai narrative discourse* (Unpublished doctoral thesis), University of Macquarie, Australia.

Payton, M. (2008). Personal productivity for classroom teachers. In M. van Mantgem (Ed.), *Tablet PCs in K–12 education* (pp. 45-85). Eugene, OR: International Society for Technology in Education.

Phillips, S. (1993). *Young learners*. Oxford: Oxford University Press.

Pricea, S., Rogers, Y., Scaifea, M., Stanton, D., & Neale, H. (2003). Using "tangibles" to promote novel forms of playful learning. *Interacting with Computers*, *15*, 169–185. doi:10.1016/S0953-5438(03)00006-7

Renkema, J. (2004). *Introduction to discourse studies*. Amsterdam: Benjamins.

Resnick, M. (2006). Computer as paintbrush: Technology, play, and the creative society. In D. G. Singer, R. M. Golinkoff & K. Hairsh-Pasek (Eds.), *Play = Learning: How play motivates and enhances children's cognitive and social-emotional growth* (pp. 192-206). New York: Oxford University Press.

Sevik, M. (2012). Teaching listening skills to young learners through "listen and do" songs. *English Teaching Forum*, *3*, 10-17. Retrieved from https://americanenglish.state.gov/files/ae/resource_files/50_3_3_sevik.pdf

Shamir, H., & Johnson, E. P. (2012). The effectiveness of computer-based EFL instruction among primary school students in Israel. *Educational Media International*, *49*(1), 49-61. doi:10.1080/09523987.2012.662624

Shuler, C. (2009). Pockets of potential: Using mobile technologies to promote children's learning. Retrieved from http://www.joanganzcooneycenter.org/wp-content/uploads/2010/03/pockets_of_potential_1_.pdf

Sibley, B. A., & McKethan, R. (2012). Add up your physical education program. *Journal of Physical Education, Recreation & Dance*, *83*(8), 9-55. doi:10.1080/07303084.2012.10598821

Sylvéna1, L. K., & Sundqvista, P. (2012). Gaming as extramural English L2 learning and L2 proficiency among young learners. *ReCALL*, *24*(3), 302-321. doi:http://dx.doi.org/10.1017/S095834401200016X

Tsoua, W., Wang, W., & Tzeng, Y. (2006). Applying a multimedia storytelling website in foreign language learning. *Computers & Education*, *47*(1), 17–28. doi:10.1016/j.compedu.2004.08.013

Verdugo, D. R., & Belmonte, I. A. (2007). Using digital stories to improve listening comprehension with Spanish young learners of English. *Language Learning & Technology*, *11*(1), 87-101. Retrieved from http://llt.msu.edu/vol11num1/ramirez/

Vungthong, S, Djonov, E, & Torr, J. (2015). Images as a resource for supporting vocabulary learning: A multimodal analysis of Thai EFL tablet apps for primary school children. *TESOL Quarterly*. doi:10.1002/tesq.274

Vungthong, S, Djonov, E, & Torr, J. (in press-a). What really matters in EFL classrooms using a tablet technology?: A critical multimodal analysis of pedagogic discourse.

Vungthong, S, Djonov, E, & Torr, J. (in press-b). Factors contributing to Thai teachers' uptake of tablet technology in EFL primary classrooms. *Asian EFL Journal*, *19*(2).

Yang, S. C., & Chen, Y. (2007). Technology-enhanced language learning: A case study. *Computers in Human Behavior*, *23*(1), 860–879. doi:10.1016/j.chb.2006.02.015

Yiemkuntitavorn, S. (2005). *Thai transitivity: A functional grammar analysis* (Doctoral dissertation, University of Tasmania, Australia). Retrieved from http://eprints.utas.edu.au/22167/1/whole_YiemkuntitavornSita2005_thesis.pdf

7.3 Postscript

The findings of this paper reveal how teachers' responses to interview questions constructed particular views of children as educational technology users and foreign language learners. This chapter has implications for both the use of new technologies for education in general and EFL teaching in particular.

The central finding of this chapter regarding the use of new technologies in education is that teachers viewed the new technology as having the potential to transform teacher-student relationships in the classroom. This is evident when teachers used language that represents children using the OTPC tablet app as having the active role and physically interacting with the tablet rather than as being passive recipients of knowledge. This implies the potential use of new technology devices to promote a shift away from traditional teacher-centred EFL classrooms in Thailand (e.g. Chatranonth, 2008; Kulsirisawad, 2012), and towards more learner-centred approaches which have been encouraged in the Thai National Education Act (Office of the National Education Commission (ONEC), Thailand, 1999)

Echoing the findings of the analysis of the teacher survey presented in Chapter 6, another main finding of this chapter, which is specific to EFL teaching, is that Thai EFL teachers emphasised the discrete English language skills (e.g. native-speaker-like pronunciation), rather than any overall communicative competence, that children can develop by using the app. This and the previous chapter focused on teachers' views about the potential of new technologies and the multimedia materials accessed through them to support children's EFL learning, with the aim of shedding light on whether and how these technologies could help address some of the challenges associated with teaching children EFL. Both chapters suggest that the success of educational technology projects depends considerably teachers' decisions about whether and how to effectively integrate a new technology into classroom practices. The next chapter explores teachers' actual practices in the EFL classroom using the OTPC tablet app, and considers the extent to which the multimodal construction of pedagogic discourse may reflect the views teacher participants in this study expressed in the survey and interviews.

Chapter 8

Teachers' use of new technologies in EFL classrooms

There can be infinite uses of the computer and of new age technology, but if teachers themselves are not able to bring it into the classroom and make it work, then it fails.

Nancy Kassebaum (Gupta, 2015)

8.1 Introduction

This research project has addressed various dimensions of new technology use for teaching EFL: the multimodal design of the EFL tablet apps in Chapter 5, factors which influence teachers' decision to use the EFL tablet app in the classroom in Chapter 6, and the views of the teachers about the use of the tablet app for students' EFL learning and children as EFL learners in Chapter 6 and 7. This chapter presents findings of the analysis of teachers' use of new technologies to teach EFL in classrooms.

In the midst of the trend of using educational technology to promote teaching and learning, Nancy Kassebaum, a United States senator from 1978 to 1997, voiced her concern over whether and how teachers bring it into effective use in classrooms. As discussed in Chapter 2, previous research on the use of technology in EFL classrooms tends to rely on surveys in which EFL teachers are asked to report or talk about its use in classrooms, not the observation of classroom interactions (Li & Walsh, 2011a; Li & Ni, 2011; Celik, 2013). A better understanding of the use of new technology to address the foreign language teaching and learning challenges such as a lack of teachers with high language proficiency, which is the aim of this research project, needs to also be informed by the observation of teachers' actual use of new technology in the classroom.

This chapter is a critical multimodal study of classroom interactions of two Grade 2 EFL classes using the OTPC tablet app through systemic functional multimodal discourse analysis (SF-MDA). In particular, it investigates how two teacher

participants use three modes of communication (speech, gesture, and pedagogical space) to integrate the tablet app into teaching and managing the EFL classroom. The findings of this chapter would shed light on pedagogical implications for research, policy, and practice regarding the use of a new technology for education in general and EFL teaching in particular.

In this paper, as a principal investigator, I conducted data collection in Thailand, transcribed the data, translated the teacher participants' speech into English, analysed the data, and writing the paper. My supervisors provided guidance in all the stages and contributed to revising the paper. This paper has been under review. It has been presented below in the format in which it was submitted to the journal.

8.2 Teachers' use of the OTCP tablet app in their EFL classrooms

What really matters in EFL classrooms using a tablet technology?: A critical multimodal analysis of pedagogic discourse

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Abstract

This article presents a critical multimodal analysis of pedagogic discourse in two English as a Foreign Language (EFL) primary-school classrooms that incorporate tablet-based instructional materials. These materials are part of Thailand's One Tablet Per Child (OTPC) project, in which tablets with teaching apps were distributed to all primary students, starting with Grade 1. By adopting a social semiotic perspective and employing Bernstein's theory of pedagogic discourse, we investigate how the teachers' use of speech, gesture and classroom space in two Grade 2 EFL lessons in separate public schools in Bangkok, Thailand contributes to (1) teaching children EFL (the instructional register) and (2) managing classroom interactions (the regulative register). The study reveals that both multimodal interaction in the classroom and the language teaching approach adopted by the teacher must be considered in developing effective methods for integrating new technologies in EFL classrooms.

Keywords: pedagogic discourse, EFL, tablet technology, primary classrooms

1. Introduction

Computer technologies offering affordances such as interactivity, sound and visuals hold much promise for supporting children's language learning. Alongside and partially in response to the integration of such technologies in teaching, there has

also been an increased research interest in multimodality, the ways in which different communication modes such as language, images and gesture interact to create meaning (O'Halloran & Smith, 2011). This interest is evident in educational research that recognises that verbal language is only one among many modes that teachers and learners select from in making meaning (Jewitt, 2013; Kress et al. 2005). Multimodality is particularly useful for studying the use of new technologies in education as they, like classroom teaching in general, rely on different semiotic resources, as Jewitt's research (2006) into the integration of new technologies in English, math, and science classrooms has demonstrated.

Recently there has been strong enthusiasm for integrating portable tablet PCs in education. It is reflected in projects such as 'One Tablet per Child' (OLPC 2012) and the Early Childhood iPad Initiative in Australia (Western Australian Department of Education, 2013). In Thailand, the One Tablet Per Child (OTPC) project is the initiative of a consortium comprising Ministry of Education, Ministry of Information and Communication Technology, Ministry of Foreign Affairs, and Office of the Prime Minister. The project commenced in 2012, with the distribution of tablet PCs to Grade 1 students and the development of applications (apps) to be included in the tablets, and has already cost more than 152.8 million US dollars (Ministry of Education, Thailand, 2013).

Despite the enthusiasm for and considerable cost of such projects, very few studies have explored the use of tablets in classroom settings. This study aims to build on current understanding of how this technology is integrated in education by investigating how Thai teachers' use of speech, gesture and space contributes to the teaching and managing of English as a foreign language (EFL) in two primary-school classrooms using the OTPC tablet app. This study focuses primarily on how teachers use the tablet app to teach EFL as part of the overall classroom interactions and much less on the content of the app itself. The reason for this is twofold. Firstly, research emphasises the important role teachers play in implementing computer technologies (Bebell & Kay, 2010; Shapley, Sheehan, Maloney, & Caranikas-Walker, 2010), on the one hand, and the need for teachers to support children in making sense of new materials introduced through these technologies (Vungthong, Djonov, & Torr, 2015; Kalyuga, 2005; Pollockm, Chandler, & Sweller, 2002), on the other. To illustrate, Vungthong, Djonov and Torr's (2015) multimodal analysis of the use of images in the

Grade 1 and 2 EFL apps provided through the OTPC tablet revealed that these materials alone cannot effectively support children's vocabulary learning. Second, the two teachers observed for this study chose to focus on different lessons (and sections within those) in their classrooms.

2. Adopting a critical multimodal approach to pedagogic discourse

2.1 Pedagogic discourse and a focus on instructional and regulative registers

According to Bernstein (1990), pedagogic discourse comprises two kinds of discourse – instructional, which is the discourse of transmitting or acquiring "specific competences", and regulative, which is the discourse transmitting "principles of order, relation and identity" (Bernstein, 1990, p. 183). Christie (1995, 2005) reconceptualised these aspects of pedagogic discourse as registers by analysing the distinct language choices that allow the instructional register to construe "the field of knowledge or subject being taught" and the regulative register to manage classroom interactions, including "the overall goals of the activity" and "the sequencing of teaching-learning behaviour" (Christie, 1995, p. 224).

Following Christie (1995, 2005), each of these two registers both reflects and shapes the social context of a classroom interaction by simultaneously constructing three broad types of meaning. These three types of meaning are what Halliday (1978) termed 'the metafunctions' of language, the resources that language has developed and is organised into in response to the kinds of meaning it is used to make:

- Ideational – concerned with constructing our experiences of the world inside us and around us;
- Interpersonal – whose focus is on enacting and negotiating social relationships in terms of power, closeness and frequency of contact as well as attitudes and emotions; and
- Textual – which interweaves ideational and interpersonal choices into cohesive and coherent units of meaning, or 'texts'.

The metafunctions have also been a useful tool for exploring the meaning making potential of modes other than language such as visual design (Kress & Van Leeuwen, 2006) and gesture (Martinec, 2000).

Both Christie (1995, 2005) and Zhao and Van Leeuwen (2014) have drawn on Bernstein's concept of pedagogic discourse to analyse the multimodal features in teaching and learning contexts. Based on the video-recording of five lessons on social science in a primary school in which students were required to read an advertisement on the construction of a nuclear power station and develop arguments on this topic, Christie (1995) explored how an analysis of the instructional and regulative registers sheds light on the ways in which students learned to process information and address the socially significant issues. It revealed that the regulative register was more frequently used than the instructional register in the lessons, and that the teacher explicitly modelled the technical language of the instructional field (content knowledge) for students to use and express their own arguments. Zhao and Van Leeuwen (2014), as another example, analysed slideshow-supported cultural studies lectures and revealed that the slides tended to realise only the instructional register or the content knowledge, whereas the teacher's speech construed the regulative register or the pacing and sequencing the lesson.

This paper extends multimodal studies of classroom interactions by analysing teachers' use of three modes of communication, speech, gesture and pedagogic space, in primary EFL classrooms using a new technology. In particular, it explores how teachers' multimodal choices (speech, gesture and pedagogic space) incorporate the app and the learning materials provided in it into (1) teaching EFL (the instructional register) and (2) managing classroom interactions (the regulative register).

2.2 Adopting a critical multimodal approach

This study employs a critical multimodal approach which brings together two strands of discourse studies. The first one is critical discourse analysis (CDA) which involves "the relationship between language (and to a lesser extent other modes) and power" (Djonov & Zhao, 2014, p. 1). CDA enables us to explore how communication embedded in classroom interactions conceals or reveals power relations between teachers and students. Zhao and Van Leeuwen (2014), for example, points to the

ways in which the use of a particular technology can obscure the pedagogic relations of differential power between teachers and students, or in other words, how the teachers controlled the regulative register or which part of the content knowledge in PowerPoint slides the students should focus on. The second strand underpinning this study is a multimodal social semiotic perspective. It was adopted for this study as classroom interactions are characterised by heavy reliance not only on language but also on many other modes of communication. Among these, gesture and space have been recognised as serving important pedagogical and classroom management functions (e.g. Hood, 2011; Lim, O'Halloran, & Podlasov, 2012; Mccafferty & Rosborough, 2014).

Multimodal social semiotic studies of classroom discourse can be categorised into two main groups: those exploring in detail the use of a single non-verbal mode (frequently in relation to language) and those which focus on the interaction between two or more modes. An example of the first group is Hood's (2011) study of teachers' body language (including movement) in relation to speech embedded in adult classes in English for academic purposes. It revealed that the teachers' body language served pedagogical functions of guiding students' attention to particular kinds of information and managing student interaction and engagement. Mccafferty and Rosborough (2014) analysed teachers' use of gesture, without considering speech, in second grade English as a second language (ESL) classrooms. They found that it served primarily as a means for limiting the risk of disruptions to classroom teaching and learning. The meanings conveyed by specific spaces in the classroom were also explored in Lim, O'Halloran and Podlasov's work (2012). In this study, four types of space in the classroom, which are situated within Hall's Social-Consultative Space (1966), were identified, based on an analysis of video-recorded classroom interactions in which two teachers taught the same lesson, which involved students answering questions based on a reading of a passage.

The second group involves multimodal studies of classroom discourse focusing on more than one mode of communication. Examples include Kress et al. (2005) and Taylor (2014). Kress and his colleagues (2005) analysed various modes of communication (e.g. the classroom layout, visual display, movement of teachers, gaze, gesture, posture, talk and writing) deployed in English classrooms in three secondary schools in London, and found that their interaction both reflected teachers' beliefs

about the teaching and learning of English and played an important role in shaping pedagogy. For example, although one classroom in this study featured a layout which encouraged "pedagogy of authority" (all the desks facing the teacher), the teacher's movement to the side of the classroom (rather than the centre), students' posture (sprawling across the table) and visual displays (students' works and book covers) reflected that the teacher did not really conform to the "pedagogy of authority", and students in this class seemed to feel free to express their sense of participation or distance in their posture (Kress et al. 2005, pp. 31-35). Whereas Kress et al. (2005) focused on teacher-student interaction, Talylor (2014) explored various modes (e.g. proxemics, posture, gesture and spoken language) embedded in student-to-student interaction in a Year 5 literary class. Focusing on the textual aspects, the study revealed how children, while working on the tasks assigned by the teacher, constructed and presented "knowledge and understanding" through various modes (p. 421). For a specific example, children used gesture to support "an omission in language in order to clarify meaning" (p. 435) and employed intertextual reference to compare Theseus, a literary hero, to Batman, a popular superhero, which can reveal their understanding of the literary character.

3. Methodology

3.1 Setting and participants

The data for this study comprise video recordings of two Grade 2 EFL lessons in two public primary schools in Bangkok, Thailand, with around 35 students in each classroom. These two schools had different ways of managing the OTPC tablets, which were reflected in differences between the classroom interactions discussed in this article. In School 1, the tablet was only kept at the school, whereas in School 2 students were allowed to take it home.

Each classroom's teacher gave written consent to participate in this study. Teacher A from School 1 is female, 30 years old with 1 year of teaching experience. Teacher B from School 2 is male, 48 years old with 13 years of teaching experience. Both teachers are Thai, hold a bachelor's degree and work as Grade 2 EFL teachers.

3.2 The OTPC tablet app for Grade 2 EFL

This study focuses on the use of the OTPC tablet app in Grade 2 classrooms as it aims to explore the teaching of children's EFL through the use of a new technology. It is suggested that foreign language teaching should commence at the start of compulsory primary schooling (Field, 2000, p. 79-80) and in many countries, including Thailand, EFL is a required subject from Grade 1 onwards. However, few studies address the issue of early primary students learning EFL especially in classrooms using new computer technologies.

The two classroom interactions analysed in this study were recorded in two different schools and both incorporated the Grade 2 EFL app designed for the OTPC project. The app offers 38 lessons, each on a different topic. Teacher A from School 1 chose to teach one lesson ('At the supermarket'), whereas Teacher B from School 2 chose four lessons ('Hello', 'Good morning', 'Fruits' and 'Months') and focused more on guiding students in class how to access these lessons on their own at home. Each lesson comprises eight sections. Table 1 presents the title and aim of each section.

Table 1: Eight sections in each lesson of the Grade 2 EFL app

	Title	**Aim**
1	Vocabulary	Learning meaning of vocabulary through pictures and words
2	Let's read	Learning how to read aloud and pronounce vocabulary
3	Let's study	Learning basic grammar and vocabulary introduced in the lesson
4	Let's listen	Listening to dialogues with the characters' speech presented both in speech bubbles and as audio
5	Let's talk	Speaking after dialogues with the characters' speech presented both in speech bubbles and as audio
6	Songs	Revising the lesson through songs (lyrics, audio and pictures)
7	Exercises	Revising the lesson through exercises
8	Games	Revising the lesson through games

The app's design draws on aspects of both grammar-translation and communicative approaches to language teaching. In each lesson, there are sections that aim to teach vocabulary (e.g. Vocabulary, Let's read and Songs) and basic grammar (e.g. Let's study), which are the language components emphasised in traditional grammar-translation methods (Larsen-Freeman & Anderson, 2013). The lessons, however, are organised according to topics (e.g. At the supermarket and Fruits) and animated stories in 'Let's listen' show characters interacting in English about these topics, in everyday contexts (e.g. Let's listen), as is typical in communicative language teaching, where the natural use of language in context is prioritised (Larsen-Freeman & Anderson, 2013).

3.3 Data collection and analysis

3.3.1 Recording and transcription

Two EFL classes in which the Grade 2 OTPC tablet app was used were video recorded – one at each school. Each recording/class lasted around 40 minutes. The camera's focus was on the teacher. Teacher A taught the students in both Thai and English language, although Thai predominated, whereas Teacher B taught almost exclusively in Thai.

The data were transcribed with a focus on the teachers' use of speech, gesture and classroom space. The transcription of their speech included each teacher's talk to the whole class. Due to limitations of the video-recording, the teachers' talk to individual students was not recorded or transcribed. The transcribed speech was then translated from Thai to English, and the translation was as literal as possible. Italics font was used to signify the teachers' speech that was in English and therefore did not require translation for this study. Gesture was transcribed in terms of its function in the classroom and its interaction with speech. The transcription also specified which part of the classroom space was used by each teacher and the amount of time spent in each part.

3.3.2 Data analysis

3.3.2.1 Phases in the two classrooms

Phases were determined through a preliminary analysis of video data. They were identified based on Baldry and Thibault's (2006) concept of "transition points" (p. 47), or boundaries between phases signalled by differences in terms of the lesson's content and a pause in the teacher's use of speech and body movement (p. 185). The phases thus identified for each of the two lessons analysed in this study are presented in Tables 2 and 3.

Table 2: Phases in Classroom 1 by Teacher A

Phase	**Phase title**	**Duration**	**Use of the app**
1	Orientation to the task	2.59 mins	✓
2	Supervision of the task	4.08 mins	✓
3	Question and answer about using the app	2.30 mins	-
4	Orientation to the task	1.15 mins	✓
5	Supervision of the task	12.01 mins	✓
6	Orientation to the task (creating your own supermarket)	1.11 mins	-
7	Supervision of the task (creating your own supermarket)	19.40 mins	-
8	Closure	0.25 mins	-
Total		44.09 mins	

Table 3: Phases in Classroom 2 by Teacher B

Phase	Phase Title	Duration	Use of the app
1	Orientation to the task (using the app)	15.14 mins	✓
2	Supervision of the task (using the app)	22.20 mins	✓
3	Closure	0.28 mins	-
Total		38.02 mins	

3.3.2.2 Framework for analysis

The transcribed data were analysed using a framework combining tools for analysing language (Halliday, 1994; Christie, 1995), gesture, and classroom space (Lim, et al., 2012).

First, the teachers' speech was analysed through the perspective of each metafunction: ideational, interpersonal and textual. The three metafunctions have already been explored and found to be applicable to Thai grammar in Yiemkuntitavorn (2005) and Patpong (2006). Key ideational meanings were revealed through the analysis of linguistic transitivity choices: process types (material, mental, verbal, behavioural, existential and relational), participants and circumstances. The analysis of interpersonal meanings focused on teachers' choices of basic Mood types – declarative, interrogative (polar or content) and imperative (inclusive or exclusive). In terms of textual meanings, this study examined the teachers' use of Theme, that is, the point of departure for each clause (Halliday, 1994, p. 37). The Theme of a clause includes the first element that constructs ideational meaning (e.g. in an English declarative clause this would typically be the Subject), which may be preceded by an interpersonal Theme, which presents the speakers attitude towards the ideas expressed in the clause, and/or a textual Theme, which establishes connections with surrounding clauses.

Table 4: Examples of Transitivity, Mood and Theme analysis from the study's data

1	**Transcription**	Then, (จากนั้น)	Students, (นักเรียน)	press (กด)	the red button (ปุ่มสีแดง)	
	Transitivity			Pr: Material	Goal	
	Mood	Imperative: Exclusive				
	Theme	Textual Theme	Interpersonal Theme	Topical Theme		
2	**Transcription**	*I*	*will give*	*you*	*10 minutes*	
	Transitivity	Actor	Pr: Material	Recipient	Scope	
	Mood	Declarative				
	Theme	Topical Theme: Unmarked				
3	**Transcription**	Mother and Daughter (แม่ลูก)	Bought (ซื้อ)	what? (อะไร)		
	Transitivity	Actor	Pr: Material	Goal		
	Mood	Interrogative: Content				
	Theme	Topical Theme: Unmarked				
4	**Transcription**	*What*	*can*	*you*	*buy*	*at the supermarket?*
	Transitivity	Goal		Actor	Pr: Material	Location
	Mood	Interrogative: Content				
	Theme	Topical Theme: Unmarked				

Gesture has been extensively analysed for the three metafunctions in Martinec's work (e.g. 2000). This study, however, defines and approaches gesture differently, defining gesture as the movement of arms, hands, fingers and head only, and considering aspects such as the distance between interactants or the movement of whole bodies across space in the analysis of space. In this study, the analysis of gesture is not concerned with mapping the overall meaning-potential of gesture, as in Martinec's work, but instead focuses only on its pedagogic functions. Based on this study's data, the functions of the teachers' gesture can be described and categorised metafunctionally as in Table 5.

Table 5: Functions of gesture

Metafunctions	**Functions of gesture**
Ideational	Reinforcement of verbally constructed ideational meaning
Interpersonal	Giving permission
	Subduing unwanted behaviour
	Relationship reinforcement
Textual	Rhythm maintenance
	Orchestrating classroom interactions

The analysis of classroom space employs categories developed by Lim, O'Halloran and Podlasov (2012), who describe four types of classroom space: authoritative, personal, supervisory and interactional. **Authoritative Space** refers to "(t)he space in front of the teacher's desk and the front centre of the classroom": it is the place where teachers "conduct formal teaching" and "provide instructions" (p. 237). **Personal Space** can be defined as "the space behind the teacher's desk" where a teacher "packs and prepares for the next stage of the lesson" (p. 238). This space, however, can be categorised as the Authoritative Space if a teacher uses it for teaching. **Supervisory Space** refers to "the rows of the students' desks" and "the side of the classroom", to where a teacher paces to supervise students performing activities (p. 238). **Interactional Space** is where a teacher stands "alongside the student's desk"

and “offers guidance” for students” (p. 238). The classroom spaces analysed in Lim et al. (2012)’s and the present study have similar, traditional western-style classroom organisation: each space includes a whiteboard/blackboard, a teacher’s desk at the front of the room, students’ desks arranged in rows with space between the rows.

Following the metafunctional analysis of each mode – speech, gesture and classroom space – using the systems and categories outlined above, we analysed the teachers’ ideational, interpersonal and textual choices in each mode and their multimodal interaction in terms of their relative contribution to either the regulative or the instructional register of pedagogic discourse or both.

4. Findings

4.1 Teaching children EFL: the contribution of teachers’ speech and gesture to realising the instructional register

Speech and gesture were used by Teacher A and Teacher B to realise the instructional register or in other words to contribute to the students’ learning of EFL. However, the use of space did not appear to directly relate to the actual EFL content taught and learned in class. A comparison of the teachers’ most dominant choices instantiating the instructional register in the two classrooms is presented in Table 6.

Table 6: Teachers' multimodal choices instantiating the instructional register

Mode	Metafunction	Teacher A	Teacher B
Speech	Ideational	**Material processes** to check what students learned from the app	**Relational processes** to ask about the translation of words
	Interpersonal	**Interrogative (content)** to check what students learned from the tablet app	**Interrogative (content)** to ask about the translations of words
	Textual	**Wh-questions** as unmarked Topical Theme in English language and **Participants (Actors)** in Thai	**Participants (Token)** as unmarked Topical Theme
Gesture	Ideational	Reinforcement of meaning realised through speech	-

Although Teacher A and Teacher B used the same app, they taught its EFL content differently. They both asked students to access this content and used the instructional register primarily to check what the students had learned. However, even when both teachers focused on vocabulary, their approaches differed. Teacher A asked students to explore the lesson 'At the supermarket' and asked questions to check both their comprehension of the content and learning of new vocabulary presented in that lesson. Teacher A's questions featured material processes reflecting the lesson's content, and were first asked in English (e.g. "*What did Mother and Daughter eat for lunch*?"), and then in Thai, where interrogative clauses retain the Subject in unmarked Topical Theme position (e.g. "The mother and daughter bought what from the supermarket?"). The repetition of each question in Thai could arguably support students in recalling information from the lesson they had read on the app. More importantly, it reveals the teacher's focus on supporting and testing their comprehension of the lesson. The questions also aimed to test children's English vocabulary knowledge as students were expected to answer the teacher's questions in English.

Teacher A also employed gesture to accompany speech in realising the instructional register. In this register, gesture was used to reinforce the representational meanings construed through speech. For example, when the students could not answer the question "*What did Mother and Daughter eat for lunch*?", Teacher A gave them a clue verbally in Thai, saying "a long and thin line", and accompanied these words gesturally by drawing long thin lines in the air. This enabled the students to supply the correct answer – "*Noodles*."

On the other hand, Teacher B did not talk or ask questions about the overall content or topic of the lessons on the app. He always spoke in Thai and asked questions aimed at testing students' ability to translate individual words used in the lesson into Thai (e.g. "*Hello* means what*?*"). His speech was dominated by interrogative clauses construing *relational: identifying* processes with an English word in the role of *Token*, in unmarked Topical Theme position, and the word 'what' as the *Value*. To answer such questions correctly, students had to supply a corresponding Thai word.

As we elaborate in the Discussion section, these differences in the two teachers' use of language and speech reflect very different approaches to both EFL teaching in general and to supporting children's emerging ability to communicate in English.

4.2 Managing classroom interactions: the contribution of teachers' speech, gesture and use of classroom space to realising the regulative register

All three modes we analysed – speech, gesture and use of classroom space - were extensively used by both teachers to instantiate the regulative register, that is, to manage and sequence the interaction in both classrooms. A comparison of the two teachers' choices in that register is presented in Table 7.

Table 7: Teachers' multimodal choices for the regulative register

Mode	**Metafunction**	**Teacher A**	**Teacher B**
Speech	Ideational	**Material processes** to introduce the task and give students step by step instructions	**Material and behavioural processes** to give students step by step instructions
		Behavioural processes involving listening and pronunciation skills	
		Material and behavioural processes to control students' behaviour	
	Interpersonal	**Imperative (exclusive)** to control students' behaviour	
		Declarative and imperative (exclusive and inclusive) to introduce the task and give students step by step instructions	**Declarative and imperative (exclusive)** to give students step by step instructions
		Interrogative (content) to check whether students can follow the instruction	**Interrogative (polar)** to check whether students can follow the instruction
	Textual	• **Process in imperative clauses** as Topical Theme • **'Students'** as Interpersonal Theme • **Continuative and conjunctive adjuncts** as Textual Theme to sequence the lesson	
Gesture	Ideational	Reinforcement of meaning realised through speech	
	Interpersonal	Giving permission	
		Subduing unwanted behaviour	
		Relationship reinforcement	
	Textual	Rhythm maintenance	
		Orchestrating classroom interactions	-
Space	Interpersonal	Frequent use of **Supervisory Space**	Frequent use of **Authoritative Space**
		Interactional Space when giving advice to individual students	

The regulative register was more dominant than the instructional register in both classrooms. In other words, in both classes more resources were oriented to managing the students' use of the app than to teaching EFL. There were, however, differences in the ways the teachers used these resources as they managed their classrooms in distinct ways.

To start with Teacher A, at the beginning of the class she introduced the lesson 'At the supermarket' by using material processes in the declarative and imperative (inclusive) clauses. She said "Today we are going to the supermarket. *Let's go to the supermarket!*". She also used gesture, pointing at her tablet to signify that she was referring to a specific lesson in the app. Then she gave an instruction on using the app mainly through the use of material processes in the declarative and imperative (exclusive) clauses. She said, "*I will give you 10 minutes.*" and "Students, turn on the tablet and go to Slide 1 to 16". In most of Teacher A's speech regarding the use of the app, the processes in imperative clauses tended to be Topical Theme, the word 'students' as Interpersonal Theme, and continuative and conjunctive adjuncts for sequencing the lesson as Textual Theme (e.g. "Next, Students, play game and listen to vocabulary.").

In order to check whether students can follow the instruction, Teacher A used the interrogative (content), especially wh- questions. (e.g. "Where are we going?"). Her instructions also included behavioural processes encouraging students to use specific language skills, for example "Listen and speak after (the model)". The teacher used gesture to reinforce ideational meanings construed in her speech. For example, she asked a student who had no tablet, "Where is your tablet?", and pointed at her own tablet.

Teacher A's use of gesture helped maintain rhythm and orchestrate the classroom interaction. Vertical hand movements rhythmically accompanied and increased the salience of her speech. Horizontal ones orchestrated students' responses to her questions. After asking a question, for example, she held out her left hand and moved it from right to left to signal that it was time for students to answer. When students raised their hands to indicate willingness and were given permission to answer a question, the teacher would choose one of them by holding out her hand towards that student without any accompanying speech.

Teacher A also employed speech, gesture and space to manage students' overall behaviour in the classroom. To achieve this, she relied on imperative (exclusive) clauses with material and behavioural processes (e.g. "Sit properly.", "Don't stand." and "Don't play."), and on gesture to give permission (e.g. nodding to approve a student's request) and subdue unwanted behaviour (e.g. pointing to students engaging in undesirable behaviour such as making loud noise). Gesture was also used to alleviate tension and reinforce positive teacher-student relationships. For instance, in the orientation phase, when a student asked for advice while the teacher was addressing the whole class, the teacher said to the student "Go to your desk first" and lightly patted the student's back.

Teacher A used space differentially when giving instructions and supervising students. She employed Supervisory Space most frequently throughout the lesson, and rarely stood in front of the room but tended to move around across the classroom. Teacher A used Interactional Space, standing next to a student's desk, when a student needed individual assistance (e.g. when the student requested help or was experiencing problems with the app).

Teacher B also used speech, gesture and space in order to give instructions and supervise his students. In stark contrast to Teacher A, however, he did not orient students to the lesson's topic but directly asked them to access the app, using imperative (exclusive) clauses (e.g. "Turn on the tablet"). Whereas Teacher A used mainly wh- questions to check whether the students could follow her instructions, Teacher B relied primarily on the polar interrogatives, that is, on closed questions (e.g. "Do you understand?"), which generally do not encourage student-teacher interaction. Like Teacher A, Teacher B's instructions featured material (e.g. press) and behavioural (e.g. listen) processes constructing the actions students had to perform using the app.

Similarly to Teacher A, Teacher B used the processes in imperative clauses as Topical Theme, the word 'students' as Interpersonal Theme, and continuative and conjunctive adjuncts (underlined below) for sequencing the lesson as Textual Theme. In the orientation phase, he said:

> Turn on the tablet. Press it long. It will turn itself on. Do you understand? Can you do it?... Students, look at the second one Good

morning. Can you see it? Press Good morning. Then wait until downloading is done… Then Students, press the red button. Can you see it? Ok. After that, press and listen. Then repeat softly. Speak after softly child. Listen to the story carefully and speak after softly. Can you see it?

Whereas Teacher A used gesture for reinforcement of meaning constructed verbally to realise both regulative and instructional registers, Teacher B employed it only to realise the regulative one (e.g. accompanying the words "wait until downloading is done" with a gesture of slowly drawing a circle in the air, and pointing to his ears while saying "listen carefully"). Teacher B also used his right hand to emphasise the rhythm and pace of his speech, that is, with a textual function.

Teacher B's speech, gestures and classroom space choices helped manage classroom interactions as well. This is evident in his use of imperative clauses with negative polarity and material or behavioural processes such as "Don't come out (to the front)" or "Don't talk", nodding to give a student permission to leave the classroom, gently patting a student's head to signal satisfaction with the student's work, without saying anything during the supervision phase (relationship reinforcement), and pointing to subdue unwanted behaviour (e.g. pointing at a student when saying "Sit properly").

Teacher B differed most starkly from Teacher A in the use of classroom space as he occupied predominantly the front of the classroom (Authoritative Space) when giving instructions, and Supervisory Space when students were completing their task with the app. Consistent with his use of closed questions, he rarely and only briefly gave individual students advice using Interactional Space.

5. Discussion

In this study, we analysed two EFL teachers' use of the tablet app in the classroom from a critical multimodal perspective. The findings suggest that the app, as a new technology for EFL teaching and learning, is a resource which can be integrated differently within the classroom environment. Despite using the same app for Grade 2 EFL, in similar types of schools, the teachers differed starkly in their approach to EFL teaching. Teacher A employed predominantly a communicative language

teaching approach, whereas Teacher B's approach was clearly grammar-translation. Teacher A first encouraged students to imagine that they are going to the supermarket and explore things available there by watching the animated story of a mother and a daughter going to buy things at the supermarket presented in the lesson 'At the Supermarket' in the Grade 2 EFL app. She used English as well as Thai language and expected students to answer her questions in English. Her questions were oriented mainly to supporting and testing students' comprehension of the lesson's content and she only checked their knowledge of relevant target vocabulary in context. A question such as "*What can you buy at the supermarket*?" thus invited multiple correct answers (e.g. milk, rice and meat). She also asked students to use both pictures and words in a multimodal assignment called "Create your own supermarket". In sum, these aspects of the instantiation of the instructional register by Teacher A defined her approach as being consistent with the principles of communicative language teaching, where students are encouraged to communicate in the target language and language is learned in context (Larsen-Freeman & Anderson, 2013).

In contrast, Teacher B adopted a grammar-translation approach, which is characterised by a focus on the direct translation of target vocabulary and teaching of grammar rules out of context (Larsen-Freeman & Anderson, 2013). Teacher B taught the class in Thai and frequently asked students for the Thai translation of target vocabulary, and did not introduce the topic of any of the four lessons that students had to access in his class.

Differences in the two teachers' integration of the EFL app in their classrooms can be partly attributed to differences in the schools' tablet use policies, too. Teacher A asked the students to complete one lesson and an assignment from the app in class as her school did not allow students to take the tablets home. Teacher B's school, on the other hand, allowed that, and so he asked students to explore four different lessons in class and continue this exploration as homework. Instead of teaching the EFL content in the app, Teacher B's focus also tended to be more on teaching students how to access that content; he provided no orientation to the topic in any of the four lessons.

Despite the differences between the two teachers' approaches, there are some notable similarities between the two classes. Both teachers spent much less time on

teaching EFL content than on classroom management and sequencing the lesson. Arguably, this can be attributed to their reliance on the app for presenting EFL content; students used the app to look at pictures and learn vocabulary, play and repeat the pronunciation of new words, listen to conversations in English, and complete exercises. To ascertain that whether such a dominance in teachers' use of the regulative register can be attributed to new technology, however, future research will need to compare a larger number of classroom interactions like the two examined in this paper.

In addition, although Teacher B displayed more authoritative power through the use of Authoritative Space and closed questions, both teachers supervised the class very closely and positioned students as passive participants especially through the use of speech. Both addressed the class by the term 'Students', clearly delineating the power difference between students and teacher in the classroom, and issued many step by step instructions using imperative clauses, with material and behavioural processes in unmarked Topical Theme and with continuative and conjunctive adjuncts as Textual Theme. A potential outcome of such interactions is that students feel discouraged to interact with the app in ways that best suit their individual learning styles.

6. Pedagogical implications

The findings presented in this paper point to several pedagogical implications for teachers' use of a new technology in EFL classrooms.

Firstly, this study sheds light on the role of a new technology in classrooms which contributes to the changing role of teachers. While traditionally teachers have carried primary responsibility for directing both the instructional and regulative register of pedagogic discourse in the classroom, this study highlights the possibility that some of this responsibility may now be outsourced to new technologies. Both classroom interactions in this study relied considerably on the app for presenting EFL content, or instantiating the instructional register, while the teacher's main role in both was to manage the pace and sequencing of the lesson and the classroom interaction, that is, the regulative register. This is consistent with previous research on the implementation of computers for teaching and learning, which sheds light on

the role of a teacher as a facilitator or a guide rather than an imparter of all knowledge (e.g. Lai, 1993).

However, heavy reliance on a technology for teaching and learning can pose a problem if the effective approaches of integrating it in classrooms are not taken into consideration (e.g. Dror, 2008). For a specific example, giving students control over the use of a computer for learning can motivate them and promote learning but can also be detrimental to learning if the use does not fit the learning program (Dror, 2008). Whether and what technology is suitable for learning as well as how to use it to maximise learning should therefore be carefully considered.

Despite the possibility of a new technology to help teach language content, this paper reveals the importance of teachers' choices of language teaching approaches for the successful integration of technology in language classrooms. This study has shown the two contrasting ways in which the app was used for EFL teaching, although the app itself is oriented towards both grammar-translation and communicative approaches. The findings suggest that the effectiveness of the tablet app as a useful teaching resource depends on the decision-making of the individual teacher in the classroom. This then points to the broader implications of large-scale computer initiatives for education such as OTPC. In order to ensure the successful integration of computer technologies in the classroom, professional development of teachers is as important as the quality of the technology and the design of the instructional materials.

This study also highlights the value of a critical multimodal perspective in analysing various modes of communication in classrooms. It sheds light on some of the complex ways in which different communicative modes interact and co-contribute to the teaching of content and classroom management in EFL classes integrating a tablet app. One mode can be used in support of another, as in the case of gesture reinforcing the representational meanings of speech in instantiating the instructional and regulative registers. One mode of communication can also be used to relieve the tension created by another. For instance, although both teachers in the study tended to enforce command and strict supervision upon students through speech and space, their use of gesture could reinforce positive teacher-student relationships. In line with other multimodal studies (e.g. Kress et al., 2005; Mccafferty & Rosborough, 2014), this article reveals that meaning-making in

language classrooms involves more than just verbal language. It is therefore important that future studies of classroom discourse also consider the interaction between various modes of communication and its contribution to pedagogic discourse.

7. Conclusion

The study reveals that multimodal interaction in the classroom and the language teaching approach adopted by a teacher must both be considered in developing effective methods for integrating this technology in EFL classrooms. To further enhance existing understanding of the ways new technologies can be successfully integrated in language teaching and learning, future research would need to combine explorations of teachers' contributions to classroom interaction, such as the one presented in this article, with analysis of the ways students use of different modes of communication when interacting with their peers and teachers. There is also the need to explore multimodality in the design of teaching materials embedded in a technology for language learning (e.g. Vungthong, Djonov, & Torr, (2015)) and how their design interacts with its actual use in classrooms. Additionally, factors other than the design of new technologies and the teaching materials provided with them and approaches to language teaching, such as teachers' attitudes towards these new technologies and views of the children as language learners, students' access to these technologies outside the classroom, and so on (some of which are considered in Vungthong, Djonov, & Torr, forthcoming in *Asian EFL*), also play a role in whether or how effectively and equitably these technologies are integrated in classroom interactions and therefore merit further investigation.

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References

Baldry, A., & P. J. Thibault. (2006). *Multimodal transcription and text analysis*: A multimedia toolkit and coursebook with associated on-line course. London: Equinox.

Bernstein, B. (1990). T*he structuring of pedagogic discourse: Class, codes & control, Volume IV*. London: Routledge.

Christie, F. (1995). Pedagogic discourse in the primary school. *Linguistics and Education*, *7*(3), 221-242. doi:10.1016/0898-5898(95)90024-1

Christie, F. (2005). *Classroom discourse analysis: A functional perspective*. Continuum.

Djonov, E., & Zhao, S. (2014). From multimodal to critical multimodal studies through popular discourse. In E. Djonov & S. Zhao (Eds.), *Critical multimodal studies of popular discourse*, (pp. 1-14). New York: Routledge.

Dror, I. E. (2008). Technology enhanced learning: The good, the bad, and the ugly. *Pragmatics & Cognition*, *16*(2), 215-223. doi:10.1075/p&c.16.2.02dro

Field, K. (ed.). (2000). *Issues in modern foreign languages teaching*. London: Routledge Falmer.

Hall, E. (1966). *The hidden dimension*. Garden City, NY: Doubleday

Halliday, M. A. K. (1994). *An introduction to functional grammar* (2nd ed.). London: Edward Arnold.

Hood, S. (2011). Body language in face-to-face teaching: A focus on textual and interpersonal meaning. In S. Dreyfus, S. Hood & M. Stenglin (Eds.), *Semiotic Margins: Meaning in Multimodalities* (pp. 31–52). London: Continuum.

Jewitt, C. (2006). *Technology, literacy and learning: A multimodal approach*. London and New York: Routledge.

Jewitt, C. (Ed.). (2013). *The Routledge handbook of multimodal analysis* (2nd ed.) London: Routledge.

Kalyuga, S. (2005). Prior knowledge principle in multimedia learning. In R. E. Mayer (Ed.), *The Cambridge handbook of multimedia learning*. New York: Cambridge University Press.

Kress, G., Jewitt, C., Jones, K., Bourne, J., Franks, A., & Hardcastle, J. (2005). *English in urban classrooms: A multimodal perspective on teaching and learning*. London: Routledge Falmer.

Kress, G., & Van Leeuwen, T. (2006). *Reading images: The grammar of visual design*. New York: Routledge.

Lai, K. W. (1993). Teachers as facilitators in a computer-supported learning environment. *Journal of Information Technology for Teacher Education 2*(2), 127-137. doi:10.1080/0962029930020202

Larsen-Freeman, D., & Anderson, M. (2013). *Techniques and principles in language teaching* (3rd ed.). New York: Oxford university press.

Lim, F. V., O'Halloran, K. L., & Podlasov, A. (2012). Spatial pedagogy: Mapping meanings in the use of classroom space. *Cambridge Journal of Education*, *42*(2), 235-251. doi:10.1080/0305764X.2012.676629

Martinec, R. (2000). Types of process in action. *Semiotica*, *130*(3), 243-268. doi:10.1515/semi.2000.130.3-4.243

McCafferty, S. G., & Rosborough, A. (2014). Gesture as a private form of communication during lessons in an ESL-designated elementary classroom: A sociocultural perspective. *TESOL Journal*, *5*, 225–246. doi:10.1002/tesj.104

Ministry of Education, Thailand. (2013). The report on the implementation of government policy. Retrieved from http://www.moe.go.th/moe/th/home/

O'Halloran, K. L., & Smith, B. A. (2011). Multimodal studies. In K. L. O'Halloran & B. A. Smith (Eds.), *Multimodal studies: Exploring issues and domains*. New York & London: Routledge.

OLPC. (2012). Learning to read with One Tablet per Child. Retrieved from http://blog.laptop.org/tag/otpc/#.UZEqKbUU-z4

Patpong, P. (2006). *A systemic functional interpretation of Thai grammar: An exploration of Thai narrative discourse* (Unpublished doctoral thesis), University of Macquarie, Australia.

Pollockm, E., Chandler, P., & Sweller, J. (2002). Assimilating complex information, *Learning and Instruction*, 12, 61-86.

Taylor, R. (2014). Multimodal analysis of the textual function in children's face-to-face classroom interaction. In A. Maiorani & C. Christie, *Multimodal Epistemologies: Towards an Integrated Framework* (pp. 420-452). New York: Routledge.

Vungthong, S, Djonov, E, & Torr, J. (2015). Images as a resource for supporting vocabulary learning: A multimodal analysis of Thai EFL tablet apps for primary school children. *TESOL Quarterly*. doi:10.1002/tesq.274

Vungthong, S, Djonov, E, & Torr, J. (in press). Factors contributing to Thai teachers' uptake of tablet technology in EFL primary classrooms. *Asian EFL Journal*, *19*(2).

Western Australian Department of Education. (2013). iPads for education: Early childhood iPad initiative. Retrieved from http://det.wa.edu.au/ipadsforeducation/detcms/navigation/ipad-initiative/?oid=MultiPartArticle-id-12568310

Yiemkuntitavorn, S. (2005). *Thai transitivity: A functional grammar analysis* (Doctoral dissertation, University of Tasmania, Australia). Retrieved from http://eprints.utas.edu.au/22167/1/whole_YiemkuntitavornSita2005_thesis.pdf

Zhao, S., & Van Leeuwen, T. (2014). Understanding semiotic technology in university classrooms: A social semiotic approach to powerpoint-assisted cultural studies lectures. *Classroom Discourse*, *5*(1), 71-90. doi:10.1080/19463014.2013.859848

8.3 Postscript

This chapter has presented a critical multimodal analysis of the ways two EFL teachers used three modes of communication (speech, gesture, and space) to teach the EFL class using the OTPC tablet app. Its findings have implications for the use of new technology to address the teaching challenges such as a paucity of teachers with high language proficiency.

The first main finding of this chapter, which is relevant to the use of educational technology in general, is that the regulative register (managing the class) was much more dominant than the instructional register (teaching the content knowledge) in both classrooms observed for this study. This implies the potential use of new technology to present the content knowledge, or in other words the possibility of the use of new technology to help teach some EFL content. However, this research project acknowledges that the findings of an observation of only two classrooms are not generalisable and need to be complemented by future research to further explore whether the dominance of the regulative register is typical in classrooms using new technology.

Another finding is specific to EFL teaching. This chapter has shown the two contrasting ways in which the tablet app was used for EFL teaching (one more oriented towards communicative teaching approaches and the other one more towards grammar-translation method). It has highlighted the importance of teachers' choices of foreign language teaching approaches for effective technology use. Different EFL teachers, through their use of language, gesture, and pedagogic space, may integrate the same technology and EFL materials very differently in their classrooms. The multimodal integration of the technology in the classroom may, for example, reflect a particular approach to foreign language teaching and classroom management.

This finding, along with the findings that multimedia materials in the OTPC tablet apps have some limitations in teaching children vocabulary in Chapter 5, teachers can make the decision whether and how to use the tablet app in their classroom in Chapter 6, and teachers tended to view the potential of the tablet app to develop students' EFL discrete skills in Chapter 6 and 7, shed light on the broader implications for large-scale educational technology initiatives. The aims of these

initiatives seem to imply that educational technology can be used as a solution to the teaching and learning challenges such as inequity in education in terms of the digital divide and access to quality teaching (OTPC, Thailand, 2012) and a lack of high quality teachers (Department of Education and Training, Australia, 2016; OLPC, 2012). This research project suggests that there is the need to caution against the reliance on new technology as an easy solution to these problems. Teachers are still needed in a classroom and play a critical role in using a new technology for effective teaching and addressing what multimedia materials in the technology lack. The distribution of a new technology device therefore should be accompanied with professional development of teachers which is as important as the quality of the technology and the design of the instructional materials.

Chapter 9

Discussion

Technology is just a tool. In terms of getting the kids working together and motivating them, the teacher is most important.

Bill Gates (Ratcliffe, 2015)

9.1 Introduction

The global phenomenon of using new computer technologies in education has attracted both support and opposition. Supporters argue that projects introducing portable computer technologies in education have the potential to transform teaching and learning, and cite improvement in students' test scores as evidence (Bebell & Kay, 2010; Shapley et al., 2010; Papert, 1993; Stager 1995; Brown 2003). Opponents view such projects as running the risk of drawing attention away from important problems in education (e.g. the need to ensure that preparing students for standardised tests is not done at the expense of encouraging life-long learning), and argue that better scores are likely to be a result of innovative teaching rather than expensive educational technology projects (Weston & Bain, 2010; Cuban, 2001, 2006a; 2006b; Oppenheimer, 2003). The present project was situated between these two opposing groups of research, with its aim being to present a more holistic and critical examination of the use of new technology and its potential to address problems associated with the teaching of EFL in primary schools in Thailand.

As discussed in Chapter 2, the use of portable technologies such as tablet computers in language teaching is on the rise, and initiatives that promote such use view these technologies as having the potential to address key challenges of foreign language teaching such as the paucity of teachers with high proficiency in foreign languages (e.g. Department of Education and Training, Australia, 2016; OLPC, 2012). Using the One Tablet Per Child (OTPC) project in Thailand as a case study, the research presented in this thesis explored the potential of the OTPC tablet, and multimedia learning materials made available through it, to support the teaching of

EFL in the early years of primary school. In this chapter, I discuss the research project's key findings and what they suggest about the potential of this new technology and learning materials to support the teaching of EFL in primary schools, promote equity in education and EFL teaching, and support learner-centred pedagogies. Underpinning this discussion is the view that studies of the potential of new technologies to support teaching and learning must carefully examine both the 'gains and losses' they bring to contexts of education (Kress, 2005).

9.2 Supporting EFL teaching in primary schools

The findings in Chapter 5 to Chapter 8 shed light on the potential and limitations of technology use to support the teaching and learning of EFL in primary school.

9.2.1 Promoting the learning outcomes of the primary EFL curriculum

Previous research has suggested that, in order to effectively integrate new technology into teaching, teachers need to consider how it can be used to support the goals specified in the curriculum (Geisert & Futrell, 2000; Marek, 2014). One of the most dominant EFL teaching methods encouraged in the EFL curricula of many countries, including Japan, South Korea, Iran, Libya and Thailand, is communicative language teaching (CLT) (Gorsuch 2000; Yoon, 2004; Orafi & Borg, 2009; Ministry of Education, Thailand, 2008; Mozafari & Wray, 2015). The basic education core curriculum in Thailand, in particular, states that EFL teaching in Grade 1 through to Grade 3 should support students in developing the ability to use English "for listening, speaking, reading and writing, exchanging data and information, expressing feelings and opinions, interpreting, presenting data, concepts and views on various matters, and creating interpersonal relationships appropriately" (Ministry of Education, Thailand, 2008, pp. 252-253). However, findings from the analysis of questionnaires and interviews with teachers who participated in the present research project reveal a tendency by teachers to use new technology in line with the principles of behaviourist approaches for the teaching of discrete language skills, especially for developing correct English pronunciation and emulating a native speaker's accent, and also, albeit less frequently, for vocabulary learning, listening and reading. The interview data, too, suggest that teachers tended to view and use the app as a means of supporting students in developing these skills in isolation, rather than for the ability

to use English in meaningful and authentic contexts. These findings, of course, cannot show whether and if so how the teachers actually helped students develop this ability or worked towards achieving an important learning outcome in Thailand's primary EFL curriculum, with or without the use of tablets.

A strong focus on discrete language skills deserves attention as it may be detrimental to children's foreign language learning. Research has shown that integrated-skill approaches encourage children to develop communicative competence and promote effective language learning (Oxford, 2001; Harmer, 2007); and also shows that, when children learn foreign languages, they tend to focus on meaning rather than forms and accuracy, and try to make sense of foreign language input by relating it to their knowledge of everyday life (Moon, 2006; Cameron, 2001; Phillips, 1993). Supporting children's foreign language learning thus requires communicative language teaching approaches, which prioritise meaning and authentic communication over accuracy in grammar, spelling or pronunciation (Larsen-Freeman & Anderson, 2013).

It is not surprising that many teachers in the present research reported their expectation of children to learn forms and accuracy according to the native speaker-like standard from their interaction with the EFL tablet app: the ideology of native-speakerism, and the associated belief that native speakers are the best teachers, dominates the field of English language teaching in many countries, including Thailand (Holliday, 2006; Foley, 2007). Although correct pronunciation is an important focus for helping students develop their speaking skills in a foreign language, research has highlighted the need for EFL teaching in Thailand to put less emphasis on following the native-speaker model in teaching correct grammar and pronunciation and instead to focus on helping learners increase their communicative competence (Kongkerd, 2013). Adopting this new perspective involves viewing language use that can be understood even though it differs from the native speaker standard, as a legitimate variation that can be appreciated as a strength rather than as a deficiency to be corrected (Jenkins, 2009).

The discrepancy between the main learning outcomes of the Thai primary EFL curriculum and EFL teachers' views about the new tablet technology, reported in this research project, draws attention to the teachers' role in implementing the technology. Teachers make decisions about whether and how to integrate the technology in their

teaching, which have the potential to support or hinder students' ability to work towards specific learning outcomes. This is also reflected in the analysis of classroom observation data in this project. Despite using the same tablet app, the two teachers observed for this project taught EFL and managed classroom interactions differently. One adopted a communicative language teaching approach overall, and encouraged students to learn English in context by using English and Thai language as well as other modes. The other relied on the Thai language, and asked students for the Thai translation of isolated English vocabulary items, without using verbal or non-verbal resources to construct a specific communicative context in which these words could be introduced and used. The stark contrast between the two teachers' classroom practices provides additional support for the argument, made in studies of 1:1 computing projects, that innovative technologies alone cannot contribute to improving students' learning performance, but must be implemented through effective pedagogy (e.g. Weston & Bain, 2010; Cuban, 2001, 2006a; 2006b).

The present project has thus highlighted the need for professional development opportunities that can support teachers to develop pedagogies for successfully integrating new technologies in EFL classrooms. Such pedagogies could help teachers overcome the tendency to rely on practices such as encouraging rote learning and prioritising strict adherence to native-speaker models of correct grammar and pronunciation over communicative competence, practices that research has shown to be ineffective yet very common in EFL teaching in Thailand (Atagi, 2002; Foley, 2005, 2007; Fry, 2002; Payaprom, 2012; Punthumasen, 2007) and attributed to teachers' limited English proficiency (Wongsothorn, 2002; Prapaisit, 2003; Nonkuketkhong, 2006).

9.2.2 Enhancing children's motivation to learn

New technologies are often viewed as having the capacity to motivate students to learn EFL (Skinner & Austin, 1999; Al-Jarf, 2004; Ramachaudran, 2004; Gilakjani, 2012; Wu et al., 2011, 2011; Kalanzadeh, Soleimani, & Bakhtiarvand, 2014; Huang, Yang, Chiang, & Su, 2016). This view was shared by teachers who participated in this project.

Affective factors such as fun and confidence are particularly important for motivating children's foreign or second language learning (e.g. Moon, 2006; Phillips,

1993); and the multimedia affordances of new technologies (e.g. use of sound, visuals, animation, and interactivity) are often considered to make learning exciting and entertaining, particularly when incorporated into songs and games designed to engage children learning EFL (Sevik, 2012; Domoney & Harris, 1993; Coyle & Gracia, 2014; Sylvéna1 & Sundqvista, 2012; Lewis & Bedson, 1999; Moon, 2006; Phillips, 1993). Games and songs were also included in the Grade 1 and Grade 2 apps in this research project and, as shown in the survey data, were considered by teachers as the two sections in the apps that children would enjoy the most.

These features may contribute, as teachers in this study have suggested, to children's increased motivation to interact with the new technology; and this motivation may be supportive of learning, as it is intrinsic, that is, it involves engaging in "an activity for its inherent satisfactions rather than for some separable consequence" (Ryan & Deci, 2000, p. 56) such as external pressures or rewards. While studies have shown that students who are intrinsically motivated learn better than those who are not (e.g. Vansteenkiste, Lens, & Deci, 2006), it is important to avoid equating motivation to interact with a new technology with motivation to learn, and to examine both through children's perspectives in future studies.

9.2.3 Multimedia affordances for teaching EFL content

A large body of research has highlighted the potential of the multimedia affordances of new technologies, such as the use of images, video, sound and interactive features, to support EFL teaching and learning, with reference to one of the four macro skills – speaking, listening, reading and writing (Huang, 2013; Khoii & Aghabei, 2009; Yeh et al., 2007; Shamir & Johnson, 2012) – and to improve exposure to English (Sadeghi & Dousti, 2014; Uzun, 2012; Chen, 2005). While many studies have documented various technical problems in implementing new computer technology devices (e.g. Liu, Maradiegue, & Wivagg, 2014; Shudong & Higgins, 2006), few have exposed the limitations of the multimedia affordances of such technologies, in particular in the context of EFL teaching and learning (e.g. Hismanoglu, 2011). Consequently, there is a need to examine these affordances, in terms of their potential as well as limitations, in the design of EFL learning materials accessed through new technologies (e.g. Finardi, Leao, & Amorin, 2016; Reinders & Hubbard, 2013).

Research has shown that multimedia features such as the use of images and their multimodal interaction with language can support the teaching of L2 vocabulary (Bagheri, 2015; Wright, 1989; Cohen, 1987). Bagheri's (2015) experimental study, for example, reports that the use of learning materials with both verbal and visual affordances helped high school students learn English vocabulary more effectively than the use of either verbal or visual affordances alone. In the present research, the potential and limitations of images to support EFL learning were examined through the analysis of visual-verbal relations in the tablet apps. The findings of this research project reveal that the use of visual-verbal relations alone could not support students to develop all of three main aspects of vocabulary learning – understanding a word, using it in the right situation, and identifying form (Cameron, 2001) – and that visual-verbal relations in the apps could not provide enough information for students to learn certain abstract concepts that are different across cultures (e.g. the concept of family, which varies across the Asian and Western contexts), or proper nouns (e.g. China). This suggests that, despite the potential of multimedia affordances to support EFL learning reported in earlier studies, teachers and other knowledgeable adults are still needed to support children's learning. This finding echoes Liaw's (2014) observation that Grade 5 EFL students, during their use of an online reading program with an instant feedback function, still needed help from their teachers, and reinforces the argument that the successful introduction of new technologies in education relies on a strong understanding of the teachers' role in integrating these technologies into the classroom (e.g. Dror, 2008; Acha, 2009; Finardi, Leao, & Amorin, 2016).

Studies of multimedia learning also suggest that such learning is more effective when students are given a preview of the content through activities that activate their prior knowledge, such as demonstration and discussion (Kalyuga, 2005; Pollockm, Chandler, & Sweller, 2002), and when they have opportunities to promptly employ their newly acquired knowledge (Mayer, 2005). Before asking students to engage with selected content of the app, one of the two teachers observed for the present study used English and Thai language and non-verbal communication modes such as gesture to preview that content. After students had explored the content, the teacher assigned them a task that she had designed to allow them to use the new English vocabulary that they had learned from the app: they had to draw a supermarket and label the various objects on the page. The other teacher participant observed in this

project did not give students any preview of content or opportunities to use their newly acquired knowledge. This, again, highlights the important role that teachers play in making and encouraging effective use of the multimedia affordances of learning materials accessed through new technologies in the classroom. Providing a new technology alone cannot address problems such as the lack of qualified foreign language teachers with high proficiency in the target language.

9.3 Promoting equity in education and EFL teaching

As discussed in Chapter 1, Thailand has faced problems of inequity in education in terms of access both to high quality EFL teaching (Hayes, 2010; Atagi, 2002) and to new technologies, the digital divide (Malisuwan, Kaewphanuekrungsri, & Milindavanij, 2016). Both types of inequity become apparent when students in urban areas are compared with their more disadvantage peers in rural areas (Hayes, 2010; Atagi, 2002; Malisuwan, Kaewphanuekrungsri, & Milindavanij, 2016). Introducing new technologies in education is often proposed as a solution to such problems (e.g. Teng, 2016; Bennett, Honey, Tally, & Spielvogel, 2001). Similarly, the OTPC project in Thailand aimed to promote equity in education through the distribution of tablets to all primary school students (OTPC, Thailand, 2012; Sririsaengtaksin, Praneetpolgrang, & Tubtimhin, 2013).

Initiatives such as the OTPC are founded on the assumption that providing access to new technologies would help ensure equity in education and deliver improvement in teaching and learning. The findings of the present study, however, highlight the need to be critical of this assumption for two main reasons. Firstly, in the questionnaire and interviews, teachers reported that some students may have had limited or no opportunities to use the OTPC tablet, as some schools did not allow students to take the tablets home, and more than half of the 213 teachers who completed the survey had decided not to use it in the classroom. If the teachers would not integrate the tablet into their teaching, some underprivileged students may not have had a chance to use it and may remain without access to any new technology. The digital divide will then remain, and the OTPC project will not achieve the aim of increasing equity in education through access to new technologies for learning. It is worth noting that these considerations apply to projects introducing new

technologies in education in general, and are not specific to EFL teaching and learning.

To overcome this risk, we need to understand the factors that impact on teachers' decisions whether and how to integrate the distributed technology in the classroom. The present study identified four main relevant factors: teachers' age, new technology training, beliefs, and confidence in their speaking skills. The teacher survey conducted in this study shows that teachers tended to use the technology if they were young, had attended the tablet training session, believed that the EFL app is aligned with the curriculum or could support their teaching, and/or had confidence in their English speaking skills. The Thai government can, therefore, ensure a better chance of success of future educational technology projects by taking these factors into account. It can, for example, examine why older teachers may be less likely to use a new technology. Although many studies have reported that age is an important factor influencing EFL teachers' technology uptake (e.g. Blankenship, 1998; Boulter, 2007; Mahdi & Al-Dera, 2013), research is yet to adequately explain why this is the case and how age interacts with other factors.

In order to motivate teachers to adopt new technologies in their classrooms in ways that could improve students' access to and use of such technologies for learning, governments can also provide professional development for teachers that focuses on how to integrate new technologies effectively through innovative pedagogy, and that supports a close correspondence between the design of learning materials accessed through these technologies and curriculum outcomes. Previous research has shown that, even when there is adequate good quality computer technology in rural schools, such technology may not be implemented effectively in EFL classrooms because of teachers' lack of technology knowledge (e.g. Zhai, 2008; Teng, 2016). It is thus not surprising that many studies have identified technology training as one factor that could encourage the uptake of new technologies in EFL teaching (e.g. Chen, 2008; Boulter, 2007; Dashtestani, 2012). In line with the argument that the design of EFL multimedia learning materials must reflect the learning outcomes outlined in relevant curricula (e.g. Howard & Major, 2004), the present project shows that teachers are most likely to use the EFL learning materials provided through the OTPC tablet if they viewed these materials as having the potential to foster students' achievement of the learning outcomes in the primary EFL syllabus.

While previous research points to lack of access to new technologies as a key barrier to integrating them in foreign language education (e.g. Park & Son, 2009; Dashtestani, 2012; Li, 2014), the present study has suggested that quality of these technologies must also be taken into account: many of the teachers in this study reported that the poor quality of the OTPC tablet was the reason they decided against integrating it into their teaching.

Secondly, regardless of teachers' decisions whether and how to incorporate a new technology in the classroom, providing students with access to new technologies outside school would not necessarily promote learning and ensure equal access to high quality education – in EFL or any other learning area. Projects such as the OTPC in Thailand are based on the belief that access to portable computer technologies itself encourages students to find information and further their learning based on their individual interests (OTPC, Thailand, 2012). However, access to resources that students find enjoyable does not guarantee that students would gain academic, subject-related knowledge when engaging with these resources. English learners have been shown to use new technology outside the classroom to access materials in English that they like, rather than ones that they believe can support their learning (Barnee, 2013; Clément, Dörnyei, & Noels, 1994). Furthermore, even if EFL learners use new technologies to access materials that can promote their learning, research has demonstrated that technology cannot support children's learning as effectively as human interaction, especially conversations with more knowledgeable adults (e.g. Plowman, Mcpake, & Stephen, 2012) This is yet another reason why the availability and use of new technologies alone cannot ensure access to quality education, especially for children.

9.4 Encouraging learner-centred pedagogies

In contemporary education systems, learner-centred approaches to EFL teaching are strongly encouraged. The Thai National Education Act, in particular, states that:

> Education shall be based on the principle that all learners are capable of learning and self-development, and are regarded as being most important. The teaching-learning process shall aim at enabling the learners to develop themselves at their own pace and to the best of their potentiality. (Office of the National Education Commission (ONEC), Thailand, 1999, p. 10).

Many studies have suggested that new technology has the potential to encourage a shift towards more learner-centred pedagogies (e.g. Dunleavy, Dextert, & Heinecket, 2007; Keengwe, Onchwari, & Onchwari, 2009; November, 2010; Shuler, 2009; Brook, 2011). Others, however, have demonstrated that technology can be used in the service of traditional, teacher-centred approaches as a result of teachers' pedagogical beliefs and the nature of the learning materials accessed through new technologies (e.g. Oakley, Pegrum, Faulkner, & Striepe, 2012).

Echoing previous research (e.g. Gilakjani, 2012), the present study suggests that tablet use may help create a less teacher-centred environment in the classroom. Based on the analysis of teacher interviews, this research project shows that teachers viewed students as active doers interacting with the tablet app, rather than as passive recipients of knowledge given by teachers. This reveals a shift in attitudes away from the traditional, teacher-centred perspectives of EFL teaching in Thailand, which feature teachers as imparters of knowledge that students acquire rather than students as actively co-constructing knowledge with scaffolding from their teachers (e.g. Kulsirisawad, 2012; Keyuravong & Maneekhao, 2006; Chatranonth, 2008; Noom-Ura, 2013).

The classroom interactions analysed in this study also suggest that tablets may support a shift towards a less teacher-directed environment. The two teachers relied considerably on the tablet app for presenting EFL content, and required students to interact with the app and learn from its EFL materials. The teachers' act of outsourcing some of their responsibility to the app could be interpreted as a positive move towards a more learner-centred approach. Learners, for example, could learn EFL from the tablet device at their own pace (Chik, 2014). Notably, however, these findings are limited in their scope and further research is needed to systematically explore whether and how changes in teachers' perspectives may be reflected in a shift towards more learner-centred pedagogies, which involve complex instructional methods that encourage learner autonomy and independence.

Despite the potential of the integration of new technologies to promote a less teacher-centred classroom, consistent with earlier research on children's learning through new technologies (Livingstone, Mascheroni, Dreier, Chaudron, & Lagae, 2015; Liaw, 2014; Plowman, Stephen, MacPake, 2010; Plowman, McPake, & Stephen, 2008; Roberts, Djonov, & Torr, 2008; Plowman & Stephen, 2007; Resnick, 2006;

Pricea, Rogers, Scaifea, Stanton, & Neale, 2003), the present study has argued that adults (teachers or parents) still play an important role in guiding children's behaviour and learning through these technologies. The survey and interview-question responses of teacher participants in this study, too, support this view, rather than the 'digital native' ideal (Prensky, 2001), the common belief that children who have grown up with new technologies do not need adult support to use them effectively. The analysis of classroom observation data also shows that the two teachers closely supervised children using the tablet app and managed classroom interactions through their use of space, gesture and speech. This suggests, in line with previous research, that although children may be able to learn some content knowledge through interactions with new technologies, adults (teachers or parents) are still needed for directing or facilitating children's technology use (e.g. Liaw, 2014; Resnick, 2006; Pricea el at., 2003). Teachers, in particular, are responsible for the successful integration of technology in the classroom. The teachers observed for this project guided children to explore certain parts of the learning materials in the tablet app, and frequently patrolled the classroom in order to ensure that children were following their instructions and not experiencing problems with the technology.

9.4 Conclusion

The introduction of new technologies alone cannot address challenges in teaching children EFL in particular or education in general, but must be accompanied by effective approaches to pedagogy and policy. Carefully examining the gains as well as the losses new technologies bring about is a prerequisite for developing such approaches and thus enabling the successful implementation of new technologies in contexts of education. The key gains associated with the use of tablet computers in primary schools highlighted in the present study include the potential to promote less teacher-centred perspectives on learning and classroom practices, and to motivate children to learn. On the other hand, the main risks are associated with the assumption that access to new technologies on its own can effect improvement in teaching and learning in general, and with the inability of the multimedia affordances of learning materials accessed through technology to effectively teach important particular aspects of EFL (e.g. proper nouns or the meaning of words that signify abstract concepts).

To bring about sustainable and significant changes in education in general and EFL teaching and learning in particular, we need to rethink our education system (e.g. classroom size; teachers' workload; incentives for individuals with high language proficiency to become teachers and for existing teachers to undertake training), pedagogical culture (e.g. strict adherence to the native-speaker ideal; a strong focus on rote learning), and professional development for teachers (e.g. providing training for teachers to develop their language proficiency and pedagogical knowledge).

Chapter 10

Conclusion

The technology itself is not transformative. It's the school, the pedagogy, that is transformative.

Tanya Byron (EdTEch Digest, 2015)

10.1 Introduction

Countries around the world are relying on new technologies to help them meet the ever growing demand for giving children equal access to both high quality education in general and opportunities to learn foreign languages in particular (e.g. OLPC, 2012; Department of Education and Training, Australia, 2016). This global trend has achieved even stronger salience in non-English-speaking countries, as many of them over the past few decades have introduced English as a foreign language (EFL) as a core curriculum subject from the early years of primary school, and have developed initiatives designed to ensure every child has access to new computer technologies. This study has critically examined this trend by focusing on the potential of the technology and EFL learning materials provided through Thailand's One Tablet Per Child (OTPC) project to address the challenges of teaching children EFL, such as a lack of teachers with high foreign language proficiency. It has shown that, with the rise of 1:1 educational technology initiatives, we need to avoid relying on new technologies alone to address such challenges.

This chapter presents an overview of the findings of this research project, and then the implications for educational policy makers, teachers, and designers of learning materials. It also briefly presents the study's contributions to multimodal research, as well as some of its limitations and recommendations for further study.

10.2 Overview of the findings

This research project has examined four main research questions, or four different but interrelated dimensions of new technology use for EFL teaching. This section presents a brief overview of the project's key findings.

Research Question 1: What is the potential of the multimodal design of the EFL tablet apps to support language teaching and learning? Specifically, what visual-verbal relations are used in the apps, and what are their potential and limitations for teaching children English vocabulary? (Chapter 5)

The analysis of the Grade 1 and 2 tablet apps shows that EFL materials in both made use of various types of visual-verbal relations in the 'Songs' section, which both Grade 1 and Grade 2 EFL apps include and which teachers had identified in their questionnaire responses as valuable for children's vocabulary learning. Both Grade 1 and Grade 2 songs had a stronger reliance on the category of elaboration (the close overlap of meanings presented in pictures and words), which could potentially help young students' vocabulary learning. The Grade 2 app at the same time had more complex visuals (e.g. incorporating a background or setting as opposed to simply showing individual objects or people against a white background) combined with more abstract vocabulary (e.g. 'family'). The analysis also reveals some limitations of relying on verbal-visual relations in the EFL tablet apps for vocabulary learning (e.g. images cannot illustrate more abstract concepts or proper nouns; divergence relations, where words and images provide very different or even contradictory information, could potentially confuse children). By revealing these limitations, this study has highlighted the important role that teachers still have in supporting effective vocabulary learning, even when a new technology is introduced.

Research Question 2: What factors influence teachers' decisions to use the EFL tablet app in the classroom? (Chapter 6)

The analysis of answers to the closed-ended questions in the questionnaire completed by 213 teachers for this study shows that factors influencing early primary teachers' uptake of the tablet app in EFL classrooms included their age, training, beliefs about the app's potential to support teaching and learning, and confidence in their English

speaking skills. To explain, younger teachers, teachers who attended the OTPC tablet training workshop, teachers who believed that the app supports teaching and learning, and teachers who had confidence in their English speaking skills, were more likely to use the OTPC tablet app in their class. The analysis also reveals that the most prominent reason preventing the teachers from using the tablet app in their classroom was the tablet's poor quality.

Research Question 3: What are the views of teachers about the use of the OTPC tablet app for students' EFL learning, and about children as EFL learners? (Chapter 6 and 7)

The analysis of the survey results reveals that the 138 EFL primary teachers who had answered the open-ended questions tended to view the tablet app as motivating children to learn EFL and tended to value the app for what they saw as its potential to help children develop discrete English language skills (e.g. pronunciation and vocabulary learning).

The analysis of seven teachers' interviews also confirms that teachers mainly construed children as EFL learners learning discrete English skills through use of the tablet app. It also shows that, in talking about children interacting with the tablet, teachers tended to present children as 'doers'. They also construed use of the tablet or the app as having the potential to transform teacher-student relationships in the classroom – giving students an active, rather than passive role – as in the interviews teachers rarely focused on their role in supervising students' use of the tablet or the tablet app, i.e. they rarely constructed children as the Goal of teachers' actions.

Research Question 4: How do teachers' multimodal choices (speech, gesture and pedagogic space) incorporate the OTPC tablet app and the learning materials provided on it into teaching EFL content and managing classroom interactions? (Chapter 8)

The analysis of the classroom observation data reveals that teachers' use of speech, gesture and pedagogic space played an important role in teaching content and managing the EFL classroom using the OTPC tablet app. In both classroom interactions analysed for this study, teachers co-opted these resources for construing both the regulative register (the managing of the classroom) and the instructional register (the teaching of EFL content) of pedagogic discourse, and in both the

regulative register was dominant. The analysis also shows that the two teacher participants in the case study for this research adopted different language teaching approaches, and that this was reflected in the way they integrated the OTPC tablet app into their classrooms (one with the grammar-translation method, and the other more oriented towards the communicative approach).

10.3 Implications for educational policy makers, teachers and learning material designers

The findings of this research project have implications for educational policy makers, teachers, and material designers, regarding the use of new technologies for EFL teaching, as well as for education in general.

10.3.1 Implications for educational policy makers

This research project has revealed three important implications for educational policy makers in implementing large-scale educational technology initiatives such as the OTPC. They need to (1) realise the important role of teachers, (2) consider how a new technology can be used effectively in classrooms, and (3) avoid relying on providing access to educational technologies alone to promote equity in education and EFL teaching.

Firstly, educational policy makers need to consider the important role of teachers in implementing educational large-scale projects. In line with previous research (Bebell & Kay, 2010; Shapley, Sheehan, Maloney & Caranikas-Walker, 2010), teachers in this study made a decision whether and how to integrate the OTPC tablet into their pedagogical practices. If they decided not to use it, students would be deprived of the opportunity to use this new technology to support their learning in a classroom. It is therefore important for policy makers to consider factors influencing teachers' decisions to use it in their classroom. This research project has shown that the factors that influenced teachers' decisions to adopt the OTPC tablet for use in their EFL classrooms include teachers' age, training, beliefs about the technology's potential to support teaching and learning, and confidence in their English speaking skills, as well as the quality of a technology itself. Future research also needs to consider whether some of these factors are more important or correlated (e.g.

whether older teachers need professional development on how to use the technology more than younger ones). These findings can help inform the policy making process to ensure better success for educational technology projects.

Secondly, educational policy makers must also develop strategies to ensure that new technology is used effectively. Consistent with what previous research suggests (e.g. Boulter, 2007), the present study reveals that there is a need to provide ongoing support for teachers to be able to use new technology in their instruction more effectively. Teachers' different approaches to the integration of the tablet app into EFL teaching and their different pedagogical practices greatly shape different teaching and learning environments, as highlighted in Chapter 8. Teachers may choose teaching approaches that are against what the curriculum and research suggest (e.g. the use of new technology to develop children's narrow English skills, as reported by teachers in the questionnaire survey and interviews, as shown in Chapters 6 and 7).

Thirdly, caution must be exercised when educational technologies are introduced to promote equity in education and EFL teaching. As discussed in Chapter 9, initiatives such as the OTPC have been used to address problems of (1) inequity in access to high quality EFL teaching, and (2) the digital divide (e.g. Teng, 2016; Bennett, Honey, Tally, & Spielvogel, 2001; OTPC, Thailand, 2012; Sririsaengtaksin, Praneetpolgrang, & Tubtimhin, 2013). The present study shows that educational policy makers need to be critical of this use, as teachers may not effectively integrate new technology in their classroom and students may not use it on their own to develop their learning.

10.3.2 Implications for teachers

This study has revealed two significant implications that projects such as the OTPC have for teachers in general and EFL teachers in particular. It has highlighted the need for teachers to consider (1) the potential and limitations of the use of multimedia materials for teaching, and (2) suitable approaches for teaching children EFL.

Firstly, teachers need to consider not only the potential of multimedia affordances for teaching EFL content but also the risk of heavy reliance on them. As shown in Chapter 5, there were some limitations of the EFL multimedia materials in

the OTPC tablet technology. Teachers would still be needed for providing the examples of using words in different contexts for students, and for explaining the meaning of some words that cannot be presented visually (e.g. proper nouns). This points to the important role of teachers in exploring the potential and limitations of the affordances of new technologies. Teachers are still required to recognise the limitations, and to compensate for what new technologies lack.

Secondly, teachers need to choose a suitable language teaching approach to the technology use, to promote more effective EFL learning. As discussed in Chapter 9 and Section 10.3.1, the 138 teacher participants' tendency to view the OTPC tablet with the EFL app as a tool to support children in developing discrete language skills as well as accuracy in these skills can be problematic. This view clashes with research about children's language learning showing that children are more likely to focus on meaning rather than forms and accuracy (Moon, 2006; Cameron, 2001; Phillips, 1993), and with the EFL curriculum outcomes in Thailand which promote communicative competence (Ministry of Education, Thailand, 2008). Teachers must therefore carefully consider the pedagogical practices that can effectively promote children's language learning, such as socio-cognitive models of language teaching that encourage students to develop communicative competence and ability to use language in authentic contexts (Warschauer & Healey, 1998). They should also consider how their use of new technology for teaching supports the goals specified in the curriculum (Geisert & Futrell, 2000; Marek, 2014).

10.3.3 Implications for designers of learning materials

This research project sheds light on two main implications for designers of learning materials: the need to consider (1) curriculum outcomes and expectations for children's learning at different stages, and (2) different meaning-making potentials and limitations of different modes in new technologies.

Firstly, EFL learning materials should be aligned with curriculum outcomes and expectations for children's learning at different stages (Howard & Major, 2004; Cabrera & Bazo, 2002; Cakir, 1999). As discussed in Chapter 6, the research project shows that teachers who agreed that the tablet app responds to the curriculum and/or supports their teaching were more likely to use it in classrooms. The design of the learning materials in the technology that correspond to the curriculum would

therefore increase the chance of teachers' adoption of that technology in classrooms. In addition, the analysis of the OTPC tablet apps in Chapter 5 suggests that the visual design should also be considered in terms of how its use would support children in learning particular aspects of EFL at different stages. To explain, differences in the use of visual-verbal relations in the Grade 1 and Grade 2 tablet apps in this research project responded to the curriculum outcomes and expectations for children's EFL learning at each grade (e.g. the Grade 1 app used visual-verbal relations that help students learn vocabulary as words or short phrases; whereas the Grade 2 app used more complex vocabulary that needs the use of background, as well as simple sentences that involve characters speaking to each other or to the audience). In addition, EFL learning multimedia designers are also required to have some knowledge of foreign language teaching and learning, or to collaborate with experts in this area as well as curriculum design experts.

Secondly, designers of learning materials to be included in new technologies need to be aware of the different meaning-making potentials and limitations of different modes of communication embedded in the new technologies (e.g. images and language). As shown in Chapter 5, visuals alone may not adequately represent some words (e.g. proper names such as China cannot be shown visually). In addition, some visual-verbal relations such as divergence potentially confuse children and should be avoided.

10.4 Contributions to research on multimodality

This study has contributed to multimodal research in terms of three main aspects. Firstly, this research challenges the traditional focus on verbal language in educational research, especially in the area of second and foreign language teaching and learning, and points to the need to consider the potential of resources other than language to support children's learning (e.g. Jewitt, 2005b; Kress et al., 2005). It analysed modes of communication other than language in learning materials and classroom interactions as contributing to the teaching of EFL to children. As shown in Chapter 5, this project has shown that images in EFL learning materials and their interaction with language could support children's vocabulary learning. In addition, Chapter 8 has documented some of the ways in which teachers may orchestrate

various modes of communication in order to teach EFL and manage the classroom, building on research that shows that both verbal and non-verbal semiotic resources can be used to realise a specific pedagogy (e.g. Bourne & Jewitt, 2003; Kress et al., 2005; Lim, O'Halloran, & Podlasov, 2012).

Secondly, this study has added to existing evidence that different modes of communication "bring with them their own affordances and constraints, both individually and in combination" (O'Halloran & Smith, 2012, p. 1). As discussed in Chapter 5 and Chapter 9, it has shown that some visual-verbal relations have a much stronger potential to promote children's EFL vocabulary learning, while others – due to the different affordances of images compared to those of words – require teachers to explain the meaning of new words and the broader ideas they represent.

Thirdly, this research has shown that "[a] multimodal approach can be used to create an inventory of the meaning potentials available to people when using a technology in a particular context" and to shed light on "how modal resources are taken up and used in a specific context" (Jewitt, 2013, pp. 256-257). Based on the concept of meaning as choice and the metafunctional hypothesis, this research used a system network to map the potential of visual-verbal relations in screen-based materials to support children's vocabulary learning. It also investigated how teachers used modal resources more broadly to teach EFL and manage classroom interactions during lessons that incorporated the use of a new computer technology.

10.5 Limitations of the research and recommendations for further study

This section addresses some limitations of the research and recommendations for further study. Firstly, all the teacher participants in this research project worked at primary schools in Bangkok, Thailand, and have generally been viewed as more readily prepared for the adoption of new technologies in classrooms than those in provincial schools (Vate-U-Lan, 2007). The findings of this study, then, may not be representative of the primary school teacher population of the entire country. Examining the differences between the views of teachers in urban vs. those in rural areas would allow future studies to build a more sophisticated understanding of whether and how the introduction of new technologies, and multimedia teaching

resources available through them, can support equal access to these technologies and quality teaching, both for EFL and more generally.

Secondly, the interviews with seven teacher participants conducted for this research were analysed with the purpose of exposing a variety of views that teachers in general may hold about children as foreign language learners and as users learning EFL through the OTPC tablet app. Given this broad aim and the small number of participants in the interviews, I did not consider the relationship between these views and differences between the participants in terms of their age, gender, years of experience as an EFL teacher, or whether or not they had used the technology in the classroom. Further research could be done to explore these relations (e.g. whether teachers of different views represent children using new technologies for learning differently), and to consider what are the reasons behind particular views. Such research could inform policy-making processes for educational technology initiatives such as the OTPC.

Thirdly, although screen-based learning materials in new technology are considered "complex multimodal ensembles of image, sound, animated movement, and other modes of representation and communication" (Jewitt, 2005b, p. 316), and classroom interactions involve various modes of communication such as gesture, classroom layout, gaze, and space (Kress et al, 2005; Lim, O'Halloran, & Podlasov, 2012), the present research focused on selected modes of communication. It first focused on the interactions between visuals and language in the songs section in the OTPC tablet apps and their contribution to vocabulary learning, as each song video in the apps mainly featured a sequence of static frames presenting individual images and lyrics, and rarely used animation. Future research could explore other modes such as animation and music, which have received limited attention in research on EFL. Beyond teachers' use of speech, gesture and space, which have been identified in the literature review as contributing to the teaching and learning in classrooms (e.g. Christie, 1995, 2005; Hood, 2011; McCafferty and Rosborough, 2014; Lim, O'Halloran and Podlasov, 2012) explored in the present research, future studies could consider how other modes play a role in an educational setting.

Fourthly, this research has focused on the perspectives of teachers and on the way teachers employ various modes in the EFL classroom. Complementing this focus with one on children's perspectives and on their learning holds much promise for

improving the success of educational technology initiatives in general and in the context of children learning EFL in particular.

10.6 Concluding remarks

Recognising the ever-rising importance of English for individual and social prosperity, English as a foreign language (EFL) has been introduced as a compulsory subject for children as young as 6 years of age in countries around the world. In order to develop the English language proficiency of their citizens, many non-English-speaking countries have invested a great deal of money and other resources in new educational technology initiatives as a means of addressing the challenges of EFL teaching and learning such as large class sizes and limited numbers of highly qualified and experienced teachers. However, little is known about the implications of using this type of initiatives to fulfil such a promise.

In order to understand these implications, this research project used the One Tablet Per Child (OTPC) project in Thailand as an example, and analysed various dimensions of new technology use in classrooms: the multimodal design of the EFL multimedia materials, factors influencing teachers to use a new technology, and teachers' views about and use of a new technology. The project's findings suggest that teachers still play a central role in choosing effective language teaching approaches and providing meaningful learning experiences for their students, thereby overcoming some of the limitations of new educational technologies and multimedia learning materials. Access to new technology alone cannot increase equity and quality in education in general or in the teaching and learning of foreign languages in particular. Investment in large-scale educational technology initiatives must be supported by a strong understanding of the importance of teachers' decisions about whether and how to integrate new technologies into their pedagogical practices.

References

Acha, J. (2009). The effectiveness of multimedia programmes in children's vocabulary learning. *British Journal of Educational Technology*, *40*(1), 23-31.

Al-Awidi, H. M., & Ismail S. A. (2014). Teachers' perceptions of the use of computer assisted language learning to develop children's reading skills in English as a second language in the United Arab Emirates. *Early Childhood Education Journal*, *42*, 29–37. doi:10.1007/s10643-012-0552-7

Albilirini, A. (2006). Teachers' attitudes toward information and communication technologies: The case of Syrian EFL teachers. *Computers & Education*, *47*(4), 373–398.

Al-Jarf, R. (2004). The effects of web-based learning on struggling EFL college writers. *Foreign Language Annals*, *37*(1), 49 – 57. doi:10.1111/j.1944-9720.2004.tb02172.x

Al-Zaidiyeen, N. J. (2010). Teachers' attitudes and levels of technology use in classrooms: The case of Jordan schools. *International Education Studies*, *3*(2), 211-218. doi:http://dx.doi.org/10.5539/ies.v3n2p211

Anderson, N. J. (2003). Scrolling, clicking, and reading English: Online reading strategies in a second/foreign language. *The Reading Matrix*, *3*(3), 1-33. Retrieved from http://www.readingmatrix.com/articles/anderson/article.pdf

Asher, J. J. (2012). *Learning another language through actions* (7th ed.). Los Gatos: Sky Oaks Productions.

Astorga, M. C. (1999). The text-image interaction and second language learning. *Australian Journal of Language and Literacy*, *22*(3), 212–233. Retrieved from http://search.informit.com.au.simsrad.net.ocs.mq.edu.au/fullText;dn=97424;res=AEIPT

Atagi, R. (2002). The Thailand educational reform project: School reform policy," http://onec.go.th/onec_backoffice/uploaded/Category/EngBook/SchoolReformPolicy-04-03-2011.pdfBaker, W. (2008). A critical examination of ELT in

Thailand: The role of cultural awareness. *RELC Journal*, *39*(1), 131-146. doi:10.1177/0033688208091144

Atkins, N. E., & Vasu, E. S. (2000). Measuring knowledge of technology usage and stages of concern about computing: A study of middle school teachers. *Journal of Technology and Teacher Education*, *8*(4), 279-302.

Auerbach, E. (1993). Reexamining English only in the ESL classroom. *TESOL Quarterly*, *27*(1), 9–32.

Aydin, S. (2013). Teachers' perceptions about the use of computers in EFL teaching and learning: the case of Turkey. *Computer Assisted Language Learning*. *26*(3), 214-233. doi:10.1080/09588221.2012.654495

Bagheri, V. (2015). The impact of visual and verbal techniques on vocabulary achievement of Iranian high school students. *Advances in Asian Social Science*, *6*(4), 1071-1084. Retrieved from http://worldsciencepublisher.org/journals/index.php/AASS/article/viewFile/1590/1150

Baker, W. (2012). English as a lingua franca in Thailand: Characterisations and implications. *Englishes in Practice Issue*, *1*, 18-17.

Baldry, A., & P. J. Thibault. (2006). *Multimodal transcription and text analysis*: A multimedia toolkit and coursebook with associated on-line course. London: Equinox.

Barnee, M. (2013). Extracurricular L2 input in a Japanese context: Exposure, attitudes, and motivation. *Second Language Studies*, *32*(1), 1-41. Retrieved from http://www.hawaii.edu/sls/wp-content/uploads/2014/09/Barbee-Matthew-Paper.pdf

Barthes, R. (1977). *Image-music-text*. London: Fontana.

Başöz, T., & Çubukçu, F. (2014). Pre-service EFL teacher's attitudes towards computer assisted language learning (CALL). *Procedia - Social and Behavioral Sciences*, *116*, 531-535. doi:10.1016/j.sbspro.2014.01.253

Bateman, J. A. (2014). *Text and image: A critical introduction to the visual/verbal divide*. London/New York: Routledge.

Beatty, K. (2012). *Teaching & researching: Computer-assisted language learning* (2nd edition). London. Pearson Education.

Bebell, D., & Kay, R. (2010). One to one computing: A summary of the quantitative results from the Berkshire wireless learning initiative. Journal of Technology, Learning, and Assessment, 9(2). Retrieved from http://www.jtla.org.

Becker, H. (1991). How computers are used in United States schools; Basic data from the 1989 I.E.A. computers in education survey. *Journal of Educational Computing Research*, 7(4), 385-406.

Berg, B. L. (2007). *Qualitative research methods for the social sciences* (6th ed.). Boston, MA: Allyn and Bacon.

Bernstein, B. (1990). T*he structuring of pedagogic discourse: Class, codes & control, Volume IV*. London: Routledge.

Blankenship, S. E. (1998). *Factors related to computer use by teachers in classroom* (Doctoral dissertation, Virginia Polytechnic Institute and State University). Retrieved from http://scholar.lib.vt.edu/theses/public/etd-32398-14166/materials/etd.pdf

Bolton, K. (2008). English in Asia, Asian Englishes, and the issue of proficiency. *English Today*, *24*(2), 3-12. doi:10.1017/S026607840800014X

Bordbar, F. (2010). English teachers' attitudes toward computer-assisted language learning. *International Journal of Language Studies*, *4*(3), 27–54.

Boulter, C. (2007). EFL and ESL teacher values and integrated use of technology in universities in the Asia-Pacific region. Queensland University of Technology, Australia. Retrieved from http://eprints.qut.edu.au/16525/1/Carmen_Boulter_Thesis.pdf

Bourne, J., & Jewitt, C. (2003).Orchestrating debate: A multimodal analysis of classroom interaction. *Reading Literacy and Language*, 64–72.

Breen, M., & Candlin, C. N. (1980). The essentials of a communicative curriculum in language teaching. *Applied linguistics*, *1*(2), 89-112.

Breeze, R. (2011). Critical discourse analysis and its critics. *Pragmatics*, *21*(4), 493-525. doi:10.1075/prag.21.4.01bre

Bret, P. A., & Nash, M. (1999). Multimedia language learning courseware: A design solution to the production of a series of CD-ROMs. *Computers & Education*, *32*(1), 19–33. doi:10.1016/S0360-1315(98)00038-4

Brett, P. (1995). Multimedia for listening comprehension: The design of a multimedia-based resource for developing listening skills. *System*, *23*(1), 77-85. doi:10.1016/0346-251X(94)00054-A

Brett, P. (1997). A comparative study of the effects of the use of multimedia on listening comprehension. *System*, *25*(1), 39-53. doi:10.1016/S0346-251X(96)00059-0

Brown, D. G. E. (2003). *Ubiquitous computing: The universal use of computers on college campuses*. Bolton, Massachusetts: Anker Publishing Company, Inc.

Brown, J. L. M. (2006). Rhymes, stories and songs in the ESL classroom. *The Internet TESL Journal*, *12*(4). Retrieved from http://iteslj.org/Articles/Brown-Rhymes.html

Bullock, D. (2004). Moving from theory to practice: An examination of the factors that preservice teachers encounter as they attempt to gain experience teaching with technology during field placement experiences. *Journal of Technology and Teacher Education*, *12*(2), 211–237. Retrieved from http://karsenti.ca/pdf/ressources/theoryToPractice.pdf

Cabrera, M. P., & Bazo, P. (2002) Teaching the four skills in the primary EFL classroom. *The Internet TESL Journal*, *8*(12). Retrieved from http://iteslj.org/Techniques/Bazo-FourSkills.html

Cakir, A. (1999). Musical activities for young learners of EFL. *The Internet TESL Journal*, *5*(11). Retrieved from http://iteslj.org/

Cameron, L. (2001). *Teaching languages to young learners*. Cambridge: Cambridge University Press.

Campoy, R. (1992). The role of technology in the school reform movement. *Educational Technology*, *32*(8), 17-22.

Carpenter, S. K., & Olson, K. M. (2012). Are pictures good for learning new vocabulary in a foreign language? Only if you think they are not. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *38*(1), 92–101. doi:10.1037/a0024828

Carrell, P. L., Gajdusek, L., & Wise, T. (1998). Metacognition and EFL/ESL reading. *Instructional Science*, *26*(1), 97-112.

Celce-Murcia, M., & Larsen-Freeman, D. (2015). *The grammar book: An ESL/EFL teacher's course* (3rd ed.). New York: Heinle ELT.

Celik, S. (2013). Internet-assisted technologies for English language teaching in Turkish universities. *Computer Assisted Language Learning*, *26*(5), 468-483. doi:10.1080/09588221.2012.692385

Celik, S., & Aytin, K. (2014). Teachers' views on digital educational tools in English language learning: Benefits and challenges in the Turkish context. *The Electronic Journal for English as a Second Language*, *18*(2). Retrieved from http://www.tesl-ej.org/wordpress/issues/volume18/ej70/ej70a1/

Chan, W. M., Chin, K. N, & Suthiwan, T. (2011). *Foreign language teaching in Asia and beyond: Current perspectives and future directions*. Boston: De Gruyter.

Chatranonth, P. (2008). *The impact of teacher feedback on students' grammatical writing accuracy: A case study in Thailand* (Unpublished doctoral thesis), The University of Manchester, Manchester.

Chen, G. D., Nurkhamid , Wang, C. Y. , Yang , S. H., Lu, W. Y., & Chang, C. K. (2013). Digital Learning Playground: Supporting authentic learning experiences in the classroom. *Interactive Learning Environments*, *21*(2), 172-183. doi:10.1080/10494820.2012.705856

Chen, X. (2013). Tablets for informal language learning: Student usage and attitudes. *Language Learning & Technology*, *17*(1), 20-36. Retrieved from http://llt.msu.edu/issues/february2013/chenxb.pdf

Chen, Y. (2010). Exploring dialogic engagement with readers in multimodal EFL textbooks in China. *Visual Communication*, *9*(4), 485–506. doi:10.1177/1470357210382186

Chen, Y. H. (2005). Computer mediated communication: The use of CMC to develop EFL learners' communicative competence. *Asian EFL Journal*, *7*(1), 167-182.

Chen, Y. L. (2008). Mixed-method study of EFL teachers' internet use in language instruction. *Teaching and Teacher Education*, *24*, 1015–1028. doi:10.1016/j.tate.2007.07.002

Chik, A. (2014). English language teaching apps: Positioning parents and young learners. *Changing English: Studies in Culture and Education*, *21*(3), 252-260. doi:10.1080/1358684X.2014.929285

Chittawat, H. (1995). Teaching English through communicative trends. *Mitr Krue*, *27*(29), 42-43.

Choi, Y. H., & Lee, H. W. (2008). Current trends and issues in English language education in Asia. *The journal of ASIA TEFL*, *5*(2), 1-34.

Christie, F. (1995). Pedagogic discourse in the primary school. *Linguistics and Education*, *7*(3), 221-242. doi:10.1016/0898-5898(95)90024-1

Christie, F. (2005). *Classroom discourse analysis: A functional perspective*. Continuum.

Chrystal, D. (2003). *English as a global language* (2nd ed.). Cambridge: Cambridge University Press.

Clément, R., Dörnyei, Z., & Noels, K. A. (1994). Motivation, self-confidence, and group cohesion in the foreign language classroom. *Language Learning*, *44*(3), 417-448.

Coady, J. (1997). L2 vocabulary acquisition through extensive reading. In J. Coady & T. Huckin (Eds.), *Second language vocabulary acquisition* (pp. 225–237). Cambridge: Cambridge University Press.

Cohen, A.D. (1987). *The use of verbal and imagery mnemonics in second language vocabulary learning*. Cambridge: Cambridge University Press

Coyle, Y., & Gracia, R. G. (2014). Using songs to enhance L2 vocabulary acquisition in preschool children. *ELT Journal*, *68*(3), 276–285. doi:10.1093/elt/ccu015

Creswell, J. W., & Plano Plano Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Thousand Oaks, CA: Sage.

Crook, C. (1998). Children as computer users: The case of collaborative learning. *Computers & Education*, *30*(3-4), 237–247. doi:10.1016/S0360-1315(97)00067-5

Crystal, D. (2003). *English as a Global Language* (2nd ed.). Cambridge: Cambridge University Press.

Cuban, L. (2006a). Commentary: The laptop revolution has no clothes. *Education Week*, p. 29.

Cuban, L. (2006b). 1:1 laptops transforming classrooms: Yeah, sure. Teachers College Record. Retrieved from http://www.tcrecord.org/Content.asp?ContentId=12818

Dashtestani, R. (2012). Barriers to the implementation of CALL in EFL courses: Iranian EFL teachers' attitudes and perspectives. *Jaltcalljournal*, *8*(2), 55–70. Retrieved from http://journal.jaltcall.org/articles/8_2_Dashtestani.pdf

Davies G., & Higgins J. (1982). *Computers, language and language learning*. London: CILT.

Davies, G., Otto, S. E. K., & Rüschoff, B. (2013). Historical perspectives on CALL. In M. Thomas, H. Reinders & M. Warschauer (Eds.), *Contemporary Computer-Assisted Language Learning* (pp. 19-38). London/ New York: Bloomsbury.

Davis, B., Torr, J., & Degotardi, S. (2015). Infants and toddlers: How visible are they in the Early Years Learning Framework?. *International Journal of Child Care*

and Education Policy, *9*(12). Retrieved from http://ijccep.springeropen.com/articles/10.1186/s40723-015-0014-ydoi:10.1186/s40723-015-0014-y

De Jong, M. T., & Bus, A. G. (2003). How well suited are electronic books to supporting literacy? *Journal of Early Childhood Literacy*, *3*, 147-164

Deng, Q., & Trainin, G. (2015). Learning vocabulary with apps: From theory to practice. *The Nebraska educator: A student-led journal. Paper 29*. Retrieved from http://digitalcommons.unl.edu/nebeducator/29

Department of Education and Training, Australia. (2016). Early Learning Languages Australia (ELLA). Retrieved from https://www.education.gov.au/early-learning-languages-australia

Dhanasobhon, S. (2006). English language teaching dilemma in Thailand. Retrieved from http://www.curriculumandinstruction.org/index.php?lay=show&ac=article&Id=539134523&Ntype=7

Dhanasobhon, S. (2006). English language teaching dilemma in Thailand. Retrieved from http://www.curriculumandinstruction.org/index.php?lay=show&ac=article&Id=539134523&Ntype=7

Diller, K. C. (1978). The language teaching controversy Rowley, MA: Newbury House.

Djonov, E., & Zhao, S. (2014). From multimodal to critical multimodal studies through popular discourse. In E. Djonov & S. Zhao (Eds.), *Critical multimodal studies of popular discourse*, (pp. 1-14). New York: Routledge.

Domoney, L., & Harris, S. (1993). Justified and ancient: Pop music in EFL classrooms. *ELT Journal*, *47*(3), 234-241. doi: 10.1093/elt/47.3.234

Driscoll, D., Appiah-Yeboah, A., Salib, P, & Rupert, D. J. (2007). Merging qualitative and quantitative data in mixed methods research: How to and why not. Ecological and Environmental Anthropology (University of Georgia). Retrieved from

http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1012&context=icwdmeea

Dror, I. E. (2008). Technology enhanced learning: The good, the bad, and the ugly. *Pragmatics & Cognition*, *16*(2), 215-223. doi:10.1075/p&c.16.2.02dro

EdTEch Digest. (2015). Inspiring education technology quotations for a productive summer. Retrieved from https://edtechdigest.wordpress.com/2015/06/30/on-edtech/

EF EPI. (2015). The world's largest ranking of countries by English skills. Retrieved from http://www.ef-australia.com.au/epi/regions/asia/thailand/

Eggins, S. (2004). *An introduction to systemic functional linguistics* (2nd ed.). London: Bloomsbury Academic.

Ellis, G., & Sinclair, B. (1990). *Learning to learn English*. Cambridge: Cambridge University Press.

Ertmer, P., Addison, P., Lane, M., Ross, E., & Woods, D. (1999). Examining teachers' beliefs about the role of technology in the elementary classroom. *Journal of Research on Computing in Education*, *32*(1), 54- 72.

ETS TOEFL. (2015). Test and score data summary for TOEFL iBT tests. Retrieved from https://www.ets.org/s/toefl/pdf/94227_unlweb.pdf

Esomar world research codes & guidelines (2009). Interviewing children and young people. Retreived from https://www.esomar.org/uploads/public/knowledge-and-standards/codes-and-guidelines/ESOMAR_Codes-and-Guidelines_Interviewing-Children-and-Young-People.pdf

European Commission. (2015). Press release: Children in Europe start learning foreign languages at an increasingly early age. Retrieved from http://europa.eu/rapid/press-release_IP-12-990_en.htm

Evans, M. (Ed.). (2009). *Foreign language learning with digital technology*. London: Continuum.

Fairclough, N. (1989). *Language and power*. London: Longman.

Fairclough, N. (2001). The discourse of New Labour: Critical discourse analysis. In M. Wetherell, S. Taylor, & S. Yates (Eds.), *Discourse as data: A guide for analysis* (pp. 229–266). London: Sage.

Fairclough, N. (2003). *Analysing discourse: Textual analysis for social research*. London: Routledge.

Field, K. (ed.). (2000). *Issues in modern foreign languages teaching*. London: Routledge Falmer.

Finardi, K. R., Leao, R. G., & Amorin, G. B. (2016). Mobile assisted language learning: Affordances and limitations of Duolingo. *Education and Linguistics Research*, *2*(2), 48-65.

Foley, J. A. (2005). English in…Thailand. *RELC Journal*, *36*(2), 223–234. doi:10.1177/0033688205055578

Foley, J. A. (2007). English as a global language: My two satangs' worth. *RELC Journal*, *38*(1), 7-17. doi:10.1177/0033688206076155

Folse, K. S. (2004). Myths about teaching and learning second language vocabulary: What recent research says. *TESL Reporter, 37*(2), 1-13. Retrieved from http://www.cieetrc.chc.edu.tw/Vocabulary/MythsaboutTeachingandLearningSecondLanguageVocabularyFolseKeith.pdf

Fry, G. W. (2002). The evolution of educational reform in Thailand. Retrieved from http://crd.grad.swu.ac.th/data_km/the%20evolution%20of%20education%20in%20thailand.pdf

Geisert, P., & Futrell, M. (2000). Teachers, computers, and curriculum: Microcomputers in the classroom. Boston, MA: Allyn and Bacon.

Gilakjani, A. P. (2012). The significant role of multimedia in motivating EFL learners' interest in English language learning. *I. J. Modern Education and Computer Scienc*e, *4*, 57-66. doi:10.5815/ijmecs.2012.04.08

Gilakjani, A. P., & Ahmadi, M. R. (2011). Why is pronunciation so difficult to learn? *English Language Teaching*, *4*(3), 74-83. http://dx.doi.org/10.5539/elt.v4n3p74

Guichona, N., & McLornan, S. (2008). The effects of multimodality on L2 learners: Implications for CALL resource design. *System*, *36*(1), 85–93. doi:10.1016/j.system.2007.11.005

Gupta, P. (2015). 20 popular technology in education quotes. Retrieved from http://edtechreview.in/news/2112-technology-in-education-quotes?tmpl=component&start=540

Hall, E. (1966). *The hidden dimension*. Garden City, NY: Doubleday

Halliday, M. A. K. (1970). Language structure and language function. In J. Lyons (Ed.), *New horizons in linguistics* (pp. 140-465). Harmondsworth: Penguin Books.

Halliday, M. A. K. (1978). *Language as social semiotic: The social interpretation of language and meaning*. Baltimore: University Park Press.

Halliday, M. A. K. (1984). Language as code and language as behaviour: A systemic functional interpretation of the nature and ontogenesis of dialogue. In M. A. K. Halliday, R. P. Fawcett, S. Lamb & A. Makkai (Eds.), *The semiotics of language and culture* Volume 1 (pp. 3-35). London: Frances.

Halliday, M. A. K. (1989[1985]). Part A: M. A. K. Halliday. In M. A. K. Halliday & R. Hasan (Eds.), *Language, context, and text: Aspects of language in a social-semiotic perspective* (pp. 3-48). Oxford: Oxford University Press.

Halliday, M. A. K. (1994). *An introduction to functional grammar* (2nd ed.). London: Edward Arnold.

Halliday, M. A. K. (2002[1992]). How do you mean?. In J. J. Webster (Ed.), *On grammar. volume 1 in collected works of M. A. K. Halliday*, (pp. 352–368). London and New York: Continuum.

Halliday, M. A. K., & Matthiessen, C. M. I. M. (2004). *An introduction to functional grammar* (3rd ed.). London: Edward Arnold.

Harmer, J. (2007). *How to teach English*. Essex: Pearson Education Limited.

Harumi, I. (2002). A new framework of culture teaching for teaching English as a global language. *RELC Journal*, *33*(2), 36–57. doi:10.1177/003368820203300202

Hasan, R. (2005) Language, society and consciousness: Transdisciplinary orientations and the tradition of specialisation. In J. J. Webster (Ed.), *Language, society and consciousness: Collected works of Ruqaiya Hasan*, Vol. 1. London: Equinox.

Hayes, D. (2010). Language learning, teaching and educational reform in rural Thailand: An English teacher's perspective. *Asia Pacific Journal of Education*, *30*(3), 305-319. doi:10.1080/02188791.2010.495843

Henrichsen, L. (2010). Unit 1B - Differences between TESL and TEFL. Basic training and resources for teaching English to speakers of other languages. Retrieved from http://hummac.byu.edu/btrtesol/units/01basic_concepts/1b_esl_vs_efl.php

Hesse-Biber, S. N., Rodriguez, D., & Frost, N. A. (2015). A qualitatively driven approach to multimethod and mixed methods research. In S. N. Hesse-Biber & B. Johnson (Eds.), *The Oxford handbook of multimethod and mixed methods research inquiry* (pp. 3-20). New York: Oxford University Press.

Hismanoglu, M. (2011). Computer assisted pronunciation teaching: From the past to the present with its limitations and pedagogical Implications. In A. Shafaei (Ed.), *Frontiers of language and teaching, Vol. 2. Proceedings of the 2011 International Online Language Conference (IOLC 2011)* (pp. 193-202). Retrieved from http://www.bookpump.com/bwp/pdf-b/2335594b.pdf

Holliday, A. (2006). Native-speakerism. *ELT Journal*, *60*, 385–387.

Hood, S. (2011). Body language in face-to-face teaching: A focus on textual and interpersonal meaning. In S. Dreyfus, S. Hood & M. Stenglin (Eds.), *Semiotic Margins: Meaning in Multimodalities* (pp. 31–52). London: Continuum.

Howard, J., & Major, J. (2004). Guidelines for designing effective English language teaching materials. Retrieved from http://www.paaljapan.org/resources/proceedings/PAAL9/pdf/Howard.pdf

Hsieh, W. (2012). An Exploratory Study of L2 Teachers' Pedagogical Decisions on Technology Activities. (Doctoral thesis, Pennsylvania State University, United States). Retrieved from https://etda.libraries.psu.edu/catalog?f%5Bkeyword_ssim%5D%5B%5D=technology+integration&f%5Blast_name_ssi%5D%5B%5D=Hsieh

Hsu, L. (2013). English as a foreign language learners' perception of mobile assisted language learning: A cross-national study. *Computer Assisted Language Learning*, *26*(3), 197-213. doi:10.1080/09588221.2011.649485

https://kttpud.files.wordpress.com/2012/04/e0b887e0b8b2e0b899e0b8a7e0b8b4e0b888e0b8b1e0b8a2e0b981e0b897e0b89ae0b980e0b8a5e0b987e0b8952554_e0b8a5e0b988e0b8b2e0b8aae0b8b8e0b894120212.pdf

Huang, C. S. J., Yang, S. J. H., Chiang, T. H. C., & Su, A. Y. S. (2016). Effects of situated mobile learning approach on learning motivation and performance of EFL students. *Educational Technology & Society*, *19*(1), 263–276. http://www.ifets.info/journals/19_1/22.pdf

Huang, H. (2013). From web-based readers to voice bloggers: EFL learners' perspectives. *Computer Assisted Language Learning*, 1-26. doi: 10.1080/09588221.2013.803983

Hyland, K. (2007). Genre pedagogy: Language, literacy and L2 writing instruction. *Journal of Second Language Writing*, *16*(3), 148-164. doi:10.1016/j.jslw.2007.07.005

Hymes, D. H. (1972). On communicative competence. In J. B. Pride and J. Holmes (Eds.), *Sociolinguistics: Selected readings* (pp. 269-293). Harmondsworth: Penguin.

Intratat, C. (2003). CALL materials for EFL students at KMUTT, Thailand. *Proceedings of world CALL 2003 CALL from the margins* (pp. 119). Banff, Alberta, Canada.

Irie, K. (2003). What do we know about the language learning motivation of university students in Japan? *JALT Journal*, *25*(1), 86–100.

Jamieson, J., & Chapelle, C. A. (2010). Evaluating CALL use across multiple contexts. *System*, *38*(3), 357–369. Retrieved from doi:10.1016/j.system.2010.06.014

Jenkins, J. (2009). *World Englishes: A resource book for students* (2nd ed.). Oxon: Routledge.

Jewitt, C. (2002). The move from page to screen: The multimodal reshaping of school English. *Visual Communication*. 1(2), 171-196.

Jewitt, C. (2005a). *Technology, Literacy and Learning: A multimodal approach*. London and New York: Routledge.

Jewitt, C. (2005b). Multimodality, "Reading", and "Writing" for the 21st Century. *Discourse: Studies in the Cultural Politics of Education*, *26*, 3, 315-331. doi:10.1080/01596300500200011

Jewitt, C. (2006). *Technology, literacy and learning: A multimodal approach*. London and New York: Routledge.

Jewitt, C. (Ed.). (2009). *Handbook of multimodal analysis*. London: Routledge.

Jewitt, C. (Ed.). (2013). *The Routledge handbook of multimodal analysis* (2nd ed.) London: Routledge.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, *33*(7), 14-26. doi:10.3102/0013189X033007014

Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research*, *1*(2), 112-133. doi:10.1177/1558689806298224

Kalanzadeh, G. A. Soleimani, H., & Bakhtiarvand, M. (2014). Exploring the influence of using technology on Iranian EFL students' motivation. P*roceedings of the international conference on current trends in ELT*, *98*, 814-823. doi:10.1016/j.sbspro.2014.03.486

Kalyuga, S. (2005). Prior knowledge principle in multimedia learning. In R. E. Mayer (Ed.), *The Cambridge handbook of multimedia learning*. New York: Cambridge University Press.

Keyuravong, S. (2002). English language instruction in universities is about to get an overhaul. *Thai TESOL Focus*, *15*(1), 10.

Keyuravong, S., & Maneekhao, K. (2006). Using e-mail consultations in a large class. *Reflection: KMUTT Journal of Language Education*, *9*, 50-66.

Khamkhien, A. (2012). Computer assisted language learning and English language teaching in Thailand: Overview. *Mediterranean Journal of Social Sciences*, 3(1), 55-64. doi:10.5901/mjss.2012.03.01.55

Khan, I. A. (2013). Teaching and technology: The EFL context. *Procedia - Social and Behavioral Sciences*, *93*, 2015–2022.

Khoii, R., & Aghabei, M. (2009). Computer software and the improvement of the elementary EFL students' listening comprehension. *Journal of Teaching English as a Foreign Language and Literature*, *1*(2), 89-101.

Kilickaya, F. (2013). Computer-based grammar instruction in an EFL context: improving the effectiveness of teaching adverbial clauses. *Computer Assisted Language Learning*, *28*(4), 325-340. doi: 10.1080/09588221.2013.818563.

Kim, D. (2011). Incorporating podcasting and blogging into a core task for ESOL teacher candidates. *Computers & Education*, *56*(3), 632–641.

Kim, H. K. (2008). Beyond motivation: ESL/EFL teachers' perceptions of the role of computers. *CALICO Journal*, *25*(2), 241-259. Retrieved from https://journals.equinoxpub.com/index.php/CALICO/article/download/23111/19116

Kongkerd, W. (2013). Teaching English in the era of English used as a lingua franca in Thailand. *Executive Journal*, *33*(4), 3-12. Retrieved from http://www.bu.ac.th/knowledgecenter/executive_journal/oct_dec_13/pdf/aw01.pdf

Kost, C. R., Foss, P., & Lenzini, J. J. (1999). Textual and pictorial glosses: Effectiveness on incidental vocabulary growth when reading in a foreign language. *Foreign Language Annals*, *32*(1), 89–113. doi:10.1111/j.1944-9720.1999.tb02378.x

Kress, G. (2005). Gains and losses: New forms of texts, knowledge, and learning. *Computers and Composition*, *22*, 5–22. doi:10.1016/j.compcom.2004.12.004

Kress, G. (2010). *Multimodality: A social semiotic approach to contemporary communication*. New York: Routledge.

Kress, G., & Van Leeuwen, T. (2001). *Multimodal discourse: The modes and media of contemporary communication*. London: Hodder Arnold.

Kress, G., & Van Leeuwen, T. (2006[1996]). *Reading images: The grammar of visual design*. New York: Routledge.

Kress, G., Jewitt, C., Jones, K., Bourne, J., Franks, A., & Hardcastle, J. (2005). *English in urban classrooms: A multimodal perspective on teaching and learning*. London: Routledge Falmer.

Krieger, D. (2005). Teaching ESL versus EFL: Principles and practices. *English Teaching Forum*, *43*(2), 8-16. Retrieved https://americanenglish.state.gov/files/ae/resource_files/05-43-2-d.pdf

Krippendorff, K. (2013). *Content analysis: An introduction to its methodology* (3rd ed.). London: Sage Publications.

Kulsirisawad, P. (2012). Developing learner autonomy in EFL writing classrooms via peer feedback. In CULI National Seminar 2012 Proceeding (pp. 1-10). Bangkok, Thailand: Chulalongkorn University Language Institute. Retrieved from http://www.culi.chula.ac.th/international/conferences/National/national2012/Proceeding/Dr%20Phnita.pdf

Lai, K. W. (1993). Teachers as facilitators in a computer-supported learning environment. *Journal of Information Technology for Teacher Education 2*(2), 127-137. doi:10.1080/0962029930020202

Lan, Y. J., Sung, Y. T., & Chang, K. E. (2007). A mobile-device-supported peer-assisted learning system for collaborative early EFL reading. *Language Learning & Technology*, *11*(3), 130-151. Retrieved from http://llt.msu.edu/vol11num3/lansungchang/

Larsen-Freeman, D., & Anderson, M. (2013). *Techniques and principles in language teaching* (3rd ed.). New York: Oxford university press.

Larson-Hall, J. (2008). Weighing the benefits of studying a foreign language at a younger starting age in a minimal input situation. *Second Language Research*, *24*(1), 35-63. http://dx.doi.org/10.1177/0267658307082981

Lau, B.T., & Sim, C.H. (2008). Exploring the extent of ICT adoption among secondary school teachers In Malaysia. *International Journal of Computing and ICT Research*, *2*(2), 19–36.

Laufer, B. (1992). How much lexis is necessary for reading comprehension? In P. J. L. Arnaud & H. Be´joint (Eds.), *Vocabulary and applied linguistics* (pp.126–32). London: Macmillan.

Laufer, B., & Nation, P. (1995). Vocabulary size and use: Lexical richness in L2 written production. *Applied Linguistics*, *16*, 307–22. doi:10.1093/applin/16.3.307

Le Roux, S. G. (2002). *Music on early childhood development and the foundation phase (0-9 years)*. Pretoria: Van Schaik.

Lemke, J. L. (1998). Multiplying meaning: Visual and verbal semiotics in scientific text. In J. R. Martin & R. Veel (Eds.), *Reading science* (pp. 87–113). London: Routledge.

Levy, M. (1997). *CALL: Context and conceptualization*. Oxford: Oxford University Press

Lewis, G., & Bedson, G. (1999). *Games for children*. Oxford: Oxford University Press.

Li, G., & Ni, Z. (2011). Primary EFL teachers' technology use in China: Patterns and perceptions. *RELC Journal*, *42*(1) 69–85. doi:10.1177/0033688210390783

Li, L. (2014). Understanding language teachers' practice with educational technology: A case from China. *System*, *46*, 105-119. doi:10.1016/j.system.2014.07.016

Li, L., & Walsh, S. (2011a). Technology uptake in Chinese EFL classes. *Language Teaching Research*, *15*(1), 99–125

Li, L., & Walsh, S. (2011b). Seeing is believing: Looking at EFL teachers' beliefs through classroom interaction. *Classroom Discourse*, *2*(1), 39–58.

Li, X., & Brand, M. (2009). Effectiveness of music on vocabulary acquisition, language usage, and meaning for mainland Chinese ESL learners. *Contributions to Music Education*, *36*(1), 73–84. Retrieved from http://krpb.pbworks.com/f/music-esl.pdf

Liaw, M. L. (2014). The affordance of speech recognition technology for EFL learning in an elementary school setting. *Innovation in Language Learning and Teaching*, *8*(1), 79-93. doi:10.1080/17501229.2012.756491

Lim, F. V. (2011). A systemic functional multimodal discourse analysis approach to pedagogic discourse (Doctoral thesis). National University of Singapore. Retrieved from https://multimodalstudies.files.wordpress.com/2012/04/a-systemic-functional-multimodal-discourse-analysis-approach-to-pedagogic-discourse-by-lim-fei-victor-2011.pdf

Lim, F. V., O'Halloran, K. L., & Podlasov, A. (2012). Spatial pedagogy: Mapping meanings in the use of classroom space. *Cambridge Journal of Education*, *42*(2), 235-251. doi:10.1080/0305764X.2012.676629

Liu, M. N., Maradiegue, C. C., & Wivagg, J. (2014). Mobile learning and English language learners: A case study of using iPod Touch as a teaching and learning tool. *Journal of Interactive Learning Research*, *25*(3). Retrieved from http://www.edb.utexas.edu/liu/files/MobileLearning_EnglishLanguageLearners_Final.pdf

Liu, Y., Theodore, P., & Lavelle, E. (2004). Experimental effects of online instruction on teachers' concerns about technology integration. *International Journal of Instructional Technology and Distance Learning*, *1*(1). Retrieved from http://www.itdl.org/journal/Jan_04/article03.htm

Livingstone, S., Mascheroni, G., Dreier, M., Chaudron, S., & Lagae, K. (2015). *How parents of young children manage digital devices at home: The role of income, education and parental style*. London: EU Kids Online, LSE.

Lombard, H., Snyder-Duch, J., & Bracken, C. C. (2010). Practical resources for assessing and reporting intercoder reliability in content analysis research projects. Retrieved from http://matthewlombard.com/reliability/

Longcope, P. (2010). Differences between the EFL and the ESL language learning contexts. Retrieved from https://www.lang.nagoya-u.ac.jp/proj/genbunronshu/30-2/longcope.pdf

Longcope, P. (2010). Differences between the EFL and the ESL language learning contexts. Retrieved from https://www.lang.nagoya-u.ac.jp/proj/genbunronshu/30-2/longcope.pdf

Mahdi, H. S., & Al-Dera, A. S. (2013). The impact of teachers' age, gender and experience on the use of information and communication technology in EFL teaching. *English Language Teaching*, *6*(6). Retrieved from http://www.ccsenet.org/journal/index.php/elt/article/viewFile/27261/16554

Maher, D. (2011). Using the multimodal affordances of the interactive whiteboard to support students' understanding of texts. *Learning, Media and technology*, *36*(3), 235-250.

Mai, L. X, & Hong, V. K. (2014). Factors affecting secondary-school English teachers' adoption of technologies in southwest Vietnam. *Language Education in Asia*, *5*(2), 198-215. Retrieved from http://dx.doi.org/10.5746/LEiA/14/V5/I2/A03/Le_Vo

Malisuwan,S., Kaewphanuekrungsi, W., Milindavanij, D. (2016). Digital divide in Thailand: Analysis and recommendations. *Journal of Advanced Research in Engineering and Technology* (IJARET), 7(1), 41-46.

Marek, M. W. (2014). The integration of technology and language instruction to enhance EFL learning. Revised version of a keynote address given at the Technology-Enhanced Language Learners Special Interest Group (TELL-SIG) Conference, Providence University, Taichung, Taiwan on 5 June 2014. Retrieved from http://files.eric.ed.gov/fulltext/ED545477.pdf

Martin, J. R. (1992). *English text: System and structure*. Philadelphia/Amsterdam: John Benjamins.

Martin, J. R. (2000). Close reading: Functional linguistics as a tool for critical discourse analysis. In L. Unsworth (Ed.), *Researching language in schools and communities: Functional linguistic perspectives* (pp. 275-304). London: Cassell.

Martin, J., Rose, D. (2007). Conjunction: Logical connections. In J. R. Martin & D. Rose (Eds.), *Working with discourse - meaning beyond the clause* (pp. 115-154). London: Continuum.

Martin, J., & Rose, D. (2008). *Genre relations: Mapping culture*. London: Equinox Publishing.

Martin, J., & Rose, D. (2013). Pedagogic discourse: Contexts of schooling. *RASK: International Journal of Language and Communication*, 38, 219-264.

Martinec, R. (1998). Cohesion in action. *Semiotica*, *120*(1), 161-180.

Martinec, R. (2000). Types of process in action. *Semiotica*, *130*(3), 243-268. doi:10.1515/semi.2000.130.3-4.243

Martinec, R. (2001). Interpersonal resources in action. Semiotica, *135*(1), 117-145.

Martinec, R. (2004). Gestures that co-occur with speech as a systematic resource: The realization of experiential meaning in indexes. *Social Semiotics*, *14*(2), 193-213.

Martinec, R., & Salway, A. (2005). A system for image-text relations in new (and old) media. *Visual Communication*, *4*(3), 337–371. doi:10.1177/1470357205055928

Marzban, A. (2011). Improvement of reading comprehension through computer-assisted language learning in Iranian intermediate EFL students. *Procedia Computer Science*, *3*, 3-10. doi:10.1016/j.procs.2010.12.003

Matthews, J., & Seow, P. (2007). Electronic paint: Understanding children's representation through their interactions with digital paint. *Journal of Art Design*, *26*(3), 251–263. doi:10.1111/j.1476-8070.2007.00536.x

Matthews, P. H. (Ed.). (2000). *Oxford concise dictionary of linguistics*. Shanghai: Shanghai Foreign Language Education Press.

Matthiessen, C. M. I. M. (1995). *Lexicogrammatical cartography: English systems*. Tokyo: International Language Sciences Publishers.

Mayer, R. E. (2005). *The Cambridge handbook of multimedia learning*. Cambridge. University Press.

McCafferty, S. G., & Rosborough, A. (2014). Gesture as a private form of communication during lessons in an ESL-designated elementary classroom: A sociocultural perspective. *TESOL Journal*, *5*, 225–246. doi:10.1002/tesj.104

McLester, S. (2012). One tablet per child? *District Administration*. Retrieved from http://www.districtadministration.com/article/one-tablet-child-0

Medina, S. (1993). The effect of music on second language vocabulary acquisition. *National Network for Early Language Learning*, *6*(3), 1–8. Retrieved from http://www.oocities.org/ESLmusic/articles/article01.html

Ministry of Education, Thailand. (2007). Implementation of the 15-year free education with quality policy. Retrieved from http://planipolis.iiep.unesco.org/upload/Thailand/Thailand_free_education.pdf

Ministry of Education, Thailand. (2008). The basic education core curriculum. Retrieved from http://www.act.ac.th/document/1741.pdf

Ministry of Education, Thailand. (2013). The report on the implementation of government policy. Retrieved from http://www.moe.go.th/moe/th/home/

Mollaei, F., & Riasati, M. J. (2013). Teachers' perceptions of using technology in teaching EFL. *International Journal of Applied Linguistics & English Literature*, *2*(1), 13-122. doi:10.7575/ijalel.v.2n.1p.13

Moltsaar, A. (2014). The representation of teachers in the headlines of Postimes and the times (2008-2012) (MA Thesis). Department of English language and literature, University of Tartu. Retrieved from http://dspace.ut.ee/bitstream/handle/10062/46994/Moltsaar_MA_thesis.pdf

Moon, J. (2006). *Children learning English* (2nd ed.). New York: MacMillan.

Mozafari, P., & Wray, D. (2015). The perspectives of Iranian EFL teachers on the integration of ICT into their teaching practices. In: Rahimi, M. (Ed.), *Handbook of research on individual differences in computer-assisted language learning* (pp. 94-119). Hershey: IGI Global.

Murphey, T. (2002). *Music & song*. Oxford: Oxford University Press.

Murray, L., & Barnes, A. (1998). Beyond the "wow" factor: Evaluating multimedia language learning software from a pedagogical viewpoint. *System*, *26*(2), 249-259. doi:10.1016/S0346-251X(98)00008-6

Nasr, R. T. (1997). *Applied English phonology: For ESL/EFL teachers*. Maryland: University Press of America.

Nation, I. S. P. (1990). *Teaching and learning vocabulary*. New York: Heinle and Heinle.

Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.

Neeley, T. (2012). Global business speaks English. Harvard Business Review. Retrieved from https://hbr.org/2012/05/global-business-speaks-english

Neisa, C. M. (2008). Using rock music as a teaching-learning tool. *Profile*, *9*, 163–180. Retrieved from http://www.revistas.unal.edu.co/index.php/profile/article/view/10716/11187

Nesselhauf. N., & Tschichold, C. (2002). Collocations in CALL: An investigation of vocabulary-building software for EFL. *Computer Assisted Language Learning*, *15*(3), 251-279. doi:10.1076/call.15.3.251.8190

Nikolov, M. (2009). *Studies on language acquisition: The age factor and early language learning*. Berlin, Germany: Mouton de Gruyter.

Nonkukhetkhong, K. (2006). Teachers' perceptions and implementation of the learner-centred approach in teaching English as a foreign language (EFL) in Thai secondary school contexts. (Unpublished doctoral thesis), University of Queensland, Australia.

Nonkukhetkhong, K., Baldauf, R., & Moni, K. (2006). Learner-centeredness in teaching English as a foreign language. *Thai TESOL International*, *1*(1), 1-9.

Noom-ura, S. (2013). English-teaching problems in Thailand and Thai teachers' professional development needs. *English Language Teaching*, *6*(11), 139-147. doi:10.5539/elt.v6n11p139

Noom-ura, S. (2013). English-teaching problems in Thailand and Thai teachers' professional development needs. *English Language Teaching*, *6*(11), 139-147. doi:10.5539/elt.v6n11p139

Nordensvärd, E. (2010). Multimodality: An EFL textbook comparison using multimodal discourse analysis (Student paper). Södertörn University College, Sweden. Retrieved from http://sh.diva-portal.org/smash/get/diva2:395278/FULLTEXT01.pdf

November, A. (2013). Why Schools Must Move Beyond One-to-One Computing. http://novemberlearning.com/assets/why-schools-must-move-beyond-one-to-one-computing.pdf

November, A. C. (2010). *Empowering students with technology* (2nd ed.). California: Corwin.

Oakley, G., Pegrum, M., Faulkner, R., & Striepe, M. (2012). Exploring the pedagogical applications of mobile technologies for teaching literacy. Retrieved from http://www.education.uwa.edu.au/__data/assets/pdf_file/0003/2195652/AISWA-Report-FINAL-Final-101012-2.pdf

Office of the National Economic and Social Development Board, Thailand. (2012). The Eleventh National Economic and Social Development Plan (2012-2016). Retrieved from http://eng.nesdb.go.th/Portals/0/news/plan/eng/THE%20ELEVENTH%20NATIONAL%20ECONOMIC%20AND%20SOCIAL%20DEVELOPMENT%20PLAN%282012-2016%29.pdf

Office of the National Education Commission (ONEC), Thailand. (1999). National Education Act of B.E. 2542 (1999). Retrieved from

http://planipolis.iiep.unesco.org/upload/Thailand/Thailand_Education_Act_1999.pdf

Office of the National Education Commission (ONEC), Thailand. (2003). Retrieved from http://www.spr.ac.th/web/ebook/pdf/education03/pdf.pdf

O'Halloran, K. L., & Smith, B. A. (2011). Multimodal studies. In K. L. O'Halloran & B. A. Smith (Eds.), *Multimodal studies: Exploring issues and domains*. New York & London: Routledge.

O'Halloran, K. L., & Smith, B. A. (2012). Multimodal text analysis. The Encyclopedia of Applied Linguistics. doi: 10.1002/9781405198431.wbeal0817

OLPC. (2012). Learning to read with One Tablet per Child. Retrieved from http://blog.laptop.org/tag/otpc/#.UZEqKbUU-z4

Oppenheimer, T. (2003). *The flickering mind: The false promise of technology in the classroom and how learning can be saved*. New York: Random House.

Orafi, S. M. S., & Borg, S. (2009). Intentions and realities in implementing communicative curriculum reform. *System*, *37*, 243-253.

Orlova, N. F. (2003). Helping prospective EFL teachers learn how to use songs in teaching conversation classes. *The internet TESL Journal*, *9*(3). Retrieved from http://iteslj.org/Techniques/Orlova-Songs.html

OTPC, Thailand. (2012). OTPC for education in Thailand. Retrieved from http://www.otpc.in.th/aboutus.html

Oxford, R. (2001). Integrated skills in the ESL/EFL classroom. *ERIC Digest*. Retrieved from http://www.ericdigests.org/2002-2/esl.htm

Oxford, R. B., & Burry-Stock, J. A. (1995). Assessing the use of language learning strategies worldwide with the ESL/EFL version of the Strategy Inventory for Language Learning (SILL). *System*, *23*(1), 1-23. doi:10.1016/0346-251X(94)00047-A

Painter, C. (2004). The interpersonal first principle in child language development. In G. Williams & A. Lukin (Eds.), *The development of language: Functional*

perspectives on species and individuals (pp. 137–157). London/New York: Continuum.

Painter, C., Martin, J. R. & Unsworth, L. (2013). *Reading visual narratives: Image analysis of children's picture books*. London: Equinox.

Papert, S. (1993). *The children's machine: Rethinking school in the age of the computer*. New York: Basic Books.

Park, C. N., & Son, J. B. (2009). Implementing computer-assisted language learning in the EFL classroom: Teachers' perceptions and perspectives. *International Journal of Pedagogies and Learning*, *5*(2), 80-101. doi:10.5172/ijpl.5.2.80

Patpong, P. (2006). *A systemic functional interpretation of Thai grammar: An exploration of Thai narrative discourse* (Unpublished doctoral thesis), University of Macquarie, Australia.

Payaprom, S. (2012). *The impact of a genre-based approach on English language teaching in an EFL tertiary context in Thailand* (Doctoral thesis, Faculty of Education, University of Wollongkong, Australia). Retrieved from http://ro.uow.edu.au/cgi/viewcontent.cgi?article=4714&context=theses

Payton, M. (2008). Personal productivity for classroom teachers. In M. van Mantgem (Ed.), *Tablet PCs in K–12 education* (pp. 45-85). Eugene, OR: International Society for Technology in Education.

Phillips, S. (1993). *Young learners*. Oxford: Oxford University Press.

Phongnapharuk, C. (2007). *Applying metacognitive strategies via computer-assisted language learning to enhance English reading, summary writing abilities and self-directed learning of expanding level students* (Unpublished master's thesis). Chiang Mai University, Thailand.

Pinter, A. (2011). *Children learning second languages*. London: Palgrave Macmillan

Plowman, L, & Stephen., S. (2007). Guided interaction in pre-school settings. *Journal of Computer Assisted Learning*, *23*(1), 14-26.

Plowman, L., McPake, J., & Stephen, C. (2008). Just picking it up? Young children learning with technology at home. *Cambridge Journal of Education*, *38*(3), 303–319.

Plowman, L., McPake, J., & Stephen, C. (2012) Extending opportunities for learning: the role of digital mediain early education. In S. Suggate & E. Reese (Eds.), *Contemporary Debates in Child Development and Education* (pp.95-104). Abingdon: Routledge.

Plowman, L., Stephen, C., & McPake, J. (2010). Supporting children's learning with technology at home and in pre-school. *Research Papers in Education*, *25*(1), 93–113.

Pollockm, E., Chandler, P., & Sweller, J. (2002). Assimilating complex information, *Learning and Instruction*, *12*, 61-86.

Prapaisit, (2003). *Changes in teaching English after the educational reform in Thailand* (Unpublished doctoral thesis), Michigan State University.

Prapphal, K. (2001). English proficiency of Thai learners and directions of English teaching and learning in Thailand. Retrieved from http://www.dlf.ac.th/uploads/train/134441498311292.pdf

Prensky, M. (2001). Digital native, digital immigrants. Retrieved from http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf

Pricea, S., Rogers, Y., Scaifea, M., Stanton, D., & Neale, H. (2003). Using "tangibles" to promote novel forms of playful learning. *Interacting with Computers*, *15*, 169–185. doi:10.1016/S0953-5438(03)00006-7

Prinsloo, M., & Sasman, F. (2015). Literacy and language teaching and learning with interactive whiteboards in early schooling. *TESOL Quarterly*, *49*(3), 533–554. doi:10.1002/tesq.237

Puakpong, N. (2005). *An individualized CALL listening comprehension program: Making listening more meaningful for Thai learners of English* (Unpublished master's thesis). University of Canberra, Australia.

Punthumasen, P. (2007). International program for teacher education: an approach to tackling problems of English education in Thailand. Retrieved from http://www.worldedreform.com/pub/paperie13dec07.pdf

Qian, D. D. (1999). Assessing the roles of depth and breadth of vocabulary knowledge in reading comprehension. *The Canadian Modern Language Review*, *56*(2), 282–307. doi:10.3138/cmlr.56.2.282

Qian, D. D. (2002). Investigating the relationship between vocabulary knowledge and academic reading performance: An assessment perspective. *Language Learning*, *52*(3), 513–36. doi:10.1111/1467-9922.00193

Qing-xue, L., & Jin-fang, S. (2007). An analysis of language teaching approaches and methods: Effectiveness and weakness. *US-China Education Review*, *4*(1), p. 69-71.

Ramachaudran, S. (2004). Integrating new technologies into language teaching: two activites for an EAP classroom. *TESL Canada Journal*, *22*(1), 79 – 90.

Ratcliffe, S. (Ed.). (2015). *Oxford essential quotations* (3rd.) retrieved from http://www.oxfordreference.com/view/10.1093/acref/9780191804144.001.0001/q-oro-ed3-00012282

Reeder, K., Heift, T., Roche, J., Tabyanian, S., Schlickau, S., & Gölz, P. (2004). Toward a theory of Evaluation for second language media. In S. Fotos & C. Browne (Eds.), *New perspectives on CALL for second language classrooms* (pp. 255-278). Mahwah, NJ: Lawrence Erlbaum.

Reinders, H. & Hubbard, P. (2013). CALL and learner autonomy: Affordances and constraints. In M. Thomas, H. Reinders, & M. Warschauer (Eds.). *Contemporary computer assisted language learning* (pp. 359-375). London: Continuum Books.

Renkema, J. (2004). *Introduction to discourse studies*. Amsterdam: Benjamins.

Resnick, M. (2006). Computer as paintbrush: Technology, play, and the creative society. In D. G. Singer, R. M. Golinkoff & K. Hairsh-Pasek (Eds.), *Play = Learning: How play motivates and enhances children's cognitive and social-emotional growth* (pp. 192-206). New York: Oxford University Press.

Richards, J. C. (1976). The role of vocabulary teaching. *TESOL Quarterly*, *10*(1), 77–90. doi:10.2307/3585941

Richards, J. C. (2006). *Communicative language teaching today*. Cambridge: Cambridge University Press.

Richards, J. C., & Rodgers, T. S. (2001*). Approaches and methods in language teaching: A description and analysis* (2nd ed.). Cambridge: Cambridge University Press.

Richards, J., Platt, J., & Weber, H. (1985). *Longman dictionary of applied linguistics*. Essex, England: Longman.

Riley, L. D. (2003). Learners' identification of language learning strategies through reflective practice: A comparative ESL/EFL study. Retrieved from http://www2.hawaii.edu/~kenton/srl/Riley_Harsch_2003.pdf

Riley, L. D., & Harsch, K. (1999). Enhancing the learning experience with strategy journals: Supporting the diverse learning styles of ESL/EFL students. Proceedings of the HERDSA Annual International Conference, Melbourne, Australia. Retrieved from http://www2.hawaii.edu/~kenton/srl/riley-harsch-99.pdf

Roberts, S. K., Hutchinson, C. J., & Little, M. (2003). Making the invisible visible and back again: Highlighting technology in an integrated curriculum for preservice teachers. *Journal of Computing in Teacher Education*, *19*, 73-81. doi:10.1080/10402454.2003.10784466

Roberts, S., Djonv, E., & Torr, J. (2008). The mouse is not a toy": Young children's interactions with e-games. *Australian Journal of Language and Literacy*, 31(3), 242-259.

Rose, K. R. (1999). Teachers and students learning about requests in Hong Kong. In E. Hinkel (Ed.), *Culture in second language teaching and learning* (pp. 167–80). Cambridge: Cambridge University Press.

Royce, T. D. (1998). Synergy on the page: Exploring intersemiotic complementarity in page-based multimodal text. *Japan Association Systemic Functional Linguistics Occasional Papers*, *2*(1), 25-50.

Royce, T. D. (2002). Multimodality in the TESOL classroom: Exploring visual-verbal synergy. *TESOL Quarterly*, *36*(2), 191–205. doi:10.2307/3588330

Royce, T. D. (2007). Intersemiotic complementarity: A framework for multimodal discourse Analysis. In T. D. Royce & W. L. Bowcher (Eds.), *New directions in the analysis of multimodal discourse* (pp. 64-109). Mahwah, NJ: Lawrence Erlbaum.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. C*ontemporary Educational Psychology*, *25*, 54–67. doi:10.1006/ceps.1999.1020

Sadeghi, A. R., &, Arkani, H. (2012). Second language research findings: A wrong generalisation to EFL studies. *Procedia - Social and Behavioral Sciences*, *69*, 984-989.

Sadeghi, K., & Dousti, M. (2014). The effect of length of exposure to computer-based vocabulary activities on young Iranian EFL learners' vocabulary gain. *Theory and Practice in Language Studies*, *4*(8), 1692-1701. doi:10.4304/tpls.4.8.1692-1701

Saussure, F. (1983[1916]). Course in general linguistics (R. Harris, Trans.). London: Duckworth.

Schmitt, N., & Meara, P. (1997). Researching vocabulary through a word knowledge framework. *Studies in Second Language Acquisition*, *19*(1), 17–36. http://dx.doi.org.simsrad.net.ocs.mq.edu.au/

Schoepp, K. (2001). Reasons for using songs in ESL/EFL classroom. *The internet TESL Journal*, *7*(2). Retrieved from http://iteslj.org/Articles/Schoepp-Songs.html

Schweers, W. Jr. (1999). Using L1 in the L2 classroom. *English Teaching Forum*, *37*(2), 6–9.

Sevik, M. (2012). Teaching listening skills to young learners through "listen and do" songs. *English Teaching Forum*, *3*, 10-17. Retrieved from https://americanenglish.state.gov/files/ae/resource_files/50_3_3_sevik.pdf

Shamir, H., & Johnson, E. P. (2012). The effectiveness of computer-based EFL instruction among primary school students in Israel. *Educational Media International*, *49*(1), 49-61. doi:10.1080/09523987.2012.662624

Shapley, K.S., Sheehan, D., Maloney, C., & Caranikas-Walker, F. (2010). Evaluating the implementation fidelity of technology immersion and its relationship with student achievement. *Journal of Technology, Learning, and Assessment*, *9*(4).

Shin, H. J., & Son, J. B. (2007). EFL Teachers' perceptions and perspectives on Internet-assisted language teaching. *CALL-EJ Online*, *8*(2). Retrieved from http://callej.org/journal/8-2/h-js_j-bs.html

Shudong, W., & Higgins, M. (2006). Limitations of mobile phone learning. *The JALT CALL Journal, 2*(1), 3-14.

Shuler, C. (2009). Pockets of potential: Using mobile technologies to promote children's learning. Retrieved from http://www.joanganzcooneycenter.org/wp-content/uploads/2010/03/pockets_of_potential_1_.pdf

Sibley, B. A., & McKethan, R. (2012). Add up your physical education program. *Journal of Physical Education, Recreation & Dance*, *83*(8), 9-55. doi:10.1080/07303084.2012.10598821

Skinner, B., & Austin, R. (1999). Computer conferencing—does it motivate EFL students? *ELT Journal*, *53*(4), 270-279. doi: 10.1093/elt/53.4.270

Sririsaengtaksin, J., Praneetpolgrang P., & Tubtimhin, J. (2013). Thailand one tablet pc per first grade student, an efficient tool to leverage education equality. In T. Obi, J. P. Auffret & N. Iwasaki (Eds.), *Aging society and ICT* (pp. 148-157). Amsterdam: IOS Press BV.

Stager, G. (1995). In Australia…Laptop schools lead the way in professional development. *Educational Leadership*, *53*(2), 78-81.

Stemler, S. (2001). An overview of content analysis. *Practical Assessment, Research & Evaluation*, *7*(17). Retrieved from http://PAREonline.net/getvn.asp?v=7&n=17

Stenglin, M. K. (2004). *Packaging curiosities: Towards a grammar of 3D space* (Doctoral thesis, Sydney University, Sydney, Australia). Retrieved from http://hdl.handle.net/2123/635

Stenglin, M. K. (2009). Space odyssey: A guided tour through the semiosis of three-dimensional space. *Visual Communication*, *8*(1), 35-64.

Sukamolson, S. (1998). English language education policy in Thailand. *Asian Englishes*,*1*(1), 68-91.

Sun, B., Zhou, H., & Zhu, B. (2013). Effects of English phonological awareness training on Chinese child EFL learners' literacy development. *Canadian Social Science*, *9*(1), 56-64. http://dx.doi.org/10.3968/j.css.1923669720130901.1049

Swann, P. (1992). Computer assisted language learning for English as a foreign language. *Computers & Education*, *19*(3), 251-266.

Sylvéna1, L. K., & Sundqvista, P. (2012). Gaming as extramural English L2 learning and L2 proficiency among young learners. *ReCALL*, *24*(3), 302-321. doi:http://dx.doi.org/10.1017/S095834401200016X

Tang, J. (2002). Using L1 in the English classroom. *English Teaching Forum*, *40*(1), 36–43.

Taylor, R. (2014). Multimodal analysis of the textual function in children's face-to-face classroom interaction. In A. Maiorani and C. Christie (Eds.), *Multimodal Epistemologies: Towards an Integrated Framework* (pp. 420-452). New York: Routledge.

Teng, Y. (2016). EFL teachers' knowledge of technology in China: Issues and challenges. In C. Lin, D. Zhang, B. Zheng (Eds.), Preparing foreign language teachers for next-generation education (pp. 23- 37). New York: IGI Global.

Thongtua, C. (2008). *The development of CALL courseware to improve English reading comprehension* (Unpublished independent study report). Ubon Ratchathani Rajabhat University, Thailand.

Tsoua, W., Wang, W., & Tzeng, Y. (2006). Applying a multimedia storytelling website in foreign language learning. *Computers & Education*, *47*(1), 17–28. doi:10.1016/j.compedu.2004.08.013

Udomsate, K., Churintorn, S, & Chiannguen, A. (2011). Results of the use of tablets in Thai Language and mathematics classrooms for Grade 1 students at The Prince Royal's College, Thailand. Retrieved from

Unsworth, L. (2006). Towards a metalanguage for multiliteracies education: Describing the meaning-making resources of language-image interaction. *English Teaching: Practice and Critique*, *5*(1), 55–76. Retrieved from http://files.eric.ed.gov/fulltext/EJ843820.pdf

Unsworth, L. (2007). Image/text relations and intersemiosis: Towards multimodal text description for multiliteracies. In L. Barbara & T. B. Sardinha (Eds.), *Proceedings of the 33rd International Systemic Functional Congress*, San Paulo, Brazil, (pp. 1165-1205). Retrieved from http://www.pucsp.br/isfc/proceedings/Artigos%20pdf/59pl_unsworth_1165a1205.pdf

Unsworth, L. (2014). Towards a metalanguage for multimedia narrative interpretation and authoring pedagogy: A national curriculum perspective from Australia. In L. Unsworth, & A. Thomas (Ed.), *English teaching and new literacies pedagogy: Interpreting and authoring digital multimedia narratives* (pp. 1-22). New York: Peter Lang.

Unsworth, L., & Chan, E. (2009). Bridging multimodal literacies and national assessment programs in literacy. Australian Journal of Language and Literacy, 32(3), 245–257. Retrieved from http://search.informit.com.au.simsrad.net.ocs.mq.edu.au/fullText;dn=179016;res=AEIPT

Uzun, L. (2012). The Internet and computer enhanced foreign language learning and intercultural communication. *World Journal on Educational Technology*, *4*(2), 99-112.

Van Leeuwen, T. (1999). *Speech, music, sound*. London: Macmillan.

Vansteenkiste, M., Lens, W., & Deci, E. L. (2006). Intrinsic versus extrinsic goal contents in self-determination theory: Another look at the quality of academic motivation. *Educational Psychologist*, *41*(1), 19-31.

Vate-U-Lan, P. (2007). Readiness of eLearning connectivity in Thailand. In *Fourth International Conference on eLearning for Knowledge-Based Society*, Bangkok, Thailand. Retrieved from http://www.ijcim.th.org/SpecialEditions/v15nSP3/P21eLearningAP_ReadinessOfeLearningConnectivity.pdf

Verdugo, D. R., & Belmonte, I. A. (2007). Using digital stories to improve listening comprehension with Spanish young learners of English. *Language Learning & Technology*, *11*(1), 87-101. Retrieved from http://llt.msu.edu/vol11num1/ramirez/

Vungthong, S, Djonov, E, & Torr, J. (2015). Images as a resource for supporting vocabulary learning: A multimodal analysis of Thai EFL tablet apps for primary school children. *TESOL Quarterly*. doi:10.1002/tesq.274

Vungthong, S, Djonov, E, & Torr, J. (in press-a). What really matters in EFL classrooms using a tablet technology?: A critical multimodal analysis of pedagogic discourse.

Vungthong, S, Djonov, E, & Torr, J. (in press-b). Factors contributing to Thai teachers' uptake of tablet technology in EFL primary classrooms. *Asian EFL Journal*, *19*(2).

Warschauer, M. (2004). Technological change and the future of CALL. In S. Fotos & C. Brown (Eds.), *New perspectives on CALL for second and foreign language classrooms* (pp. 15-25). Mahwah, NJ: Lawrence Erlbaum Associates.

Warschauer, M., & Healey, D. (1998). Computers and language learning: an overview. *Language Teaching*, *31*, 57-71. doi:10.1017/S0261444800012970

Watson Todd, R. (2008). The impact of evaluation on Thai ELT. *Selected proceedings of the 12th English in Southeast Asia International Conference: Trends and directions*, Bangkok, pp. 118-127.

Weninger, C., & Kiss, T. (2013). Culture in English as a foreign language (EFL) textbooks: A semiotic approach. *TESOL Quarterly*, *47*, 694–716. doi:10.1002/tesq.87

Western Australian Department of Education. (2013). iPads for education: Early childhood iPad initiative. Retrieved from http://det.wa.edu.au/ipadsforeducation/detcms/navigation/ipad-initiative/?oid=MultiPartArticle-id-12568310

Weston, M. E. & Bain, A. (2010). The end of techno-critique: The naked truth about 1:1 laptop initiatives and educational change. *Journal of Technology, Learning, and Assessment*, *9*(6). Retrieved from http://www.jtla.org

Williams, E., & Williams, A. (2007). ESOL and EFL: An unhelpful distinction?: A report commissioned by CfBT Education Trust. Retrieved from https://esol.britishcouncil.org/sites/default/files/2ESOL-EFL_Report_WEB(2).pdf

Wiriyachitra,A. (2002). English language teaching and learning in Thailand in this decade. *Thai TESOL Focus*, 15(1), 4-9.

Wongsothorn, A. (2002). Survey of problems and needs for language research and language testing research. Bangkok: Chulalongkorn University Language Institute.

Wood, E, & Attfield, J. (2005). *Play, learning and the early childhood curriculum* (2 ed.). London: SAGE.

Worthington, J. (2009). Teaching teachers in Thailand: English language learning that is active, useful, and fun. *The Delta Kappa Gamma Bulletin*, *75*(3), 5-9.

Wright, A. (1989). *Pictures for language learning*. Cambridge: Cambridge University Press.

Wu, W. V., Yen, L. L., & Marek, M. (2011). Using online EFL interaction to increase confidence, motivation, and ability. *Educational Technology & Society*, *14*(3), 118–129.

Yang, S. C., & Chen, Y. (2007). Technology-enhanced language learning: A case study. *Computers in Human Behavior*, *23*(1), 860–879. doi:10.1016/j.chb.2006.02.015

Yeh, Y., Liou, H., & Li, Y. (2007). Online synonym materials and concordancing for EFL college writing. *Computer Assisted Language Learning*, *20*(2), 131-152.

Yiemkuntitavorn, S. (2005). *Thai transitivity: A functional grammar analysis* (Doctoral dissertation, University of Tasmania, Australia). Retrieved from http://eprints.utas.edu.au/22167/1/whole_YiemkuntitavornSita2005_thesis.pdf

Yoon, K. (2004). CLT theories and practices in EFL curricula: A case study of Korea. *Asian EFL*. Retrieved from http://asian-efl-journal.com/Sept_04_yke.pdf

Zhai, H. (2008). Discussion on elementary and secondary EFL teachers' information literacy education at the information age. *Journal of Qiqihaer Teachers' College*, *3*, 119-121.

Zhao, S., & Van Leeuwen, T. (2014). Understanding semiotic technology in university classrooms: A social semiotic approach to powerpoint-assisted cultural studies lectures. *Classroom Discourse*, *5*(1), 71-90. doi:10.1080/19463014.2013.859848

Zhong, Y. X., & Shen, H. Z. (2002). Where is the technology-induced pedagogy? Snapshots from two multimedia EFL classrooms. *British Journal of Educational Technology*, *33*(1), 39–52. doi:10.1111/1467-8535.00237H

Appendices

Appendix 1 Approval for Study by Macquarie University Ethics Committee

MACQUARIE University

SOMPATU VUNGTHONG <sompatu.vungthong@students.mq.edu.au>

RE: HS Ethics Application - Approved (5201300758)(Con/Met)

3 messages

Fhs Ethics <fhs.ethics@mq.edu.au> Wed, Nov 20, 2013 at 2:18 PM
To: Dr Emilia Djonov <emilia.djonov@mq.edu.au>
Cc: Associate Professor Jane Torr <jane.torr@mq.edu.au>, Miss Sompatu Vungthong <sompatu.vungthong@students.mq.edu.au>

Dear Dr Djonov,

Re: "Multimodal foreign language learning and technology: the design of the tablet application for Grade 1 English in Thailand and its use in the classroom"(5201300758)

Thank you for your recent correspondence. Your response has addressed the issues raised by the Faculty of Human Sciences Human Research Ethics Sub-Committee and approval has been granted, effective 20th November 2013. This email constitutes ethical approval only.

This research meets the requirements of the National Statement on Ethical Conduct in Human Research (2007). The National Statement is available at the following web site:

http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/e72.pdf.

The following personnel are authorised to conduct this research:

Associate Professor Jane Torr
Dr Emilia Djonov
Miss Sompatu Vungthong

Please note the following standard requirements of approval:

1. The approval of this project is conditional upon your continuing compliance with the National Statement on Ethical Conduct in Human Research (2007).

2. Approval will be for a period of five (5) years subject to the provision of annual reports.

Progress Report 1 Due: 20th November 2014
Progress Report 2 Due: 20th November 2015
Progress Report 3 Due: 20th November 2016
Progress Report 4 Due: 20th November 2017
Final Report Due: 20th November 2018

NB. If you complete the work earlier than you had planned you must submit a Final Report as soon as the work is completed. If the project has been discontinued or not commenced for any reason, you are also required to submit a Final Report for the project.

Progress reports and Final Reports are available at the following website:

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/forms

3. If the project has run for more than five (5) years you cannot renew approval for the project. You will need to complete and submit a Final Report and submit a new application for the project. (The five year limit

on renewal of approvals allows the Sub-Committee to fully re-review research in an environment where legislation, guidelines and requirements are continually changing, for example, new child protection and privacy laws).

4. All amendments to the project must be reviewed and approved by the Sub-Committee before implementation. Please complete and submit a Request for Amendment Form available at the following website:

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/forms

5. Please notify the Sub-Committee immediately in the event of any adverse effects on participants or of any unforeseen events that affect the continued ethical acceptability of the project.

6. At all times you are responsible for the ethical conduct of your research in accordance with the guidelines established by the University. This information is available at the following websites:

http://www.mq.edu.au/policy

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/policy

If you will be applying for or have applied for internal or external funding for the above project it is your responsibility to provide the Macquarie University's Research Grants Management Assistant with a copy of this email as soon as possible. Internal and External funding agencies will not be informed that you have approval for your project and funds will not be released until the Research Grants Management Assistant has received a copy of this email.

If you need to provide a hard copy letter of approval to an external organisation as evidence that you have approval, please do not hesitate to contact the Ethics Secretariat at the address below.

Please retain a copy of this email as this is your official notification of ethics approval.

Yours sincerely,

Dr Peter Roger
Chair
Faculty of Human Sciences Ethics Review Sub-Committee
Human Research Ethics Committee

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on renewal of approvals allows the Sub-Committee to fully re-review research in an environment where legislation, guidelines and requirements are continually changing, for example, new child protection and privacy laws).

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Please retain a copy of this email as this is your official notification of ethics approval.

Yours sincerely,

Dr Peter Roger
Chair
Faculty of Human Sciences Ethics Review Sub-Committee
Human Research Ethics Committee

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Appendix 2 Macquarie University's policy on thesis by publication

Skip to Content

HIGHER DEGREE RESEARCH THESIS BY PUBLICATION GUIDELINE

» Purpose | » Guideline | » Guideline Information

Purpose	This Guideline provides information to assist Higher Degree Research (HDR) candidates in the preparation of a thesis including published or co-published material prepared during candidature. A thesis prepared in journal article format adds value to the research student experience, encourages timely completion, enhances job prospects and improves the publication outputs and research ranking of the University.
Guideline	Eligible Material A thesis by publication may include relevant papers, including conference presentations, which have been published, accepted, submitted or prepared for publication for which at least half of the research has been undertaken during enrolment. The papers should form a coherent and integrated body of work, which should be focused on a single thesis project or set of related questions or propositions. These papers are one part of the thesis, rather than a separate component (or appendix). Contribution by Co-Authors These papers may be single author or co-authored. The candidate must specify his/her specific contribution. The contribution of others to the preparation of the thesis or to individual parts of the thesis should be specified in the thesis Acknowledgments and/or in relevant footnotes/endnotes. Where a paper has multiple authors, the candidate would usually be the principal author and evidence of this should appear in the appropriate manner for the discipline. Examiners can then assess if the quality and extent of the candidate's contribution warrant the award of the degree based on the standard criteria. Number and Presentation of Papers Each discipline will have a different number of publications that are acceptable as the substantive foundation for a thesis by publication. As a general rule a candidate will need to have enough papers to support the important findings from the research, presented in a logical and coherent way. Most theses by publication have between 2 and 8 papers in combinations of sole and co-authored papers. These papers will normally form thesis chapters and the chronological publication order may be quite different from the way they are sequenced in the thesis. The length of the papers will reflect discipline requirements and journal guidelines. Although it is not necessary to reformat published works in a thesis, it is not enough simply to bind these publications together. The candidate needs to include a critical introduction to the work, sections that link the papers together, and a concluding section that synthesises the material as a whole. Above all, candidates must consider the coherence of the thesis as a whole, and the way in which each paper contributes to the overall thesis. Preparing for a Thesis by Publication Candidates and supervisors should plan a thesis by publication in relation to the timetable of the individual project and the writing conventions and publishing schedules of their discipline in order to make sure that research, writing and journal submission can be undertaken within standard candidature. For instance, in some science disciplines major journals have 10 editions in a year, whereas the major journals in education may publish biannually. Although a thesis by publication may contain some repetition, it is expected that the repetition be minimal so as to facilitate the examination process.

Candidates should ensure that any referencing and stylistic inconsistencies between papers are minimised to assist the examiners.

Guideline Information

Contact Officer	Dean, Higher Degree Research
Date Approved	28 November 2013
Approval Authority	Higher Degree Research Committee
Date of Commencement	25 July 2014
Amendment History	28 November 2013 – revised guideline approved by Higher Degree Research Committee
Date for Next Review	25 July 2017
Related Documents	Higher Degree Research Thesis Preparation, Submission and Examination Policy / Procedure Links http://www.hdr.mq.edu.au/ http://www.hdr.mq.edu.au/information_for/current_candidates/thesis_preparation http://www.hdr.mq.edu.au/information_for/current_candidates/thesis_submission http://www.hdr.mq.edu.au/information_for/current_candidates/thesis_submission http://www.hdr.mq.edu.au/information_for/thesis_examiners
Keywords	Thesis by Publication, thesis with journal articles, thesis with papers, thesis co-authors, thesis co-publication.

Appendix 3 The list of interview questions for Grade 2 EFL teachers

Interview questions for Grade 2 teachers regarding their views about children using the tablet OTPC tablet app for EFL learning

1. Personal Info:

1.1) Age

1.2) Gender

1.3) Years of experience

1.4) Qualification

1.5) Type of schools

2. Frequency of use of the OTPC app:

2.1) Have you ever used the app in classrooms? Why or why not?

2.2) If yes, how often do you use it?

2.3) Can you tell me why you use it (or plan to use it) quite often/once a month/etc?

3. Attitudes towards the OTPC app:

3.1) Do you like the app? Why? Why not?

3.2) Do children like to use the app in classrooms?

3.3) When students use the app, are there any problems arising?

3.4) Which part of the app do you like the most? Why?

3.5) Which part of the app do you dislike or which part of the app that you think you would not use in classrooms? Why?

3.6) Which part do you think would be the most useful to the students?

3.7) Which part would be the most entertaining for the students? Which part do you think children will like the most?

3.8) Is it difficult to integrate the app into classroom practices? What are the problems arising from the use?

3.9) If you can improve the app or add a new function to the app, what will you do? Why?

4. The use of the OTPC tablet app to help young students learn English:

4.1) Do you think the app content can help children learn English?

4.2) How can the app help children learn English?

4.3) Which part do you think would be the most useful in terms of helping students to achieve the English learning outcomes specified by the government?

4.4) Which learning skill do you think the app enhances the most?

5. Teachers' pedagogical beliefs and instructional practices:

5.1) How do/will you use the app in classrooms?

5.2) Do you think the app can help children learning English better?

5.3) Without the app, do you think you can use other kinds of material to help children learn English? If yes, what are they? If no, why?

5.4) Do you think students learn best by themselves or under the guidance/instruction of the experienced?

5.5) Is it better for children to learn with the app by themselves or under the close supervision?

Appendix 4 The multimodal transcription of the song videos for Grade 1 and Grade 2 OTPC EFL apps

See the attached USB.

Appendix 5 Transcription of teachers' use of pedagogic space

Teacher A

	Type of pedagogic space	**The amount of time**	**Phase**
1	Supervisory	2.59 mins	Phase 1: Orientation to the task
2	Supervisory	2 mins	Phase 2: Supervision of the task
3	Interactional	2.08 mins	Phase 2: Supervision of the task
4	Supervisory	2.30 mins	Phase 3: Question and answer about using the app
5	Supervisory	1.15 mins	Phase 4: Orientation to the task
6	Supervisory	5.54 mins	Phase 5: Supervision of the task
7	Interactional	4.32 mins	Phase 5: Supervision of the task
8	Personal	56 secs	Phase 5: Supervision of the task
9	Authoritative	39 secs	Phase 5: Supervision of the task
10	Supervisory	1.11 mins	Phase 6: Orientation to the task (creating your own supermarket)
11	Supervisory	11 mins	Phase 7: Supervision of the task (creating your own supermarket)
12	Interactional	8.40 mins	Phase 7: Supervision of the task (creating your own supermarket)
13	Supervisory	25 secs	Phase 8: Closure
	Total	44.09 mins	

Teacher B

	Type of pedagogic space	**The amount of time**	**Phase**
1	Authoritative	10.13 mins	Phase 1: Orientation to the task
2	Supervisory	2.53	Phase 1: Orientation to the task
3	Interactional	2.08	Phase 1: Orientation to the task
4	Supervisory	8.26 mins	Phase 2: Supervision of the task
5	Interactional	3.34 mins	Phase 2: Supervision of the task
6	Authoritative	10.20 mins	Phase 2: Supervision of the task
7	Supervisory	28 secs	Phase 3: Closure
	Total	38.02 mins	

Appendix 6 TRANSITIVITY analysis of teachers' interviews

See the attached USB.

Appendix 7 TRANSITIVITY, MOOD, and THEME analysis of teachers' speech

See the attached USB.

Appendix 8 The teacher interview scripts translated by a NAATI certified translator

See the attached USB.

Appendix 9 Letter to a school principal (Thai)

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เรื่อง ขอความอนุเคราะห์เข้าศึกษาดูงานการเรียนการสอนภาษาอังกฤษผ่านการใช้ tablet ของนักเรียนชั้นประถมศึกษาปีที่ 2

เรียน ท่านผู้อำนวยการโรงเรียน

ดิฉัน Dr. Emilia Djonov อาจารย์ ณ Institute of Early Childhood, Macquarie University ประเทศออสเตรเลีย อาจารย์ที่ปรึกษาของนางสาวสมพธู หวังทอง เนื่องด้วยหัวข้องานวิจัยของนางสาวสมพธูเกี่ยวข้องกับการใช้ Tablet App ในการเรียนการสอนวิชาภาษาอังกฤษของเด็กนักเรียน และสอดคล้องกับโครงการของรัฐบาลด้าน tablet สำหรับนักเรียนประถมศึกษาชั้นปีที่ 2

ดิฉันจึงใคร่ขอความอนุเคราะห์ ขอให้นางสาวสมพธู เข้าชมการเรียนสอนห้องเรียนวิชาภาษาอังกฤษที่มีการใช้ tablet ของนักเรียนชั้นประถมศึกษาปีที่ 2 ณ โรงเรียนของท่าน ในเทอมการศึกษานี้หรือเทอมการศึกษาหน้าตามแต่ทางโรงเรียนของท่านสะดวก ในฐานะที่เป็นส่วนหนึ่งของงานวิจัย ขออนุญาตให้นางสาวสมพธู หวังทอง 1)เข้าเยี่ยมชมและถ่ายทำ การเรียนการสอน รายวิชาภาษาอังกฤษผ่านการใช้ tablet ของนักเรียนชั้นประถมศึกษาปีที่ 2 ไม่เกิน 50 นาที (ตามแต่ที่ทางโรงเรียนเห็นสมควร), 2) สัมภาษณ์ครู 1 ท่าน (ไม่เกิน 30 นาที) และนักเรียน 2 คน (ไม่เกิน 20 นาที) เกี่ยวกับการใช้ tablet ในห้องเรียน เพื่อเป็นการแสดงความชื่นชมในการอนุเคราะห์ครั้งนี้ ทาง มหาวิทยาลัย Macquarie University ขอมอบหนังสือเรียนภาษาอังกฤษ มูลค่า ประมาณ 1,500 บาท (50 AUD) เพื่อห้องสมุดโรงเรียนของท่าน ในงานวิจัยจะไม่มีการเผยแพร่ข้อมูลของโรงเรียน อาจารย์ หรือนักเรียนโดยไม่ได้รับอนุญาตโดยเด็ดขาด การเยี่ยมชมครั้งนี้มีไปเพื่อ ประโยชน์ด้านการวิจัย เพื่อพัฒนาการเรียนการสอนภาษาอังกฤษผ่านทางเทคโนโลยี tablet เท่านั้น

จึงเรียนมาเพื่อโปรดพิจารณา หวังเป็นอย่างยิ่งว่าจะได้รับความอนุเคราะห์จากท่าน และขอขอบคุณมา ณ โอกาสนี้

ขอแสดงความนับถือ

Dr Emilia Djonov
Lecturer in Early Childhood Language and Literacy
Institute of Early Childhood
Macquarie University
North Ryde, NSW 2109
Australia

Building X5B, room 276, phone +61 2 9850 9823

Appendix 10 Letter to a school principal (English translation)

MACQUARIE UNIVERSITY

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24 September 2013

Re: Request for conducting research _____ (*name of school*)

Dear …… (Principal of …..),

I am the Principal Supervisor of Ms Sompatu Vungthong who is currently a PhD candidate at the Institute of Early Childhood, Macquarie University. For her PhD project, Ms Vungthong is researching the use of the OTPC Grade 2 English application in Thai classrooms and the views of teachers and students about the application.

I am writing to request your kind permission for MsVungthong to 1) distribute the attached OTPC questionnaire to English Grade 1 teachers at your school, 2) after obtaining written consent from the teachers, interview them about their experiences with and views towards the OTPC Grade 2 English application, and 3) observe and video-record the ways in which the application is used in Grade 2 English classrooms by focusing on the teacher and two focus children, after obtaining written consent from the teachers and verbal consent from the children's parents and then the children themselves. For more information, please see the attached 1) brief summary of the study, 2) questionnaire for Grade 2 English teachers, and 3) information and consent form for teachers, and do not hesitate to contact me or Ms Vungthong.

Thank you for your consideration of this request.

Sincerely yours,

Dr Emilia Djonov
Lecturer in Early Childhood Language and Literacy
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Appendix 11 The information and consent letter for a school principal in Thai language

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24 กันยายน 2013

แบบฟอร์มยินยอมสำหรับผู้อำนวยการ

เรียน ผู้อำนวยการโรงเรียน

นางสาวสมพธู หวังทอง กำลังลาศึกษาต่อระดับปริญญาเอก ณ Institute of Early Childhood, Macquarie University ประเทศออสเตรเลีย เนื่องด้วยหัวข้องานวิจัยของนางสาวสมพธู หวังทองเกี่ยวข้องกับการใช้ Tablet App ในการเรียนการสอนวิชาภาษาอังกฤษของเด็กนักเรียน และสอดคล้องกับโครงการของรัฐบาลด้าน tablet สำหรับนักเรียนประถมศึกษาชั้นปีที่ 2 ในฐานะที่เป็นส่วนหนึ่งของงานวิจัย ขออนุญาตให้นางสาวสมพธู หวังทอง

- เก็บแบบสอบถามเกี่ยวกับความเห็นของครูต่อการใช้ Tablet App ซึ่งใช้เวลาการกรอกไม่เกิน15 นาที
- เข้าเยี่ยมชมและถ่ายทำ การเรียนการสอน รายวิชาภาษาอังกฤษผ่านการใช้ tablet ของนักเรียนชั้นประถมศึกษาปีที่ 2 ไม่เกิน 50 นาที (ตามแต่ที่ทางโรงเรียนเห็นสมควร),
- สัมภาษณ์และอัดบันทึกเสียงครู 1 ท่าน (ไม่เกิน 30 นาที) และ นักเรียน 2 คน (ไม่เกิน 20 นาที) เกี่ยวกับการใช้ tablet ในห้องเรียน

เราขอความอนุเคราะห์ให้ท่านช่วยส่งต่อแบบสอบถามให้ครูภาษาอังกฤษพร้อมซองจดหมายและแสตมป์เพื่อส่งคืน นางสาวสมพธู หวังทอง

ครูผู้ยินยอมเข้าร่วมการทำงานวิจัยจะถูกขอร้องให้ช่วยระบุตัวแทนนักเรียนที่มีทักษะภาษาอังกฤษ และการใช้เทคโนโลยี ติดต่อผู้ปกครองของนักเรียน และ ส่งต่อแบบฟอร์มยินยอมเข้าร่วมงานวิจัยแก่ผู้ปกครองและนักเรียน การสัมภาษณ์และอัดบันทึกนักเรียนจะกระทำโดยมีครูผู้สอนคอยควบคุมดูแล นางสาวสมพธู หวังทองจะหลีกเลี่ยงการรบกวนการเรียนการสอนและนักเรียนให้มากที่สุด

หากท่านยินยอมให้โรงเรียนของท่านเข้าร่วมงานวิจัย ท่านจะถูกขอร้องให้ส่งต่อแบบสอบถามให้กับครูผู้สอนภาษาอังกฤษ ป.2 ครูผู้ตอบแบบสอบถามจะส่งจดหมายแบบสอบถาม คืนมายังนางสาว สมพธู หวังทอง หากท่านยินยอมให้โรงเรียนของท่านเข้าร่วมงานวิจัย ท่านจำเป็นต้องกรอกแบบฟอร์มนี้ ท่านสามารถส่งแบบฟอร์มพร้อมแบบสอบถามมาที่นางสาวสมพธู นางสาวสมพธูจะเซ็นแบบฟอร์มและส่งคืนให้ท่านเก็บไว้

เพื่อเป็นการแสดงความชื่นชมในการอนุเคราะห์ครั้งนี้ ทาง มหาวิทยาลัย Macquarie University ขอมอบหนังสือเรียนภาษาอังกฤษ มูลค่า ประมาณ 1,500 บาท (50 AUD) เพื่อห้องสมุดโรงเรียนของท่าน

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ในงานวิจัยจะไม่มีการเผยแพร่ข้อมูลของโรงเรียน อาจารย์ หรือนักเรียนโดยไม่ได้รับอนุญาตโดยเด็ดขาด ผู้เข้าถึงข้อมูลมีเพียงนางสาวสมพธู และ อาจารย์ที่ปรึกษาสองท่าน (Dr. Emilia Djonov และ A/Prof Jane Torr) การเยี่ยมชมครั้งนี้มีไปเพื่อประโยชน์ด้านการวิจัย เพื่อพัฒนาการเรียนการสอนภาษาอังกฤษผ่านทางเทคโนโลยี tablet เท่านั้น

ทั้งนี้นางสมพธูจะกลับไปเก็บข้อมูลครั้งที่1 ที่ประเทศไทยเป็นเวลาสองเดือน นับตั้งแต่วันที่ 25 ธันวาคม 2556 หากท่านมีข้อสงสัยหรือต้องการข้อมูล/ เอกสารเพิ่มเติม สามารถติดต่อสอบถามนางสาวสมพธู (เบอร์โทรติดต่อในประเทศไทย 089-0361220/ Email: sompatu.vungthong@students.mq.edu.au) ได้ตามที่อยู่อีเมลและเบอร์โทรศัพท์ที่ให้ไว้นี้

สำหรับผู้อำนวยการ

ข้าพเจ้า _____(ชื่อผู้อำนวยการ) ได้อ่านข้อมูลในแบบฟอร์มนี้และซักถามจนพอใจแล้ว ข้าพเจ้าเข้าใจว่าการเข้าร่วมงานวิจัยนี้ของข้าพเจ้า ครูและนักเรียนเป็นไปโดยสมัครใจ ข้าพเจ้ายินยอมเข้าร่วมงานวิจัยนี้ ข้าพเจ้าเข้าใจว่าสามารถถอนตัวออกจากการเข้าร่วมได้ตลอดเวลาโดยไม่ต้องให้เหตุผล ข้าพเจ้าเข้าใจว่า ครู นักเรียน ผู้ปกครอง สามารถถอนตัวจากการเข้าร่วมงานวิจัยได้โดยไม่ต้องให้เหตุผลเช่นกัน ข้าพเจ้าได้รับ copy ของแบบฟอร์มนี้

ชื่อผู้อำนวยการ_____

ลายเซ็น _____วันที่_____

สำหรับผู้ทำวิจัย

ชื่อ_____

ลายเซ็น _____วันที่_____

Macquarie University ได้อนุมัติการทำวิจัยครั้งนี้แล้ว หากท่านอยากร้องเรียน สามารถ ติดต่อได้ที่ the Director, Research Ethics (telephone (02) 98507854; email ethics@mq.edu.au) เราจะเก็บเป็นความลับและจะแจ้งผลกลับ

ผู้ทำวิจัยมอบ copy พร้อมลายเซ็นแบบฟอร์มนี้ให้ผู้เข้าร่วมงานวิจัย

Appendix 12 The information and consent letter for a school principal in Thai language (English translation)

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Information and Consent Form

Dear School Principal,

Ms Sompatu Vungthong is a PhD candidate at the Institute of Early Childhood, Macquarie University, Sydney, Australia. She is studying Grade 2 teachers' and students' use of, experiences with and views about the tablet application for learning English included in the tablet computers that all Grade 2 students in Thailand receive under the Thai government's onet tablett pert child (OTPC) initiative.

As part of this project, Ms Vungthong would like to:

- collect Grade 2 English teachers' responses to the attached questionnaire; questionnaire would take approximately 15 minutes to complete
- observe and video-record the use of the application in Grade 2 English classrooms, in each classroom focussing on the teacher and two students for up to 50 minutes in total
- conduct and audiot record interviews with Grade 2 English teachers on their experience with and views towards the Grade 2 English application for up to 30 minutes each
- conduct and audiot record interviews with Grade 2 students on their experiences with and views towards the Grade 2 English application for up to 20 minutes each.

We would like to request your assistance in distributing the attached questionnaires and reply paid return envelopes to any teacher/s who have been or will be involved in teaching Grade 2 English at your school in the period 2011 to 2015.

To assist Ms Vungthong in identifying suitable children to focus on during classroom observations/video-recording sessions, teachers who agree to participate in classroom observations and interviews will be asked to select children who have skills in English and in using the technology that are typical of children from the same class, contact their parents and give them the attached information and consent form for parents and children. Both classroom observations/video-recording and any interviews with children will be conducted only in the presence of the children's teacher. Ms Vungthong will conduct the data collection activities listed above in ways that avoid any significant disruption to the daily routine and other planned activities of the school, teachers, classrooms and children.

If you agree for your school to participate in the classroom observations and interviews that are part of Ms Vungthong's PhD project, you will be asked to distribute the attached information and consent forms for teachers to all teachers involved in teaching Grade 1 English in 2014/2015. Those who choose to complete the questionnaire and/or information and consent form can then return both to Ms Vungthong either directly by using the postage-paid reply envelope or through you. She will then counter-sign and give each teacher who has signed the form a copy of the completed consent form to keep.

At the completion of Ms Vungthong's PhD project, we will provide your school with a short summary of the project's key findings, and will appreciate your school's assistance in making this summary available to any interested parents, children or teachers (for example, sending it to them via email or post).

As a token of appreciation for your school's participation in interviews and classroom observations for this project, we would also present your school with a book voucher (equivalent to A$50) for purchasing books for the school's library.

No information identifying your school or any teacher or child will be made available to anyone except Ms Vungthong and her two PhD supervisors – Dr Emilia Djonov and Associate Professor Jane Torr. If you have any further questions, please feel free to contact Dr Emilia Djonov using the details provided above or Ms Sompatu Vungthong via email (sompatu.vungthong@students.mq.edu.au) or mobile number in Thailand (089-036-1220).

School Principal

I, _____ (name of principal) have read and understand the information above and any questions I have asked have been answered to my satisfaction. I understand that school, teacher and student participation in this study is completely voluntary and understand what this participation will involve. I agree for my school to participate in this study. I understand that I can withdraw my consent at any time without having to give a reason and without consequence. I understand that any teacher, student or parent of a student who has agreed to participate, too, is free to withdraw from the study at any time without having to give a reason and without consequence. I have been given a copy of this form to keep.

School Principal's Name: _____
(Block letters)

School Principal's Signature:_____ Date:_____

Investigator

*Investigator's Name:*_____
(Block letters)

*Investigator's Signature:*_____*Date:*_____

The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics (telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

Investigator to give one copy of the signed form to the school principal and keep a separate one.

Appendix 13 Questionnaire for Grade 2 EFL teachers regarding their use of and views about the Grade 2 OTPC tablet app (Thai)

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แบบสอบถามเรื่องโปรแกรมในแท็บเบล็ตของรัฐบาลสำหรับอาจารย์สอนภาษาอังกฤษระดับชั้นประถมศึกษาปีที่ 2

(แม้ท่านจะไม่เคยใช้แท็บเบล็ตของรัฐบาล คำตอบของท่านก็มีคุณค่าอย่างยิ่ง ท่านสามารถดูรายละเอียดโปรแกรมบนแท็บเบล็ตวิชาภาษาอังกฤษอย่างคร่าว ๆได้ใน Section E ของแบบสอบถามนี้)

แบบสอบถามนี้เป็นส่วนหนึ่งของงานวิจัยของนางสาว สมพธู หวังทอง นักศึกษาระดับปริญญาเอก Department of Educational Studies มหาวิทยาลัย Macquarie University ประเทศออสเตรเลีย ภายใต้การดูแลของที่ปรึกษา Dr Emilia Djonov

หนึ่งในเป้าหมายของการทำวิจัยนี้มีเพื่อ วิเคราะห์มุมมองทัศนคติของอาจารย์ต่อการออกแบบและการใช้โปรแกรมที่อยู่ในแท็บเบล็ต ของรัฐบาล ในห้องเรียนภาษาอังกฤษของนักเรียนระดับชั้นประถมศึกษาปีที่ 2

ข้อมูลที่ท่านให้จะถูกเก็บเป็นความลับ ในแบบสอบถามนี้ไม่มีการระบุตัวตนหรือโรงเรียนของท่านแต่อย่างใด จึงเรียนมาเพื่อขอความอนุเคราะห์ให้ท่านช่วยตอบแบบสอบถามนี้ และใส่ซองซึ่งมีการติดแสตมป์และที่อยู่ของผู้ทำวิจัยเรียบร้อยแล้ว พร้อมส่งกลับมาให้ผู้ทำวิจัย

ขอกราบขอบพระคุณเป็นอย่างสูง

นางสาว สมพธู หวังทอง

Tel: 089-036-1220 E-mail: sompatu.vungthong@students.mq.edu.au

Instruction: **แบบสอบถามนี้ประกอบไปด้วย** Section A – Section E

Section A: **ข้อมูลส่วนตัว**

โปรดกาเครื่องหมาย (√) สำหรับคำตอบที่ตรงกับท่าน

1. **อายุ**:
   ☐ 20-24 ☐ 25-29 ☐ 30-34 ☐ 35-39 ☐ 40-44 ☐ 45-49 ☐ 50-54 ☐ 55 up
2. **เพศ**: ☐ ชาย ☐ หญิง
3. **ระดับการศึกษา**: ☐ อนุปริญญา ☐ ปริญญาตรี ☐ ประกาศนียบัตรบัณฑิต
   ☐ ปริญญาโท ☐ ปริญญาเอก
4. ประสบการณ์ในการสอนภาษาอังกฤษระดับชั้นประถมศึกษา (จำนวนปี):
   ☐ 0-2 ☐ 3-5 ☐ 6-10 ☐ 11-15 ☐ 16-20
   ☐ มากกว่า 20
5. **ลักษณะของโรงเรียน?** ☐ รัฐบาล ☐ เอกชน

Section B: **ข้อมูลเกี่ยวกับโครงการแท็บเบล็ตของรัฐบาล**

โปรดขีดเครื่องหมาย (√) สำหรับคำตอบที่ตรงกับท่าน

1. ท่านเคยเข้ารับการฝึกอบรมเกี่ยวกับแท็บเบล็ตของรัฐบาลหรือไม่

☐ เคย ☐ ไม่เคย

2. ท่านเคยลองใช้โปรแกมในแท็บเบล็ตของรัฐบาลหรือไม่ หากเคยใช้ โปรดช่วยกรุณาตอบคำถาม ทุก section หากไม่เคย โปรดข้าม Section C กับ Section D

☐ เคย ☐ ไม่เคย

3. ท่านเคยใช้แท็บเบล็ตของรัฐบาลในห้องเรียนภาษาอังกฤษหรือไม่

☐ เคย ☐ ไม่เคย

4. ท่านวางแผนที่จะใช้แท็บเบล็ตในห้องเรียน ในเทอมการศึกษานี้หรือไม่?

☐ ใช่ ☐ ไม่ใช่

Section C: **มุมมองต่อการใช้โปรแกรมบนแท็บเบล็ต และการเรียนรู้ภาษาอังกฤษของเด็กนักเรียน**

Part I

โปรดอ่านข้อความแต่ละข้อ และกากบาท (X) หมายเลขที่แสดงถึงมุมมองของท่านต่อการใช้ โปรแกรมบนแท็บเบล็ตของรัฐบาล และการเรียนรู้ภาษาอังกฤษของเด็กนักเรียน

1 (ไม่เห็นด้วยอย่างยิ่ง) 2 (ไม่เห็นด้วย) 3 (ไม่แน่ใจ) 4 (เห็นด้วย) 5 (เห็นด้วยอย่างยิ่ง)

1.	โปรแกรมบนแท็บเบล็ต มีส่วนช่วยให้นักเรียนเรียนรู้ภาษาอังกฤษ	1	2	3	4	5
2.	โปรแกรมบนแท็บเบล็ต ช่วยพัฒนาทักษะการพูดภาษาอังกฤษของนักเรียน	1	2	3	4	5
3.	โปรแกรมบนแท็บเบล็ต ช่วยพัฒนาทักษะการฟังภาษาอังกฤษของนักเรียน	1	2	3	4	5
4.	โปรแกรมบนแท็บเบล็ต ช่วยพัฒนาทักษะการเขียนภาษาอังกฤษของนักเรียน	1	2	3	4	5
5.	โปรแกรมบนแท็บเบล็ต ช่วยพัฒนาทักษะการอ่านภาษาอังกฤษของนักเรียน	1	2	3	4	5
6.	โปรแกรมบนแท็บเบล็ต มีผลช่วยให้คะแนนภาษาอังกฤษของนักเรียนดีขึ้น	1	2	3	4	5
7.	โปรแกรมบนแท็บเบล็ต ช่วยพัฒนาทักษะการทำงานร่วมกันของนักเรียน	1	2	3	4	5
8.	โปรแกรมบนแท็บเบล็ต ทำให้การจัดการการเรียนการสอนยากยิ่งขึ้น	1	2	3	4	5
9.	โปรแกรมบนแท็บเบล็ต ยากที่จะใช้	1	2	3	4	5
10.	การใช้โปรแกรมบนแท็บเบล็ต จะประสบความสำเร็จ หากครูได้รับการฝึกอบรมที่เหมาะสม เกี่ยวกับโปรแกรมบนแท็บเบล็ต	1	2	3	4	5
11.	การใช้โปรแกรมบนแท็บเบล็ต มีปัญหาทางด้านเทคนิคบางอย่าง (เช่น เครื่องเปิดไม่ติด เครื่องค้าง)	1	2	3	4	5
12.	การใช้โปรแกรมบนแท็บเบล็ต ในห้องเรียนไม่ใช่เรื่องจำเป็น เนื่องจากนักเรียนสามารถใช้โปรแกรมบนแท็บเบล็ตที่บ้านได้	1	2	3	4	5
13.	การใช้โปรแกรมบนแท็บเบล็ต ในห้องเรียนไม่ใช่เรื่องจำเป็น เนื่องจากการใช้สื่อการสอนธรรมดาก็สามารถทำให้นักเรียนเรียนภาษาอังกฤษอย่างมีประสิทธิภาพได้	1	2	3	4	5
14.	โปรแกรมบนแท็บเบล็ต ช่วยกระตุ้นให้นักเรียนสนใจในการเรียนรู้ภาษาอังกฤษใน	1	2	3	4	5

	ห้องเรียนมากยิ่งขึ้น					
15.	การใช้โปรแกรมบนแท็บเบล็ตในห้องเรียน ทำให้นักเรียนเครียดมากขึ้น	1	2	3	4	5
16.	เนื้อหาด้านวิชาภาษาอังกฤษในโปรแกรมบนแท็บเบล็ต เกี่ยวข้องกับหลักสูตรการเรียนภาษาอังกฤษของนักเรียนระดับป2 โดยตรง	1	2	3	4	5
17.	การใช้โปรแกรมบนแท็บเบล็ต จำเป็นต้องมีการวางแผนกิจกรรมการเรียนรู้มากกว่าปกติ	1	2	3	4	5
18.	นักเรียนมองว่ายากที่จะใช้โปรแกรมบนแท็บเบล็ต	1	2	3	4	5
19.	นักเรียนสนุกสนานกับการใช้โปรแกรมบนแท็บเบล็ต ในห้องเรียนภาษาอังกฤษ	1	2	3	4	5
20.	โปรแกรมบนแท็บเบล็ต เหมาะกับลักษณะการเรียนรู้ที่แตกต่างกันของเด็ก (เด็กนักเรียนบางคนเรียนรู้ช้า เด็กบางคนเรียนรู้เร็ว)	1	2	3	4	5
21.	การใช้โปรแกรมบนแท็บเบล็ต ช่วยสนับสนุนการสอนภาษาอังกฤษของฉัน	1	2	3	4	5

Part II

โปรดอ่านข้อความแต่ละข้อ และกากบาท (X) หมายเลขที่แสดงถึงมุมมองของท่านเกี่ยวกับภาษาอังกฤษและการสอนภาษาอังกฤษ

1 (ไม่เห็นด้วยอย่างยิ่ง) 2 (ไม่เห็นด้วย) 3 (ไม่แน่ใจ) 4 (เห็นด้วย) 5 (เห็นด้วยอย่างยิ่ง)

1. นักเรียนไทยจำเป็นต้องเรียนรู้ภาษาอังกฤษ	1	2	3	4	5
2. สำหรับการเรียนภาษาอังกฤษสำหรับเด็กเล็ก การเรียนด้วยการเล่น เช่น การเล่นเกม จะเป็นการดีกว่าการท่องจำ	1	2	3	4	5
3. ฉันมีความมั่นใจในทักษะการเขียนภาษาอังกฤษของฉัน	1	2	3	4	5
4. ฉันมีความมั่นใจในทักษะการพูดภาษาอังกฤษของฉัน	1	2	3	4	5
5. ฉันมีความมั่นใจในทักษะการอ่านภาษาอังกฤษของฉัน	1	2	3	4	5
6. ฉันมีความมั่นใจในทักษะการฟังภาษาอังกฤษของฉัน	1	2	3	4	5

Section D

Part I: โปรดตอบคำถามดังต่อไปนี้เกี่ยวกับมุมมองของท่านต่อการใช้โปรแกรมบนแท็บเบล็ตและการเรียนภาษาอังกฤษของนักเรียน

1. ท่านคิดว่าโปรแกรมบนแท็บเบล็ตสามารถช่วยให้นักเรียนเรียนภาษาอังกฤษได้อย่างไร

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2. ท่านเคยมีปัญหาในการใช้โปรแกรมบนแท็บเบล็ตในห้องเรียนภาษาอังกฤษหรือไม่ หากมี ปัญหาคืออะไร

Section E: The OTPC Tablet Application

แม้ว่าท่านไม่เคยใช้โปรแกรมนี้บนแท็บเบล็ตของรัฐบาลมาก่อน ท่านสามารถใช้รูปภาพและข้อมูลในตัวเลือกเพื่อตอบคำถามได้

Part I: โปรดเรียงลำดับรูปแบบบทเรียน ที่ตรงกับความเห็นของท่าน พร้อมทั้งกรุณาให้เหตุผล

1. ในโปรแกรมบนแท็บเบล็ต เนื้อหาบทเรียนภาษาอังกฤษมีอยู่ 8 แบบ โปรดเรียงลำดับรูปแบบบทเรียน ที่ท่านคิดว่ามีประโยชน์ต่อการเรียนภาษาอังกฤษของนักเรียนมากที่สุด โปรดเรียงลำดับหมายเลข 1 ถึง 8 โดย 1 = มีประโยชน์ต่อนักเรียนมากที่สุด และ 8 = มีประโยชน์ต่อนักเรียนน้อยที่สุด

___: Vocabulary

___: Let's listen

___: Let's read

___: Let's study

___: Let's talk

___: Songs

___: Exercise

___: Games

เหตุผล:……

……

……

2. จากเนื้อหาบทเรียนภาษาอังกฤษ 8 แบบ โปรดเรียงลำดับรูปแบบบทเรียน ที่ท่านคิดว่านักเรียนชื่นชอบและสนุกสนานมากที่สุด โปรดเรียงลำดับหมายเลข 1 ถึง 8 โดย 1 = นักเรียนชื่นชอบมากที่สุด และ 8 = นักเรียนชื่นชอบน้อยที่สุด

___: Vocabulary ___: Let's listen ___: Let's read
___: Let's study ___: Let's talk ___: Songs
___: Exercise ___: Games

เหตุผล:……
……
……

Part II: โปรดกรุณาตอบคำถามดังต่อไปนี้

1. หากท่านสามารถเปลี่ยนหรือแก้ไขโปรแกรมบนแท็บเบล็ตได้ ท่านจะเลือกทำอะไร เช่น เพิ่มเกมแกรมม่า เพิ่มโปรแกรม dictionary

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2. อะไรคือส่วนที่ดีที่สุดของโปรแกรมบนแท็บเบล็ตนี้สำหรับการเรียนภาษาอังกฤษของนักเรียน

Part III: ท่านมีความประสงค์ให้ผู้ทำวิจัยสัมภาษณ์หรือไม่ หากท่านยินยอมให้มีการสัมภาษณ์ท่านที่โรงเรียนเกี่ยวกับเทบเบล็ตเป็นเวลาไม่เกิน 40 นาที คณะผู้วิจัยจากทางมหาวิทยาลัย Macquarie University ขอมอบชุดหนังสือเรียนราคาประมาณ 1,500 บาทเพื่อห้องสมุดโรงเรียนของท่านเพื่อเป็นการขอบคุณสำหรับการสละเวลาของท่าน และการสัมภาษณ์นี้จะไม่มีการเปิดเผยตัวตนหรือชื่อโรงเรียนของท่านแต่อย่างใด

☐ ยินยอม ชื่อ:_____ เบอร์โทร:_____

☐ ไม่ยินยอม

<u>ข้อเสนอแนะ</u>

Appendix 14 Questionnaire for Grade 2 EFL teachers regarding their use of and views about the Grade 2 OTPC tablet app (English translation)

MACQUARIE UNIVERSITY

OTPC Questionnaire for Grade 2 English Teachers

(Although you have never used the OTPC tablet, your answer is still appreciated. You can look at the OTPC app's details in Section E of this questionnaire.)

This questionnaire is part of the research of Sompatu Vungthong, a PhD student at Department of Educational Studies, Macquarie University, under Dr. Emilia Djonov's supervision.

One of the research aims is to analyse teachers' views about the design and use of the OTPC tablet app for teaching Grade 2 students in EFL classrooms.

Your information would be kept confidential. In this questionnaire, you and your school would not be identified. Please help fill in the questionnaire, put it in the attached envelope with the stamp and send it back to the researcher.

Thank you so much for your kind help.

Best regards,
Sompatu Vungthong
Tel: 089-036-1220 E-mail: sompatu.vungthong@students.mq.edu.au

Instruction: This questionnaire has five sections (1-5) and consists of six pages. After you have completed your responses, please kindly return the questionnaire by using the attached envelope with the attached stamp and specified address.

Section A: Demographic Information
Please check (√) the most appropriate response for each item.

1. **Age**:
   ☐ 20-24 ☐ 25-29 ☐ 30-34 ☐ 35-39 ☐ 40-44 ☐ 45-49
   ☐ 50-54 ☐ 55 up

2. **Gender**: ☐ Male ☐ Female

3. **Highest Education**: ☐ Diploma ☐ Bachelor Degree ☐ Graduate Diploma
   ☐ Master Degree ☐ Doctorate Degree

4. **Years of experience in teaching English at elementary school level**:
   ☐ 0-2 ☐ 3-5 ☐ 6-10 ☐ 11-15 ☐ 16-20
   ☐ more than 20

5. **Which type of school have you taught in?** ☐ Public ☐ Private

1

Section B: OTPC Project Info
Please check (√) the most appropriate response for each item.

1. Have you attended any training session on the use of tablets provided by the government?
☐ Yes ☐ No

2. Have you seen or used the tablet application provided by the government? If yes, please fill out all sections. If no, please skip to Section C.
☐ Yes ☐ No

3. Have you used the government commissioned tablet in your English classes?
☐ Yes ☐ No

4. Do you plan to use it this year?
☐ Yes ☐ No

Section C: Views towards the Use of the app and Children's Learning of English as well as views towards English as a foreign language
The purpose of this section is to find out about teachers' views towards the use of technology and children's learning English. There are no right or wrong answers.

Part I
Please read each of the items carefully and circle the number that best represents your views towards the use of the OTPC app and children's learning.
1 (Strongly Disagree) 2 (Disagree) 3 (Undecided) 4 (Agree) 5 (Strongly agree)

1. The app can help children learn English as a Foreign language.	1	2	3	4	5
2. The app can help children improve their English speaking skills.	1	2	3	4	5
3. The app can help children improve their English listening skills.	1	2	3	4	5
4. The app can help children improve their English writing skills.	1	2	3	4	5
5. The app can help children improve their English reading skills.	1	2	3	4	5
6. The app increases students' academic achievement (e.g. grades).	1	2	3	4	5
7. The app promotes student collaboration.	1	2	3	4	5
8. The app makes classroom management more difficult.	1	2	3	4	5
9. The app is difficult to use.	1	2	3	4	5
10. The app will be successful if there is adequate teacher training on how to use it.	1	2	3	4	5
11. There are some technical problems when using the app.	1	2	3	4	5

12. The use of the app in classrooms is unnecessary because students can use it on their own, outside of school.	1	2	3	4	5
13. The use of the app in classrooms is unnecessary because traditional teaching materials can be used to teach English effectively.	1	2	3	4	5
14. The app motivates students to get more involved in learning activities.	1	2	3	4	5
15. The app increases the amount of stress and anxiety students experience.	1	2	3	4	5
16. The app content is directly related to the curriculum.	1	2	3	4	5
17. The use of the app requires extra time to plan learning activities.	1	2	3	4	5
18. Students find it difficult to use the app.	1	2	3	4	5
19. Students enjoy the use of the app in English classrooms.	1	2	3	4	5
20. The app accommodates students' personal learning styles.	1	2	3	4	5
21. The app supports my teaching in English classrooms.	1	2	3	4	5

Part II

Please read each of the items carefully and circle the number that best represents your views towards English as a foreign language.

1 (Strongly Disagree) 2 (Disagree) 3 (Undecided) 4 (Agree) 5 (Strongly agree)

1. English is a very important language for Thai children to learn	1	2	3	4	5
2. Children learn English best by playing (such as through games) rather than memorising.	1	2	3	4	5
3. I am confident in my English writing skills.	1	2	3	4	5
4. I am confident in my English speaking skills.	1	2	3	4	5
5. I am confident in my English reading skills.	1	2	3	4	5
6. I am confident in my English listening skills.	1	2	3	4	5

Section D: Views towards the Use of the app and Children's Learning English

Please answer the following questions regarding views towards the use of the app and children's learning English.

1. In your opinion, how can the app be used to help children learn English as a foreign language?

……
……
……

2. Have you experienced any problems when using the tablet app in classrooms or what makes it difficult to integrate the tablet app into classroom practices?

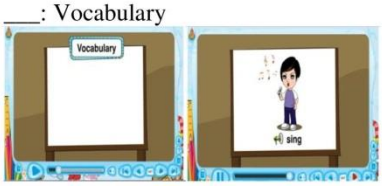
……
……
……

Section E: Views towards the Grade 2 OTPC Tablet Application
Although you have never seen the app before, you can use the pictures and given information to answer the questions.

Part I: Please answer the following questions and specify your reasons. There are no right or wrong answers.

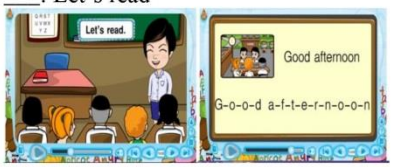
1. There are eight types of the EFL lessons available in the tablet application. Please choose the types of these lessons that you think would be the most beneficial for children learning English and should be prioritised in classrooms. Please rank them from 1 to 8 (1 = the most beneficial for children learning English; 8 = the least beneficial for children learning English).

___: Vocabulary



___: Let's listen

___: Let's read



___: Let's study

___: Let's talk

___: Songs

4

___: Exercise

___: Games

Reasons:……
……
……

2. From the eight types of the EFL lessons available in the tablet application, please choose rank the lessons that you think children will enjoy the most from 1 to 8 (1 = children will enjoy the most; 8 = children will enjoy the least.).

___: Vocabulary ___: Let's listen ___: Let's read

___: Let's study ___: Let's talk ___: Songs

___: Exercise ___: Games

Reasons:……
……
……

Part II: Please answer the following questions. There are no right or wrong answers.

1. If you can make changes regarding the app, what would you choose to do (e.g. adding the grammar games, choosing only the native narrators, etc.)?
……
……
……

2. What are the best features of the OTPC Grade 1 English tablet application?
……
……
……

Part III: Do you agree to be interviewed regarding the use of tablets for around 30-40 minutes at your school? (Your identity will not be revealed.)

☐ Yes Name:_____
Phone Number:_____
☐ No

5

Appendix 15 Teacher Information Statement and Consent Form for Interviews and/or Video-recording (Thai)

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24 กันยายน 2013

แบบฟอร์มยินยอมสำหรับครู

เรียน อาจารย์

นางสาวสมพธู หวังทอง กำลังลาศึกษาต่อระดับปริญญาเอก ณ Institute of Early Childhood, Macquarie University ประเทศออสเตรเลีย เนื่องด้วยหัวข้องานวิจัยของนางสาวสมพธู หวังทองเกี่ยวข้องกับการใช้ Tablet App ในการเรียนการสอนวิชาภาษาอังกฤษของเด็กนักเรียน และสอดคล้องกับโครงการของรัฐบาลด้าน tablet สำหรับนักเรียนประถมศึกษาชั้นปีที่ 2 ในฐานะที่เป็นส่วนหนึ่งของงานวิจัย ขออนุญาตให้นางสาวสมพธู หวังทอง

- เก็บแบบสอบถามเกี่ยวกับความเห็นของครูต่อการใช้ Tablet App ซึ่งใช้เวลาการกรอกไม่เกิน15 นาที
- เข้าเยี่ยมชมและถ่ายทำ การเรียนการสอน รายวิชาภาษาอังกฤษผ่านการใช้ tablet ของนักเรียนชั้นประถมศึกษาปีที่ 2 ไม่เกิน 50 นาที (ตามแต่ที่ทางโรงเรียนเห็นสมควร),
- สัมภาษณ์และอัดบันทึกเสียงครู 1 ท่าน (ไม่เกิน 30 นาที) และ นักเรียน 2 คน (ไม่เกิน 20 นาที) เกี่ยวกับการใช้ tablet ในห้องเรียน

เราขอความอนุเคราะห์ให้ท่านช่วยกรอกแบบสอบถามและส่งคืน นางสาวสมพธู หวังทอง

ครูผู้ยินยอมเข้าร่วมการทำงานวิจัยจะถูกขอร้องให้ช่วยระบุตัวแทนนักเรียนที่มีทักษะภาษาอังกฤษ และการใช้เทคโนโลยี ติดต่อผู้ปกครองของนักเรียน และ ส่งต่อแบบฟอร์มยินยอมเข้าร่วมงานวิจัยแก่ผู้ปกครองและนักเรียน การสัมภาษณ์และอัดบันทึกนักเรียนจะกระทำโดยมีครูผู้สอนคอยควบคุมดูแล นางสาวสมพธู หวังทองจะหลีกเลี่ยงการรบกวนการเรียนการสอนและนักเรียนให้มากที่สุด

หากท่านยินยอมเข้าร่วมงานวิจัย ท่านจำเป็นต้องกรอกแบบฟอร์มนี้ ท่านสามารถส่งแบบฟอร์มพร้อมแบบสอบถามมาที่ นางสาวสมพธู หรือผ่านทางผู้อำนวยการโรงเรียน นางสาวสมพธูจะเซ็นแบบฟอร์มและส่งคืนให้ท่านเก็บไว้

เพื่อเป็นการแสดงความชื่นชมในการอนุเคราะห์ครั้งนี้ ทาง มหาวิทยาลัย Macquarie University ขอมอบหนังสือเรียนภาษาอังกฤษ มูลค่า ประมาณ 1,500 บาท (50 AUD) เพื่อห้องสมุดโรงเรียนของท่าน

ในงานวิจัยจะไม่มีการเผยแพร่ข้อมูลของโรงเรียน อาจารย์ หรือนักเรียนโดยไม่ได้รับอนุญาตโดยเด็ดขาด ผู้เข้าถึงข้อมูลมีเพียงนางสาวสมพธู และ อาจารย์ที่ปรึกษาสองท่าน (Dr. Emilia Djonov และ A/Prof Jane Torr) การเยี่ยมชมครั้งนี้มีไปเพื่อประโยชน์ด้านการวิจัย เพื่อพัฒนาการเรียนการสอนภาษาอังกฤษผ่านทางเทคโนโลยี tablet เท่านั้น

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ทั้งนี้ดิฉันจะกลับไปเก็บข้อมูลครั้งที่1 ที่ประเทศไทยเป็นเวลาสองเดือน นับตั้งแต่วันที่ 25 ธันวาคม 2556 หากท่านมีข้อสงสัยหรือต้องการข้อมูล/ เอกสารเพิ่มเติม สามารถติดต่อสอบถามนางสาวสมพธู (เบอร์โทรติดต่อในประเทศไทย 089-0361220/ Email: sompatu.vungthong@students.mq.edu.au) ได้ตามที่อยู่อีเมลและเบอร์โทรศัพท์ที่ให้ไว้นี้

สำหรับครู

ข้าพเจ้า _____(ชื่อครู) ได้อ่านข้อมูลในแบบฟอร์มนี้และซักถามจนพอใจแล้ว ข้าพเจ้าเข้าใจว่าการเข้าร่วมงานวิจัยนี้ของข้าพเจ้าและนักเรียนเป็นไปโดยสมัครใจ ข้าพเจ้ายินยอมเข้าร่วมงานวิจัยนี้ ข้าพเจ้าเข้าใจว่าสามารถถอนตัวออกจากการเข้าร่วมได้ตลอดเวลาโดยไม่ต้องให้เหตุผล ข้าพเจ้าเข้าใจว่า ครู นักเรียน ผู้ปกครองสามารถถอนตัวจากการเข้าร่วมงานวิจัยได้โดยไม่ต้องให้เหตุผลเช่นกัน ข้าพเจ้าได้รับ copy ของแบบฟอร์มนี้

โปรดติ๊กเครื่องหมายถูกในกล่องข้างล่างนี้เพื่อแสดงว่าท่านยินยอมสัมภาษณ์ และ/หรือ ถ่ายทำการเรียนการสอน

- ☐ ข้าพเจ้ายินยอมให้มีการถ่ายทำการเรียนการสอนระหว่างการใช้ tablet app ในห้องเรียนภาษาอังกฤษ
- ☐ ข้าพเจ้ายินยอมให้มีการบันทึกเสียงการสัมภาษณ์การใช้ tablet app ในห้องเรียนภาษาอังกฤษ

ชื่อครู_____

ลายเซ็น _____วันที่_____

สำหรับผู้ทำวิจัย

ชื่อ_____

ลายเซ็น _____วันที่_____

Macquarie University ได้อนุมัติการทำวิจัยครั้งนี้แล้ว หากท่านอยากร้องเรียน สามารถ ติดต่อได้ที่ the Director, Research Ethics (telephone (02) 98507854; email ethics@mq.edu.au) เราจะเก็บเป็นความลับและจะแจ้งผลกลับ

ผู้ทำวิจัยมอบ copy พร้อมลายเซ็นแบบฟอร์มนี้ให้ผู้เข้าร่วมงานวิจัย

Appendix 16 Teacher Information Statement and Consent Form for Interviews and/or Video-recording (English translation)

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Information and Consent Form

Dear School Teacher,

Ms Sompatu Vungthong is a PhD candidate at the Institute of Early Childhood, Macquarie University, Sydney, Australia. She is studying Grade 2 teachers' and students' use of, experiences with and views about the tablet application for learning English included in the tablet computers that all Grade 2 students in Thailand receive under the Thai government's onet tablett pert child (OTPC) initiative.

As part of this project, Ms Vungthong would like to:

- collect Grade 2 English teachers' responses to the attached questionnaire; the questionnaire would take approximately 15 minutes to complete
- observe and videot record the use of the application in Grade 2 English classrooms, in each classroom focussing on the teacher and two students for up to 50 minutes in total
- conduct and audio-record interviews with Grade 1 English teachers on their experience with and views towards the Grade 2 English application for up to 30 minutes each
- conduct and audio-record interviews with Grade 1 students on their experiences with and views towards the Grade 2 English application for up to 20 minutes each.

We would like to request that you complete the attached questionnaire and return it to Ms Vungthong by using the attached postage-paid reply envelope.

To assist Ms Vungthong in identifying suitable children to focus on during classroom observations/video-recording sessions, teachers who agree to participate in observations and interviews for this study will be asked to select children who have skills in English and in using the technology that are typical of children from the same class, contact their parents and give them the attached information and consent form for parents and children. Both classroom observations/video-recording and any interviews with children will be conducted only in the presence of the children's teacher. Ms Vungthong will conduct the data collection activities listed above in ways that avoid any significant disruption to the daily routine and other planned activities of the school, teachers, classrooms and children.

If you agree to participate in the classroom observations/video-recording and/or be interviewed on your experiences with and views towards the Grade 1 English tablet application, you will need to complete this information and consent form. You can then either include this form in the return envelope together with your completed questionnaire or return it to Ms Vungthong through your school's principal. Ms Vungthong will then counter-sign the form and give you a copy of the completed consent form to keep.

At the completion of Ms Vungthong's PhD project, we will provide your school with a short summary of the project's key findings, and will appreciate your school's assistance in making this summary available to any interested parents, children or teachers (for example, sending it to them via email or post).

As a token of appreciation for your school's participation in interviews and classroom observations for this project, we would also present your school with a book voucher (equivalent to A$50) for purchasing books for the school's library.

No information identifying your school or any teacher or child will be made available to anyone except Ms Vungthong and her two PhD supervisors – Dr Emilia Djonov and Associate Professor Jane Torr. If you have any further questions, please feel free to contact Dr Emilia Djonov using the details provided above or Ms Sompatu Vungthong via email (sompatu.vungthong@students.mq.edu.au) or mobile number in Thailand (089-036-1220).

School Teacher

I, _____ (name of teacher) have read and understand the information above and any questions I have asked have been answered to my satisfaction. I understand that school, teacher and student participation in this study is completely voluntary and understand what this participation will involve. I agree to participate in this study, and to be observed/video-recorded and/or interviewed. I understand that I can withdraw my consent at any time without having to give a reason and without consequence. I understand that any teacher, student or parent of a student who has agreed to participate, too, is free to withdraw from the study at any time without having to give a reason and without consequence. I have been given a copy of this form to keep.

Please place a tick in one or both boxes below to indicate whether you agree to be observed/video-recorded and/or interviewed/audio-recorded for this project.

I agree to be observed and videot recorded during one or two of my Grade 2 English classes and to be interviewed about my experiences of and views on the Grade 1 English tablet application

I agree to be interviewed about my experiences of and views on the Grade 2 English tablet application.

School Teacher's Name: _____
(Block letters)

School Teacher's Signature:_____ Date:_____

Investigator

*Investigator's Name:*_____
(Block letters)

*Investigator's Signature:*_____*Date:*_____

The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics (telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

Investigator to give one copy of the signed form to the teacher and keep a separate one.

Appendix 17 Information Statement and Consent Form for Parents and Children (Thai)

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24 กันยายน 2013

แบบฟอร์มยินยอมสำหรับผู้ปกครองนักเรียน

เรียน ผู้ปกครองนักเรียน

นางสาวสมพธู หวังทอง กำลังลาศึกษาต่อระดับปริญญาเอก ณ Institute of Early Childhood, Macquarie University ประเทศออสเตรเลีย เนื่องด้วยหัวข้องานวิจัยของนางสาวสมพธู หวังทองเกี่ยวข้องกับการใช้ Tablet App ในการเรียนการสอนวิชาภาษาอังกฤษของเด็กนักเรียน และสอดคล้องกับโครงการของรัฐบาลด้าน tablet สำหรับนักเรียนประถมศึกษาชั้นปีที่ 2 ในฐานะที่เป็นส่วนหนึ่งของงานวิจัย นางสาวสมพธู หวังทอง มีความประสงค์จะ เก็บแบบสอบถามเกี่ยวกับความเห็นของครูต่อการใช้ Tablet App ซึ่งใช้เวลาการกรอกไม่เกิน15 นาที เข้าเยี่ยมชมและถ่ายทำ การเรียนการสอน รายวิชาภาษาอังกฤษผ่านการใช้ tablet ของนักเรียนชั้นประถมศึกษาปีที่ 2 ไม่เกิน 50 นาที (ตามแต่ที่ทางโรงเรียนเห็นสมควร) และ สัมภาษณ์และอัดบันทึกเสียง นักเรียน ไม่เกิน 20 นาที เกี่ยวกับการใช้ tablet ในห้องเรียน

ครูผู้ยินยอมเข้าร่วมการทำงานวิจัยจะถูกขอร้องให้ช่วยระบุตัวแทนนักเรียนที่มีทักษะภาษาอังกฤษ และการใช้เทคโนโลยี ติดต่อผู้ปกครองของนักเรียน และ ส่งต่อแบบฟอร์มยินยอมเข้าร่วมงานวิจัยแก่ผู้ปกครองและนักเรียน การสัมภาษณ์และอัดบันทึกนักเรียนจะกระทำ โดยมีครูผู้สอนคอยควบคุมดูแล นางสาวสมพธู หวังทองจะหลีกเลี่ยงการรบกวนการเรียนการสอนและนักเรียนให้มากที่สุด

หากท่านยินยอมเข้าร่วมงานวิจัย ท่านจำเป็นต้องกรอกแบบฟอร์มนี้ ท่านสามารถส่งแบบฟอร์มพร้อมแบบสอบถามมาที่นางสาวสมพธู หรือผ่านทางผู้อำนวยการ โรงเรียน นางสาวสมพธูจะเซ็นแบบฟอร์มและส่งคืนให้ท่านเก็บไว้

ในงานวิจัยจะไม่มีการเผยแพร่ข้อมูลของ โรงเรียน อาจารย์ หรือนักเรียน โดยไม่ได้รับอนุญาต โดยเด็ดขาด ผู้เข้าถึงข้อมูลมีเพียงนางสาวสมพธู และ อาจารย์ที่ปรึกษาสองท่าน (Dr. Emilia Djonov และ A/Prof Jane Torr) การเยี่ยมชมครั้งนี้มีไปเพื่อ ประโยชน์ด้านการวิจัยเพื่อพัฒนาการเรียนการสอนภาษาอังกฤษผ่านทางเทคโนโลยี tablet เท่านั้น

ทั้งนี้นางสาวสมพธูจะกลับไปเก็บข้อมูลครั้งที่1 ที่ประเทศไทยเป็นเวลาสองเดือน หากท่านมีข้อสงสัยหรือต้องการข้อมูล/ เอกสารเพิ่มเติม สามารถติดต่อสอบถามนางสาวสมพธู (เบอร์ โทรติดต่อในประเทศไทย 089-0361220/ Email: sompatu.vungthong@students.mq.edu.au) ได้ตามที่อยู่อีเมลและเบอร์ โทรศัพท์ที่ให้ไว้นี้

สำหรับผู้ปกครอง

ข้าพเจ้า _____(ชื่อผู้ปกครอง) ได้อ่านข้อมูลในแบบฟอร์มนี้และซักถามจนพอใจแล้ว ข้าพเจ้าเข้าใจว่าการเข้าร่วมงานวิจัยนี้ของข้าพเจ้าและนักเรียนเป็นไป โดยสมัครใจ ข้าพเจ้ายินยอมเข้าร่วมงานวิจัยนี้ ข้าพเจ้าเข้าใจว่าสามารถถอนตัวออกจากการเข้าร่วมได้ตลอดเวลา โดยไม่ต้องให้เหตุผล ข้าพเจ้าเข้าใจว่า ครู นักเรียน ผู้ปกครอง สามารถถอนตัวจากการเข้าร่วมงานวิจัยได้ โดยไม่ต้องให้เหตุผลเช่นกัน ข้าพเจ้า ได้รับ copy ของแบบฟอร์มนี้

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โปรดติ๊กเครื่องหมายถูกในกล่องข้างล่างนี้เพื่อแสดงว่าท่านยินยอมให้นักเรียนสัมภาษณ์ และ/หรือ ถ่ายทำการเรียนการสอน

☐ ข้าพเจ้ายินยอมให้มีการถ่ายทำการเรียนการสอนระหว่างการใช้ tablet app ในห้องเรียนภาษาอังกฤษ

☐ ข้าพเจ้ายินยอมให้มีการบันทึกเสียงการสัมภาษณ์การใช้ tablet app ในห้องเรียนภาษาอังกฤษ

ชื่อผู้ปกครอง_____

ลายเซ็น _____วันที่_____

สำหรับนักเรียนผู้สามารถกรอกแบบฟอร์มยินยอม

ผู้ปกครองได้อธิบายเกี่ยวกับโครงการนี้ให้ฉันฟังแล้ว _____(ชื่อนักเรียน) และอธิบายว่าต้องทำอย่างไรเมื่อเข้าร่วมโครงการ ฉันเข้าใจว่าจะออกจากการเข้าร่วมโครงการได้ตลอดเวลาโดยไม่ต้องให้เหตุผล

☐ ฉันยินยอมให้มีการถ่ายทำการใช้ tablet app ในห้องเรียนภาษาอังกฤษ

☐ ฉันยินยอมให้มีการบันทึกเสียงการสัมภาษณ์การใช้tablet app ในห้องเรียนภาษาอังกฤษ

ชื่อ_____

ลายเซ็น _____วันที่_____

สำหรับผู้ทำวิจัย

ชื่อ_____

ลายเซ็น _____วันที่_____

Macquarie University ได้อนุมัติการทำวิจัยครั้งนี้แล้ว หากท่านอยากร้องเรียน สามารถ ติดต่อได้ที่ the Director, Research Ethics (telephone (02) 98507854; email ethics@mq.edu.au) เราจะเก็บเป็นความลับและจะแจ้งผลกลับ

ผู้ทำวิจัยมอบ copy พร้อมลายเซ็นแบบฟอร์มนี้ให้ผู้เข้าร่วมงานวิจัย

Appendix 18 Information Statement and Consent Form for Parents and Children (English translation)

Dr Emilia Djonov
Institute of Early Childhood
Faculty of Human Sciences
MACQUARIE UNIVERSITY NSW 2109

Phone: +61 (0)2 9850 9823
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Email: Emilia.Djonov@mq.edu.au

Information and Consent Form

Dear Parent/Guardian,

Ms Sompatu Vungthong is a PhD candidate at the Institute of Early Childhood, Macquarie University, Sydney, Australia. She is studying Grade 2 students' use of, experiences with and views about the tablet application for learning English included in the tablet computers that all Grade 2 students in Thailand receive under the Thai government's onet tablett pert child (OTPC) initiative. As part of this project, Ms Vungthong would like to observe and video-record your child's use of the tablet application in his/her English classroom during one or two lessons and/or interview your child on his/her experiences with and views about the tablet application for Grade 2 English. The classroom observation and video-recording will last up to 50 minutes in total and will focus on the way that your child's teacher and two children in the same classroom use the tablet application. To assist Ms Vungthong in identifying suitable children to focus on during these observations/videot recording sessions, your child's English teacher has been asked to select children who have skills in English and in using the technology that are typical of children in the same class, and then to contact their parents and give them this information and consent form. The interview will last up to 20 minutes. Both classroom observations/video-recording and the interview will be conducted only in the presence of your child's teacher. Ms Vungthong will conduct both in ways that avoid any significant disruption to the child's, classroom's and school's daily routine and other planned activities.

This is not a test of your child's skills in English or in using the tablet application or computer technology more generally. At the completion of Ms Vungthong's PhD candidature, however, she will provide your child's school with a short summary of her project's key findings, and you can request the school to send you a copy of this summary.

Participation in this experience is voluntary, and you or your child can withdraw at any time without having to give a reason and without adverse consequences.

No personal information identifying you or your child, your child's school or teacher will be made available to anyone except Ms Vungthong and her two PhD supervisors – Dr Emilia Djonov and Associate Professor Jane Torr. If you have any further questions, please feel free to contact Dr Emilia Djonov using the details provided above or Ms Sompatu Vungthong via email (sompatu.vungthong@students.mq.edu.au) or mobile number in Thailand (089-036-1220).

Parent/Guardian

I, _____ (name of parent/guardian) have read and understand the information above and any questions I have asked have been answered to my satisfaction. I have explained to my child that participation in this study is completely voluntary as well as what his or her participation will involve and then obtained his/her verbal consent to participate in the study. I allow my child to participate and to be video-recorded and/or interviewed as part of this research and understand that I can withdraw my consent for my child to participate in the research at any time without having to give a reason and without consequence. My child also understands that participation

is voluntary and that s/he is free to withdraw from the study at any time without having to give a reason and without consequence. I have been given a copy of this form to keep.

Please place a tick in one or both boxes below to indicate whether you allow your child to be video-recorded and/or interviewed for this project.

I allow my child to be observed and video-recorded in one or two of his/her Grade 1 English classes and interviewed on his/her experiences with and views about the tablet application for Grade 1 English.

I allow my child to be interviewed about his/her experiences of and views on the Grade 1 English tablet application.

Parent's/Guardian's Name: _____
(Block letters)

Parent's/Guardian's Signature:_____ Date:_____

For children able to give written consent

My parent/guardian has explained the project to me, _____ (name of focus child), and explained how I can participate in it if I wish to. I agree to participate in the project, and understand that I can choose to stop participating at any time and do not have to explain why.

Please place a tick in one or both boxes below to show if you agree to be video-recorded and/or interviewed for this project.

I agree to be observed and video-recorded in one or two of my English classes and interviewed about the ways I use and what I think about the English lessons and activities on the tablet.

I agree to be interviewed about the ways I use and what I think about the English lessons and activities on the tablet.

*Participant's Name:*_____
(Block letters)

*Participant's Signature:*_____*Date:*_____

Investigator

*Investigator's Name:*_____
(Block letters)

*Investigator's Signature:*_____*Date:*_____

The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics (telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

Investigator to give one copy of the signed form to the parent/guardian and keep a separate one.

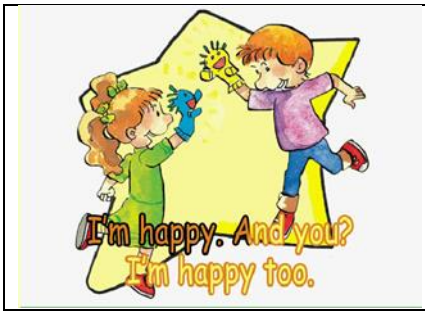
List of Appendices

Appendix 4 The multimodal transcription of the song videos for Grade 1 and Grade 2 OTPC EFL apps

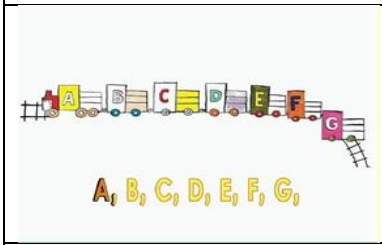
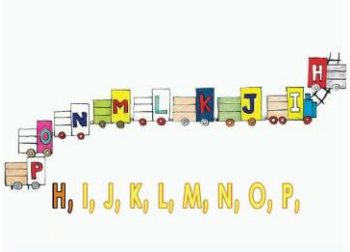
Grade 1 Songs

1) Hello, Hi

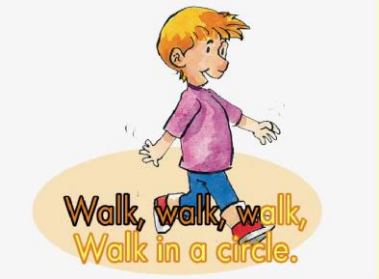
Visual	Verbal language
	Hello, hello, hello/ Hello, hello, hello/ Hi, hi, hi/ Hi, hi, hi
	Hello, I'm Andy
	Hi, I'm Anna
	Hello, hello, hello/ Hello, hello, hello/ Hi, hi, hi/ Hi, hi, hi

	I'm happy. And you? I'm happy too.

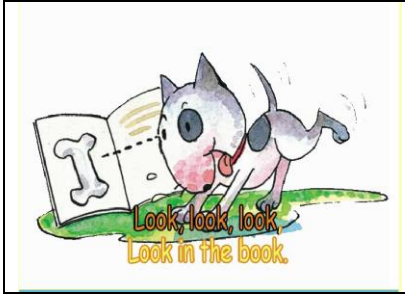
2) The alphabet song

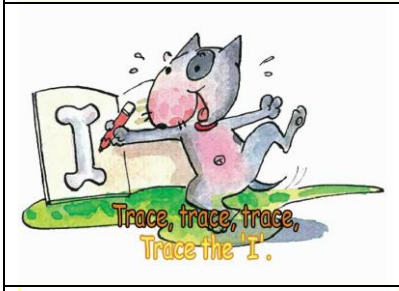
Visual	Verbal language
	A, B, C, D, E, F, G
	H, I, J, K, L, M, N, O, P
	Q, R, S, T, U, V, W, X, Y, and Z
	Now know my ABC, Next time won't you sing with me?

3) Sit in a circle

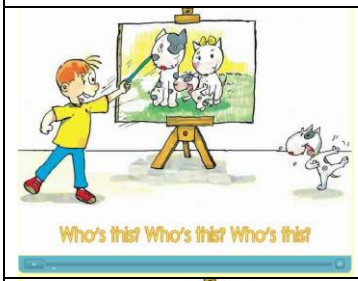
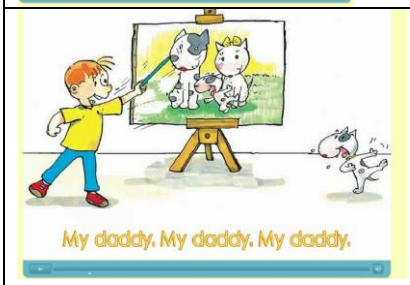
Visual	Verbal language
	Sit, sit, sit, Sit in a circle.
	Stand, stand, stand, Stand in a circle.
	Walk, walk, walk, Walk in a circle.
	Run, run, run, Run in a circle.

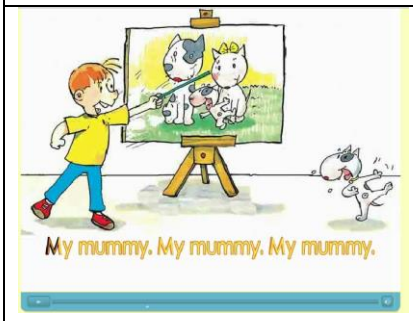
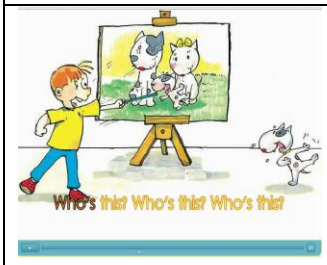
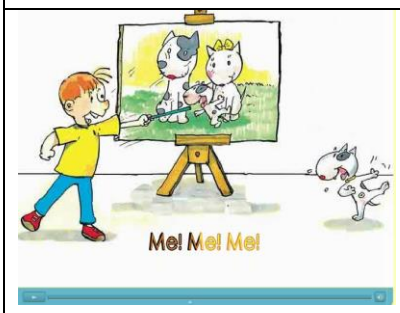
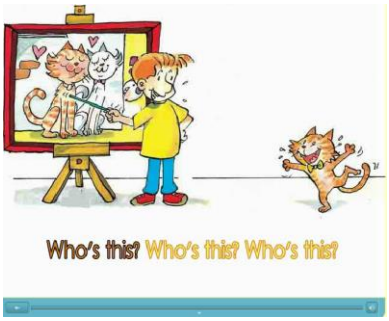
4) Look in the Book

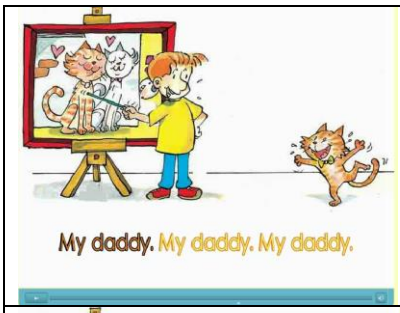
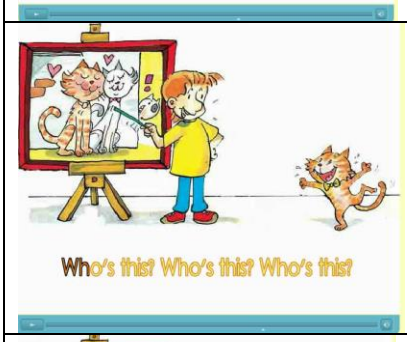
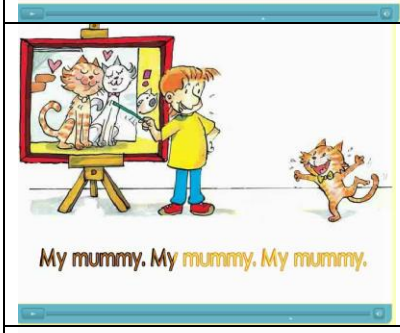
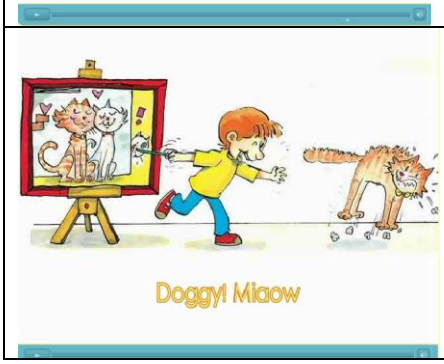
Visual	Verbal language
	Look, look, look, Look in the book

	Find, find, find, Find the “I”.
	Trace, trace, trace, Trace the “I”.
	I / ice cream

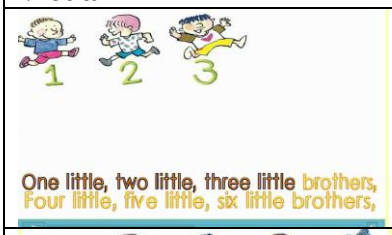
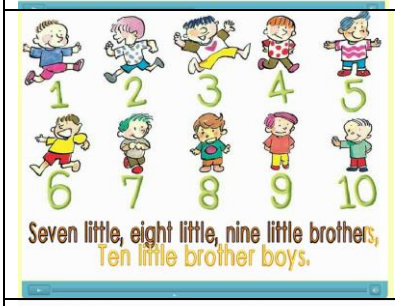
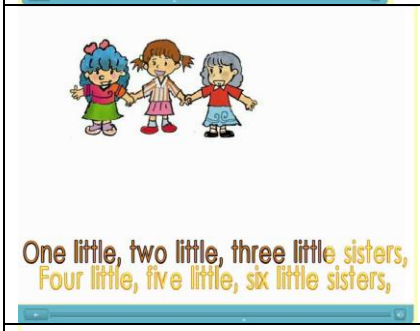
5) Who’s this?

Visual	Verbal language
	The boy: Who’s this? Who’s this? Who’s this?
	The dog (the boy): My daddy. My daddy. My daddy.

	The boy: Who's this? Who's this? Who's this?
	The dog (the boy): My mummy. My mummy. My mummy.
	The boy: Who's this? Who's this? Who's this?
	The dog (the boy): Me! Me! Me!
	The boy: Who's this? Who's this? Who's this?

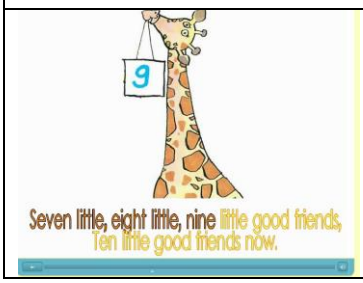
	The dog (the boy): My daddy. My daddy. My daddy.
	The boy: Who's this? Who's this? Who's this?
	The dog (the boy): My mummy. My mummy. My mummy.
	The boy: Who's this? Who's this? Who's this?
	The dog (the boy): Doggy! Miaow

6) Ten little brother boys and sister girls

Visual	Verbal language
	The boy: One little, two little, three little, brothers, Four little, five little, six little brothers,
	The boy: Seven little, eight little, nine, little brothers, Ten little brother boys.
	The girl: One little, two little, three little sisters, Four little, five little, six little sisters,
	Seven little, eight little, nine little sisters, Ten little sister girls.

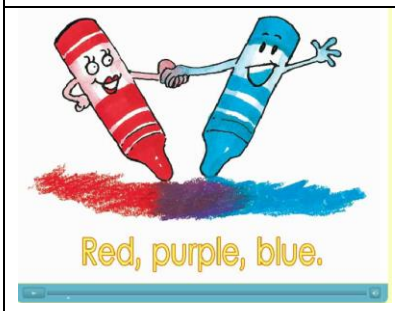
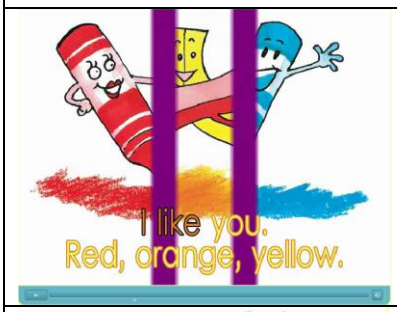
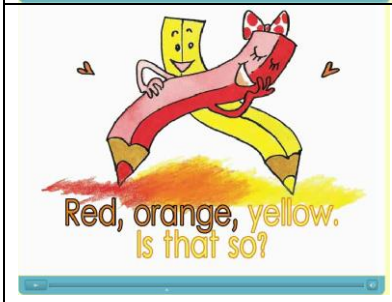
7) Ten little good friends now

Visual	Verbal language
	One little, two little, three little good friends,
	One little, two little, three little good friends,
	One little, two little, three little good friends,
	Four little, five little, six little good friends,

	Four little, five little, six little good friends,
	Four little, five little, six little good friends,
	Seven little, eight little, nine little good friends,
	Seven little, eight little, nine little good friends,
	Seven little, eight little, nine little good friends,

	Ten little good friends now.

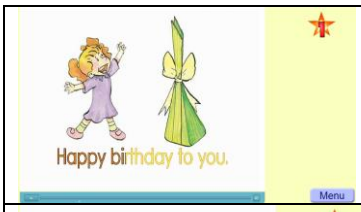
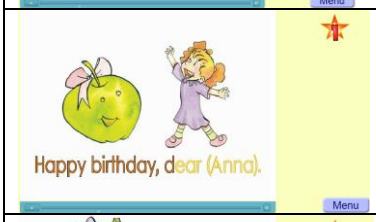
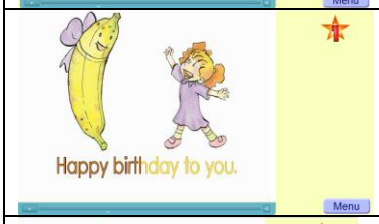
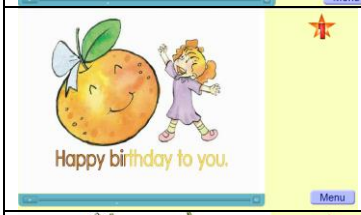
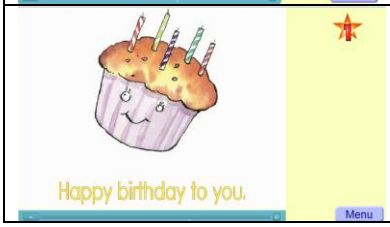
8) Red, Purple, Blue

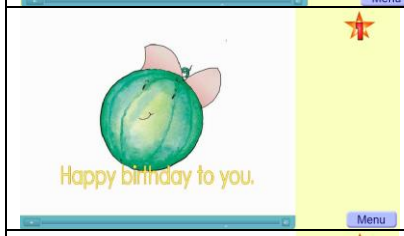
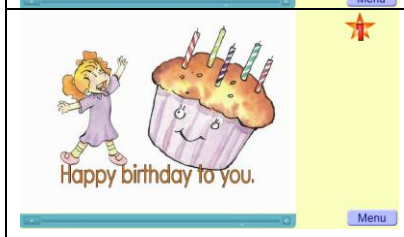
Visual	Verbal language
	Red, purple, blue.
	I like you.
	Red, orange, yellow.
	Is that so?

	Yellow, green, blue.
	I like you.
	Red, pink, white
	Hold me tight.

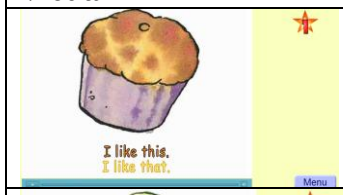
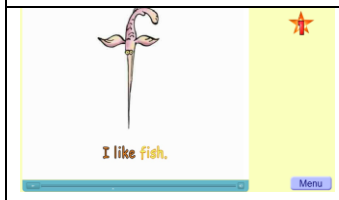
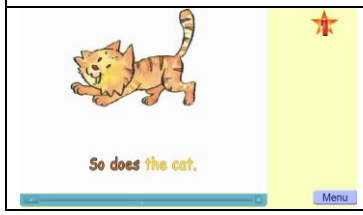
9) Happy Birthday

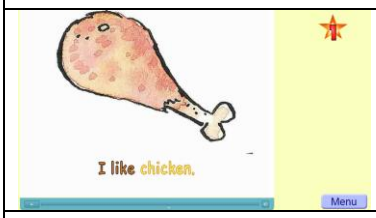
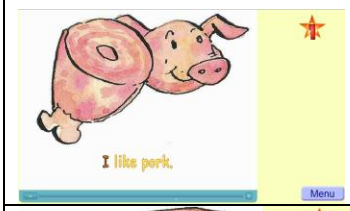
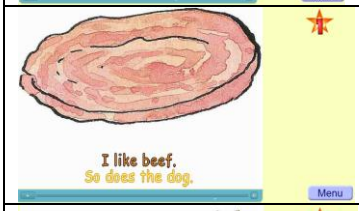
Visual	Verbal language
	Happy birthday to you.

	Happy birthday to you.
	Happy birthday, dear (Anna).
	Happy birthday to you.
	Happy birthday to you.
	Happy birthday to you.
 	Happy birthday, dear (Anna). Happy birthday to you.
	Happy birthday to you.

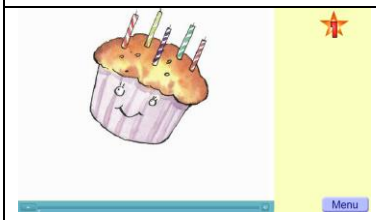
	Happy birthday to you.
	Happy birthday to you.
	Happy birthday to you.

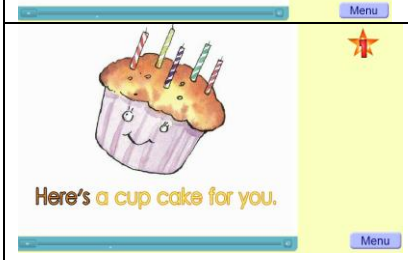
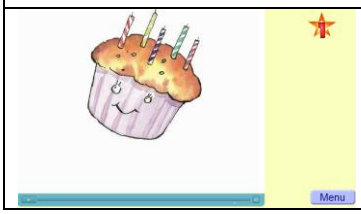
10) I like this

Visual	Verbal language
	I like this.
	I like that.
	I like fish.
	So does the cat.

	I like chicken.
	I like pork.
	I like beef.
	So does the dog.

11) Here's a cup cake for you

Visual	Verbal language
	Here's a cup cake for you.
	Here's a cup cake for you.
	Here's a cup cake for you.

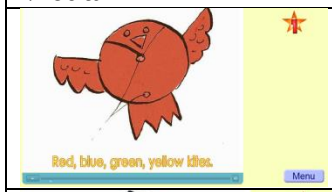
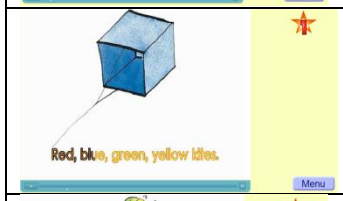
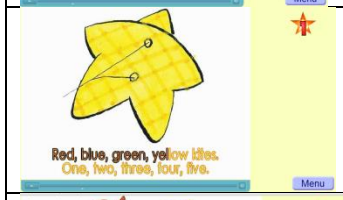
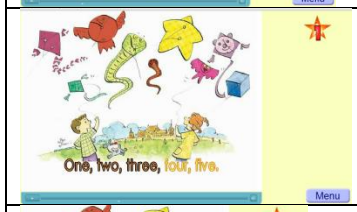
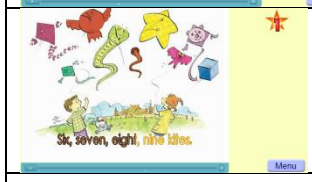
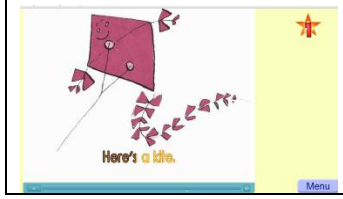
	Here's a cup cake, dear (Anna).
	Here's a cup cake for you.
	Here's a cup cake for you.
	Here's a cup cake for you.
	Here's a cup cake, dear (Anna).
	Here's a cup cake for you.
	Here's a cup cake for you.

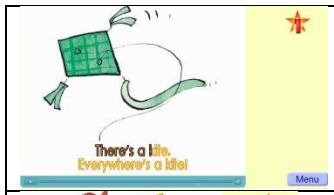
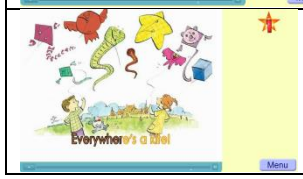
12) Here’s some fried rice for you

Visual	Verbal language
	Here’s some fried rice for you.
	Here’s some fried rice for you.
	Here’s some fried rice for you.
	Here’s some fried rice for you.
	Here’s some fried rice, dear (Anna).
	Here’s some fried rice for you.

	Here's some fried rice for you.

13) Red, Blue, Green, Yellow Kites

Visual	Verbal language
	Red, blue, green, yellow kites.
	Red, blue, green, yellow kites.
	Red, blue, green, yellow kites.
	Red, blue, green, yellow kites.
	One, two, three, four five.
	Six, seven, eight, nine kites.
	Here's a kite.

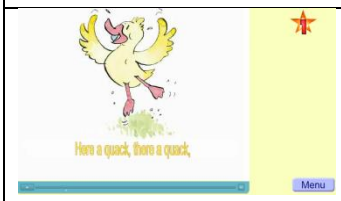
	There's a kite.
	Everywhere's a kite!

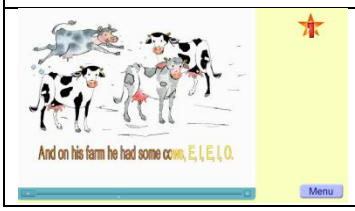
14) Merry Christmas/ Happy New Year to You

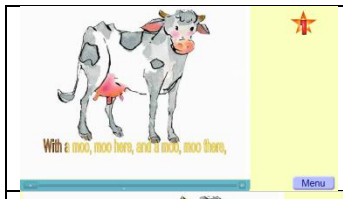
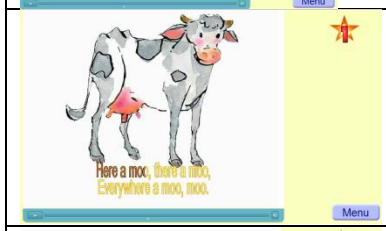
Visual	Verbal language
	We wish you a Merry Christmas,
	We wish you a Merry Christmas,
	We wish you a Merry Christmas, And a Happy New Year.
	Happy New Year to you.
	Happy New Year to you.
	Here's a pink kite. Here's a pink kite.

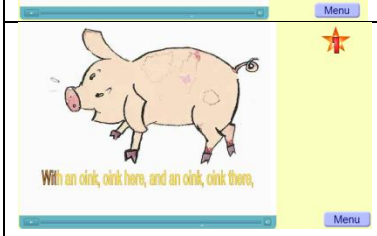
	Here's a pink kite for you!
	Merry Christmas Happy New Year

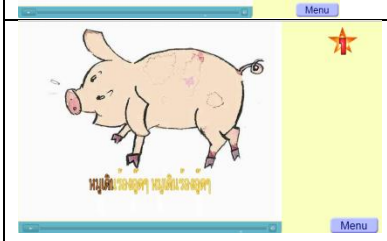
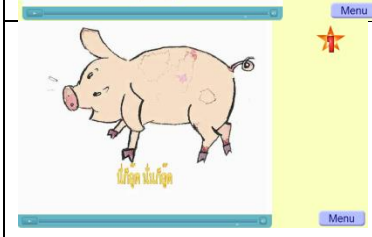
15) Old McDonald Had a farm

Visual	Verbal language
	Old MacDonald had a farm, E, I, E, I, O.
	And on his farm he had some ducks, E, I, E, I, O.
	With a quack, quack here, and a quack, quack there,
	Here a quack, there a quack,
	Everywhere a quack, quack.

	คุณตาเลี้ยงสัตว์ไว้มากมาย E, I, E, I, O. (Grandfather raised a lot of animals, E, I, E, I, O.)
	เป็ดน้อยๆเดินพลางร้องเพลงไป E, I, E, I, O. (Little ducks walked and sang, E, I, E, I, O.)
	เป็ดร้องก๊าบๆ เป็ดเดินร้องก๊าบๆ (Ducks sang quack quack, Ducks walked and sang quack quack.)
	นี่ก็ก๊าบ นั่นก็ก๊าบ เป็ดชอบร้องก๊าบๆ (This is quack; that is quack. Ducks like to sing quack quack.)
	Old MacDonald had a farm, E, I, E, I, O.
	And on his farm he had some cows, E, I, E, I, O.
	And on his farm he had some cows, E, I, E, I, O.

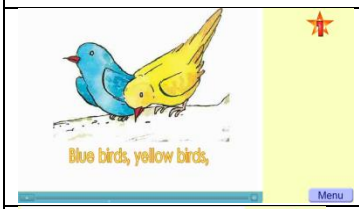
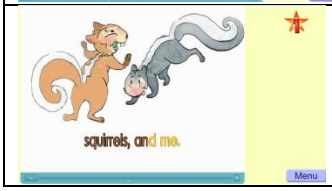
	With a moo, moo here, and a moo, moo there,
	Here a moo, there a moo,
	Everywhere a moo, moo.
	คุณตาเลี้ยงสัตว์ไว้มากมาย E, I, E, I, O. (Grandfather raised a lot of animals, E, I, E, I, O.)
	วัวน้อยๆเดินพลางร้องเพลงไป E, I, E, I, O. (Little cows walked and sang, E, I, E, I, O.)
	วัวเดินร้องมอๆ (Cow walked and sang moo moo)
	วัวเดินร้องมอๆ)Cow walked and sang moo moo)

	นี่ก็มอ (This is moo.)
	นั่นก็มอ (That is moo.)
	วัวชอบร้องมอๆ (Cows like to sing Moo Moo.)
	Old MacDonald had a farm, E, I, E, I, O.
	And on his farm he had some pigs, E, I, E, I, O.
	With an oink, oink here, and an oink, oink there,
	With an oink, oink here, and an oink, oink there,

	Here an oink, there an oink,
	Everywhere an oink, oink.
	คุณตาเลี้ยงสัตว์ไว้มากมาย E, I, E, I, O. (Grandfather raised a lot of animals, E, I, E, I, O.)
	หมู น้อยๆเดินพลางร้องเพลงไป E, I, E, I, O. (Little pigs walked and sang, E, I, E, I, O.)
	หมูเดินร้องอู๊ดๆ (Pigs walked and sang moo moo)
	หมูเดินร้องอู๊ดๆ (Pigs walked and sang moo moo)
	นี่ก็ (This is oink.)

	นั่นก็อู๊ด (That is oink.)
	หมูชอบร้องอู๊ดๆ (Pigs like to sing oink oink.)
	คุณตาเลี้ยงสัตว์ไว้มากมาย E, I, E, I, O. (Grandfather raised a lot of animals, E, I, E, I, O.)

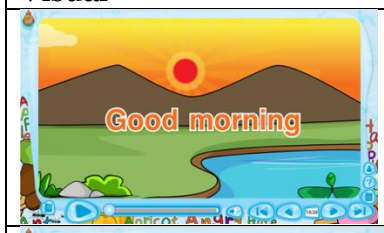
16) There is a Little Zoo

Visual	Verbal language
	There's a little zoo
	on the big big tree,
	Blue birds, yellow birds,
	Squirrels, and me.

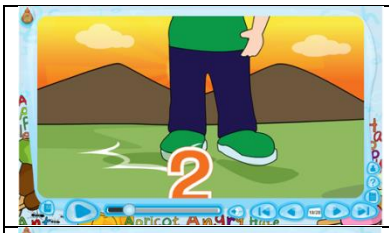
	Squirrels, and me.
	Butterflies, butterflies
	Ants,
	And bees.

Grade 2 songs

1) Good Morning

Visual	Verbal language
	Good morning
	Good morning

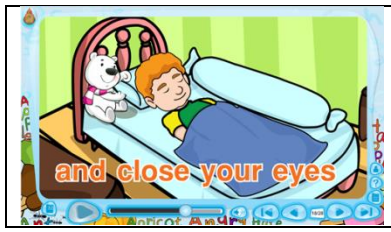
	Clap your hands
	Stamp your feet
	and spin around
	สวัสดียามเช้า (Good morning)
	พวกเรามาตบมือ (Let’s clap our hands.)
	กระทืบเท้า (Stamp your feet.)
	1 (One)

	สอง (Two)
	สาม (Three)
	แล้วหมุนไปรอบตัว (And spin around)
	Good afternoon
	Wash your hands
	Shake your head
	And spin around

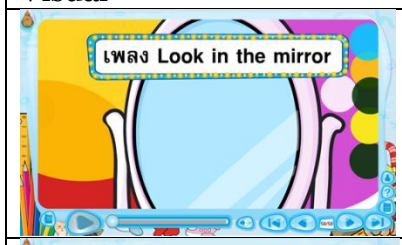
	สวัสดียามบ่าย (Good afternoon)
	เด็กๆไปล้างมือ (Children, go to wash your hand.)
	ผงกหัว (Shake your head.)
	One
	two
	three
	แล้วหมุนไปรอบตัว (and spin around)

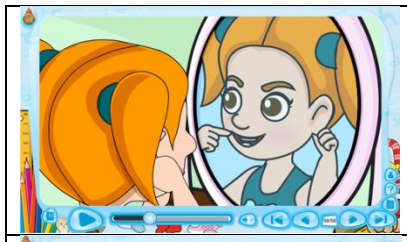
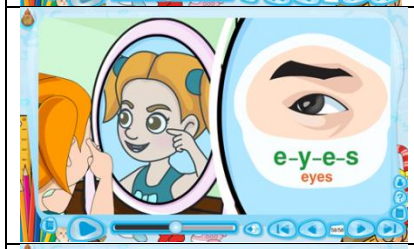
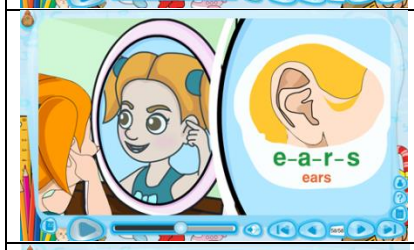
	Good evening
	take your bag
	wave your hand
	go back home
	สวัสดียามบ่าย (Good evening)
	เราหยิบกระเป๋าขึ้นมา (We pick up our bag.)
	จากนั้นเราโบกมือลา (Then we wave the goodbye.)
	แล้วกลับบ้านของเรา (Then we go back home.)

	Good night
	drink your milk
	brush your teeth
	and close your eyes
	ราตรีสวัสดิ์ทุกคน (Good night everyone)
	เด็กๆดื่มนมก่อนนอน (Children, drink your milk before going to bed.)
	แปรงฟันตามแม่สอน (Brush your teeth like mom teaches.)

	จะนอนแล้วต้องหลับตา When you are going to sleep, you need to close your eyes

2) Look in the mirror

Visual	Verbal language
	Look in the mirror
	เอ๊ะนั่นใครที่อยู่ในกระจกเงา (Oh! Who is that in the mirror?)
	เขาเป็นใครทำไมหน้าตาคล้ายฉันจัง (Who is she? Why does she look like me?)
	เอ๊ะ นั่นใครกัน (Oh! Who is that?)
	จมูกกับตาช่างเหมือนฉัน (Her nose and eyes are like mine.)

	ดูรูปปากใบหู ดูแล้วคล้ายกันทุกอย่าง (Look at the shape of the mouth and ears. They all look like mine.)
	เขามีจมูก (She has a nose.)
	เขามีปาก (She has a mouth.)
	เขามีตา (She has eyes.)
	เขามีหู (She has ears.)
	อยากรู้ว่าเขาเป็นใคร (I want to know who she is.)
	Look in the mirror

3) I can

Visual	Verbal language
	I can
	I can see. ฉันมองเห็น
	I can eat. ฉันกินได้
	I can drink. ฉันสามารถดื่มได้
	I can hear. ฉันได้ยิน
	I can smell. ดมกลิ่นได้
	ไม่ว่าอะไรทำได้ทุกอย่าง

	I can sit. นั่งลงได้
	I can walk. ฉันเดินได้
	I can run. ฉันวิ่งได้รวดเร็ว
	I can stand. ฉันยืนได้
	I can jump. กระโดดได้ด้วย
	ไม่ว่าอะไรทำได้ทุกอย่าง

4) Hello

Visual	Verbal language
	Hello
	Hello Hello How are you
	คุณเป็นใคร (Who are you?)
	Come-on. Let's make a circle.
	จับมือกันแล้วล้อมเป็นวงกลม (Hold hand and make a circle.)
	Let's walk this way.
	ดินมาทางนี้ (Let's walk this way.)

	อ่าปล่อยมือด้วย จับไว้ให้ดี (Do not let go. Hold our hands tight.)
	Let's clap your hands.
	ตบมือพร้อมๆกัน โอ้วันสุขสันต์ Good idea (Let's clap our hands. Oh so happy. Good idea.)
	Hello Hello How are you
	คุณเป็นใคร (Who are you?)
	Come-on. Let's make a circle.
	Let's clap your hands.
	ตบมือพร้อมๆกัน โอ้วันสุขสันต์ Good idea (Let's clap our hands. Oh so happy. Good idea.)

5) My family

Visual	Verbal language
	My family
	ครอบครัวของฉันมี Father คือพ่อ (Our family consists of 'Father' which is father.)
	Motherคือแม่ที่สุดแสนจะห่วงใย 'Mother' is our kind mother
	Brother คือน้องชายและพี่ชายที่ใจดี 'Brother' is kind younger and older brothers
	Sister ก็เหมือนกันคือน้องสาวและพี่สาว 'Sister' is younger or older sisters
	โอ้..... Oh.....
	Baby I see you.

	Sister I love you.

6) Color

Visual	Verbal language
	Color
	ท้องฟ้าสดใสสีblue (The bright sky is blue.)
	ต้นไม้สวยสีgreen (Beautiful trees are green.)
	Pandaมาจากเมืองจีน สี Black and white (Panda comes from China. Their colours are black and white.)
	กล้วยหอมจอมซนสีyellow (Naughty banana is yellow.)

	ช้างป่าตัวโตสีgrey (Big wild elephants are grey.)
	ตัวตุ่นจอมเกเรนั้นสี brown (The naughty mole is brown.)
	-
	หมูน้อยใจดีสี pink (The kind pig is pink.)
	องุ่นน่ากินสีpurple (The delicious grapes are purple.)
	เด็กๆจำไว้ให้ดี สีสันสดใสมากมาย (Children, remember well. There are many bright colours.) แล้วเรามาพบกันใหม่ (And see you again.)
	Bye bye

7) I go to the jungle

Visual	Verbal language
	I go to the jungle. ฉันเดินเล่นในป่า (I have a walk in the jungle.)
	I see the beetle เกาะอยู่บนต้นหญ้า (on grass leaves)
	I see a bee and a bird in the sky.
	เอ๊ะมองให้ดีนั่นมีนกมากมาย (Oh! Look! There are many birds.)
	Parrotsสีสันสดใส (Parrots are colourful.)
	Peacock แผ่หางอันใหญ่ (Peacock shows its big tail.)
	Pigeon กระพือปีกบินไป (Pigeons move their wings and fly.)

	I go to the jungle ฉันเดินเล่นในป่า (I have a walk in the jungle.)
	I see the beetle เกาะอยู่บนต้นหญ้า (on grass leaves)
	I see a bee and a bird in the sky เอ๊ะมองให้ดีมีแมลงมากมาย (Oh! Look! There are many birds.)
	Butterflyดูสวยสดใส (Butterflies look beautiful and colourful.) Dragonfly อยู่เหนือบึงใหญ่ (Dragonflies are above the big pond.)
	Moth fly บินวนรอบกองไฟ (Mothflies fly around the fire.)
	-

Appendix 6 Transitivity analysis of teachers' interviews

เด็ก		ก็สนใจนะ
Children	(are/feel)	interested
Carrier	Pr: relational: attributive	Attribute

อาจารย์	ว่า	-	ควรให้	ป 4.ขึ้นไปดีกว่า	เพราะ เด็ก
I	think	(it)	Should be	Grade 4 upward	because of being young
(Interpersonal metaphor)		(Carrier)	Pr: relational: attributive	Attribute	Cir: cause

มัน	ต้องกอด	
It (The tablet)	needs to be embraced	(by children)
Goal	Pr: material	(Actor)

(ถ้า)	(เด็ก)	ถือ	
(if)	(children)	hold	(it)
	(Actor)	Pr: material	(Goal)

	กลัว		หล่น
(I)	fear	(it)	drops
(interpersonal metaphor)		actor	Pr: material

	แตก	
(and)	breaks.	(because of children)
	Pr: material	Cir: cause

แล้ว	ก็มี		คน
Then	there	will be	a person (student)
		Pr: existential	Existent

	ทำแตก
who	breaks
Actor	Pr: material

	ทำหล่น	
(and)	drops	(it)
	Pr: material	(Goal)

เพราะ	เด็ก	ความรับผิดชอบ	จะไม่มี
because	young children	responsibility	will not have
	Carrier	Attribute	Pr: relational: attributive

(เด็ก)	สนุกมาก
(Children)	enjoy/ have a lot of fun
(Senser)	Pr: mental: emotive

เค้า	อยากจะไป	ในสิ่ง
They (children)	want to go	to the thing [that they search for]
Actor	Process: material	Cir: location

ตามที่	เค้า	ไป	เรื่อยๆ
as	they	go (search)	on and on
	Actor	Pr: material	Cir: extent

เด็ก	ไม่มี	ความรับผิดชอบ	ในการเอาไปเสียบไฟ มาก่อนที่จะเรียน
Children	do not have	responsibility	in terms of charging (the tablet) before class
Carrier	Pr: relational: attributive	Attribute	Cir: matter

เด็ก	ต้องได้	คำศัพท์	ก่อนครับ
Children	must get/learn	vocabulary	first.
Senser	Pr: mental: cognitive	Phenomenon	(conjunctive adjunct)

		สำคัญที่สุด	
(It/Vocabulary)	(is)	the most important	(for children)
Token	Pr: relational: identifying	Value	(Cir: matter)

ถ้า	คุณ	ไม่เอา	คำศัพท์	
If	you	do not choose	vocabulary	(for children)
	Actor	Pr: material	Goal	(Beneficiary: client)

ไม่มี		ทาง
there	is not	a way (for children to succeed in learning)
	Pr: existential	Existent

แบบฝึกมัน		ก็ต้องใช้
Exercise	(we/children)	need to use.
Goal	(Actor)	Pr: material

	เลือก	คำศัพท์	ก่อน	
(I)	choose	vocabulary	first	(for children)
(Actor)	Pr: material	Goal	(conjunctive adjunct)	(Beneficiary: client)

จริงๆ	เพลง			ก็สำคัญนะ	
Actually	songs	are	also	important	(for children)
	Carrier	Pr: relational: attributive		Attribute	(Cir: matter)

เพราะว่า	เด็กประถม	มันอยากจะ
because	primary school students	want to.
	Senser	Pr: mental: desiderative

ก่อน	พี่	จะเข้าไปสอน	
Before	I	teach	(students)
	Actor	Pr: material	Goal

พี่	จะเปิด	เพลง	ให้เค้า	ก่อนทุกครั้ง
I	will turn on	the songs	for them	every time
Actor	Pr: material	Goal	Beneficiary: client	Cir: extent

เพลงเรื่องสี เพลงเรื่อง body อะไรอย่างเงี้ย	เรา	จะเปิดก่อน	
Color songs Body songs (or) something like this	we	will turn on	(for them)
Goal	Actor	Pr: material	Beneficiary: client

แล้ว	เค้า	จะจำได้	
Then	they (children)	will be able to remember	(vocabulary).
	Senser	Pr: mental: cognitive	Phenomenon

ถ้าเกิด	เด็ก	ไม่ต้องการ
If	children	do not want
	Senser	Pr: mental: desiderative

	ให้		มายังไงก็ตาม
(I)	give	(children)	whatever
(Actor)	Process: material	(Beneficiary: recipient)	Goal

	เค้า	ไม่ต้องการ
(if)	they	do not want
	Senser	Pr: mental: desiderative

เค้า	ไม่เอาอะ
they (children)	will not take/accept
Actor	Pr: material

	ต้องยังไงให้	เค้า	รัก	ภาษานี้	ก่อน
(We)	must make	them (children)	love	this language	first
(Inducer)	Pr:	Senser	Pr: mental: emotive	Phenomenon	(conjunctive adjunct)

จริงๆ	เด็ก	อยากเล่นอยู่แล้ว
Actually	children	want to play
	Actor	Pr: material

แต่ถ้า		ไม่บังคับ	
But if	(we)	do not force/control	(them)
	(Actor)	Pr: material	(Goal)

มัน	มี	กิจกรรมอย่างอื่นให้เล่นได้เยอะแยะ	
It (the tablet)	has	many other activities to play	(for children)
Carrier	Pr: relational: attributive	Attribute	Beneficiary: client

เรา	จะสอน		ในแท็บเลต	ก่อน
I	will teach	(children)	(the content) in the tablet	first.
(Actor)	Pr: material	(Beneficiary: recipient)	(Goal)	Conjunctive adjunct

แล้ว		เอาออกมา		ให้เน้น ตรงไหน อีกที	
Then	(I)	bring out	(the content)	in order to focus on the part again.	(for children)
	(Actor)	Pr: material	(Goal)	Purpose	Beneficiary: client

หรือ		สอน		ไปก่อน
Or	(I)	teach	(children)	first
	(Actor)	Pr: material	(Beneficiary: recipient)	Conjunctive adjunct

			“ดูสิ นักเรียน มันอยู่ในนี้”
(I)	(can tell)	(students)	“Look!Students it is in here”
Sayer	(Pr: verbal)	(Receiver)	a paratactic projection: a quoted locution (a ranking clause)

เรา	จะไม่ได้แตะ
We	will not be able to touch
Actor	Pr: material

หรือไม่ได้ใช้เลย	
or use	(the tablet)
Pr: material	(Goal)

เพราะ	เด็กเรา		ขี้เกียจท่องมาก	
Because	our children	are	very idle	in terms of memorising vocabulary
	Carrier	Pr: relational attributive	attribute	Cir: matter

ถ้า	เด็ก	รู้	คำศัพท์
If	children	know	vocabulary
	Senser	Pr: mental cognitive	Phenomenon

เด็กก็	จะแปลได้
they	will be able to translate
Actor	Pr: material

	อ่านได้
(They)	can read
(Actor)	Pr: material

	ทำ	ทุกอย่างได้เลย นะคะ
(They)	can do	everything
(Actor)	Pr: material	Goal

	ต้องฝึก	
(Children)	must practise	(vocabulary)
(Actor)	Pr: material	(Scope)

	ให้		ท่อง	คำศัพท์
(I)	(need to) make	(children)	repeat	vocabulary
(Initiator)	Pr:	(Actor)	Pr: material	Goal

if this means 'say words', it could be analysed as a verbal clause

การท่อง		เพื่อเด็กจะได้จำ
Repeating words	is	for children to memorise
Carrier	Pr: relational: attributive	Circumstantial attribute: cause

สิ่ง	ที่	ทำให้	เด็ก		ไม่ง่วง
The thing	that	makes	children	(feel)	awake/ not sleepy
Attributor		Pr:	Carrier	(Pr: relational: attributive)	Attribute

	ก็คือ	การใช้เพลง เพลงเป็นส่วนประกอบ	
That	is	using songs as a supplementary	(for children)
Token	Pr: relational: identifying	value	(Beneficiary: client)

เค้า	ได้ฟัง	เพลง
They	can listen	to the songs
Behaver	Pr: behavioural: near mental	Cir: location (orientation)

แล้ว	ลุกขึ้น
and	stand up
	Pr: behavioural: near material

มาทำ	กิจกรรม
do	activities
Pr: material	Scope

มี		กิจกรรม ตื่นตัว
There	are	exciting activities (for children)
	Pr: existential	Existent

การใช้สัมผัสสระของเพลง	จะทำให้	เด็ก	จำได้		ง่ายกว่า
The use of similar vowel sounds in the songs	makes	children	memorise	(vocabulary)	more easily
Inducer	Pr:	Senser	Pr: mental: cognitive	(Phenomenon)	Cir: manner

เด็ก	ชอบร้องเพลง	
Children	like to sing	a song
Behaver	Pr: behavioural: near material	Behaviour

ดังนั้น	มันจะ		ง่ายในการจำของเค้า
So	it	is	easy for them to memorise
	Carrier	Pr: relational: attributive	Circumstantial attribute

การใช้เพลง เสร็จแล้ว		ให้	เด็ก	ฝึก	พูด
After using songs	(I'll)	make	children	practise	speaking
Cir: location	(Initiator)	Pr:	Actor	Pr: material	Scope

ถ้า	เด็ก	พูดได้
If	children	can speak
	Behaver	Pr: behavioural: near verbal

การอ่าน	ไม่มี	ปัญหา	
reading	would not be	a problem	(for them)
Token	Pr: relational identifying	Value	(Cir: matter)

การเรียนรู้	เค้า	มาอ่านเองแล้ว
For learning	they	can read
Cir: cause	Actor	Pr: material

เค้า	เข้าใจ	หมด
They	can understand	all
Senser	Pr: mental: cognitive	Phenomenon

	พูด	รู้เรื่อง
(They)	can speak	understandably
Behaver	Pr: behavioural: near verbal	Cir: manner

เพราะฉะนั้น	เกมส์	ไม่มีปัญหา		
so	game	is	no problem	(for children)
	Carrier	Pr: relational: attributive	Attribute	(Cir: matter)

เด็กกับเกมส์	เป็น	ของคู่กัน
Children and games	are	a pair (idiom).
Token	Pr: relational: identifying	Value

ยังไง	เด็ก	ก็ชอบ
No matter what (games)	children	like
Phenomenon	Senser	Pr: mental: emotive

	ไม่จำเป็นต้องรู้	ภาษาอังกฤษ
(They)	do not need to know	English
(Senser)	Pr: mental: cognitive	Phenomenon

เค้า	ก็เล่นได้	ไม่ว่าจะเกมส์ในแท็ปเลต ในไอแพด ในคอมพิวเตอร์	
they	can (still) play	games	either in tablets, ipads or computer
Actor	Pr: material	Scope	Cir: location

เด็กก็ยัง	เข้าใจ	ว่านี่คืออาวุธ
children	can still understand	that this is weapon.
Senser	Pr: mental: cognitive	a projected idea clause (attributive)

อะไรก็ตามที่	เด็ก	เล่นได้
whatever	children	can play
Scope	Actor	Pr: material

เกมส์	จะไม่มีปัญหา		กับเด็กเลยนะคะ
Games	will be	no problem	for children
Carrier	Pr: relational: attributive	Attribute	Cir: matter

พอเสร็จแล้ว	เด็ก	ได้มาใช้	เพลง
After that	children	can use	songs
Cir: location	Actor	Pr: material	Goal

เค้า	ได้ฟัง	แน่นอน
They	can listen	for sure
Behaver	Pr: behavioural: near mental	a mood adjunct

ตัวฟังเนี่ย	ไม่มีปัญหาแน่		
Listening	should be	no problem	(for children)
Carrier	Pr: attributive: attributive	Attribute	(Cir: matter)

นอกจาก	เค้า	ไปเพิ่ม	ฟังคำยากๆ ขึ้น	
unless	they	add	more difficult words for listening	(for children)
	Actor	Pr: material	Goal	(Beneficiary: client)

		รู้	คำศัพท์
(if)	(children)	know	vocabulary
	(Senser)	Pr: mental: cognitive	Phenomenon

	พูดได้
(they)	can speak
(Behaver)	Pr: Behavioural: near verbal

	มันก็น่าจะมี		ท่าทาง
(For songs)	there	should be	gesture (dance) (for children)
(Cir: matter)		Pr: existential	Existent

	คิดว่า		เป็น	สิ่งที่ดี	
I	think	it (tablet)	is	a good thing	(for children)
Interpersonal metaphor		Carrier	Pr: relational: attributive:	Attribute	(Cir: matter)

ภาษาเพลง	บางทีมัน		ง่ายกว่า	ที่เป็นภาษาเขียนนะคะ	
Language in the songs	sometimes	is	easier than written language		(for children)
Carrier	Mood adjunct	Pr: relational: attributive	Circumstantial attribute		(Cir: matter)

เด็ก	จะเข้าใจ	ง่ายกว่า
Children	will understand	more easily
Senser	Pr: mental: cognitive	Cir: manner

	คิดว่า	เด็ก	จะใช้	
(I)	think	children	will use	(the tablet app)
Interpersonal metaphor		Actor	Pr: material	(Goal)

แต่ว่า		ต้องมี	ลิมิตในการใช้	
But	there	must be	the limit of use	(for children)
		Pr: existential	Existent	(Cir: matter)

เช่น ชม.นี้ วิชาภาษาอังกฤษ			ให้	เด็ก	ได้ดู
For example,	in this class/hour for English	(I)	make	children	watch
	Cir: matter	(-)	Pr:	Behaver	Pr: Behavioural: near mental

	ฝึก
(and)	practise
	Pr: material

ถ้า		ใช้		ตลอดเลย
if	(children)	use	(it)	all the time
	(Actor)	Pr: material	(Goal)	Cir: extent

เด็ก	อาจจะเขียนไม่เป็น
children	may not be able to write
Actor	Pr: material

เด็ก	จะ อยู่บ้าน	รวมกับพี่คนนึงที่เป็นพยาบาล ไม่มีเวลาดูแลลูก
One child	stays	with my senior who is a nurse and has no time to take care of her child
Actor	Pr: material	Cir: accompaniment

พอเช้ามา	ลูก	ตื่นเช้า	มาอยู่หน้าไอแพด
In the morning	a child	wakes up	in front of an iPad
Cir: location	Actor	Pr: material	Cir: location

	เล่น	เกมส์
(They)	play	games
	Pr: material	Scope

ดู	หนัง
watch	movies
Pr: Behavioural: near mental	Phenomenon

ดู	อะไรก็ได้
Watch	Whatever
Pr: Behavioural: near mental	Phenomenon

กด	
Press	(the tablet)
Pr: material	(Goal)

touch	
Touch	(the tablet)
Pr: material	(Goal)

slide	
slide	(the tablet)
Pr: material	(Goal)

พอ		บอก	
When	(I)	ask	(a child)
	(Sayer)	Pr: verbal	(Receiver)

ให้เขียน
to write
Pr: material

	ไม่ยอมเขียน
(the child)	won't write
(Actor)	Pr: material

เค้า	พูดได้
The child	can speak
Behaver	Pr: behavioural: near verbal

	พูดได้	ชัดเจน
(They)	can speak	clearly
(Behaver)	Pr: behavioural: near verbal	Cir: manner

	ฟังได้
(They)	can listen
(Behaver)	Pr: behavioural: near mental

การเขียน	มี	ปัญหามาก	
Writing	is	very problematic	(for children)
Carrier	Pr: relational: attributive	Attribute	(Cir: matter)

	ไม่ยอมเขียน
(A child)	won't write
(Actor)	Pr: material

การเขียน	เป็น	การฝึกกล้ามเนื้อมือ
writing	is	practising (their) hand muscles
Token	Pr: relational: identifying	Value

ถ้า	เด็ก	ไม่ฝึก	เขียน
If	children	do not practise	writing
	Actor	Pr: material	Scope

กล้ามเนื้อมือ	จะ	อ่อนล้าจริงนะคะ
(their) hand muscles	will be	really weak.
Carrier	Pr: relational: attributive	Attribute

	สอน		เนื้อหา	ก่อน
(I)	teach	(them)	the content	first.
(Actor)	Process	(Beneficiary: recipient)	Goal	

	ให้	เค้า	เรียนรู้	ก่อนนะคะ
(I)	make/let	them	learn	first
(Inducer)	Pr:	Senser	Pr: mental	

	ฝึก	ด้านแบบฝึกหัด
(Children)	practise	exercise
(Actor)	Pr: material	Scope

	อธิบาย	
(I)	explain	(for them)
(Sayer)	Pr: verbal	(Beneficiary: client)

	ให้	เค้า	ได้ลองใช้	
(I)	make/let	them	use	(the tablet)
(Initiator)	Pr:	Actor	Pr: material	(Goal)

	ให้	เค้า	ลองเห็น
(I)	make/let	them	watch
(-)	Pr:	Behaver	Pr: behavioural: near mental

	ให้	เค้า	ฝึก	ตาม ในแท็ปเลตค่ะ
(I)	make/let	them	practise	according to the tablet app
(Initiator)	Pr:	Actor	Pr: material	Cir: manner

เรา	ต้องสอน		ก่อน
We/I	need to teach	(them)	first
Actor	Pr: material	(Beneficiary: recipient)	

เด็ก	ใช้		วิชาเดียว
Children	use	(the tablet)	for one subject
Actor	Pr: material	(Goal)	Cir: cause

ชมต่อไป.		ก็ใช้ไม่ได้แล้ว
Next class/hour	(they)	cannot use
Cir: location	(Actor)	Pr: material

เพราะ	เด็ก	เรียน	วิชานึง	หนึ่งชม.
Because	children	study	one subject	for 1 hour
	Actor	Pr: material	Goal	Cir: extent

เพราะฉะนั้น	เด็ก	ต้องมาชาร์จ		เรื่อยๆ
So	children	need to charge	(the tablet)	continually
	Actor	Pr: material	(Goal)	Cir: extent

ชาร์จไปด้วยเล่นไปด้วย		อันตราย	
Charging and playing at the same time	is	dangerous	(for children)
Carrier	Pr: relational: attributive	Attribute	(Cir: matter)

	ใช้ได้		แค่หนึ่งชม.
(children)	can use	(the tablet)	for one hour
(Actor)	Process	(Goal)	Cir: extent

	ใช้ไม่ได้		ทั้งวัน
(they)	cannot use	(the tablet)	all day long
(Actor)	Pr: material	(Goal)	Cir: extent

เรา	ต้องดูแล	
I/We	have to take care of/ look after	(children)
Actor	Pr: material	(Goal)

อย่าปล่อย		
Don't leave	(children)	(alone)
Pr: material	(Goal)	(Resultative attribute)

ถ้า		ปล่อย		
If	(we)	leave	(them)	(alone)
	(Actor)	Pr: material	(Goal)	(Resultative attribute)

	เข้าไป	ในเกมส์
(they)	enter	into games
(Actor)	Pr: material	Cir: location

เด็กอนุบาล	ก็เข้าได้	
Kindergarten students	can enter	(into games)
Actor	Pr: material	(Cir: location)

เด็กอนุบาล	สมัยนี้ก็	เข้าได้แล้ว	
Kindergarten students	these days	can enter	(into games)
Actor	Cir: location	Pr: material	(Cir: location)

เด็กเตรียม ที่ยังไม่เข้าอนุบาล เขา	รู้แล้ว่า	ต้องล็อกอินยังไง
Pre-kindergarten children	already know	how to log in
Senser	Pr: mental: cognitive	Phenomenon

		สบายมาก	สำหรับเด็กสมัยนี้	
(It)	(is)	easy	for children	these days
(Carrier)	(Pr: relational attributive)	Attribute	Cir: matter	Cir: location

	เข้าไปกด	
(Children)	can press	(the tablet)
(Actor)	Pr: material	(Goal)

	เสริชหา	ทุกอย่างได้	สบายมาก
(Children)	search	everything	easily
(Actor)	Pr: material	Phenomenon	Cir: manner

ถ้า	เรา	ไม่ควบคุม	เค้า
If	We	don't control	them
	Actor	Pr: material	Goal

	เล่น	เกมส์
(they)	play	games
(Actor)	Pr: material	Scope

ที่	เรา	ให้	เด็ก	เข้า	ห้องคอม
As	we	let/make	children	enter	a computer room
	Initiator	Pr:	Actor	Pr: material	Cir: location

เค้า	จะเปิดเข้า	เกมส์ของเค้า
they	will enter	their games
Actor	Pr: material	Cir: location

ที่บ้านมีแล้ว	ผู้ปกครอง	เป็น	หลัก
At home	parents/guardians	are	the main people (for supervising children)
Cir: location	Token	Pr: relational: identifying	Value

	ไม่มี	เวลา	ให้ลูกหลานตัวเอง
(They)	do not have	time	for their children
(Carrier)	Pr: relational: attributive	Attribute	Cir: matter

	ให้	ลูกหลาน	อยู่	กับคอมพิวเตอร์
(They)	let	children	stay	with computer
(Initiator)	Pr:	Actor	Pr: material	Cir: accompaniment

เค้า	เข้า	เกมส์
They	enter	games
Actor	Pr: material	Cir: location

	ดู	การ์ตูน
(They)	watch	Cartoon
(Behaver)	Pr: Behavioural: near mental	Phenomenon

ไม่มีเด็กคนไหน	เข้าไป	
No children	use	(the tablet)
Actor	Pr: material	(Goal)

ที่จะ	เรียนรู้	พวกสิ่งต่างๆที่เราสร้างขึ้นเพื่อเป็นประโยชน์กับเค้า
to	learn	the things [[that we created for their benefits]]
	Pr: mental: cognitive	Phenomena

นอกจาก		บังคับ	เค้า
unless	(we)	force	them
	(Actor)	Pr: material	Goal

(We)	(told)	(them)
(Sayer)	(Pr: verbal)	(Receiver)

นักเรียน	เข้าไปดู	ในนี้นะ
“Students	enter	(this section) in the app
Actor	Pr: material	Cir: location

	ดูซิ
(Students,)	Look!
	Pr: behavioural: near mental

แล้วก็	ลิสต์มาซิว่า
Then,	list
	Pr: material

เรา	ได้	อะไร	จากตรงนั้น บ้าง
we	have learned	what	from there”
Senser	Pr: mental: cognitive	Phenomenon	Cir: location

				มัวแต่กังวลเรื่องแกรมม่าร์
(if)	(we)	are	only	worried about grammar
	(Carrier)	Pr: relational: attributive		Circumstantial attribute

	ตายแน่ค่ะ
(we)	will die/get into trouble (idiom)
(Actor)	Pr: material

คุณ	ไปอ่าน
You (children)	read
Actor	Pr: material

ถ้า	คุณ	เข้าใจ	ทั้งหมดนี้แล้ว
if	you	understand	everything
	Sense	Pr: mental: cognitive	Phenomenon

	คุณ	จะอ่าน	แกรมม่าร์
(when)	you	read	(about) grammar
	Actor	Pr: material	Cir: matter

คุณ	ก็เข้าใจค่ะ
you	will understand
Senser	Pr: mental: cognitive

ถ้า	เรา	ได้ใช้		ได้ถูกต้อง
If	we	can use	(it)	correctly
	Actor	Pr: material	(goal)	Cir: manner

พูด	ได้ถูกต้อง
speak	correctly
Pr: behavioural: near verbal	Cir: manner

ยังไงถ้า	เรา	ไปอ่าน
if	we	read
	Actor	Pr: material

เรา	ก็รู้เรื่อง นะคะ
we	will understand
Senser	Pr: mental: cognitive

แกรมม่าร์	เรา	เรียนมา
Grammar	we	have learnt
Phenomenon	Senser	Pr: mental: cognitive

เรา	จะถูกสอนมาว่า
we	have been taught
Goal	Pr: material

ท่อง	มาเป็นฉากๆ
Repeat	many things/chunks
Pr: material	Goal

ถ้า		พูดไม่ได้
If	(children)	can't speak
	(Behaver)	Pr: behavioural: near verbal

มันไม่มีประโยชน์นะคะ			
there	is	no use	(for them)
	Pr: existential	Existent	(Cir: matter)

เพราะฉะนั้น		ฝึก	conversation
So	(children)	should practise	conversation
	(Actor)	Pr: material	Scope

ที่	เด็ก	ต้องใช้	ในชีวิตประจำวันดีกว่า
that (conversation)	they	use	in everyday life
Scope	Actor	Pr: material	Cir: location

		ไปเจอ	ต่างชาติ
(when)	(they)	meet	foreigners
	(Actor)	Pr: material	Goal

	แล้วสามารถพูดได้
(they)	can speak
(Behaver)	Pr: behavioural: near verbal

คนญี่ปุ่น	มาถามทาง	นศ.	can you speak English?
a Japanese	asked (for a direction)	a student	“Can you speak English?”
Sayer	Pr: verbal	Receiver	Paratactically projected locution

Can	you	speak	English
Pr:	Sayer	Pr: verbal	Verbiage

เค้า	ตอบ	No ได้
He (a student)	said	“No”
Sayer	Pr: verbal	Paratactically projected locution

เค้า	ไม่อยาก พูด
He	did not want to speak
Behaver	Pr: behavioural: near verbal

	กลัว	ว่าตอบไปแล้วจะผิด พูดไม่ถูกอะไรอย่างนี้
(He)	feared	that his answer is wrong (or) speak wrong
Senser	Pr: mental: emotive	Phenomenon

	รู้	วิธีการพูด
(Children)	(should) know	how to speak
Senser	Pr: mental: cognitive	Phenomenon

และ		กล้าที่จะแสดงออก
and	(they)	(should) dare to express/speak
	(Behaver)	Pr: behavioural: near verbal

สัปดาห์นึง	เรา	เรียน	ภาษาอังกฤษ	แทบจะทุกวัน	.ชม 5
In one week	we (children)	study	English	almost everyday	for five hours
Cir: extent	Actor	Pr: material	Goal	Cir: extent	Cir: extent

หนึ่งชม.	เรา	ก็จะให้		ไปอยู่	กับต่างชาติเช่น ครูฟิลิปปินส์	1 ชมไป.
For one hour,	we	let/make	(children)	stay	with a foreigner such as a Philippines teacher	for one hour
Cir: extent	Initiator	Pr:	(Actor)	Pr: material	Cir: accompaniment	Cir: extent

อีกหนึ่งชม .	ครู	คิดว่า	เค้า	ได้เข้า	ห้องคอม
For another one hour	I	think	they	enter	a computer room
Cir: extent	Interpersonal metaphor		Actor	Pr: material	Cir: location

	ได้ฟัง
(they)	listen
Behaver	Pr: behavioural: near mental

	ได้รีแลกซ์
(they)	relax
Actor	Pr: material

เรา	ไม่อยากใส่เข้าไป		เยอะๆ ค่ะ
We	do not want to put (teach)	(them)	a lot of things
Actor	Pr: material	(Beneficiary: recipient)	Goal

เด็ก	ได้เข้าไปเรียน	ในห้องคอมพิวเตอร์
Children	can study	in a computer room
Actor	Pr: material	Cir: location

เรา	ก็จะให้	เด็ก	ฟัง
we	make/let	children	listen
(-Agent)	Pr:	Behaver	Pr: behavioural: near mental

และก็		ต้องควบคุม		ด้วย
And	(we)	must control	(them)	too
	(Actor)	Pr: material	(Goal)	

บางทีซักพัก	เค้า	จะแว้บเข้าหา	เกมส์
Sometimes for a while	they	will sneak to use	games
Cir: extent	Actor	Pr: material	Goal

จริงแล้วก็			น่าสนใจ	
Actually	(it)	(is)	interesting	(for children)
Cir: manner	(Carrier)	(Pr: relational: attributive)	attribute	(Cir: matter)

เรื่องภาษาที่ใช้ในนั้น	accent	พี่ว่า		โอเค	
For the language used in the app	Accent	I think	(is)	okay	(for children)
	Carrier	Interpersonal metaphor	(Pr: relational: attributive)	attribute	(Cir: matter)

เพราะว่า	เด็ก	จะได้เรียนรู้	จากเจ้าของภาษาจริง
Because	children	will learn	from a native speaker
	Senser	Pr: mental: cognitive	Cir: manner

เพราะ		เรียน	กับเรา
Because	(children)	learn	with/from us
	(Senser)	Pr: mental: cognitive	Cir: manner

	ได้	แต่ครูไทย
(they)	get	only Thai teachers' (accent)
(Actor)	Pr: material	Goal

พี่ว่า	สีสัน รูปภาพ	ดู	สวย น่าสนใจ	
I think	color and pictures	are/look	beautiful and interesting	(for children)
Interpersonal metaphor	Carrier	Pr: relational: attributive	Attribute	(Cir: matter)

		เหมาะกับวัยเด็ก
(They)	(are)	suitable for children's age
(Carrier)	(Pr: relational: attributive)	Circumstantial attribute

เนื้อเรื่อง	ที่	เค้า	อ่าน	ให้ เด็กๆ
The content	which	they (the app)	read	for children
Goal		Actor	Pr: material	Beneficiary: client

เด็ก	สามารถออกเสียง	ตามได้เลย
children	can pronounce	after (the model)
Sayer	Pr: verbal	Cir: manner

เด็ก	จะได้	ฝึกภาษาไปในตัวเลย
children	can practise	language
Actor	Pr: material	Scope

	ได้ออกเสียง	ตาม
(children)	can pronounce	after (the model)
(Sayer)	Pr: verbal	Cir: manner

	สอน		เรื่องการออกเสียงให้ถูกต้อง
(I)	teach	(children)	correct pronunciation
(Actor)	(Pr: material)	(Beneficiary: recipient)	Goal

	ต้องให้		ออกเสียง	ได้ถูกต้อง
(I)	must make	(children)	pronounce	correctly
(Agent)	Pr:	(sayer)	Pr: verbal	Cir: manner

เรื่องคำศัพท์ เกี่ยวกับชีวิตประจำวัน เรื่องสี เรื่องอาหาร เรื่องเครื่องแต่งกาย	ที่	เด็ก	ได้เจอจริงๆ
vocabulary about everyday life (such as) color food (and) dress	that	children	really face
Goal		Actor	Pr: material

สิ่ง	ที่เรา	สามารถนำไปใช้	ในชีวิตประจำวันได้จริง
the thing	we	can use	in our everyday life
Goal	Actor	Pr: material	Cir: location

ไม่น่าจะมี		ปัญหา	
There	should not be	a problem	(for them)
	Pr: existential	Existent	(Cir: matter)

เพราะ	เด็ก		คุ้นเคยกับการใช้แท็ปเลต
because	children	are	familiar with the use of tablet
	Carrier	Pr: relational: attributive	Circumstantial attribute

เค้า	สามารถใช้ได้	
They	can use	(the tablet)
Actor	Pr: material	(Goal)

แม้		เป็น	เด็กเล็ก
although	they	are	young children
	Token	Pr: relational: identifying	Value

เพราะ	เด็กๆ	ชอบ ค้นคว้า
Because	children	like to search
	Actor	Pr: material

	จะก้าวไปข้างหน้า
(They)	will walk forward (progressing/advancing)
(Actor)	Pr: material

เค้า	จะก้าวไปข้างหน้า
They	will walk forward
(Actor)	Pr: material

		อยากรู้อยากเห็น
(They)	are	curious
(Carrier)	Pr: relational: attributive	Attribute

	ต้องสอน		เนื้อหา	ก่อน
(I)	need to teach	(children)	the content	first
(Actor)	Pr: material	(Beneficiary: recipient)	Goal	Conjunctive adjunct

	กระตุ้น หรือเร้า	
(The app)	stimulates	(children)
(Phenomenon)	Pr: mental: emotive	(Senser)

ให้	เค้า	รู้สึกว่าเออ
make	them	feel (think)
Pr:	Senser	Pr: mental: cognitive

ถ้า	เรา	ตั้งใจเรียน	
if	we	pay	attention to studying
	Actor	Pr: material	Scope

		เหมือนกับว่าเป็นของแถมให้อย่างเนี้ย
(The app)	(is)	like a complementary (for children)
(Carrier)	Pr: relational: attributive	Circumstantial attribute

	น่าจะเป็น	สีสัน	ให้กับเค้ามากว่า
(The app)	is	color (idiom: an exciting element)	for them
(Token)	Pr: relational: identifying	Value	Cir: matter

เรา	เรียน	วิชาหลักๆ
we	have already studied	main subjects
Actor	Pr: material	Goal

สิ่งที่	เรา	เรียนไปแล้ว
what	we	have already studied
Goal	Actor	Pr: material

คน	ชี้นำ		นิดหน่อย
a person	guiding	(them)	a little bit
Actor	Pr: material	(Goal)	Cir: extent

เด็ก	สามารถเรียนรู้	ได้เองโดยอัตโนมัติ
children	can learn	by themselves automatically
Senser	Pr: mental: cognitive	Cir: manner

	สอน	เด็กที่รร.ป.สอง	ตั้งแต่ป.หนึ่ง
(We)	teach	Grade 2 students at our school	since Grade 1
(Actor)	Pr: material	Beneficiary: recipient	Cir: location

เด็ก		คุ้นเคยกับการใช้คอมพิวเตอร์
Children	are	familiar with the use of computer
Carrier	Pr: relational: attributive	Circumstantial attribute

การใช้แท็ปเลต	ก็ไม่ใช่	เรื่องยุ่งยาก	
The use of tablet	is not	difficult or complicated	(for children)
Carrier	Pr: relational: attributive	attribute	(Cir: matter)

	เป็น	เรื่องง่าย	
(It/the use of tablet)	is	easy	(for children)
Carrier	Pr: relational: attributive	attribute	(Cir: matter)

		ง่าย	สำหรับเค้า
(it)	is	easy	for them (children)
Carrier	Pr: relational: attributive	attribute	Cir: matter

ไม่น่ามี		ปัญหาเลย	
There	should not be	any problem	(for them)
	Pr: existential	Existent	Cir: matter

เด็กเล็กๆ	ทักษะที่ง่าย	คือ	ฟังพูด
for young children	the easy skills	are	listening and speaking
Cir: matter	Token	Pr: relational: identifying	Value

เด็ก	จะได้	เรื่องของการออกเสียงที่ถูกต้อง
children	will get	correct pronunciation
Actor	Pr: material	Goal

ซึ่ง		จำเป็นที่สุด	
which	(is)	the most important	(for them)
Carrier	Pr: relational: attributive	attribute	(Cir: matter)

คำศัพท์เกมส์	เด็ก	จะชอบ
vocabulary and games	children	will like
Phenomenon	Senser	Pr: mental: emotive

อันนี้	ให้	เด็ก	พูดตาม
this one	allows/enables	children	to say/repeat after
Agent	Pr:	Sayer	Pr: verbal

เด็กก็	ชอบ	
Children	like	(it)
Carrier	Pr: mental: emotive	(Phenomenon)

ของป.สอง ของที่ป.สอง ลงไปแล้ว	ไม่ค่อยได้ใช้	
The Grade 2 app installed (in the tablet)	is rarely used	(by children)
Goal	Pr: material	(Actor)

เด็ก	ใช้		ป.หนึ่ง
Children	used	(it)	in Grade 1
Actor	Pr: material	(Goal)	Pr: location

เรา	เน้น	เด็ก	เรียน	คอมมากกว่าเรียนแท็ปเลต
We	focus/make	children	study	computer rather than tablets
Initiator	Pr:	Actor	Pr: material	Goal

	ก็จะได้	accent ถูกต้อง
(children)	will get	the right/correct accent
(Actor)	Pr: material	Goal

คืออย่างพี่	ต้องมาสอน		ภาษาอังกฤษ
I	have to teach	(students)	English
Actor	Pr: material	(Beneficiary: recipient)	Goal

	การให้	เด็ก	ฟัง
(the app)	makes	children	listen
(Inducer)	Pr:	Behaver	Pr: behavioural: near mental

แล้ว		พูดตาม
and	(they)	say/repeat after
	(Sayer)	Pr: verbal

เกมส์	จะดึงใจ	เด็ก	ได้ดีมากๆ
games	attract	children	very well
Phenomenon	Pr: mental: emotive	Senser	Cir: manner

คือ ถ้า	เด็กที่	ขึ้นมา	จากป.อนุบาลแล้วมาอยู่ป.หนึ่ง
If	children	move	from kindergarten to Grade 1
	Actor	Pr: material	Cir: manner

	จะจำ	คำศัพท์	ได้ดี
(they)	will memorise	vocabulary	well
(Senser)	Pr: mental: cognitive	Phenomenon	Cir: manner

	เล่น	เกมส์
(they)	play	games
(Actor)	Pr: material	Scope

แล้ว	อย่าไปบอก	เค้านะ	ว่าอันนี้คือพัดลม อันนี้คือ ตู้เย็น อันนี้คือรถยนต์ คืออะไร
And	don't tell	them	that this is fan, this is refrigerator, this is car, this is what
	Pr: verbal	Receiver	Verbiage

ไม่ต้อง บอก	เค้า
Don't tell	them
Pr: verbal	Receiver

แต่ถ้าอยู่ดีๆ แล้ว	เค้า	มาเห็น	
But if	they	see	(it)
	(Senser)	Pr: mental: perceptive	(Phenomenon)

เค้า	จะไม่พูดคำว่า	พัดลม
they	would not say	Pat-Lom (fan)
Sayer	Pr: verbal	Verbiage

เค้า	จะไม่พูด	คำว่าตู้เย็น
They	wouldn't say	Tu-Yen (fridge)
Sayer	Pr: verbal	Verbiage

เค้า	จะไม่พูดคำว่า	คอมพิวเตอร์
They	wouldn't say	Computer
Sayer	Pr: verbal	Verbiage

แต่	เขา	จะออกเสียง	เป็นภาษาอังกฤษไปเลยได้ดี
But	they	will pronounce	with the English accent well
	Sayer	Pr: verbal	Cir: manner

	จำ		ได้ดีกว่า
They	can memorise	(words)	better
Actor	Pr: mental: cognitive	(Phenomenon)	Cir: manner

คือ ครูส่วนมาก	จะลืม	เรื่องการสะกด	ให้เด็ก
Most teachers	forget (to teach)	spelling	for children
Actor	Pr: material	Goal	Beneficiary: recipient

แต่ว่า	เด็กเค้า	จำได้
But	children	can remember
	Senser	Pr: mental: cognitive

แต่ว่า เมื่อไรที่	เค้า	จะลืม
But when	they	forget to memorise
	Senser	Pr: mental: cognitive

เค้า	จะเขียน	ไม่ถูก
they	will write	incorrectly
Actor	Pr: material	Cir: manner

เด็กมัน	ต้องเขียนได้
they	must be able to write
Actor	Pr: material

คำศัพท์	เรา	ต้องมานั่งสะกด	แบบภาษาไทย สระอะ สระอา สระอิ สระอี แบบเนี้ย	
For vocabulary	we	need to spell	like Thai language the vowels –ah, -I, -ee	(for them)
Cir: matter	Actor	Pr: material	Cir: manner	((Beneficiary: recipient)

เพราะ	พี่	สอน		ภาษาอังกฤษ	ทุกสัปดาห์
Because	I	teach	(them)	English	every week
	Actor	Pr: material	(Beneficiary: recipient)	Goal	Pr: extent

พี่	จะสอน		ในหนังสือ	ก่อน
I	would teach	(them)	(the content) in the book	first
Actor	Pr: material	(Beneficiary: recipient)	Goal	Conjunctive adjunct

พี่	เตรียมแล้วว่าจะสอน	เรื่องอะไร	เด็ก
I	would prepare to teach	what topic	for children
Actor	Pr: material	Goal	(Beneficiary: recipient)

สมมติเรื่องสีใช่มั้ยคะ	พี่	ก็สอน	เรื่องสี เรื่องอะไร	ไปก่อน	
For the topic of color	I	would teach	the topic of color	first	(for children)
Cir: matter	Actor	Pr: material	Goal	Conjunctive adjunct	(Beneficiary: recipient)

แต่ว่าการสอนเรื่องสี เรื่องสัตว์	พี่	จะไม่ค่อยพูดว่า		อันนี้ คือ สีม่วง สีฟ้า สีส้มหรือสีอะไร
But for the teaching of the topics like color and animals	I	rarely say	(to them)	this is violet, blue, orange, or other colors
Cir: matter	Sayer	Pr: verbal	Receiver	Verbiage

เรา	จะให้	เค้า	ดู	สี
we	will make	them	look	at colors
Agent	Pr:	Behaver	Pr: behavioural: near mental	Cir: location

และ		พูด	เป็นภาษาอังกฤษออกไปเลย
and	(they)	speak	English
	(Behaver)	Pr: behavioural: near verbal	Phenomenon

เด็ก	จะจำ	ได้ดี
Children	will remember	well
Senser	Pr: mental: cognitive	Pr: manner

แต่ว่า	พี่	สอน		บ่อย
But	I	taught	(them)	often
	Actor	Pr: material	(Goal)	Cir: extent

เด็ก	ชอบ	เรียน	มากขึ้น
children	like	studying	more
Senser	Pr: mental: emotive	Phenomenon	Cir: extent

เรา	ต้องพูด	เรื่องสุขภาพ
we	need to talk	about the health issue (of children)
Behaver	Pr: behavioural: near verbal	Cir: matter

เด็ก	ดู		นานๆ
children	look	(at the screen)	for a long time
Behaver	Pr: behavioural: near mental	(Cir: location)	Cir: extent

	ปวดหัว	
(they)	have	a headache
(Behaver)	Pr: relational attributive	Attribute

พี่	สอน		ทุกอาทิตย์ได้
I	teach	(them)	every week
Actor	Pr: material	(Goal)	Cir: extent

ตัวหนังสือมัน		เล็ก	
The letters (in the tablet)	are	small	(for children)
Carrier	Pr: relational: attributive	attribute	(Cir: matter)

บางอัน	พา		ออกเสียง	ผิด
some (parts in the app)	make	(children)	pronounce	wrong
Agent	Pr:	(Sayer)	Pr: verbal	Cir: manner

	อ่าน	ชื่อ	ผิด
(they)	read	the name	wrong
(Actor)	Pr: material	Goal	Cir: manner

ถ้า	เด็ก	เล่น	เกมส์
If	children	play	games
	Actor	Pr: material	Scope

พี่	จะปล่อย	
I	would let	(them)
Actor	Pr: material	(Goal)

ต้องมี		การแนะนำอย่างใกล้ชิด	
There	must be	close consultation/ supervision	(for children)
	Pr: existential	Existent	(Cir: matter)

	บอก แนะนำ		การเข้าโปรแกรม แล้วถอยออกมายังไง การแบ็ค การกลับ การไปสู่เมนูอื่น หรือแม้แต่การชัทดาวน์เครื่อง ปิดเครื่อง
(I)	tell	(them)	how to access the program, exit it, go to other pages in the menu, or even shut down or turn on the tablet.
(Sayer)	Pr: verbal	(Receiver)	Verbiage

เพราะว่า	เรา	ใช้	แท็ปเลต	อาทิตย์ละครั้ง
Because	we	use	the tablet	once a week
	Actor	Pr: material	Goal	Cir: extent

เรา	ต้องปิด
we	must turn (it) off
(Actor)	Pr: material

เรา	จะเปิด (ไม่ได้)	ตลอดไม่ได้
We	cannot turn (it) on	all the time
Actor	Pr: material	Cir: extent

ถ้า	เรา	ไม่บอก	
If	we	do not tell	(them)
	Sayer	Pr: verbal	(Receiver)

เค้า	ก็ลืม
they	will forget
Senser	Pr: mental: cognitive

เรา	ต้องดู		อย่างใกล้ชิดเลยแหละ
We	must supervise	(children)	closely
Actor	Pr: material	(Goal)	Cir: manner

มัน	ช่วย	ในเรื่องของการออกเสียง	ได้เยอะที่สุด	
It	helps	pronunciation	the most	(for children)
Actor	Pr: material	Scope	Cir: manner	(Beneficiary: client)

พี่	ปล่อยให้	เด็ก	เล่นไปเลย	
I	let	children	play	(the tablet)
Initiator	Pr:	Actor	Pr: material	(Goal)

	สอน		ทางเทคนิค
(I)	taught	(students)	the content
(Actor)	Pr: material	(Beneficiary: recipient)	Goal

เค้า	ออกเสียง	ได้ดีกว่าพี่อีก
They	pronounce	better than me
Sayer	Pr: verbal	Cir: manner

เพราะว่า	สมองเค้า		โล่ง
because	their brain	is	open/clear.
	Carrier	Pr: relational: attributive	Attribute

	ให้	เด็ก	เล่นไปเลย
(I)	let	children	play
(Innitiator)	Pr:	Actor	Pr: material

เด็กเค้า	ไม่ได้รับรู้	จากคนอื่นมา	ว่าการออกเสียงภาษาอังกฤษ ต้องเป็น แบบสำเนียงไทยหรือแบบนี้
Children	didn't learn	from others	that English pronunciation must be like Thai accent or like this.
Senser	Pr: mental: cognitive	Cir: manner	Phenomenon

แต่	เค้า	ฟัง	แท็ปเลตปุ๊บ
But	they	listen	to the tablet
	Behaver	Pr: behavioural: near mental	Cir: location

แล้ว	เค้า	ออกเสียง	ได้ถูกต้อง accent ดี
and	they	pronounce	correctly and with good accent
	Sayer	Pr: verbal	Cir: manner

ไม่ใช่ว่า		เรียน	ทั้งหมด
It is not that	(they)	study	all
	(Actor)	Pr: material	Goal

เด็กเค้า		สนใจอยู่แล้ว
Children	are	surely interested
Carrier	Pr: relational: attributive	Attribute

เค้า	เรียน	ทั้งหกชม.	ในหนังสือทุกอย่างเลย
They	study	for six hours	everything in the book
Actor	Pr: material	Cir: extent	Goal

เค้า	ได้ใช้	อุปกรณ์นั้นอุปกรณ์นี้
they	use	this device
Actor	Pr: material	Goal

เค้า		ดีใจ
they	are	glad/happy
Carrier	Pr: relational attributive	Attribute

เค้า		ตื่นเต้น
They	are	excited
Carrier	Pr: relational attributive	Attribute

	ที่จะใช้
(they)	use
(Actor)	Pr: material

ตัวหนังสือ		เล็ก	
the letters	are	small	(for children)
Carrier	Pr: relational: attributive	Attribute	(Cir: matter)

เค้า	เคยอ่าน	หนังสือตัวโตๆ
they	used to read	big letters
Actor	Pr: material	Goal

พอ	เค้า	มาเห็น	ในนี้
When	they	see	(the content) in here
	Senser	Pr: mental: perceptive	Phenomenon

เค้า	จะเพ่ง	มาก
they	will stare	a lot/ intensely
Behaver	Pr: behavioural: near mental	Cir: manner

They	said
Sayer	Pr: verbal

คุณครู		อยากอ้วก
“Teacher,	(I)	want to vomit”
	(Behaver)	Pr: behavioural: physiological

They	said
Sayer	Pr: verbal

คุณครู			เวียนหัว
“Teacher,	(I)	am	dizzy”
	(Carrier)	Pr: relational: attributive	Attribute

เค้า	จะไม่บอก	เราหรอก	ตอนที่เรียน
They	will not tell	us	during the class
Sayer	Pr: verbal	Receiver	Cir: location

เค้า	จะบอก		ตอนที่ ตอนเลิกเรียนแล้ว
They	will tell	us	after class
Sayer	Pr: verbal	Receiver	Cir: location

ถ้ามันสองชม.ต่อกัน	เด็ก	จะเริ่ม	ตาลาย
With two hours in a row	children	will feel	dizzy
Cir: extent	Actor	Pr: relational: attributive	Attribute

เรา	จะเบรค	เด็ก
We	will stop	children
Actor	Pr: material	Goal

เรา	อาจจะสอน		แท็ปเลต	แค่ชม.แรก
we	will teach	(them)	(with) the tablet	only in the first hour
Actor	Pr: material	(Beneficiary: recipient)	Cir: manner	Cir: location

ชม.สอง		สอน		ในกระดานแทน
(For) the second hour	(I)	will teach	(them)	on the blackboard
Cir: location	Actor	Pr: material	(Beneficiary: recipient)	Cir: location

แต่			ถาม	เด็ก
But	(if)	(we)	ask	children
		(Sayer)	Pr: verbal	Receiver

ว่า	เค้า	อยากหยุด	เล่น
whether	they	want to stop	playing
	Actor	Pr: material	Goal

เค้า	ก็ชอบแหละ	
they	like	(using the tablet)
Senser	Pr: mental: emotive	(Phenomenon)

ตอน		เพิ่งได้	
when	(we/they)	just get	(the tablet)
	(Actor)	Pr: material	(Goal)

เด็ก		เห่อมาก
children	are	crazy about it
Carrier	Pr: relational: attributive	Circumstantial attribute

เรียนนานๆ ไป	เด็ก	จะ	เบื่อหน่าย
After studying (with the tablet) for a long time	children	will be	bored
Cir: extent	Carrier	Pr: relational: attributive	Attribute

เรา	ต้องสอน		ตามตัวชี้วัดที่เค้าให้เรามา
we	have to teach	(children)	according to the assigned learning standard
Actor	Pr: material	(Beneficiary: recipient)	Cir: Angle

เรา	จะให้	อะไร	เด็ก
we	will give	what	to students
Actor	Pr: material	Goal	Beneficiary: recipient

	วัด	อะไรเด็ก
(we)	measure	which part of students' learning
(Actor)	Pr: material	Goal

เรา	ถึงจะปล่อย	เด็ก	ดู	ในส่วน
we	will let	children	look	at the part
Agent	Pr:	Behaver	Pr: behavioural: near mental	Cir: location

	ที่เรา	ไม่สอน	
(which)	we	don't teach	(them)
(Goal)	Actor	Pr: material	(Beneficiary: recipient)

เขา	ต้องใช้		เกือบทุกวัน
they	have to use	(the tablet)	almost everyday
Actor	Pr: material	(Goal)	Cir: extent

เรา	เลยใช้		อาทิตย์ละครั้ง	ส่วนมากวันจันทร์
We	used	(it)	once a week	mostly on Monday
Actor	Pr: material	(Goal)	Cir: extent	Cir: location

เรา	ไม่	เบื่อหรอก
We	are not	bored
Carrier	Pr: relational: attributive	Attribute

เพราะว่า	เด็ก	ชอบ	
because	children	like	(it)
	Senser	Pr: mental: emotive	(Phenomenon)

เด็ก		สนใจ
Children	are	interested
Carrier	Pr: relational: attributive	Attribute

เด็ก	ชอบ	
children	like	(it)
Senser	Pr: mental: emotive	(Phenomenon)

เด็ก	จะชอบ	
Children	will like	(it)
Senser	Pr: mental: emotive	(Phenomenon)

เด็กเล็กๆ	ลูก	ต้องออกแบบ	แอป	ให้มีการไม่หยุดนิ่ง
(For) young children	you	have to design	the app	with movement
Beneficiary: client	Actor	Pr: material	Goal	Cir: manner

เคลื่อนที่ ดุกดิกๆ	เด็ก	ชอบ
Movement	children	like
Phenomenon	Senser	Pr: mental: emotive

คือว่าเด็ก		ไม่ทำให้		เบื่อ
For children	(it)	does not make	(them)	bored
Cir: matter	(Attributer)	Pr:	(Carrier)	Attribute

	ให้		ความรู้
(It)	gives	(children)	knowledge
(Actor)	Pr: material	(Beneficiary: recipient)	Goal

เค้า		จะสนใจกับแทปเลต
They	are	interested in the tablet
Carrier	Pr: relational: attributive	Circumstantial attribute

เรา	บอกว่า		ให้ทำอะไร
we	tell	(children)	what to do
Sayer	Pr: verbal	(Receiver)	verbiage

เช่นว่า		อ่าน	บทนี้
For example,	(they)	read	this lesson
	(Actor)	Pr: material	Goal

หรือว่า		พูดตาม	บทสนทนา
or	(they)	say/repeat after	the conversation
	(Sayer)	Pr: verbal	Verbiage

เด็ก	ชอบ	
Children	like	(these)
Senser	Pr: mental: emotive	Phenomenon

เด็กเค้า		มีความกระตือรือร้น
They	are	enthusiastic
Carrier	Pr: relational: attributive	Attribute

บางที	เด็ก	เล่น		นาน
Sometimes	children	play	(it)	too long
Cir: extent	Actor	Pr: material	(Goal)	Cir: extent

เรา	ก็มี	ที่เสียบ	ให้เค้า
We	provide	the plug	for them
Actor	Pr: material	Goal	Beneficiary: recipient

เนื้อหา	เด็ก	ชอบ
The content	children	like
Phenomenon	Senser	Pr: mental: emotive

		น่าสนใจ	
(it)	is	interesting	(for children)
(Carrier)	Pr: relational: attributive	Attribute	(Cir: matter)

ไม่ใช่ว่ามี เนื้อหาอย่างเดียว	เด็กก็		เบื่อ
With the content only,	children	will be	bored
	Carrier	Pr: relational: attributive	Attribute

เด็ก	ก็เห็น
Children	can see
Senser	Pr: mental: perceptive

	ได้สัมผัส
(they)	can touch
(Actor)	Pr: material

	ชอบ	
(They)	like	(it)
(Senser)	Pr: mental:emotive	(Phenomenon)

เด็ก	ก็พูดตาม
Children	can speak/repeat after
(Sayer)	Pr: verbal

เด็กมัน	ก็ชอบนะ	
Children	like	(it)
Senser	Pr: mental: emotive	(Phenomenon)

ถ้า ไม่มีอะไร		มันก็	เบื่ออ่ะ
With nothing	(children)	will be	bored
	(Carrier)	Pr: relational: attributive	Attribute

	มันก็ไม่ได้สัมผัสนะ	
(They)	cannot touch	(other types of media)
(Actor)	Pr: material	(Goal)

	ได้โต้ตอบได้นะ	
(Children)	can interact	(with the tablet)
(Actor)	Pr: material	

บางที		ให้		อ่านตาม
Sometimes,	(I)	asked/made	(them)	to read
Cir: extent	(Initiator)	Pr:	(Actor)	Pr: material

เขา	ก็อ่าน
They	read
Actor	Pr: material

	ก็นั่งดูไป
(They)	watched
(Behaver)	Pr: behavioural: near mental

	ไม่ได้โต้ตอบ
(They)	did not interact
(Actor)	Pr: material

	พูดตาม
(They)	speak/repeat after
(Sayer)	(Pr: verbal)

	ก็ไม่ได้คุย	กัน
(children)	did talk	to each other
Behaver	Pr: behavioural: near verbal	Cir: accompaniment

	สอน		ก่อน
(I)	teach	(them)	first
(Actor)	Pr: material	(Beneficiary: recipient)	Conjunctive adjunct

แล้ว			ค่อยเสริม	
then	(use)	(the app)	as a supplement	(for children)
	(Pr: material)	(Goal)	Cir: role	(Beneficiary: client)

	ต้องสอน	เขา	ก่อน
(I)	must teach	them	first
(Actor)	Pr: material	Beneficiary: recipient	Conjunctive adjunct

เรา	ต้องอธิบาย	ก่อน	
We	must explain	first	(for children)
Sayer	Pr: verbal	Conjunctive adjunct	(Beneficiary: client)

	ต้องดู	
(We)	must supervise	them
(Actor)	Pr: material	(Goal)

	ต้องเอาใจใส่	
(We)	must take care of	them
(Actor)	Pr: material	(Goal)

	ต้องอธิบาย	ก่อน	
(We)	must explain	first	(for children)
(Sayer)	Pr: verbal	Conjunctive adjunct	(Beneficiary: client)

	ต้องดูแล	เด็ก	อย่างใกล้ชิด
(We)	must look after	children	closely
(Actor)	Pr: material	Goal	Cir: manner

เดี๋ยว		แอบไปเล่น	เกมส์
Or else	(children)	will sneak to play	games
	(Actor)	Pr: material	Scope

มัน	จะมี	เกมส์ มาให้นะ	
It	has	games available	(for children)
Carrier	Pr: relational: attributive	Attribute	(Beneficiary: client)

เขา	ถาม	ครู
They	ask	teachers
Sayer	Pr: verbal	Receiver

	ก็เรียนรู้	เรื่องคำศัพท์	ก่อนค่ะ
(Children)	(should) learn	vocabulary	first
(Senser)	Pr: mental: cognitive	Phenomenon	Conjunctive adjunct

ภาษาอังกฤษจริงๆ แล้ว		ต้องเลือก	คำศัพท์	ก่อนค่ะ	
For English, actually	(we)	need to choose	vocabulary	first	(for children)
	(Actor)	Pr: material	Goal	Conjunctive adjunct	(Beneficiary: client)

คำศัพท์		ก็สำคัญ	
Vocabulary	is	important	(for children)
Carrier	Pr: relational: attributive	attribute	(Cir: matter)

ถ้า		รู้	คำศัพท์เสร็จ
if	(children)	know	vocabulary
	(Senser)	Pr: mental: cognitive	Phenomenon

มันก็		ง่าย ต่อการที่แบบว่า จะพูดหรือว่าจะฟัง
it	is	easy (for them) to speak or listen
Carrier	Pr: relational: attributive	Circumstantial attribute

	ก็สามารถที่จะรู้เรื่อง	อะไรต่าง ๆ ได้
(they)	can understand	various things
(Senser)	Pr: mental: cognitive	Phenomenon

	จะสื่อสาร	ได้ง่าย
(They)	will communicate	easily
(Actor)	Pr: verbal	Cir: manner

อย่างพูดคำว่า sing มาอย่างนี้	เด็ก	รู้ว่า	sing คือ ร้องเพลง
Like the word “sing”	children	know	“sing” means sing.
	Senser	Pr: mental: cognitive	Phenomenon

	จะสื่อสารตอบ	กับเราได้
(They)	will be able to communicate	with us
(Sayer)	Pr: verbal	Receiver

	ฝึก	ออกเสียง
(Children)	practise	pronunciation
(Actor)	Pr: material	Scope

		แอนเตอร์เทนเม้น	
(Game)	is	entertaining	(for children)
(Carrier)	Pr: relational: attributive	Attribute	(Cir: matter)

	ได้สนุกสนาน	
Children	enjoy	(it)
Senser	Pr: mental: emotive	(Phenomenon)

	ไม่	เครียดเกินไป	
(It)	is not	too stressful	(for children)
(Carrier)	Pr: relational: attributive	Attribute	(Cir: matter)

เหมือนว่า	มัน	ไปกระตุ้นค่ะ	
like	it	stimulates/motivates	(children)
	Phenomenon	Pr: mental: emotive	(Senser)

	กระตุ้นให้เด็กสนใจ	
(it)	attract/interest	children
(Phenomenon)	Pr: mental: emotive	Senser

	เห็น	เทคโนโลยีอะไรต่าง ๆ ดูอะไรแปลกๆ
(Children)	see	various aspects of technology, something strange (new)
(Senser)	Pr: mental: perceptive	Phenomenon

อย่างสมมุติว่า เราพูดอย่างเดียว	เด็กมัน	จะไม่ค่อย	สนใจ
If we speak only	children	will not be	interested
-	Carrier	Pr: relational: attributive	Attribute

เสริมเข้ามา ทางด้านอื่น	ทำให้	เด็ก	สนใจมากขึ้น
An addition from other ways (media)	makes	children	more interested
Attributor	Pr:	Carrier	Attribute

เด็ก	จะตั้งใจ	
Children	will pay	attention
(Actor)	Pr: material	

	สอน		หลัก	ก่อน
(I)	teach	(children)	the main (content)	first
(Actor)	Pr: material	(Beneficiary: recipient)	Goal	Conjunctive adjunct

อาจจะมี		พวกแบบฝึกหัดหรือเกมส์	ในแทปเลต	มาเสริม
There	may be	exercise or games	in the tablet	as a supplement
	Pr: existential	existent	Cir: location	Cir: role

อย่างฟังเนี่ย	เด็ก	ก็ได้	เจ้าของภาษา
Like listening	children	get	a native speaker (’s accent)
	Actor	Pr: material	Goal

	ออกเสียง	ได้ถูกต้อง
(Children)	pronounce	correctly
(Actor)	Pr: verbal	Cir: manner

แล้ว	สีสันอะไรต่างๆ	เด็ก	เห็น
And	many colors	children	see
	Phenomenon	Senser	Pr: mental: perceptive

เด็ก		ก็สนใจแล้ว
children	are	interested
Carrier	Pr: relational: attributive	Attribute

ถ้ายิ่งเด็กเล็กอะค่ะ			น่าสนใจ
Especially for young children	(it)	is	interesting
Pr: matter	(Carrier)	Pr: relational: attributive	Attribute

แต่บางทีถ้า	พ่อแม่คนไหน	กลับไปซื้อ	แทปเลต	ให้ลูก
If	parents	buy	the tablet	for their child
	Actor	Pr: material	Goal	Beneficiary: recipient

เด็กคนนั้น	ก็จะทำ		คล่องเลย
That child	would use	it	well/easily
Actor	Pr: material	Goal	Cir: manner

แต่ถ้า	เด็กคนไหน	ไม่ค่อยมี	ตังค์
But if	children	do not have	much money
	Carrier	Pr: relational: attributive	Attribute

	จะไม่		คล่อง
(they)	will not use	(it)	well/easily
(Actor)	Pr: material	(Goal)	Cir: manner

	สัมผัส	อะไร	ก็จะไม่คล่อง
(They)	touch (press/interact)	the thing (the tablet)	not easily
(Actor)	Pr: material	Goal	Cir: manner

	เปิด	
(They)	turn on	(the tablet)
(Acto)	Pr: material	(Goal)

	ปิด		ก็จะไม่คล่อง
(They)	turn off	(the tablet)	not easily
(Actor)	Pr: manner	(Goal)	Cir: manner

ถ้า	เด็กคนไหน	ไม่	คล่อง
If	children	are not	good at using (the tablet)
	Carrier	Pr: relational: attributive	Circumstantial attribute

	ก็ต้องค่อยๆสอน	
(we)	need to slowly teach	(them)
(Actor)	Pr: material	(Goal)

แต่จริงๆ	เด็ก	จะเกิดความอยากจะ เรียนรู้
Actually,	children	want to learn
	Senser	Pr: mental: cognitive

	อยากจะ	อะไรอย่างนี้
(They)	want	something like that
(Senser)	Pr: mental: desiderative	Phenomenon

เขาก็		มีความสามารถ
They	are	capable
Carrier	Pr: relational: attributive	Attribute

บางที		มี		ท็อปปิก
sometimes	we	give	(them)	the topic
	Actor	Pr: material	(Beneficiary: recipient)	Goal

เด็ก	ไปดูเอง เรียนรู้	เองค่ะ
children	learn	by themselves
Senser	Pr: mental: cognitive	Cir: manner

เหมือน	เด็ก	เรียนรู้	ด้วยตัวเองอะไรอย่างงี้ค่ะ
Like	children	learn	by themselves
	Senser	Pr: mental: cognitive	Cir: manner

	เรียนรู้	ด้วยตัวเอง
(Children)	learn	by themselves
(Senser)	Pr: mental: cognitive	Cir: manner

แล้ว		ทำ	แบบฝึกหัด
and	(they)	do	exercise
	(Actor)	Pr: material	Scope

	เล่น	เกมส์
(They)	play	games
(Actor)	Pr: material	Scope

	ลองผิดลองถูก	
(They)	try	what is right what is wrong
(Actor)	Pr: material	Scope

แทปเลตมันก็	จะมีรัน	ตามความสามารถของเด็ก
The tablet	runs	according to children's capability
(Actor)	Pr: material	Pr: manner

ถ้า	เด็กคนนี้		เก่ง
If	this child	is	good
	Carrier	Pr: relational: attributive	Attribute

มันก็	จะทำ	ถูก
He/she	will choose	the right answer
(Actor)	Pr: material	Scope

ถ้า	เด็กคนนี้	ไม่	เก่ง
If	this child	is not	good
	Carrier	Pr: relational: attributive	Attribute

	ก็ทำ	ผิดได้
(he/she)	may choose	the wrong answer.
(Actor)	Pr: material	Scope

ผิดบ้างเนี่ย		ก็สามารถทำ	ใหม่
For wrong answers	(the child)	can do	again
	(Actor)	Pr: material	

levelในส่วนของเด็ก		จะไม่เท่ากันนะคะ
Children's levels	are	different
Carrier	Pr: relational: attributive	Attribute

แต่จริงๆ ถ้า		เรียนรู้	ด้วยตัวเอง
But actually if	(children)	learn	by themselves
	(Senser)	Pr: mental: cognitive	Cir: manner

แล้ว	เรา	ค่อยแนะนำ		อยู่ข้างๆ
and	we	advise	(them)	by their side
	(Actor)	Pr: material	(Goal)	Cir: location

มันก็	จะช่วย	ให้เด็กแบบ
It	will help	children
Actor	Pr: material	Goal

บางที	บทนั้นมัน		ยากเกินไป	
Sometimes	the lesson	is	too difficult	(for children)
	Carrier	Pr: relational: attributive	Attribute	(Cir: matter)

เขา	ก็เริ่ม	ตั้งแต่บทที่แบบว่าง่าย	ก่อน
They	will start	with the easy lesson	first
Actor	Pr: material		Conjunctive adjunct

อย่างบางที	เด็กบางคน		เก่งไงคะ
Sometimes	some students	are	good
	Carrier	Pr: relational: attributive	Attribute

	ไปถึง	บทที่ 4	แล้ว จะเร็วกว่า เด็กที่ช้า
(They)	reached	Lesson 4	already faster than slow students
(Actor)	Pr: material	Goal	

	ก็เปิดอีกแระ	ซีดี		อีกแล้ว
(The teacher)	turn on	CDs	(for them)	again
(Actor)	Pr: material	Goal	(Beneficiary: client)	

แต่		ไม่เห็น	ภาพ
But	(children)	cannot see	picture
	(Senser)	Pr: mental: perceptive	

	จับต้องไม่ได้
(They)	cannot touch
(Actor)	Pr: material

เด็ก	กดไม่ได้
Children	cannot press
Actor	Pr: material

ครู	เปิด		อีกแล้ว
The teacher	turn (it) on	(for them)	again
Actor	Pr: material	(Beneficiary: client)	

เด็ก	สามารถที่จะสัมผัส
children	can touch
Actor	Pr: material

	เล่นซ้ำอีกซิ
(They)	can replay
(Actor)	Pr: material

เด็ก	กด	เอง
Children	can press	by themselves
Actor	Pr: material	Cir: manner

	ฟัง	เองได้
(They)	can listen	by themselves
(Behaver)	Pr: behavioural: near mental	Cir: manner

เด็ก	ก็อาจเรียนรู้ได้	ง่ายกว่าค่ะ
Children	may learn	more easily
Senser	Pr: mental: cognitive	Cir: manner

	ชาร์จไปได้		สักพักนึง
(They)	charge	it	awhile
(Actor)	Pr: material	Goal	Cir: extent

เด็ก	อยากจะเรียนรู้
Children	want to learn
Senser	Pr: mental: cognitive

	อยากจะใช้	ตลอด
(They)	want to use	all the time
(Actor)	Pr: material	Pr: extent

ถ้า				บ่อย
If	(they)	(can use)	(it)	often
	(Actor)	(Pr: material)	(Goal)	

เด็กก็	ชอบเลยนะคะ	
children	like	(it)
Senser	(Pr: mental: emotive)	(Phenomenon)

			เดือนนึง อาจจะสัก ครั้ง อะไรแบบนี้ 3 ครั้ง 2
(We)	(use)	(the tablet)	2-3 times a month
(Actor)	(Pr: material)	(Goal)	Cir: extent

	แบบว่ากระตุ้น	เด็ก
(It)	stimulates/motivates	children
(Phenomenon)	Pr: mental: emotive	Senser

ถ้าต่อไป	คุณ	ไม่ตั้งใจ เรียน	
If	you (children)	do not pay	attention to study
	(Actor)	Pr: material	Scope

เรา	ก็จะไม่ได้ให้		เล่น
we	will not let	(you) (children)	play
Initiator	Pr:	Actor	Pr: material

Let's study	จะให้	เด็ก	เข้าใจ	มากขึ้น	ว่าเราจะเริ่มเรียนเรื่องอะไรอย่างงี้ค่ะ
Let's study	will make	children	understand	better	about the topic we are going study
Inducer	Pr:	Senser	Pr: mental: cognitive	Cir: manner	Cir: matter

	ดึงความสนใจให้	นักเรียน
(It)	interests	students
(Phenomenon)	Pr: mental: emotive	Senser

คำศัพท์	จะทำให้	เด็ก	สนใจ
Vocabulary	will make	children	interested
Attributor	Pr:	Carrier	Attribute

อย่างที่	เด็ก	ตอบเลยก็คือ
As	children	answer
	(Sayer)	Pr: verbal

เด็ก	ก็จะ	สนใจรูปภาพแล้วก็คำศัพท์ไปด้วย
Children	will be	interested in pictures and vocabulary
Senser	Pr: relational: attributive	Circumstantial attribute

เขา	ก็จะจำ	คำศัพท์ได้	เพราะรูปภาพ
They	will be able to remember	vocabulary	because of pictures
Senser	Pr: mental: cognitive	Phenomenon	Cir: cause

สะกดคำ		อ่านสะกด	คำ เป็นทีละตัว
(For) spelling	(children)	spell	the word for each letter
Cir: matter	(Actor)	Pr: material	Goal

ภาษาอังกฤษจะ			สำคัญตรงที่ สะกด คำศัพท์ค่ะ
(For) English	(it)	is	Important (for children) to spell a word
Cir: matter	Carrier	Pr: relational: attributive	Circumstantial attribute

หนังสือที่	เรา	สอน	เด็ก
The book	we	teach	students
Goal	Actor	Pr: material	Beneficiary: recipient
		ก็ สัปดาห์ครั้งนึง 2	
(We)	(use)	once a month	
(Actor)	(Pr: material)	Cir: extent	

แล้วก็	เด็ก		จะสนใจภาษาอังกฤษ มากขึ้น
And	children	will be	interested in English more/better
	Senser	Pr: relational: attributive	Circumstantial attribute

	ชอบค่ะ	
(Children)	like	(it)
(Senser)	Pr: mental: emotive	(Phenomenon)

เค้า	จะ enjoy		มาก
They	enjoy	(it)	a lot
Senser	Pr: mental: emotive	(Phenomenon)	Pr: extent

		เล็กไป	เหมือนกันค่ะ
(They)	are	too young	too
(Actor)	Pr: relational: attributive	Attribute	

แต่ว่า ถ้า	เด็ก	ได้รับ	คำแนะนำ	จากคุณครูนะคะ
But if	children	get	the advice	from teachers
	(Actor)	Pr: material	Goal	

เด็กเค้า	ก็จะสามารถทำ		ได้ถูก
they	can do	(it)	right
Actor	Pr: material	(Scope)	Cir: manner

คือ	จะอยู่	ในคำแนะนำของคุณครู	ตลอด
(Children)	will be	under teacher's supervision	all the time
(Carrier)	Pr: relational: attributive	Circumstantial attribute	Cir: extent

	คอยดู	
(I)	look after	(them)
(Actor)	Pr: material	(Goal)

	คอยคุม	
(I)	supervise	(them)
(Actor)	Pr: material	(Goal)

ส่วนมาก		จะสอน		ก่อน
Mainly	(I)	teach	(them)	first
	(Actor)	Pr: material	(Beneficiary: recipient)	Conjunctive adjunct

	เหมือน เป็น	การทบทวนบทเรียนให้	
(it)	is	like revising the lesson	(for children)
Carrier	Pr: relational: attributive	Circumstantial attribute	(Beneficiary: client)

บางเกมส์เนี่ยค่ะ	เด็ก	ไม่สามารถเล่นได้
Some games	children	cannot play
Scope	Actor	Pr: material

แกรมม่า บทสนทนา	ให้	เด็ก	สามารถสนทนา	ได้มากขึ้น
Grammar (and) conversation	enable	children	to communicate	more
Agent	Pr:	Sayer	Pr: verbal	Cir: extent

	ไม่ได้เน้นย้ำให้	เด็ก	สามารถพูดโต้ตอบกันได้ค่ะ
(The tablet)	does not focus on enabling	children	to communicate
(Agent)	Pr:	Sayer	Pr: verbal

ออกเสียง	เด็ก		จะคุ้นชินกับสำเนียงคนไทย ภาษาไทยของครู
(For) pronunciation	children	are	familiar with the Thai accent of teachers
	Carrier	Pr: relational: attributive	Circumstantial attribute

เรา	ฟัง	จากแทปเลต
we	listen	from the tablet
Behaver	Pr: behavioural: near mental	Cir: location

เด็ก	จะเข้าใจ	มากกว่า
Children	will understand	more/better
Senser	Pr: mental: cognitive	Cir: manner

แต่ถ้า	เด็ก	สามารถฟัง	ในนี้
But if	children	can listen	in here (the tablet)
	Behaver	Pr: behavioural: near mental	Cir: location

	เข้าใจ
(They)	understand
(Senser)	Pr: mental: cognitive

เด็ก	สามารถมี	ทักษะการฟังมากขึ้น
children	have	the better listening skills
Carrier	Pr: relational: attributive	Attribute

แล้วถ้า		ออกเสียงตาม	ได้ สำเนียงเค้า
And if	(children)	can pronounce	after their accent
	(Sayer)	Pr: verbal	Cir: manner

แต่เท่าที่		สอนมานะคะ	
But as	I	have taught	(them)
	Actor	Pr: material	(Goal)

เด็ก	ที่	เรียนเร็ว	
Students	who	learn	fast
Senser		Pr: mental: cognitive	Cir: manner

	เค้าจะช่วย	เด็ก ที่เรียนช้า
(they)	will help	those who learn slowly
(Actor)	Pr: material	Goal

เค้า	จะคุย	กันอะค่ะ
They	talk	to each other
Behaver	Pr: behavioural: near verbal	

เขา	จะมี
They	will say
Sayer	Pr: verbal

เรา	ไปถึง	นี้แล้ว
“we	reach	this (page)”
Actor	Pr: material	Goal

เด็ก	ที่	เรียน	เร็ว
Students	who	learn fast	fast
Senser		Pr: mental: cognitive	Cir: manner

	ก็จะช่วย	เพื่อน
(they)	will help	friends
(Actor)	Pr: material	Goal

เด็กเค้าก็	จะ	สนใจมากขึ้น
Children	will become	more interested
Carrier	Pr: relational: attributive	Attribute

เด็ก	ที่	เรียน	ช้า
Children	who	learn	slowly
Senser		Pr: mental: cognitive	Cir: manner

เด็ก	ที่	ไม่ค่อยอยากจะเรียน
those children	who	do not want to study
Actor		Pr: material

เขา	ไม่กล้าถาม	คุณครู
They (children)	dare not ask	the teacher
Sayer	Pr: verbal	Receiver

เค้าก็	จะถาม	เพื่อน
They	will ask	their friends
Sayer	Pr: verbal	Receiver

เด็ก	ได้ฝึก	ทักษะต่างๆ
Children	can practise	various skills
Actor	Pr: material	Scope

เด็ก	จะมีการเขียน	น้อยลง
Children	write	less
Actor	Pr: material	Pr: manner

เพราะ	เด็ก	จะฟัง	แต่ในแทปเลต
Because	children	will listen	to (what is) in the tablet only
	Behaver	Pr: behavioural: near mental	

	ก็จะไม่ได้ใช้	สมุด
(They)	will not use	a notebook.
(Actor)	Pr: material	Goal

เขา	จะเขียนตัวหนังสือ	ไม่ถูก
They	will write	incorrectly
Actor	Pr: material	Cir: manner

Appendix 7 TRANSITIVITY, MOOD, and THEME analysis of teachers' speech

Teacher 1

Phase 1

Sit	properly.
Pr: behavioural: near material	Cir: manner
Imperative: Exclusive	
Theme: Topical	

Are	you	ready?
Pr: relational	Carrier	Attribute
Interrogative : Polar		
Theme: Interpersonal	Theme: Topical	

Teacher Nan	will take	students	to the supermarket
Actor	Pr: material	Goal	Cir: location
Declarative			
Theme: Topical			

We	are going	to the supermarket.
Actor	Pr: material	Cir: location
Declarative		
Theme: Topical		

Today	we	are going	to the supermarket.
Cir: location	Actor	Pr: material	Cir: location
Declarative			
Theme: Topical			

Let's	go	to the supermarket.
	Pr: material	Cir: location
Imperative: inclusive		
Theme		

We	are going (to)	where?
Theme: Topical	Pr: material	Cir: location
Interrogative: Content		
Theme		

Hey	Listen!
	Pr: behavioural: near mental
Imperative: Exclusive	
Theme: Textual	Theme: Topical

Look	at Page one to sixteen!
Pr: behavioural: near mental	Cir: location
Imperative: Exclusive	
Theme: Topical	

Students,	look	at Page 1 to what page?
	Pr: behavioural: near mental	Cir: location
Interrogative: Content		
Theme: Interpersonal	Theme: Topical	

Look
Pr: behavioural: near mental
Imperative: Exclusive
Theme: Topical

and	answer	the questions.
	Pr: material	Goal
	Imperative: Exclusive	
	Theme: Topical	

Students,	look	at Slide 1 to 16
	Pr: behavioural: near mental	Cir: location
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

and	answer	the questions
	Pr: material	Goal
Imperative: Exclusive		
	Theme: Topical	

Students,	turn on	the tablet
	Pr: material	Goal
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

and	go	to Slide 1 to 16 Page 1 to 16
	Pr: material	Cir: location
Imperative: Exclusive		
	Theme: Topical	

We	go	to the supermarket .
Actor	Pr: material	Cir: location
Declarative		
Theme: Topical		

We	will go	to the supermarket.
Actor	Pr: material	Cir: location
Declarative		
Theme: Topical		

And	Teacher Nan (I)	asks	the students.
	Sayer	Pr: verbal	Receiver
Declarative			
Theme: Textual	Theme: Topical		

to look	at Page 1 – 16
Pr: behavioural: near mental	Cir: location

Open (use the tablet)	to what page,	child?
Pr: material	Cir: location	
Imperative	Interrogative: Content	
Theme: Topical		

Then	listen
	Pr: behavioural: near mental
Imperative: Exclusive	
Theme: Textual	Theme: Topical

and	answer	the questions
	Pr: material	Goal
Imperative: Exclusive		
	Theme: Topical	

Listen
Pr: behavioural: near mental
Imperative: Exclusive
Theme: Topical

and	answer	the questions
	Pr: material	Goal
Imperative: Exclusive		
	Theme: Topical	

Teacher Nan (I)	give	(you)	10 minutes.
Actor	Pr: material	(Recipient)	Scope
Declarative			
Theme: Topical			

I	will give	you	10 minutes.
Actor	Pr: material	(Recipient)	Scope
Declarative			
Theme: Topical			

How many minutes	(are	there)?
	Pr: existential	
Interrogative: Content		
Theme: Topical		

Answer	the question.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

Soon	answer	Teacher Nan's questions
	Pr: material	Goal
Imperative: Exclusive		
	Theme: Topical	

which	Teacher Nan	wrote	on the backboard.
Verbiage	Sayer	Pr: verbal	Cir: location

Teacher Nan (I)	give	<u>10 minutes</u> 10 minutes
Actor	Pr: material	Scope
Declarative		
Theme: Topical		

(It)	is not	answering the questions in the tablet.
	Pr: relational	
A misconstrued imperative (Don't answer the questions in the tablet)		

Answer	the questions (on the backboard)
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

Are	you	ready?
Pr: relational	Carrier	Attribute
Interrogative: Polar		
Theme: Interpersonal	Theme: Topical	

Let's	go!
	Pr: material
Imperative: Inclusive	
Theme: Unmarked	

Phase 2

(Read)	Page 1 to 16	first
(Pr: material)	Goal	
Imperative: Exclusive		
(Theme: Topical)		

Then	stop (studying/ reading)
	Pr: material
Imperative: Exclusive	
Theme: Textual	Theme: Topical

It	is not	the game	yet.
Token	Pr: relational	Value	
Declarative			
Theme: Topical			

<u>Finish (studying)?</u>
Pr: material
Interrogative: Polar

Don't play	yet
Pr: material	
Imperative: Exclusive	
Theme: Topical	

Don't play	yet
Pr: material	
Imperative: Exclusive	
Theme: Topical	

Wait.
Pr: material
Imperative: Exclusive
Theme: Topical

Soon	Teacher Nan	will let	(you)	play	later.
	Initiator	Pr:	(Actor)	Pr: material	Cir: location
Declarative					
Theme: Interpersonal	Theme: Topical				

Phase 3

Answer	the questions.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

Answer	the questions.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

At the supermarket,	students (you)	see	(it)	right?
Cir: location	Senser	Pr: mental	(Phenomenon)	
Interrogative: Polar				
Theme: marked	Theme: Topical			

We	already	visited	the supermarket .
Actor		Pr: material	Scope
Declarative			
Theme: Topical			

First question the first question	is	"What can you buy at the supermarket?"
Value	Pr: relational	Token
Declarative		
Theme: Topical		

"What	can	you	buy	at the supermarket?"
Goal		Actor	Pr: material	Cir: location
Interrogative: Content				
Theme: Topical				

Students,	go	to the supermarket.
	Pr: material	Cir: location
Imperative: Exclusive		
	Theme: Topical	

(You)	bought	what	there?
(Actor)	Pr: material	(Goal)	Cir: location
Interrogative: Content			
(Theme: Topical)			

Ok	What else	(are	there)?
	Existent	Pr: existential	
Interrogative: Content			
Theme: Textual	Theme: Topical		

(There	are)	many many things	at the supermarket
	Pr: existential	Existent	Cir: location
Declarative			
(Theme: Topical)			

What	can	you	buy?
Goal		Actor	Pr: material
Interrogative: Content			
Theme: Topical			

And	the students (you)	bought	what?
	Actor	Pr: material	Goal
Interrogative: Content			
Theme: Textual	Theme: Topical		

(Students from) That side too,	(answer).
	Pr: material/verbal
Imperative: Exclusive	
Theme: Interpersonal	

Next	is	Number 2.
Value	Pr: relational	Token
Declarative		
Theme: Topical		

There	are	mother and daughter
	Pr: existential	Existent
Declarative		
Theme		

They	talked	right?
Behaver	Pr: behavioural: near verbal	
Declarative		
Theme: Topical		

Teacher Nan	asked
Sayer	Pr: verbal
Declarative	
Theme: Topical	

"Does	the daughter	go	to supermarket with her mother?"
	Actor	Pr: material	Cir: location
Interrogative: Polar			
Theme: Interpersonal	Theme: Topical		

Teacher Nan	asked
Sayer	Pr: verbal
Declarative	
Theme: Topical	

"Does	the daughter	go	to supermarket with her mother?"
	Actor	Pr: material	Cir: location
Interrogative: Polar			
Theme: Interpersonal	Theme: Topical		

If	(it	is)	yes
	Value	Pr: relational	Token
			Theme: Topical

you	have to say	what?
Sayer	Pr: verbal	Verbiage
Interrogative: Content		

The mother and the daughter	went	to the supermarket.
Actor	Pr: material	Cir: location
Declarative		
Theme: Topical		

What	do	they	want to buy
Goal		Actor	Pr: material
Interrogative: Content			
Theme: Topical			

Mother and Daughter	bought	what?
Actor	Pr: material	Goal
Interrogative: Content		
Theme: Topical		

They	bought	(the ingredients)
Actor	Pr: material	Goal
Declarative		
Theme: Topical		

to make	breakfast and lunch
Pr: material	Goal

Breakfast	is	what?
Token	Pr: relational	value
Interrogative: Content		
Theme: Topical		

What meal	(is)	(it)?
Value	Pr: relational	Token
Interrogative: Content		
Theme: Topical		

Lunch	is	what meal?
Token	Pr: relational	Value
Interrogative: Content		
Theme: Topical		

And	they	want to eat	what	for lunch?
	Actor	Pr: material	Goal	Cir: cause: purpose
Interrogative: Content				
Theme: Textual	Theme: Topical			

(can)	(you)	remember?
	Senser	Pr: mental
Interrogative: Polar		
		Theme: Topical

(You)	remember?
(Senser)	Pr: mental
Interrogative: Polar	
	Theme: Topical

For lunch,	they	ate	what?
Cir: cause: purpose	Actor	Pr: material	Goal
Interrogative: Content			
Theme: Marked	Theme: Topical		

This one,	(we)	will know
Matter	(Senser)	Pr: mental
Declarative		
Theme: Marked		

who	listen	to (what is) inside or not
Behaver	Pr: behavioural	Cir: location

<u>What</u>	<u>do</u>	<u>they</u>	<u>want to eat</u>	<u>for lunch?</u>
Goal		Actor	Pr: material	Cir: cause: purpose
Interrogative: Content				
Theme: Topical				

Mom and daughter	will buy	what to eat for lunch <u>for lunch</u>?
Actor	Pr: material	Goal
Interrogative: Content		
Theme: Topical		

It	is	what?
Token/Carrier	Pr: relational	Value/Attribute
Interrogative: Content		
Theme: Topical		

(It)	(is)	lunch	for lunch for lunch
Carrier	Pr: relational	Attribute	(Cir: cause: purpose)
Declarative			
(Theme: Topical)			

(it)	is	a long thin line
Carrier	Pr: relational	Attribute
Declarative		
Theme: Topical		

Phase 4

OK next	next	Students,	play	game
			Pr: material	Scope
Imperative: Exclusive				
Theme: Textual	Theme: Textual	Theme: Interpersonal	Theme: Topical	

and	listen	to vocabulary
	Pr: behavioural: near mental	Cir: location
Imperative: Exclusive		
Theme: Textual	Theme: Topical	

Teacher Nan (I)	will ask	(you)
Initiator	Pr:	(Actor)
Declarative		
Theme: Topical		

to put	it	on the backboard.
Pr: material	Goal	Cir: location

Teacher Nan	asks	(you)
Sayer	Pr: verbal	Receiver
Declarative		
Theme: Topical		

to go	to page 16 to 49.
Pr: material	Cir: location

Look	until Page 49
Pr: behavioural: near mental	Cir: extent
Imperative: Exclusive	
Theme: Topical	

Many people	listened
Behaver	Pr: behavioural: near mental
Declarative	
Theme: Topical	

and	took	notes
	Pr: material	Scope
Declarative		

(That)	(is)	very good.
(Carrier)	(Pr: relational)	Attribute
Declarative		
(Theme: Topical)		

but	many people	listened
	Behaver	Pr: behavioural: near mental
Declarative		
Theme: Textual	Theme: Topical	

but	did not take	notes
	Pr: material	Scope
Declarative		

(They)	will forget
	Pr: mental
Declarative	
(Theme)	

Soon	Teacher Nan	will ask	(you)
	Sayer	Pr: verbal	(Receiver)
Declarative			
Theme: Interpersonal	Theme: Topical		

to do	mind-mapping	of what you see (learn) in the lesson
Pr: material	Scope: process	Cir: matter

(Have)	(you)	finished (studying)?
		Pr: material
Interrogative: Polar		
(Theme: Interpersonal)	(Theme: Topical)	

If	(you)	finish,
		Pr: material
		(Theme: Topical)

sit	still.
Pr: behavioural: near material	Cir: manner
Imperative: Exclusive	
Theme: Topical	

or	play	game.
	Pr: material	Scope
Imperative: Exclusive		
	Theme: Topical	

Phase 5

Those who finish page 40,	draw	your own supermarket
	Pr: material	Goal
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

(and) see	there is what inside.
Pr: mental	Phenomenon
Imperative: Exclusive	
Theme: Topical	

This one	Teacher Nan	roughly	drew	as a model
Goal	Behaver	Cir: manner	Pr: material	Ci: role
Declarative				
Theme: Topical: Marked				

There	are	vocabulary and pictures
	Pr: existential	Existent
Declarative		
Theme: Topical		

Bring	out	your notebook
Pr: material	Cir: location	Goal
Imperative: Exclusive		
Theme: Topical		

and	write	the date.
	Pr: verbal	Verbiage
Imperative: Exclusive		
Theme: Textual	Theme: Topical	

Those who finish visiting the supermarket,	Teacher Nan	ask	you
	Sayer	Pr: verbal	Receiver
Declarative			
Theme: Interpersonal	Theme: Topical		

to create	your own supermarket.
Pr: material	Goal

There	are	what?
	Pr: existential	Existent
Interrogative: Content		
Theme		

Draw	on a book.
Pr: material	Cir: location
Imperative: Exclusive	
Theme: Topical	

Turn off	the tablet	first.
Pr: material	Goal	
Imperative: Exclusive		
Theme: Topical		

Turn off	the tablet	first
Pr: material	Goal	
Imperative: Exclusive		
Theme: Topical		

in order	to know	what students get (learn) from the tablet.
	Pr: mental	Phenomenon

Look	until Page 49.
Pr: behavioural: near mental	Cir: extent
Imperative: Exclusive	
Theme: Topical	

(For) those who finish drawing what you get (learn),	students (you)	saw	what	in the supermarket?
	Senser	Pr: mental	Phenomenon	Cir: location
Interrogative: Content				
Theme: Interpersonal	Theme: Topical			

We	already	visited	the supermarket.
Actor		Pr: material	Scope
Declarative			
Theme: Topical			

Draw	a picture.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

We	visited	the supermarket.
Actor	Pr: material	Scope
Declarative		
Theme: Topical		

There	are	what?
	Pr: existential	Existent
Interrogative: Content		
Theme		

Write (down)	vocabulary	too.
Pr: verbal	Verbiage	
Imperative: Exclusive		
Theme: Topical		

Then	we	will take	Mom	to the supermarket.
	Actor	Pr: material	Goal	Cir: location
Declarative				
Theme: Textual	Theme: Topical			

Students,	put away	the tablet.
	Pr: material	Goal
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

Before	putting	the tablet	away,
	Pr: material	Goal	Cir: location

we	must turn off	the tablet	first.
Actor	Pr: material	Goal	
Declarative			
Theme: Topical			

Turn ...off	it	first
Pr: material	Goal	
Imperative: Exclusive		
Theme: Topical		

If	you	have not finished watching,
		Pr: behavioural: near mental
Theme: Textual	Theme: Topical	

finish watching	First.
Pr: behavioural: near mental	
Imperative: Exclusive	
Theme: Topical	

Turn off	(it)
Pr: material	(Goal)
Imperative: Exclusive	
Theme: Topical	

until	“Will you turn off the tablet?”	appears.
	Actor	Pr: material

Then	click	OK.
	Pr: material	Goal
Imperative: Exclusive		
Theme: Textual	Theme: Topical	

Turn off	the tablet .
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

and	see (consider)
	Pr: mental
Imperative: Exclusive	
Theme: Textual	Theme: Topical

whether	each of your supermarket	is	similar.
	Carrier	Pr: relational	Attribute

Phase 6

Baitong	has already started to get (draw)	the supermarket.
	Pr: material	Goal
Declarative		
Theme: Topical		

Those who finish (reading) Page 49 ,	turn off	the tablet
	Pr: material	Goal
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

Students,	put ...away	it	nicely,	child.
	Pr: material	Goal	Cir: manner	
Imperative: Exclusive				
Theme: Interpersonal	Theme: Topical			

Those whose tablet is running out of battery,	turn off	(it)	first.
	Pr: material	(Goal)	
Imperative: Exclusive			
Theme: Interpersonal	Theme: Topical		

Supermarket,	(you)	have to finish (studying).
Goal	(Actor)	Pr: material
Imperative: Exclusive		
Theme: Topical: Marked		

Teacher Nan's supermarket	has	a cart	first.
Carrier	Pr: relational	Attribute	
Declarative			
Theme: Topical			

Apart from that,	Students,	add	it	later.
		Pr: material	Goal	Cir: location
Imperative				
Theme: Textual	Theme: Interpersonal	Theme: Topical		

Teacher Nan	cannot come up with.	an idea
Senser	Pr: mental	Phenomenon
Declarative		
Theme: Topical		

Try to bring	things	into the supermarket.
Pr: material	Goal	Cir: location
Imperative: Exclusive		
Theme: Topical		

Phase 7

Ok	(there	are)	five minutes left.
		Pr: existential	Existent
Declarative			
Theme: Textual	Theme: Topical		

There	are	five minutes left.
	Pr: existential	Existent
Declarative		
Theme: Topical		

We	will put away	the tablet	first.
Actor	Pr: material	Goal	
Declarative			
Theme: Topical			

Those who finish watching,	draw	their own supermarket.
	Pr: material	Goal
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

Turn off	the tablet
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

and	put	it	in the bag.	first
	Pr: material	Goal	Cir: location	
Imperative: Exclusive				
	Theme: Topical			

Put	it	in a bag
Pr: material	Goal	Cir: location
Imperative: Exclusive		
Theme: Topical		

and	send (hand over)	it	to the back.
	Pr: material	Goal	Cir: location
Imperative: Exclusive			
	Theme: Topical		

Send (hand over)	it.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

Don't stand,	child.
Pr: behavioural: near material	
Imperative: Exclusive	
Theme: Topical	

Send (hand over)	it	to Bam.
Pr: material	Goal	Recipient
Imperative: Exclusive		

Theme: Topical	
Send (hand over)	it.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

Send (hand over)	it	to your friend.
Pr: material	Goal	Recipient
Imperative: Exclusive		
Theme: Topical		

Send (hand over)	the tablet	to the back
Pr: material	Goal	Cir: location
Imperative: Exclusive		
Theme: Topical		

for	Bam	to put…away	(it).
	Actor	Pr: material	(Goal)
	Theme: Topical		

Ok	Those who put away the tablet,	look at (consider)	their own supermarket.
		Pr: mental	Phenomenon
Imperative: Exclusive			
Theme: Textual	Theme: Interpersonal	Theme: Topical	

Show	it	to Teacher Nan	too.
Pr: material	Goal	Recipient	
Imperative: Exclusive			
Theme: Topical			

(The group) at the door	is	very good.
Carrier	Pr: relational	Attribute
Declarative		
Theme: Topical		

(They)	already	put away	the bag.
(Actor)		Pr: material	Goal
Declarative			
Theme: Topical			

Teacher Nan (I)	give	(you)	five more marks.
Actor	Pr: material	Recipient	Goal
Declarative			
Theme: Topical			

(The groups) in the middle and at the winder (window?)	have not put away	the bags	yet.
Actor	Pr: material	Goal	
Declarative			
Theme: Topical			

Teacher 2

Phase 1

Today	we	will use	the tablet.
Cir: location	Actor	Pr: material	Goal
Declarative			
Theme: Topical: Marked			

(Do)	students (you)	have	the earphone?
	Carrier	Pr: relational	Attribute
Interrogative: Polar			
(Theme: Interpersonal)	Theme: Topical		

Wear	only one side of the earphone.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

Don’t wear	both sides of the earphone.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

Because if	students (you)	wear	both sides of the earphone,
	Actor	Pr: material	Goal
Declarative			
Theme: Textual	Theme: Topical		

students (you)	will not hear	what the teacher (I) say.
	Pr: mental	Phenomenon
Declarative		
Theme: Topical		

(I)	told	(you)
Sayer	Pr: verbal	(Recipient)
Declarative		
	Theme: Topical	

to wear	only one side of the earphone.
Pr: material	Goal

Ok	(Do)	(you)	understand?
			Pr: mental
Interrogative: Polar			
Theme: Textual	(Theme: Interpersonal)	(Theme: Topical)	

Wear	only one side of the earphone.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

Ok	Turn on	(the tablet).
	Pr: material	Goal
Imperative: Exclusive		
Theme: Textual	Theme: Topical	

Who else	does not have	an earphone?
Carrier	Pr: relational	Attribute
Interrogative: Content		
Theme: Topical		

(You)	must have	(it)
(Carrier)	Pr: relational	(Attribute)
Imperative: Exclusive		
	Theme: Topical	

(You)	must have	the earphone
(Carrier)	Pr: relational	Attribute
Imperative: Exclusive		
	Theme: Topical	

Turn on	(the tablet).
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

Press	it	long.
Pr: material	Goal	Cir: manner
Imperative: Exclusive		
Theme: Topical		

It	will turn ... on.	by itself.
Actor	Pr: material	Cir: manner
Declarative		
Theme: Topical		

(Do)	you	understand?
	Senser	Pr: Mental
Interrogative: Polar		
(Theme: Interpersonal)	Theme: Topical	

Can	(you)	do	(it)?
	(Actor)	Pr: material	(Goal)
Interrogative: Polar			
Theme: Interpersonal	Theme: Topical		

Follow	me	where to go (navigate).
Pr: material	Goal	Cir: location
Imperative: Exclusive		
Theme: Topical		

Wear	your earphone.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

Who	didn't wear	the earphone?
Actor	Pr: material	Goal
Interrogative: Content		
Theme: Topical		

Everyone,	don't make	loud noise.
	Pr: material	Goal
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

Because	(we)	must be	Quiet.
	(Carrier)	Pr: relational	Attribute
Declarative			
Theme: Textual	(Theme: Topical)		

Because	we	have to listen	to what (it is) said.
	Behaver	Pr: behavioural: near mental	Cir: location
Declarative			
Theme: Textual	Theme: Topical		

Ok	Unlock.
	Pr: material
Imperative: Exclusive	
Theme: Textual	Theme: Topical

(Have)	(you)	already	unlocked	(the tablet)?
	Actor		Pr: material	Goal
Interrogative: Polar				
(Theme: Interpersonal)	(Theme: Topical)			

Unlock .
Pr: material
Imperative: Exclusive
Theme: Topical

and	you	will see	this picture.
	Senser	Pr: mental	Phenomenon
Declarative			
Theme: Textual	Theme: Topical		

(Can)	(you)	see	this picture?
	(Senser)	Pr: mental	Phenomenon
Interrogative: Polar			
(Theme: Interpersonal)	(Theme: Topical)		

(Can)	(you)	see?
		Pr: mental
Interrogative: Polar		
(Theme: Interpersonal)	(Theme: Topical)	

(Have)	(you)	seen	(it)?
	(Senser)	Pr: mental	(Phenomenon)
Interrogative: Polar			
(Theme: Interpersonal)	(Theme: Topical)		

(Have)	(you)	seen	(it)?
	(Senser)	Pr: mental	(Phenomenon)
Interrogative: Polar			
(Theme: Interpersonal)	(Theme: Topical)		

After that,	where	to unlock?
	Cir: location	Pr: material
Interrogative: Content		
Theme: Textual	Theme: Topical	

Where	to unlock?
Cir: location	Pr: material
Interrogative: Content	
Theme: Topical	

Press	on the dots, six dots
Pr: material	Cir: location
Imperative: Exclusive	
Theme: Topical	

(Can)	(you)	see?
	(Senser)	Pr: mental
Interrogative: Polar		
(Theme: Interpersonal)	(Theme: Topical)	

Then,	there	will be	this picture.
		Pr: existential	Existent
Declarative			
Theme: Textual	Theme: Topical		

(Can)	(you)	see,	child?
	(Senser)	Pr: mental	
Interrogative: Polar			
(Theme: Interpersonal)	Theme: Topical		

Then,	go	to the boy (picture).
	Pr: material	Cir: location
Imperative: Exclusive		
Theme: Textual	Theme: Topical	

(Can)	(you)	see	the boy	here?
	(Senser)	Pr: mental	Phenomenon	Cir: location
Interrogative: Polar				
(Theme: Interpersonal)	(Theme: Topical)			

(Have)	(you)	seen	(it)?
	(Senser)	Pr: mental	(Phenomenon)
Interrogative: Polar			
(Theme: Interpersonal)	(Theme: Topical)		

Who	hasn't (seen)?
Senser	Pr: mental
Interrogative: Polar	
Theme: Topical	

Those who have not seen (it),	raise	your hand,	child.
	Pr: material	Goal	
Imperative: Exclusive			
Theme: Interpersonal	Theme: Topical		

(Have)	(you)	seen	(it)?
	(Senser)	Pr: mental	(Phenomenon)
Imperative: Exclusive			
(Theme: Interpersonal)	(Theme: Topical)		

This boy…	(have)	(you)	seen	it?
Phenomenon		(Senser)	Pr: mental	(Phenomenon)
Interrogative: Polar				
Theme: Marked			Theme: Topical	

(Have)	(you)	seen	it?
	(Senser)	Pr: mental	Phenomenon
Interrogative: Polar			
(Theme: Interpersonal)	(Theme: Topical)		

(Have)	(you)	seen	it?
	(Senser)	Pr: mental	Phenomenon
Interrogative: Polar			
(Theme: Interpersonal)	(Theme: Topical)		

(Have)	(you)	seen	it?
	(Senser)	Pr: mental	Phenomenon
Interrogative: Polar			
(Theme: Interpersonal)	(Theme: Topical)		

Ok.	Who	has not seen	it?
	Senser	Pr: mental	Phenomenon
Interrogative: Content			
Theme: Textual	Theme: Topical		

Then,	there	will be	music	too.
		Pr: existential	Existent	
Declarative				
Theme: Textual	Theme: Topical			

(Can)	(you)	see	it?
	(Senser)	Pr: mental	Phenomenon
Interrogative: Polar			
(Theme: Interpersonal)	(Theme: Topical)		

We	will see
Senser	Pr: mental
Declarative	
Theme: Topical	

there	is	electronic material for Grade 2 students.
	Pr: existential	Existent
Declarative		
Theme: Topical		

There	are	English, Thai, Social.
	Pr: existential	Existent
	Declarative	
Theme: Topical		

Students, (you)	go	to the second one
	Pr: material	Cir: location
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

Press	it.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

Press	it.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

(Have)	(you)	pressed	(it)?
	Actor	Pr: material	Goal
Interrogative: Polar			
(Theme: Interpersonal)	(Theme: Topical)		

(That)	(is)	very good!
Carrier	(Pr: relational)	Attribute
Declarative		
(Theme: Topical)		

Next	go	to the first one.
	Pr: material	Cir: location
Imperative: Exclusive		
Theme: Textual	Theme: Topical	

Choose (Press)	Grade 2 English.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

Go	to Hello.
Pr: material	Cir: location
Imperative: Exclusive	
Theme: Topical	

Press	Hello.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

(You)	will find	it.
(Actor)	Pr: material	Goal
Declarative		
(Theme: Topical)		

After that,	there	is	the downloading
		Pr: existential	Existent
Declarative			
Theme: Textual	Theme: Topical		

Wait
Pr: material
Imperative: Exclusive
Theme: Topical

until	it	is	finished.
	Carrier	Pr: relational	Attribute
Declarative			
Theme: Textual	Theme: Topical		

After that,	go	to this picture.
	Pr: material	Cir: location
Imperative: Exclusive		
Theme: Textual	Theme: Topical	

There	is	the picture	on the right.
	Pr: existential	Existent	Cir: location
Declarative			
Theme: Topical			

(Can)	(you)	see	(it)?
	(Senser)	Pr: mental	(Phenomenon)
Interrogative: Polar			
(Theme: Interpersonal)	(Theme: Topical)		

(Have)	students (you)	finished (studying)?
	Actor	Pr: material
Interrogative: Polar		
(Theme: Interpersonal)	Theme: Topical	

(Have)	(you)	pressed	(it)	yet?
	(Actor)	Pr: material	(Goal)	
Interrogative: Polar				
(Theme: Interpersonal)	(Theme: Topical)			

Students,	listen	to them/these.
	Pr: behavioural: near mental	Cir: location
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

Students,	listen	to them	continually.
	Pr: behavioural: near mental	Cir: location	Cir: extent/manner
Imperative: Exclusive			
Theme: Interpersonal	Theme: Topical		

What	is	your name?
Token	Pr: relational	Value
Interrogative: Content		
Theme: Topical		

Then,	read
	Pr: material
Imperative: Exclusive	
Theme: Textual	Theme: Topical

and	speak	after (the model)
	Pr: behavioural: near verbal	Cir: location
Imperative: Exclusive		
Theme: Textual	Theme: Topical	

Don' t come	out (to the front).
Pr: material	Cir: location
Imperative: Exclusive	
Theme: Topical	

Read	after the model
Pr: material	Cir: location
Imperative: Exclusive	
Theme: Topical	

Students (you)	want to go	back.
Actor	Pr: material	Cir: location
Declarative		
Theme: Topical		

Students (you)	can click	where	child?
Actor	Pr: material	Cir: location	
Interrogative: Content			
Theme: Topical			

Students (you)	can click
Actor	Pr: material
Declarative	
Theme: Topical	

to come back	on the other side too.
Pr: material	Cir: location

Then,	speak	after.
	Pr: behavioural: near verbal	Cir: location
Imperative: Exclusive		
Theme: Textual	Theme: Topical	

Try	it (speaking),	child.
Pr: behavioural: near verbal	Behaviour	
Imperative: Exclusive		
Theme: Topical		

Try	it (speaking),	child.
Pr: behavioural: near verbal	Behaviour	
Imperative: Exclusive		
Theme: Topical		

(Can)	(you)	speak	after?
	(Behaver)	Pr: behavioural: near verbal	Cir: location
Interrogative: Polar			
(Theme: Interpersonal)	(Theme: Topical)		

Students,	wear	the earphone.
	Pr: material	Goal
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

Students,	speak	after.
	Pr: behavioural: near verbal	Cir: location
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

(Use)	only one side of earphone.
Pr: material	Goal
Imperative: Exclusive	
(Theme: Topical)	

Don’t use	both.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

Ok.	After	students (you)	listen
		Behaver	Pr: behavioural: near mental
Declarative			
Theme: Textual		Theme: Topical	

and	read.
	Pr: material
Declarative	

students (you)	press	1 2 3
Actor	Pr: material	Goal
Declarative		
Theme: Topical		

to go.	back
Pr: material	Cir: location

Students ,	find	next section Good Morning.
	Pr: material	Goal
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

Students,	look	at the second one Good morning.
	Pr: behavioural: near mental	Cir: location
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

(Can)	(you)	see	(it)?
	(Senser)	Pr: mental	(Phenomenon)
Interrogative: Polar			
(Theme: Interpersonal)	(Theme: Topical)		

Press	Good morning.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

Then	wait	until	it	is finished/done.
	Pr: material			Pr: material
Imperative: Exclusive				
Theme: Textual	Theme: Topical			

until	it	is.	finished/done
	Carrier	Pr: relational	Attribute
Theme: Textual	Theme: Topical		

And	it	will come	out.
		Pr: material	Cir: location
Declarative			
Theme: Textual	Theme: Topical		

It	is downloading.
Actor	Pr: material
Declarative	
Theme	

Then	Students,	press	the red button.
		Pr: material	Goal
Imperative: Exclusive			
Theme: Textual	Theme: Interpersonal	Theme: Topical	

(Can)	(you)	see	it?
	(Senser)	Pr: mental	Phenomenon
Interrogative: Polar			
(Theme: Interpersonal)	(Theme: Topical)		

After	pressing,
	Pr: material

press
Pr: material
Imperative: Exclusive
Theme: Topical

and	listen.
	Pr: behavioural: near mental
Imperative: Exclusive	
Theme: Textual	Theme: Topical

Then	speak	after	softly.
	Pr: behavioural: near verbal	Cir: location	Cir: manner
Imperative: Exclusive			
Theme: Textual	Theme: Topical		
Speak	after	softly	child.
Pr: behavioural: near verbal	Cir: location	Cir: manner	
Imperative: Exclusive			
Theme: Topical			

Listen	to the story	carefully
Pr: behavioural: near mental	Cir: location	Cir: manner
Imperative: Exclusive		
Theme: Topical		

and	speak	after	softly.
	Pr: behavioural: near verbal	Cir: location	Cir: manner
Imperative: Exclusive			
Theme: Textual	Theme: Topical		

(Can)	(you)	see?
	(Senser)	Pr: mental
Interrogative: Polar		
(Theme: Interpersonal)	(Theme: Topical)	

(You)	have heard	it	right?
(Senser)	Pr: mental	Phenomenon	
Declarative			
(Theme: Topical)			

Then	there	will be	vocabulary.
		Pr: existential	Existent
Declarative			
Theme: Textual	Theme: Topical		

That	is	vocabulary.
Token	Pr: relational	Value
Declarative		
Theme: Topical		

Students,	look (explore)	at vocabulary.
	Pr: behavioural: near mental	Cir: location
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

Listen
Pr: behavioural: near mental
Imperative: Exclusive
Theme: Topical

and	practise	at home.	frequently
	Pr: material	Cir: location	Cir: extent
Imperative: Exclusive			
Theme: Textual	Theme: Topical		

Then	students (you)	will be	very good (skillful).
	Carrier	Pr: relational	Attribute
Declarative			
Theme: Textual	Theme: Topical		

Next	the teacher (I)	will ask	students (you)
	Sayer	Pr: verbal	Receiver
Declarative			
Theme: Textual	Theme: Topical		

to press	the third one.
Pr: material	Goal

Go	back.
Pr: material	Cir: location
Imperative: Exclusive	
Theme: Topical	

Students,	find	the word fruit.
	Pr: material	Goal
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

We	will look	at the topic of fruit.
	Pr: behavioural: near mental	Cir: location
Declarative		
Theme: Topical		

Go	back to Fruit
Pr: material	Cir: location
Imperative: Exclusive	
Theme: Topical	

Slide.
Pr: material
Imperative: Exclusive
Theme: Topical

(You)	can slide.
(Actor)	Pr: material
Declarative	
	Theme: Topical

Those who can find it,	raise	your hand.
	Pr: material	Goal
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

(That)	(is)	very good.
(Carrier)	(Pr: relational)	Attribute
Declarative		
(Theme: Topical)		

Press
Pr: material
Imperative: Exclusive
Theme: Topical

to get	in
Pr: material	Cir: location

The teacher (I)	found	it	too.
Actor	Pr: material	Goal	
Declarative			
Theme: Topical			

Don’t do	anything.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

Wait
Pr: material
Imperative: Exclusive
Theme: Topical

until	it	downloads
	Actor	Pr: material
Theme: Textual	Theme: Topical	

Wait
Pr: material
Imperative: Exclusive
Theme: Topical

until	it	goes	to the end.
	Actor	Pr: material	Cir: location
Imperative: Exclusive			
Theme: Textual	Theme: Topical		

Then	we	press	on the right.
	Actor	Pr: material	Cir: location
Declarative			
Theme: Textual	Theme: Topical		

Ok.	There	will be	a picture of home.
		Pr: existential	Existent
	Declarative		
Theme: Textual	Theme: Topical		

See (explore)	what fruit	this house	has.
Pr: mental	Phenomenon		
Imperative: Exclusive			
Theme: Topical			

Then,	listen.
	Pr: behavioural: near mental
Imperative: Exclusive	
Theme: Textual	Theme: Topical

Click
Pr: material
Imperative: Exclusive
Theme: Topical

and	listen	by yourselves.
	Pr: behavioural: near mental	Cir: manner/accompaniment
	Imperative: Exclusive	
Theme: Textual	Theme: Topical	

(Can)	(students/you)	do (click and listen)	it	repeatedly and often?
	(Actor)	Pr: material	Goal	Cir: extent
Interrogative: Polar				
Theme: Interpersonal	(Theme: Topical)			

(Can)	(you)	do (click and listen)	it?
	(Actor)	Pr: material	Goal
Interrogative: Polar			
(Theme: Interpersonal)	(Theme: Topical)		

Try going	back
Pr: material	Cir: location
Imperative: Exclusive	
Theme: Topical	

and	press	it	again.
	Pr: material	Goal	
Imperative: Exclusive			
Theme: Textual	Theme: Topical		

We	will be able to remember
Senser	Pr: mental
Declarative	
Theme: Topical	

how	we	pronounce	this vocabulary.
Cir: manner	Sayer	Pr: verbal	Verbiage
Declarative			
Theme: Topical			

Try	it	Child,	for example an apple.
Pr: material	Goal		Matter
Imperative: Exclusive			
Theme: Topical			

Can	(you)	do (go back and press it)?
		Pr: material
Interrogative: Polar		
Theme: Interpersonal	(Theme: Topical)	

Ok.	Can	(you)	see?
			Pr: mental
Interrogative: Polar			
	Theme: Interpersonal	(Theme: Topical)	

Can	(you)	do (go back and press it)	(it)	child?
	(Actor)	Pr: material	(Goal)	
Interrogative: Polar				
Theme:	(Theme:			

Interpersonal	Topical)			

If	(you)	finish	(it),
	(Actor)	Pr: material	(Goal)
Theme: Textual	(Theme: Topical)		

next	press	(it).
	Pr: material	(Goal)
Imperative: Exclusive		
Theme: Textual	Theme: Topical	

Press.
Pr: material
Imperative: Exclusive
Theme: Topical

Students,	(do)	(you)	know	where to press?
		(Senser)	Pr: mental	Phenomenon
Interrogative: Polar				
Theme: Interpersonal	(Theme: Interpersonal)	(Theme: Topical)		

(It)	(is)	at the picture of heart.
Carrier	Pr: relational	Attribute/Location
Declarative		

(Theme: Topical)		

The arrow	points	to that way.
Carrier	Pr: relational: circumstantial	Attribute/Location
Declarative		
Theme: Topical		

Next word	is	what?
Value	Pr: relational	Token
Interrogative: Content		
Theme: Topical		

Students,	press	(it)	many times.
	Pr: material	(Goal)	Cir: extent
Imperative: Exclusive			
Theme: Interpersonal	Theme: Topical		

if	(you)	cannot press	it,	child
	(Actor)	Pr: material	Goal	
Theme: Textual	(Theme: Topical)			

can	(you)	do	(it)?
	(Actor)	Pr: material	(Goal)
Interrogative: Polar			
Theme: Interpersonal	Theme: Topical		

Who	cannot find	the word Fruit?
Actor	Pr: material	Goal
Interrogative: Content		
Theme: Topical		

(Have)	(you)	seen	it?
	(Senser)	Pr: mental	Phenomenon
Interrogative: Polar			
(Theme: Interpersonal)	(Theme: Topical)		

Then,	students (you)	speak	after.
	Behaver	Pr: behavioural: near verbal	Cir: location
Imperative: Exclusive			
Theme: Textual	Theme: Topical		

Students (you)	must speak after,	child.
Behaver	Pr: behavioural: near verbal	
Declarative		
Theme: Topical		

Speak	after	shortly (and) softly
Pr: behavioural: near verbal	Cir: location	Cir: manner
Imperative: Exclusive		
Theme: Topical		

Then	press.
	Pr: material
Imperative: Exclusive	
Theme: Textual	Theme: Topical

Then	students (you)	wear	only one side of the earphone.
	Actor	Pr: material	Goal
Declarative			
Theme: Textual	Theme: Topical		

Can	(you)	do (wear)	(it)?
	(Actor)	Pr: material	(Goal)
Interrogative: Polar			
Theme: Interpersonal	(Theme: Topical)		

(That)	(is)	very good.
(Carrier)	(Pr: relational)	Attribute
Declarative		
(Theme: Topical)		

Then	students	look	at each type of fruit.
		Pr: behavioural: near mental	Cir: location
Imperative: Exclusive			
Theme: Textual	Theme: Interpersonal	Theme: Topical	

Look (explore)	at each type of fruit.
Pr: behavioural: near mental	Cir: location
Imperative: Exclusive	
Theme: Topical	

Then	speak	after
	Pr: behavioural: near verbal	Cir: location
Imperative: Exclusive		
Theme: Textual	Theme: Topical	

and	remember.
	Pr: mental
Imperative: Exclusive	
Theme: Textual	Theme: Topical

Speak	after
Pr: behavioural: near mental	Cir: location
Imperative: Exclusive	
Theme: Topical	

and	remember.
	Pr: mental
Imperative: Exclusive	
Theme: Textual	Theme: Topical

Next word	students (you)	click.
Goal	Actor	Pr: material
Declarative		
Theme: Topical: Marked		

Sometimes,	(you)	have to press	many times.
		Pr: material	Cir: extent
Declarative			
Theme: Interpersonal	(Theme: Topical)		

Today,	what we are going to do (study)	is	“Hello” “Fruits” “Good morning” “Month”
Cir: location	Value	Pr: relational	Token
Declarative			
Theme: Topical			

Today	we	are going to study	four topics.
Cir: location	Actor	Pr: material	Goal
Declarative			
Theme: Topical			

Ok	Start (exploring)	again.
	Pr: material	
Imperative: Exclusive		
Theme: Textual	Theme: Topical	

Everyone,	press	Hello.
	Pr: material	Goal
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

Go	back to the third button,	child.
Pr: material	Cir: location	
Imperative: Exclusive		
Theme: Topical		

Press	Hello	again.
Pr: material	Goal	
Imperative: Exclusive		
Theme: Topical		

Wait
Pr: material
Imperative: Exclusive
Theme: Topical

until	it	is downloaded.
	Actor	Pr: material
Theme: Textual	Theme: Topical	

and	listen.
	Pr: behavioural: near mental
Imperative: Exclusive	
Theme: Textual	Theme: Topical

Who	cannot do	(it)?
Actor	Pr: material	(Goal)
Interrogative: Content		
Theme: Topical		

Listen
Pr: behavioural: near mental
Imperative: Exclusive
Theme: Topical

and	read.	after
	Pr: material	Cir: location
Imperative: Exclusive		
Theme: Textual	Theme: Topical	

Speak	after.
Pr: behavioural: verbal	Cir: location
Imperative: Exclusive	
Theme: Topical	

Look (explore)	in the tablet
Pr: behavioural: near mental	Cir: location
Imperative: Exclusive	
Theme: Topical	

and	speak	after.
	Pr: behavioural: near verbal	Cir: location
Imperative: Exclusive		
Theme: Textual	Theme: Topical	

Find	Month.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

Find	(it).
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

Those who cannot find it,	tell	me.
	Pr: verbal	Receiver
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

We	will study	“Hello” “Fruits” “Good morning” “Month”
Actor	Pr: material	Goal
Declarative		
Theme: Topical		

Who	can’t remember?
Senser	Pr: mental
Interrogative: Content	
Theme: Topical	

Phase 2

(Is)	(it)	fun,	child?
(Pr: relational)	(Carrier)	Attribute	
Interrogative: Polar			
Theme: Interpersonal	Theme: Topical		

(Is)	(it)	fun?
(Pr: relational)	(Carrier)	Attribute
Interrogative: Polar		
Theme: Interpersonal	Theme: Topical	

(Is)	(it)	interesting?
(Pr: relational)	(Carrier)	Attribute
Interrogative: Polar		
Theme: Interpersonal	Theme: Topical	

When	(you)	go	back home,
	(Actor)	Pr: material	Cir: location
-			
Theme: Textual	(Theme: Topical)		

This one	students (you)	take	home	right?
	Actor	Pr: material	Cir: location	
Declarative				
Theme: Topical: Marked				

Students,	take	it
	Pr: material	Goal
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

to do.
Pr: material

The teacher (I)	gave	(you)	the homework.
Actor	Pr: material	Recipient	Goal
Declarative			
Theme: Topical			

There	are	four topics.
	Pr: existential	Existent
Declarative		
Theme: Topical		

There	are	four topics.
	Pr: existential	Existent
Declarative		
Theme		

Next time	we	will answer.
	Actor	Pr: material
Declarative		
Theme: Textual	Theme: Topical	

The teacher (I)	will have	new questions
Carrier	Pr: relational	Attribute

Declarative		
Theme: Topical		

(for you)	to answer	again.
	Pr: material	

Those who finish (it),	raise	your hand.
	Pr: material	Goal
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

Those who haven't (finished),	(it)	(is)	alright,	child.
	Carrier	Pr: relational	attribute	
Declarative				
Theme: Interpersonal	(Theme: Topical)			

Continue (studying).
Pr: material
Imperative: Exclusive
Theme: Topical

Hello	means	what?
Token	Pr: relational	value
Interrogative: Content		
Theme: Topical		

The teacher (I)	have already taught	(you)
Actor	Pr: material	(Goal)
Declarative		
Theme: Topical		

Who	can find	it?
Actor	Pr: material	Goal
Interrogative: Content		
Theme: Topical		

Who	cannot (find)	(it)?
Actor	Pr: material	Goal
Interrogative: Content		
Theme: Topical		

(That)	(is)	very good.
(Carrier)	(Pr: relational)	Attribute
Declarative		
(Theme: Topical)		

Find,
Pr: material
Imperative: Exclusive
Theme: Topical

listen,
Pr: behavioural: near mental
Imperative: Exclusive
Theme: Topical

speak	after
Pr: behavioural: near verbal	Cir: location
Imperative: Exclusive	
Theme: Topical	

and	remember.
	Pr: mental
Imperative: Exclusive	
Theme: Textual	Theme: Topical

Find,
Pr: material
Imperative: Exclusive
Theme: Topical

listen,
Pr: behavioural: near mental
Imperative: Exclusive
Theme: Topical

speak	after
Pr: behavioural: near verbal	Cir: location
Imperative: Exclusive	
Theme: Topical	

and	remember.
	Pr: mental
Imperative: Exclusive	
Theme: Textual	Theme: Topical

Can	(you)	do?
		Pr: material
Interrogative: Polar		
Theme: Interpersonal	(Theme: Topical)	

Who	don't understand?
Senser	Pr: mental
Interrogative: Content	
Theme: Topical	

Who	don't understand?
Senser	Pr: mental
Interrogative: Content	
Theme: Topical	

Students,	listen	to the teacher.
	Pr: behavioural: near mental	Cir: location
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

There	will be	exercise.
	Pr: existential	Existent
Declarative		
Theme: Topical		

Can	(you)	see	it?
	(Senser)	Pr: mental	(Phenomenon)
Interrogative: Polar			
Theme: Interpersonal	Theme: Topical		

After the vocabulary page,	fill in/choose	the right one,	child.
Cir: location	Pr: material	Goal	
Imperative: Exclusive			
Theme: Topical: marked			

Try (choosing).
Pr: material
Imperative: Exclusive
Theme: Topical

Who	would be	good (skillful)?
Carrier	Pr: relational	Attribute
Interrogative: Content		
Theme: Topical		

Try (choosing).
Pr: material
Imperative: Exclusive
Theme: Topical

(You)	can do (choose)	(it).
(Actor)	Pr: material	(Goal)
Declarative		
Theme: Topical		

Those students who finish ,	slide	(to the next section).
	Pr: material	(Cir: location)
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

Slide	to the next one.
Pr: material	Cir: location
Imperative: Exclusive	
Theme: Topical	

Can	(you)	understand?
	Senser	Pr: mental
Interrogative: Polar		
Theme: Interpersonal	Theme: Topical	

Don't forget
Pr: mental
Imperative: Exclusive
Theme: Topical

to speak	after.
Pr: behavioural: near verbal	Cir: location

Don't forget
Pr: mental
Imperative: Exclusive
Theme: Topical

to speak	after.
Pr: behavioural: near verbal	Cir: location

Choose	a right answer.
Pr: material	Goal
Imperative: Exclusive	
Theme: Topical	

Students,	don't forget
	Pr: mental
Imperative: Exclusive	
Theme: Interpersonal	Theme: Topical

to speak	after.
Pr: behavioural: near verbal	Cir: location

Spell.
Pr: behavioural/verbal
Imperative: Exclusive
Theme: Topical

Speak.
Pr: behavioural: near verbal
Imperative: Exclusive
Theme: Topical

Those who got/chose many correct answers,	raise	your hand.
	Pr: material	Goal
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

Who	has	the problem?
Carrier	Pr: relational	Attribute
Interrogative: Content		
Theme: Topical		

Students,	listen.
	Pr: behavioural: near mental
Imperative: Exclusive	
Theme: Interpersonal	Theme: Topical

Students,	follow.
	Pr: material
Imperative: Exclusive	
Theme: Interpersonal	Theme: Topical

Students,	speak	after.
	Pr: behavioural: near verbal	Cir: location
Imperative: Exclusive		
Theme: Interpersonal	Theme: Topical	

And	Students,	catch	the main idea and story.
		Pr: material	Goal
Imperative: Exclusive			
Theme: Textual	Theme: Interpersonal	Theme: Topical	

Conversation	is	easy
Carrier	Pr: relational	Attribute
Declarative		
Theme: Topical		

because	vocabulary	the teacher (I)	have already taught.
	Goal	Actor	Pr: material
Declarative			
	Theme: Topical: Marked		

Answer	the questions	too.
Pr: material	Goal	
Imperative: Exclusive		
Theme: Topical		

Students,	keep on doing.
	Pr: material
Imperative: Exclusive	
Theme: Interpersonal	Theme: Topical

Don’t talk,	child.
Pr: behavioural: near verbal	
Imperative: Exclusive	
Theme: Topical	

(If)	(you)	feel	interested	in the topic,
	Carrier	Pr: relational	Attribute	Cir: matter
(Theme: Textual)	(Theme: Topical)			

open	it	next.
Pr: material	Goal	
Imperative: Exclusive		
Theme: Topical		

Press	the third button	on one side of the tablet.
Pr: material	Goal	Cir: location
Imperative: Exclusive		
Theme: Topical		

It	will go	back to the menu
Actor	Pr: material	Cir: location
Declarative		
Theme: Topical		

Don’t forget
Pr: mental
Imperative: Exclusive
Theme: Topical

to speak	after.
Pr: behavioural: near verbal	Cir: location

Don’t forget
Pr: mental
Imperative: Exclusive
Theme: Topical

to speak	after.
Pr: behavioural: near verbal	Cir: location

Remember
Pr: mental
Imperative: Exclusive
Theme: Topical

and	speak	after.
	Pr: behavioural: verbal	Cir: location
Imperative: Exclusive		
Theme: Textual	Theme: Topical	

Phase 3

Today	there	are	only	four topics
Cir: location		Pr: existential		Existent
Declarative				
Theme: Topical: Marked				

Sit	properly.
Pr: behavioural: near material	Cir: manner
Imperative: Exclusive	
Theme: Topical	

Ok.	Students,	(for) homework	the teacher (I)	gave	these four topics.
		Cir: cause	Actor	Pr: material	Goal
Declarative					
Theme: Textual	Theme: Interpersonal	Theme: Topical: marked			

Students (you)	must do	homework	for the teacher (me)
Actor	Pr: material	Goal	Client
Declarative			
Theme: Topical			

Next time	the teacher	will check
	Actor	Pr: material
Declarative		
Theme: Textual	Theme: Topical	

(Do)	(you)	understand?
		Pr: mental
Interrogative: Polar		
(Theme: Interpersonal)	(Theme: Topical)	

Ok.	Then	we	will study	the topic of Hello.
		Actor	Pr: material	Goal
Declarative				
Theme: Textual	Theme: Textual	Theme: Topical		

Are	there	any sentences that you don't understand?
Pr: existential		Existent
Interrogative: Polar		
Theme: Interpersonal	Theme: Topical	

Who	can answer?
Actor	Pr: material
Interrogative: Content	

Theme: Topical	

Fruit which fruit (the meaning of fruit vocabulary)	I	will ask
Verbiage	Sayer	Pr: verbal
Declarative		
Theme: Topical marked		

Students,	study
	Pr: material
Imperative: Exclusive	
Theme: Interpersonal	Theme: Topical

and	revise	(the lesson)
	Pr: material	(Goal)
Imperative: Exclusive		
Theme: Textual	Theme: Topical	

(Do)	(you)	understand?
	Senser	Pr: mental
Interrogative: Polar		
(Theme: Interpersonal)	(Theme: Topical)	

Then	there	are	“Good morning” “Month”.
		Pr: existential	Existent
Declarative			

Theme: Textual	Theme: Topical		

Today	turn ...off	(it)
	Pr: material	Goal
Imperative: Exclusive		
Theme: Textual	Theme: Topical	

Time	is	up.
Carrier	Pr: relational	Attribute
Declarative		
Theme: Topical		

Don't forget
Pr: mental
Imperative: Exclusive
Theme: Topical

to revise,	child.
Pr: material	

Appendix 8 The teacher interview scripts translated by a NAATI certified translator

I = Interviewer

T = Teacher

Teacher 1

I: Firstly, can I ask your age?

T: 48. Is that old?

I: No, not old. You look very young. You teach primary level. How long have you taught for?

T: I've always taught primary, 13 years already.

I: 13 years. And your qualification?

T: I graduated in law, actually. But I came to teach English because I was a flight attendant.

I: Oh?

T: And when I came to teach, well, I taught for a long time, so it became my profession.

I: Oh? But you didn't graduate in education.

T: I trained, but I didn't graduate in it.

I: OK. Government schools.

T: I definitely used it in the class room. Why did you choose to use tablets in the English language class? Why did you choose it?

I: Well, actually, the course, it has it, and the Ministry allow its use. When I tried it out, the kids were interested. But in my view, I say it should be from Grade 4 upwards, because kids ..

I: The kids are too small.

T: Yes. They have to hug them. They have to grab onto them, in case they break, they drop them or whatever.

I: Because they can fall.

T: Yes, yes. It's small kids, they don't have the responsibility.

I: Yes. Do you think that when the kids use it, they have fun, or do they get sick of it?

T: A lot of fun.

I: You think they have a lot of fun.

T: Yes.

I: You feel that they really like it?

T: Yes, they want to go to the things they search for on and on.

I: But you yourself, if it wasn't for the tablets falling and breaking, or this kind of thing, if it wasn't for that, you feel that the content in the tablets, do you feel that they like it or not?

T: The content is compatible. It's compatible with the course.

I: You feel that it's compatible with the course.

T: Yes.

I: Therefore you feel that it's OK to use then.

T: Yes, it's OK.

I: And are there any problems? Apart from dropping and breaking them? Is there anything else you're concerned about?

T: Mostly, electricity. The kids aren't responsible for plugging it in, before class.

I: Oh, therefore it's just a technical problem. The charge is gone in one hour.

T: Yes, yes.

I: If the kids don't plug them in they can only use them for a few minutes.

T: Yes.

T: Oh, that's the only problem then? OK, regarding the apps. There are about eight kinds. Suppose you didn't have time to teach all of the modules, and you had to choose some parts of the application to teach. The eight kinds are Let's Talk, the songs, vocabulary, games, let's study, training module, listening and reading: if you were to choose only three of them..

T: Three of them? One, they have to get the vocabulary first.

I; You feel that the kids should get the vocabulary first.

T: Yes, that's the most important. If you can't read the words, there's no way.

I: Oh, yes.

T: And this is related to listening.

I: Two, you say, is listening.

T: Yes, listening and reading.

I: Reading. This reading, it's spelling.

T: Yes.

I: You feel that spelling is important, that is, to teach the kids spelling.

T: Yeah.

TL Is it similar?

T: Well, it's all similar. You have to use the training module.

I: But if you were to choose only three of them.

T: Three of them. I'd choose songs, er, choose vocabulary first. If three, then words..

I: Just three.

T: Reading, words and training module.

I: Training module. That's revision.

T: Actually songs are important, because it's primary school kids. They want to, er,

I: You feel that if, suppose that they learn by using songs then they will remember it.

T: Yes, that's right. Before starting the lesson I play the songs, every time.

I: Usually you play them.

T: Yes, that's right.

I: Is this the songs on a CD or songs in the tablet?

T: The CD.

I: You feel that the songs are important for teaching kids.

T: Yes, that's right. For instance, the song about the body, this kind of thing. I play it first, and then they can remember it.

I: Using songs helps small children to remember more.

T: That is for sure.

I: Yes, OK, you feel that if the content of the application is helpful to primary level, what English-language skill to you think it helps the most: listening, speaking, reading or writing? Or do you think it's about equal?

T: Equal.

I: For you, you feel the four are about equal.

T: If it's something the kids don't want, no matter how you give it, they don't want it. They don't take it at all. Like me, I've been to many countries. I got Vietnamese, Khmer, these kinds of languages. But if ... like when I went to Indonesia. I don't like their language at all. I lived there for eight months but I didn't get it at all. I only got 1 to 10. But Vietnamese I can speak it all, because I like the people. This is something. We need to do something to make them love the language first.

I: It's not just forcing it, wanting them to know it all the time. For you, you feel that they have fun, they like it, or love it, then they will learn it.

T: I like Vietnamese people. It's like, I have lots of Vietnamese friends. We go to the swimming pool, go to various places, and have fun, and so I want to chat, I want to talk to them. Yes. But when I went to Indonesia, there was only bad people...cheats . Indonesian people are uncultured. I didn't want to know them, didn't want to listen to them.

I: You didn't want to chat with them.

T: I didn't want to listen to their language, like this.

I: This is referring to when you were flying, when you were a flight attendant.

T: Yes, yes.

I: Oh, in that case, two questions. So if small kinds are in Grade 2, do you feel that they need close instruction from you, or do you feel that just let them play and learn for themselves, use things for themselves?

T: Can't.

I: You feel they can't do it.

T: Can't do it. You have to force them and let them play for themselves. Actually, kids already want to play, but you don't force them. There are many other activities for them to play.

I: Oh, the kids go out by themselves. You feel that they have to stay within the teacher's lesson.

T: Yes.

I: Lesson time. What app do you mainly use in teaching, or do you teach the subject first, then use the app afterwards, or ...

T: Together.

I: You feel that it's together.

T: Yes, it must be together. I say together.

I: Together in what way? Can you explain a little?

T: Suppose that we were to teach on the tablet first, then emphasize some place, or teach first. See, the students are in this.

I: You feel that these two things support each other.

T: Yes, that's right.

I: You feel that they support each other but they must be used together, is that right?

T: That's right.

I: How often do you use the tablet app?

T: I use it two or three times a term. It's like the problem, like time. We use, er, the tablet, there is a technical problem. And another thing, another thing is that, the government, they have their subjects, we have to follow the subjects, 1 2 3 4 5 6 7 8 9 10, and we aren't able to use the tablet all the time, we must teach according to the subject.

Teacher 2

I: First of all, can I ask your age? How old are you?

T: I'm 36.

I: Sex?

T: Female.

I: How much experience do you have teaching at primary level?

T: At primary, a little over a year.

I: Your qualifications?

T: Bachelor's degree.

I: A Bachelor's degree. And the kind of school ...

T: Government school. It belongs to Bangkok.

I: You've never used the app. Why is it that you never used it?

T: Umm, how can I say it? I've never used it because the tablets that were handed out, mostly the level teacher is responsible for them. When we want to use them, the level teachers have put them away. Yes, put them away. For that reason, we are the English teachers, we do not get to touch them or have never used them. Mostly the teachers responsible are the level teachers.

I: As of this time you have never seen the apps?

T: Never.

I: Can I explain? In the app there are eight modules, because for English language, because there are many subjects. Not in order, there are songs, there is listening, for the kids to just listen, there is an introduction, there is someone talking, there is a training module. There are many modules for the kids to use. There is 'let's talk', there is vocabulary, there are pictures and words, there is a speaker to press and there are games, many modules. One of those is a tug-of-war game. If you answer the word wrongly you get pulled over. There's let's study. This is like telling the structure, explaining. The teacher explains, teaches the children about structure, using sentences. As for reading, it is spelling, teaching to spell. Reading is called Let's Read, but really it's spelling words. There is pressing G O O D and there is pressing...

T: To let the kids practice accordingly, right?

I: In the app there are these eight modules. This is like a questionnaire that you are answering. None of them will have your name or surname, they are anonymous. So we won't say that you have already answered. Choose again. Choose three of them. Suppose you were unable to choose all of them, but were to choose only three of them, one, two, three. You choose three of them for the classroom that you think are essential. I want to

use them as teaching aids. Three of them. Do you think, one, two, three, which would you choose?

T: One is vocabulary, because kids are lazy to do a lot of reciting. If they know the words, they can translate, they can read. They can do everything. One is vocabulary.

I: You want them to learn the words first.

T: They have to practise, to recite the words. I think the old-fashioned way of teaching is still useful. Reciting to remember. Following that, something that won't make the kids sleepy, is using songs. Songs are a part of it.

I: How do you mean 'won't make the kids sleepy'?

T: When they listen to songs they stand up and do activities, they wake up, and, er, using the [???] of the songs helps the kids to remember more easily. Kids like to sing songs, so it's easy for their memories, using songs. After that, let the kids practice speaking.

I: To repeat it, is better, right?

T: If I were to choose three, I'd choose vocabulary, songs and speaking. If the kids can say it then reading is no problem. In learning, they can read it for themselves and they can understanding it all, right? Games, or vocabulary, speaking clearly. Therefore games is no problem. Kids and games are a pair. Kids will like it regardless. They don't have to know English to play games, be it games in the tablet, in the app, in the computer, even if they're in English, kids can still understand that this is a weapon, this is such and such. There's no problem with games and kids. After that, the kids listen to songs. They listen for sure. Listening, there's no problem with that at all, other than if they add to it and listen to harder words. Training module, knowing the words, they can speak.

I: They go together.

T: Yes, everything is linked.

I: If the app is like this, about this, if I were to ask you if you like it, and why, would you be able to answer? If the app is about this amount, you might not be able because you haven't seen the details. Suppose you saw just this much, there are many songs, there are many training modules. If it's like this, would you like it or not?

T: Umm.

I: Nothing to do with the tablet being something bad, nothing to do with the technical aspect.

T: Umm, if it's songs. I don't see what songs there are. If there are songs, it should be a way for the kids to follow. I think that is good. Song language is often easy, easier than written language. The kids could understand it easier.

I: Yes.

T: I've played the song for the children, Good morning, good morning.

I: You've used songs in the classroom already, is that right?

T: Yes.

I: In this case, let's skip over to another question. What do you feel are other materials. What other communication materials can help, not just books, and not the tablets. For instance, you have songs too.

T: Yes.

I: If that's the case, tablet: suppose there was no problem with charging it, suppose that the kids were able to use it and hold it any time. If it was you, would you use it in the classroom, if there was no problem of breakage, or going dead?

T: I think it's suitable for the kids to use, but there should be limitations.

I: Limitations.

T: Yes, for instance, in this hour it's English. OK, let the kids look at them and practice. Maybe if you use them all the time the kids would not be able to write.

I: There was another teacher who said the same, in regards to writing.

T: Yes, that's right. The kids stay at a home with an elder sibling who is a nurse, and doesn't have time to look after the child. So in the morning, as soon as he wakes up the child is in front of the iPad, playing games and looking at videos. He does touch, touch, slide, slide. When you ask them to write something he won't do it. He can talk, he talks clearly, he can listen.

I: But it becomes about the writing.

T: Yes. Writing is a big problem. They won't write. Another thing: writing is a training of the hand muscles. If the child doesn't practice writing, the hand muscles will become weak, right?

I: Yes. This shows that you feel that it could be good, but not to use it all the time, because it might cause them to miss out on writing skills, even though it can help in listening and speaking skills, but missing out on the speaking skill. This makes using it

all the time not a good thing. If you were to really use it how would you use it? Would you use it as a core, would you use it first before teaching, or would you teach the lesson first and then add the tablet as a supplement. If you were to plan it, just supposing, how would you do it?

T: Teach the subject first. Let them learn first, then practise with the training module. Explain. Finally let them try, look at it and practise with it on the tablet. We have to teach them first.

I: You see that we should teach them first ... Suppose that, let's just view it, roughly, if there were many people who didn't use the tablet in English language classes, what problem do you see? If that problem were to disappear, there would be a desire to use them. The difficulty, or the need to prepare for teaching.

T: Their difficulty?

I: Or the problem. Or something that if improved would [make it] very good.

T: What I see is, one, um, it is a problem with the school. In the past, when the tablets were brought out to use, one is that there is a problem with the charge cable.

I: They say that it can only be used for one hour, or not even that.

T: The kids use it for one subject. The next hour they don't use it, because the kids study one subject for one hour at a time. Therefore the kids have to keep charging it. They charge it as they use it. It's dangerous too.

I: It's impossible for 30 people to all charge at once.

T: This is the problem. You can only use it for an hour, you can't use it all day.

I: You view it as having its uses, but technical problems prevent it from being really effectively used. OK, um, the last questions now. Um, this shows that you view that if you were to let the children play with them, you would have to supervise them, you would have to be a supervisor together with the lesson more than let the children choose, play games if they want too, do what they want to. You view it as ...

T: We have to supervise them. If you let them go, what we will see is, one, go to the games, because we have wi-fi, they can access them. Yes. Kindergarten kids can access them. Prep kids who haven't started kindergarten, they know how to log in. It's so easy for kids these days. Free wi-fi, they can access and search for anything, so easy. If we don't supervise them, we will see for sure they're playing games. When we allow the kids into the computer room, they just go onto their games. At home they already have them. The parents are important: they don't have time for their kids, they leave their kids at the computer. What they go onto is games, cartoons. There aren't any kids who will go

on to learn things, which is what we built them for, unless we force them, "Here, look at this. What is there? And list what happens there." This is ..

I: This shows that you view that in order to be useful there must be supervision

T: Yes.

I: Even if there's lots of really good content, but you see that there should be guidance. The last question: You, just looking roughly, like this ...You haven't seen the real thing yet. If they were to improve it with additional programs into the app, so that you saw it as very good, for instance there should be something to help in writing. Some teachers say to increase content about conversation, some say to add the dictionary, to add grammar. For you, what would you like to build into the app to teach English to the children? What would you add?

T: Increase the talking more than anything, because grammar ... nowadays speaking is communication, enable understanding is better. Because if we're just worrying about grammar we'll just die for sure. Here you go and read, if you understand it all you can read grammar and understand it. It's like Thai. If we use it correctly, we can speak it correctly, then when we read it we can understand it. Grammar is what we learn, we are taught, we recite the verses. If you can't speak it's of no use. So it's better to train in conversation that the kids have to use in daily life. For instance if they meet a foreigner, they can talk with him. Because I was once waiting for a bus, and a Japanese person came to ask directions from a student. She asked, 'Can you speak English?' He answered 'No.' He didn't want to talk, afraid he would answer wrongly, that he would speak incorrectly.

I: You see that it will help in their attitude, or not attitude, but the kids will like talking, will be confident to speak, will speak correctly and be able to speak, the method of speaking.

T: The way to speak and the confidence to express yourself.

I: You think that like this, will the kids have more fun?

T: Umm.

I: There is a module that is an app like this to use in the classroom. You say the kids will enjoy it? Or it depends. Because you said you have songs in the classroom. If that's the case, you play the songs in the classroom, and the kids dance to them. They can have fun.

T: Yes.

I: If we were able to find a media to use.

T: Yes, because in one week we study English almost every day, 5 hours. For one hour we leave them with a foreigner, such as a Filipino teacher, for one hour. Another 3 hours listening, speaking, reading, writing another one hour I think they go to the computer room, they listen and relax. We don't want to force too much in.

I: It means there's already a lot.

T: Yes, they meet a foreign teacher, the kids go to learn in the computer room, we let the kids listen, and we must supervise them too. Sometimes after a short time they lapse and go onto the games. Just this.

Teacher 3

I: OK, firstly, can I ask your age? How old are you?

T: 42.

I: Your sex?

T: Female.

I: How many years have you been teaching?

T: I've been teaching for twenty years. This is the twentieth year. Your qualifications?

I: Bachelor's degree, majoring in English.

I: The school you teach at: is it private or government?

T: A government school, primary.

I: Have you ever used the app in the class room?

T: No I haven't.

I: Why haven't you used it?

T: Because the teaching hours for the year, in a week I teach only one hour. Another hour is by a foreign teacher. And here I've taught already. Measuring the results of the learning, the standards aren't the same. If I were to sit and use only the app, it couldn't be done. If you really ask me, if there was time, like suppose the level teacher, he is teaching, teaching Thai or mathematics and we might, like, can I use it after you? Can I

use it a little bit too? Let the kids know that what English language is like. This might work.

I: Because there's one hour. To divide up the hour, you have to teach all the content in full.

T: Yes.

I: If there was time you might be able to use it .. Have you ever seen the English app for Grade 2?

T: Yes, I have.

I: Having seen it, do you like it or not?

T: To tell you the truth, it looks interesting.

I: Interesting. You say it's interesting, so it must have some good points. What are the good points?

T: The language used in there, the accent is OK, because the kids can learn from the owners of the language. Because if they learn with us, they only have a Thai teacher, or if it's a foreign teacher, we use the method of volunteers. We get them from an agency. They send a representative, such as a Filipino or Burmese teacher, and they aren't the language owners, they're not native speakers.

I: You see that they have the accent of a native speaker. Other than that, are there any other good points?

T: I think the colours and images are interesting. They're appropriate for the children's age.

I: Appropriate for children. The kids in your class haven't used it yet because you have limited time, one hour per week. You think the children would like it. Why would they like it?

T: The cartoon characters are cute and appropriate for their age. They have imagination and dreaming.

I: You see the cartoon characters. So do the normal text books not have any cartoon characters?

T: There are cartoon characters but they can't move, they don't have any life, because we learn from a textbook only, right?

I: You see that apart from being interesting cartoon characters, they have movement.

T: Yes.

I: There is movement in the cartoon characters in the tablet app. You think the kids would like this.

T: And the colour.

I: Beautiful colours, bright. If there are any good points, um, are there any other good points?

T: Good points? I say, this, the language accent, the colours and the format they have created, the content they read kids, sometimes, some sections, the kids can pronounce after them. That's a good point, because the children practise their language at the same time, they repeat after them.

I: It emphasises the sound.

T: I will emphasise it, when teaching pronunciation, to make it correct.

I: Yes, because they're children.

T: My accent may not be like that, but at least you have to pronounce it correctly.

I: Yes, apart from the good points, there are many good points - maybe not bad points, but is there anything you would like to see added to the tablet, or is there something you would like to correct, or if you were able to correct something ...

T: Adding things, it would have to be adding vocabulary in daily life that the children would really encounter, like colours, food, clothing.

I: You want to increase the vocabulary.

T: Like animals, fruits, these kinds of things. Because these are things that can be used in daily life for real.

I: Do you think there would be any problem with the children using the tablets in the classroom. The good point is that the kids would like it. Are there any problems?

T: There shouldn't be any problems. Because the kids are familiar with using tablets, they can use them, even small children. Because kids like finding out things, like they're moving forward. They will move forward, they want to see, they want to know. I think in this regard there shouldn't be any problems.

I: Suppose that you had lots of time, four periods a week teaching the one class, and you were able to use the tablet. What would you do? Would you use it as a foundation, use it as a supplement, teach the content? What do you think you would do?

T: I think I would have to teach the content first. This is like an addition, like adding some excitement or incitement, or add a feeling so they feel, oh, if we pay attention to the study, we will learn. It's like a bonus for them. It's more like adding some colour for them. Because we learn, actually we learn the basics already, but this thing might be an addition, like an additional training module to what we've already learned.

I: Suppose that you taught it, and you had to... do you think that the children would be able to use the tablets for themselves or would they need guidance?

T: I think I might be a bit of a control freak, but really the kids are able to learn by themselves, automatically.

I: Just tell the kids to try it out, no need to watch them a lot.

T: Because kids in Grade 2, we've used computers for teaching from Grade 1. The kids are familiar with using computers. Using tablets is not difficult at all, it's easy, because it's a complete program, pretty easy. It's easy for them, no problem at all.

I: You think the content in the tablet..

T: A bit difficult.

I: A bit difficult? So is it aligned with the curriculum? Or is it more than the curriculum, or the same as the curriculum?

T: No, no. I, when I look at this, I'm not looking at the content as really difficult or a lot of something, but looking at if I am able, like when I assess the results, I assess in accordance with the assessment indicators, what can I hold that fits in with the assessment indicators, then it's successful. I don't think they have to learn this, and this only. No. But if it fits in with our assessment indicators, then yes, it's useable.

I: Do you think it fits with the assessment indicators?

T: Looking at it, it fits. There isn't much to English: listen, speak, read, write. Being able to speak, to communicate, to answer questions, like this.

I: You say the content in the English language app, what skill is most prominent, or are they all about the same? Listening, speaking, reading, writing. Are they all the same? Or does it stress one direction, do you feel?

T: I feel that they stress speaking practice, because for little kids this skill is easy: listening and speaking.

I: They don't yet write all that much.

T: Listening, speaking. I think listening and speaking are on the frequent side. You ask if it's good, I say it's good. For the kids, small kids. It's more suitable for listening and speaking. Reading and writing are not exactly discarded, because when we learn English we have to practice all four skills.

I: Last question now: How do you think these kinds of apps will help children to develop their English. Make it specific, say, um, for instance you say the kids will get a lot of words, the kids will speak a lot, or this kind of thing.

T: I think that the kids will get correct pronunciation. Um.

I: You view it as getting correct pronunciation.

T: Which I think is most important, because if you pronounce it wrongly, the meaning is wrong.

I: OK, in that case, there isn't anything else. Thank you.

Teacher 4

T: Take this out, here. Take this out. Because these are games words. The kids will like them. This is first hand. And this, let the kids speak afterward, they will like it.

I: Yes.

T: And clear pronunciation. I take these three.

I: Before we take these three, I want to ask you first. This school is a government school. How old are you?

T: 29.

I: 29. Female. Now your teaching experience in primary. How many years?

T: Three years.

I: Your qualifications. Bachelor's or what kind of degree?

T: Bachelor's degree. I'm going for my masters.

I: Overall, have you used the app, or the app designed by the government for Grade 2?

T: If for Grade 2 kids, this, I haven't had it, but I studied computing, so they asked me to speak about this. I joined in with the Education Office to develop the app, the app for

the Grade 2 tablet. Ah but the Grade 2, the Grade 2 finished I didn't really use it. The kids used it in Grade 1, because the hours were full. We stress the kids learning computer more than learning the tablet.

I: On this, do you teach computers or do you teach English?

T: I teach English also.

I: Oh, you teach English as well.

T: I teach English, and I teach computers, I teach tablets.

I: Oh?

T: I lay the whole foundation.

I: You teach two things. This shows you have experience.

T: Now I am teaching Grade 3, English. I don't teach Grade 1, but I teach tablet use, lay the foundation for all the teachers here who use the tablet.

I: Oh?

T: I teach all grades. If you come here, everyone has to have my teaching.

I: Oh? OK. You've seen roughly that there are eight modules in the English teaching. If you were to choose three of them, what would be the first one you would choose?

T: Practising speech. Thai teachers are not teachers who have majored in English. Having a tablet helps. They have correct, clear pronunciation. One, it is clear, correct, according to the characters. Ah, like the word 'who'. In Thai we say who, like this. In the tablet you get the correct accent. Like me, I'm not an English teacher, but I have to teach English. Now that I have the tablet it helps a lot, kids can listen and then repeat.

I: And second?

T: Second, games. Because with games they pay attention really well. If kids who have come up from kindergarten into Grade 1, they will remember the words well, because they play games.

I: You see, in your experience, if the kids play games they remember well.

T: And don't tell them, that this is a fan, this is a fridge, this is a car, whatever. You don't have to tell them. If they just see it, they won't say the word fan, they won't say the word fridge, they won't say the word computer, but they will be able to say the words in English really well. They remember better.

I: Yes, OK. And third?

T: Third, spelling. Like G O O D, like this. Mostly teachers forget to spell out the words for the children. But kids can remember, but whenever they forget, they will write incorrectly.

I: You want the children to write too.

T: Correct. It's not just being able to pronounce, and translate, but the kids should be able to write too. The words, we have to sit down and spell them, like in Thai 'sara a, sara ah, sara i, sara ee', like this. You have to 'mor or nor' [spell it out], like this. This would be good.

I: Now we've finished...Have you ever used, how often have you used it, once a term, or ...

T: When we first got it, I used it every week, because I teach English every week.

I: So, I just want to ask. When you use it, how do you use it? Do you teach first and then use it, or do you use it first, get their interest, and then teach the lesson?

T: Ah, at first I will teach what's in the text book. Teach them in the text first, then, I have prepared what I will teach them, then we will look at the lesson in the tablet and see how it relates to what I've been teaching. Suppose that I was teaching the colours, or whatever, but in teaching about colours, or animals, I won't actually say 'this is purple, blue, orange' or whatever, but I will show them the colours and say the English words. They remember well. But I taught often, when i was teaching, every week.

I: You used it every week. Oh-ho.

T: Because I didn't major in English, I don't have a media for teaching, I had to put my name down for English, the only thing I could do was to find some aid, the tablet. That was really OK.

I: You've spoken about the good points, making the kids interested, responding, the kids like it more, yes?

T: If you ask whether the kids like learning more, yes. But the bad point is that..

I: I want to hear something about the bad points.

T: The bad point, we have to speak a bit more about health. The kids look for a long time they get headaches. Even myself, I get headaches.

I: Even you get dull, you can't look at it for many hours.

T: For me, yes. I teach English only twice a week, because here there is teaching of Chinese and Thai. They emphasise Chinese language more than English. One week I teach for two weeks, I teach every week, like this. Then...

I: But you said ....

T: The font is small. Two, there are many errors in the application.

I: Is the content wrong?

T: Errors in the content.

I: There was another teacher who said this regarding another subject, but are there errors in the English? I haven't looked.

T: Some of the English has wrong pronunciation, reads the names wrongly. In my teaching there is social too, there is Thai language, lots of errors, seriously, so that I don't dare use it to teach the kids. I can use it but I have to monitor it closely. But English is useable, because it is easy words. But there are still errors.

I: Still errors.

T:Correct. In Maths it may say 15 + 15 = 45, like this. We have to watch it.

I: This shows that we can't let the kids play with it on their own.

T: If the kids are playing games, i will let them go.

I: Yes. When you teach, do you see that there has to be, what do they call it, close watching?

T: Yes.

I: Or, do you see that if the kids want to play you let them play, or do you see that there should be supervision, that you have to advise.

T: They need close advice, telling, advising, how to enter the program and exit the program, backing up, going back, going to other menus, or even shutting down the machine, turning it off, because we use the tablet once a week, we have to turn it off. We can't leave it on all the time. But if we don't tell them, they forget. We have to supervise them closely. As also the content. Sometimes when we're preparing for a lesson, I look at it and it's OK, but when I go to teach it and really look at it, it's wrong. Like this. I don't want this sort of thing to happen.

I: In the content, listening, speaking, reading, writing, which English-language skill do you think the app helps the kids with most, or do you think it helps in all four skills about the same?

T: It helps with pronunciation most of all.

I: You see it as helping with pronunciation.

T: Because when I first got the tablets, I just let the kids play with them after teaching them the technical, and then let the kids play. The kids could pronounce better than me. Because, one, their brains are empty, they haven't received a lot from other people, about how pronunciation of English has to be Thai style or whatever, but they listen to the tablet and Voila, they pronounce it correctly, they have a good accent.

I: So the kids have good pronunciation, so you see a use for it here. You've used it. What do you say, if you were able to add anything or change or improve anything, what would you do, or what would you add?

T: I would make the content more aligned with the lessons than it is now.

I: Is it aligned at the moment?

T: No, not aligned. Because the books that we study are not the same. Some people learn from the Ministry of Education's books, some people learn from Phukoet School, some people learn from Aksorn Charoenthat, and we have to adjust it ourselves as to whether it matches anything that we're teaching.

I: But you see that this matches with what?

T: It doesn't match.

I: You feel that it doesn't match with anything at all.

T: Because this is made, I'm not sure where they got their reference from, but everyone has to look at the assessment indicators of the central curriculum as to what we will teach the children in the year. Here we use the first book of Aksorn Charoenthat, and I opened it up to see whether it was appropriate, not just learning everything, but the information used is not that much.

I: Yes, OK, is there anything else. That's all my questions.

T: For the tablet? What I think they should do, the font and the equipment material should be better than this. Children are interested in it already, they learn for six hours, everything in books. When they come to this, they use this material and that material, they're happy, they're excited to use it, but the problem is the font is small, especially for Grade 1. Grade 2 can be a little smaller. But the font should be bigger than this.

I: Because it's for small children.

T: Because they're used to books with really big letters. So when they see this they have to really focus. It can't zoom. Teacher, I want to vomit. Teacher, I'm dizzy. They won't tell us during the lesson, they tell us when the lesson is over.

I: Are there kids like this?

T: Yes, yes. We teach Thai too, and English. If we teach consecutive hours, the kids start to get dizzy. We give the kids a break, saying we might teach with the tablet for the first hour, and the second hour teach on the blackboard. But if you ask the kids if they want to stop using them, they like it. Another problem, when we first got them the kids were really into them. After a lot of learning the kids got bored with them. The content is repetitive. Because we have to teach according to the assessment indicators given to us, as to what we will give the children this year, what will we measure. Except for free hours, when we let them look at things we aren't teaching. This is how it is.

I: This shows that if, suppose that it was developed, there was a good tablet, and you had the chance to use it, would you use it?

T: Yes, use it.

I: If, suppose that everything was ready.

T: Yes, I would use it, because I graduated in IT. I look at things in the sense that if we use IT it will make everything easier, it's progress, it helps us to do things more easily. But if it's an old-fashioned teacher, they might not like it. Maths, they won't teach it via the tablet at all, science, they won't use it. Social studies says the material is too specialised. I am only talking in relation to English language.

I: English language. OK, that's all.

Teacher 5

I: Firstly, can I ask your age?

T: 49

I: Female. Um, how many years have you taught?

T: 25 years, nearly 26

Oh, 26 years already? Almost the same as my mother.

T: 26 years, yes

I: Qualifications? Bachelor's degree.

T: I graduated with a bachelor's, Srinakharinwirot University, Pathum Wan, and...

I: The school you teach at. You teach government?

T: Masters at Bangkok University.

I: Oh, Masters Degree, is that right?

T: Masters at Bangkok, but Bachelors at Srinakharinwirot.

I: You have used the government apps in the classroom in the past, right?

T: Yes, yes I have.

I: In the past, how often did you use it?

T: Not very often. Once a week.

I: Once a week is often.

T: But three hours. I mean actually they wanted to use it almost every day.

I: Oh?

T: It's related to what we had to teach in the books. So I used it once a week, usually on Monday.

I: Oh? On Monday you used it, and each time you used it it was for three hours continuously, right?

T: Yes. Thai, numbers, whatever. Some English.

I: If you used it continuously ... Oh? You mean many subjects. It has English. And the kids weren't bored, using the app for three hours?

T: I wasn't bored because the kids liked it. The kids were interested. It turned out the kids liked it.

I: More than yourself?

T: There are pictures, sounds, colours, movement. Kids like it.

I: Oh?

T: For small kids you have to make apps that aren't still, moving.

I: Oh?

T: Moving around, the kids like it.

I: There have been people saying that small kids like this aren't able to use it.

T: Grade 1 can do it.

I: Grade 1 could do it already.

T: Grade 1 can.

I: The kids were able to play with it and liked playing with it too.

T: Yes, they liked it.

I: Ah, OK. And you yourself. Did you like these apps?

T: They were OK. I looked at it and it was interesting.

I: You say it was interesting. How was it interesting?

T: Well, for kids, it didn't bore them. It's like a kind of teaching media.

I: Yes, you view it as a teaching media.

T: And it has content, it's useful. There are pictures and sounds with it.

I: You think that the content is useful, it's not just the usual games, it's content that's compatible with the ..

T: Yes, with the curriculum, with the curriculum.

I: You view it as compatible with the curriculum.

T: Yes, the people who designed the app...

I: For you, you like it because it's fun and it's compatible with..

T: Informative too, and interesting ...it draws your attention.

I: OK, so you see that the kids like it, right? When the kids like it, what do you notice, what are the signs that the kids like it?

T: Well, they're interested in the tablet, with what we tell them to do. For instance, read this passage, or this conversation, repeat it. The kids like it.

I: You saw it, you observed it.

T: Yes, the kids were enthusiastic.

I: You saw their enthusiasm rising, yes? And when the kids played with the apps, what problems were there, in the classroom?

T: There weren't any.

I: You felt there weren't any.

T: Oh, the matter of the battery. Suppose that I charged them up, but they ran out quickly. If the kids were on them for a long time, we had a place to plug it in for them.

I: Oh, in the classroom you had one.

T: Yes, a place to charge the battery.

I: So mostly it's about externals. If the battery runs out quickly you have to recharge, but in relation to the content...

T: The content, the kids liked. It was interesting.

I: From when you used the app, what part of the app did you feel you liked the most?

T: Meaning ....

I: The parts, for instance, it might be that you like that the content is good, or you like the Thai language section, or something like that.

T: The content is good. Like English language, like what you're looking at, see? It has pictures, it's not just writing, the kids get sick of it.

I: Oh? For you, you say pictures.

T: Take the subject of family

I: Family.

T: There are trees.

I: You say it's the pictures. When I interviewed the children they liked that they could tap it. They said they could tap it and there would be sounds.

T: Hmm. That too. There are sounds too.

I: Oh? There are sounds and pictures.

T: Yes, the kids can see it, they can touch it, you see?

I: Oh, they can feel it. It's like Interaction, they can tap it and there's sound, there's a response. You like this part, yes? OK.

T: I like that there are pictures, sounds, responses.

I: And suppose that you disliked, or not dislike, but if your were able to change it, what would you change to make it better?

T: I say it's good already. I don't know, for myself.

I: Yes, that's OK. If it's good already.

T: For myself it's good as it is.

I: OK, so if we were to add anything to it. What programs would you want to add to it to make it better?

T: Like the conversation section, I say it has speaking, it has sounds, and the kids...it's like ...well, to summarise I say it's good as it is.

I: For you, sum up as good.

T: Better sum up like this.

I: Sure.

T: Um, I think like this. It has a medium the kids like. If there wasn't anything the kids get bored.

I: Yes.

T: We find a teaching medium.

I: They say that the tablet might not be necessary. They say that the teachers might have other interesting media. If there wasn't a tablet, and there was other media, would it be enough? For instance, playing a CD, using TV.

T: They don't get to touch it.

I: You see that they don't touch it.

T: It responds sometimes, it tells them to repeat it, then they read it.

I: Each person can repeat it. If it was TV or CD, it's just belonging to the classroom.

T: They sit and watch.

I: They sit and watch, they can't speak.

T: There is no response. That is, they can speak but there is no conversation.

I: You view that other media can't replace the tablet.

T: I say it's OK. At first I didn't really like it, but now I say it's good, from what I've seen. I've used it, and I say it's good. It's useful.

I: What learning skills do you say the application increases in the children, or do you think it's all sides: listening, speaking, reading, writing. Oh, but do they have writing and reading?

T: They can read from the content on the screen. There is some writing. The letters have dot dot dot, and the follow them

I: Oh.

T: There are dots. Like the letter 'A'. Follow the dots, with touch.

I: Therefore they get writing, they get reading, they get vocabulary, they get listening. For you, you see it ...

T: Covers everything. It's useful, good.

I: It covers all the skills.

T: Covers everything. It's useful.

I: Yes, when you used the app in the classroom, how did you use it? Meaning, did you use it as the core or use it as a support?

T: Support.

I: You taught the lesson first, then tried it in practice.

T: Yes.

I: Try using it first then teaching.

T: No, support.

I: For you, it was a support.

T: Support. Because we have to have a principle for teaching first. Teach first, then support.

I: Let the kids know the content of the lesson first, then use the tablets to support it.

T: To support it.

I: To support the lesson, then put it into practice, not as the core but as a support.

T: Not the core, couldn't be the core. You have to teach them first.

I: You think that in that case, there has to be a teacher? Suppose that the kids were learning with the tablet.

T: There must be, must be.

I: You tell them to learn, do you have to go and look too?

T: No, we have to explain first.

I: Do we have to watch?

T: We have to watch, we have to pay attention, we have to explain first, and we have to supervise them closely.

I: And when the kids are doing the learning, we have to watch then.

T: Yes, or they will sneak off and play games.

I: Oh, some people. But are the games in the app?

T: It's, they can leave [the app]. There are games for them.

I: Oh, games that aren't related to the learning?

T: There are. Eh, but mostly, what, it might be the numbers games.

I: Oh, other subjects. Suppose they learn..

T: Suppose they are learning English, they have to look at English.

I: Oh, suppose they are learning English, but they go and look at Thai.

T: In the Thai hour, they have to look at Thai.

I: That is you must watch to supervise them, there needs to be guidance on what to go to, not just letting them choose for themselves.

T: Meaning, what time is this? And we teach the basics first, then let them go to the support.

I: Do you think it's the same? They say using the tablet, like these apps, there has to be preplanning. It's not as if you want to teach you can teach easily, is that right? For you, does it make an extra burden or make you tired, preparing for your lesson?

T: Not tiring, not tiring. Because the apps are complete in themselves. Suppose Lesson 1, it's already there, it aligns with the content, we can just use it.

I: Oh? Mostly the content is aligned.

T: Yes, like this, family, or whatever like this.

I: Mostly, the content is aligned with the lessons, right?

T: Yes, because they issued it in alignment with the curriculum.

I: For you, when the kids have a problem with the tablet, do they mostly ask each other or do they ask the teacher?

T: They ask the teacher.

I: Mostly they don't ask each other.

T: They ask the teacher.

I: So the teacher is the foundation of the classroom.

T: The foundation, the teacher has to be the foundation.

Teacher 6

I: Yes, firstly, can I know our age?

T: I'm 34.

I: Female. You have experience in teaching primary grades.

T: One year of private, then I transferred to secondary for another year, then I went to the Office of the Basic Education Commission, a teachers committee, for another year, so three years, coming into the fourth year.

I: Fourth year. You've taught on this level. Your Qualifications. You graduated with a Bachelor's degree.

T: Bachelor's degree from Nakhon Sawan Rajabhat University.

I: Is this school a government or municipal school?

T: Government, government. This school is a government school, OK. OK, then can you look at these 8 things in Grade 2. So we're stressing Grade 2. In Grade 2, English, there are 8 kinds of content.

T: Um, I've kind of seen this too.

I: Listen, games, songs, Let's Study, Exercise, Let's Talk, Vocabulary

T: OK.

I: Suppose. Suppose you didn't have time to use all of those in your teaching, can you choose three of them that you want to teach. If you had to choose three of them.

T: Three of them, yes?

I: Yes, what would you choose, and why, three of them.

T: Um, three of them. If really choosing, then Vocabulary

I: That's first, right?

T: Yes, learn about the words first.

I: Why .... Many teachers choose vocabulary. Why is that?

T: For English, really, you have to choose vocabulary first.

I: Especially for small kids, right?

T: Yes.

I: You see the vocabulary as important.

T: Yes, vocabulary is important. If you know the words, it's easier for, like, to say or listen to anything, you can understand what's going on, you can easily communicate. Like, you say the word 'sing', and the kids know that 'sing' means to sing, so OK, they can communicate, and answer us ... if it's this.

I: And second. No need to hurry.

T: No need to hurry, right? This would be reading. This will be speaking, right? Next would be speaking.

I: Speaking.

T: Speaking, yes.

I: Why is it Let's Talk?

T: If speaking, like practising speaking, what sentences...

I: Practise speaking.

T: Yes. Which sentences do you use with which situations, like this.

I: Which situations. Let the kids practise pronunciation, practise speaking.

T: Yes, practise pronunciation.

I: You view it as vocabulary, and speaking practise are important for small kids.

T: Yes.

I: And third.

T: Third would be games.

I: Why do you choose games?

T: A bit of entertainment. Like, yes, have some fun, not to be too stressed with things, like this.

I: Fun, not too stressed.

T: Yes.

I: You said that in the past you saw or experienced the tablet, English on the tablet.

T: Yes.

I: If it happened that you could choose, you had the chance to teach, would you use the tablet? If you had one (If there was one that would be good.) For you, you say if you had one it would be good, why?

T: Yes, it's like it stimulates. It stimulates a part of the children to make them interested, draws their attention on the point of, er, seeing technology and stuff that they've brought in. Seeing something different. Like, suppose that we just talked: the kids wouldn't be very interested. Like that. But if we have media, listening to tapes, tablets, computers, and things like this, adding these things, as well as other things, it makes the kids more interested.

I: You see that the tablet makes the teaching more interesting. The kids will pay more attention.

T: Yes, they will pay attention.

I: If it were you teaching, would you choose ... suppose you had a chance to use it, just suppose, you had a chance to use it, in what way would you use it? Meaning, would you use it as the main thing, or teach the lesson and then use it, or would you use it together, or what do you think?

T: Oh, like first teach the principles first.

I: You see that you would teach the principles first.

T: Yes, and then use the tablet. There might be training modules or games in the tablet, like this.

I: To support it, the teaching, right?

T: Yes, to support it.

I: If you view that the Grade 2 content is of this amount, what branch of English language skills do you see that this supports building the most: listening, speaking, reading, writing. Or do you feel that for you, overall, it's about the same?

T: Well, you can't. Like, listening, the kids will get the native speakers.

I: OH, they get native speakers.

T: Yes, the accent is clearer than Thai people. Like, Thai people teach it with a Thai accent, but if it's a native speaker, like this. The accent has to be tighter, it has to be good, it has to be clear. Pronounce it correctly first.

I: Yes.

T: More correct. And the colours. The kids see it and it's interesting. Especially small kids.

I: Mm.

T: It's interesting, there are colours, beautiful, like this.

I: And small kids, some teachers say, some people see Grade 2, suppose Grade 2, that the kids are too small to use the tablet, but some people say the kids aren't too small to use them.

T: It depends on the person, but if any parents are interested, and care about it, and buy a tablet for their child, that child will be fluent with it, but if anyone doesn't have much money, it's not easy to do anything, they can't touch it, they can't turn it on or turn it off. It takes time. If any child is not yet fluent then they have to gradually do it, but actually the kids will get the desire. They will want to learn, want to do this.

I: Um, this shows that you view it as even if the kids aren't fluent, if they want to learn they will become capable.

T: Yes, they have the ability.

I: To learn.

T: Yes, yes.

I: Now suppose that you had to use the tablet in the classroom, you see these apps in the tablet, do you think it is difficult or easy to bring the apps and the tablet to use in the classroom. Do you see yourself having to prepare more for teaching, or do you think it would be easier, or less preparation?

T: Maybe the tablet would help a lot. Maybe if we don't prepare for the lesson, there will be a topic for the kids to look at for themselves, to learn for themselves.. Like children self-learning, like this. Self learning and make a practice module, play games, try things out. It will be in this area. If it's the tablet it will function according to the ability of the child, right?

I: Yes.

T: If this child is clever, it will do it correctly. If this child is not clever, it will do it wrongly, there will be errors, so they can do it again. Levels for each child will not be the same.

I: Hm, so for that reason you see there isn't a problem.

T: Yes, it's not a problem. But I would like to see the effectiveness and quality of the tablet good, and the content put on it to be suitable, like this.

I: Do you see this amount of content as suitable?

T: For Grade 2?

I: Yes, if it's Grade 2.

T: It's not hard, OK, yes.

I: You say it's suitable, yes?

T: Yes.

I: Suppose that you could change anything or add anything, what would you change or add?

T: To add something, right?

I: Or change something or add something.

T: In truth, I didn't see much of the other content, I only saw the English language section.

I: This is only for English language. We're not discussing other subjects here.

T: OK.

I: I just want your perspective. Or if you were to add anything. There might be something already there, but you want to add to it. If you were able to develop the app according to your perspective.

T: Oh, develop the app?

I: Or the tablet.

T: Well, increase the content. Is the content up to speed with situations? There are modern events, changing all the time, like this.

I: You see that situations are important for the children to learn about.

T: Yes, situations should be updated.

I: Updated in what way?

T: Update the news, the information. These days it's all about ASEAN, right? Then put something about ASEAN. Put these things in.

I: Oh, that's interesting too, right?

T: Yes, yes.

I: Like this, then your perspective is that if the kids use the tablet, you already said that it helps the kids, it encourages them.

T: It's interesting.

T: You're confident that the kids may like it and have more fun.

I: Yes, yes.

I: Yes, and suppose that if you really had to use the tablet in the classroom, do you see it as necessary to guide the kids a lot, to follow the lesson, like this, or do you see it has leaving the kids to use it for themselves?

T: Ah, but really, if they learn for themselves, and we gently advise them on the side, it will help the kids to, sometimes that lesson is too difficult, they begin with an easy lesson first.

I: You see that the kids are able to choose for themselves.

T: Yes.

I: That is suitable for their own level.

T: Yes.

I: Oh? You see it as only having someone on the side to help out, not a someone to guide them all the time, to use this lesson, just this much. You see it like this, right?

T: Yes, like sometimes some kids are bright. They've got to Lesson 4 already, like this. They will progress faster than the slower kids.

I: Some teachers, um, people tell me that the tablets are not really necessary because if you like songs there are CDs to play, or if you like animation you can play videos for the kids. Do you see a difference, between the other materials and the materials in the tablet?

T: Speaking of the original form, it's about like, in the olden times, right? Like no progressing. Turn them on, the CDs: you can turn them on but you don't see pictures, you can't touch them.

I: Oh, the kids can't tap them.

T: Yes, the kids can't tap them. The teacher turns it on again. But if it's the tablets, the kids can touch them. They can see for themselves, that, Oh, OK, play it again. The kids tap for themselves, listen for themselves, like this. It's like, it's like development. The kids might be able to learn more easily.

I: Um, like this, see only good points. Do you see any bad points or problems, or do you see none?

T: There are.

I: You see some?

T: Yes, the quality of the device, many things. Sometimes there is a result, that they say after charging and using it for a while, the battery dies again.

I: The battery dies before even an hour.

T: Yes, the kids don't get there, they want to learn, they want to use them all the time, they want to do this sort of thing.

I: Can't do many subjects.

T: Yes, yes.

I: In a day you can use it only once.

T: Yes.

I: In this case, you see it as a technical issue.

T: Yes, it's a technical issue.

I: If we were to correct the technical issue, make it good quality, you would see it as having more good points, if used correctly?

T: Yes.

I: Suppose that you had a chance to use it, how often would you use it? Just suppose it was Grade 2.

T: Speaking of.. if it's often the kids will really like it.

I: Let's take what you see, not right or wrong, but how often, would you think?

T: Well actually, not every ...

I: Every month, every week, something like this.

T: Per month, maybe 2 times or 3 times, something like this. Let the kids ...

I: Two times or 3 times a month.

T: Let the kids be excited. If you don't pay attention to the lesson or don't do something, we won't let you play with them, something like this.

I: It's a kind of play, fun for the kids.

T: Yes.

I: And it gives knowledge. This is your view.

T: Yes.

Teacher 7

I: Can I just ask a little, your age?

T: 30.

I: Female. How many years of primary teaching experience do you have?

T: On primary level, one year.

I: 1 year. Oh, your qualifications?

T: Bachelor's degree.

I: Bachelor's degree. The school you teach at is a government school. OK, firstly, if there are these 8 kinds, what 3 kinds would you choose first. What would you choose?

T: First would be this.

I: First, choose the subject.

T: Beginning the lesson, right?

I: It's Let's Study. Why would you begin with the lesson?

T: It helps the kids to understand more about what they are going to learn, like this.

I: Yes, it helps the kids to understand more.

T: Introducing, er, what do they call it? Introducing the learning, introducing the lesson.

I: It's introducing the lesson. And if it were necessary you had to use this as the first one, it's because it is useful, you see it as useful.

T: Yes, it draws the children's interest

I: It draws their interest for the kids to begin learning. And the 2nd kind?

T: Second would be this, vocabulary.

I: Vocabulary. Why is that?

T: It makes the kids, like what the kids immediately answer is that, there are pictures, the kids will be interested in the pictures and then the words. They will remember the words because of the pictures.

I: And third?

T: Third would have to be this, spelling, spelling out words.

I: Spelling out words.

T: A letter at a time.

I: One letter at a time.

T: Important. For English spelling of words is important.

I: Oh? You see that for English the spelling of words is important.

T: Yes.

I: So spelling is third, right?

T: Yes.

I: OK, third. That's all. Now, about the content, you have used the app, er, the OTPC tablet in the English language class, right?

T: Yes, I've used it.

I: You've used it.

T: Yes.

I: Why did you use it? Because some schools don't use it, some schools do. Why did you use it?

T: Well, ah, some lessons or some slides in this tablet, can be used to summarise lessons from the textbooks .... some parts are very similar to what is in the books we use to teach the children.

I: In the books.

T: That is aligned with our curriculum. We can pull these up to summarise the lessons.

I: You see that some parts of the content in the apps, or many parts, are compatible with the curriculum?

T: Yes.

I: Oh? You see it as compatible with the curriculum, so you use it because it is useful, right?

T: Yes.

I: If I tell, er, I just told you that there is a problem with the charging the tablets battery, so you have to share them in all subjects.

T: Yes.

I: In this case you can't use them often, in English lessons.

T: Yes.

I: If you had, how often did you have to use it?

T: It was one time every two weeks.

I: One time every two weeks, about two weeks. OK. In your personal view, liking the app, the tablet app, the English language program in the tablet, do you like it or not?

T: Um, I like it.

I: Why do you like it?

T: It's labour-saving, and the kids are more interested in English.

I: You see that the app on this tablet will help your teaching.

T: Yes.

I: Labour-saving, secondly it helps to get the kids more interested in learning.

T: Yes.

I: This is how you see it, right? Do you see that the kids like it? You like it. Do you think the kids like it?

T: They like it. They enjoy it a lot.

I: You see that they enjoy it from their trying it out, right? There are people who wonder whether the kids are too small to use it in Grade 1 or Grade 2, where the tablets are used. Can they use it? This kind of thing. For you, do you think they are too small?

T: Um, I see that they are a bit too small, but if the kids get advice from the teacher, they will be able to use them correctly.

I: Oh, if...

T: That is, they are under the guidance of the teacher throughout.

I: This shows that, like when you teach, you don't leave them to play for themselves.

T: Yes.

I: You have to supervise them.

T: Have to watch, have to supervise.

I: You have to supervise, right? Your use of the app. When do you use it, and how? For instance, before giving the introduction to the lesson, teaching the lesson first, then using the app as an aid, or some people use it as the main part. How do you use it?

T: Mostly I teach first, then in another hour I summarise.

I: Mostly you teach.

T: It's like, it's a revision of the lesson.

I: Suppose the hour before this, you were to teach the content, the second hour would be a summary.

T: Revision of the lesson

I: Revision of the content using the tablet apps.

T: Yes.

I: When the students use it, do you see any problems? With using the tablet apps in the class room.

T: There is the problem of slowness.

I: Yes.

T: Some things, some games, the kids can't play them.

I: Mm.

T: Because it gets stuck.

I: Oh? Some things the kids may want to use, but some things there is a technical problem, you tap it and it lags.

T: Yes.

I: If it didn't have a problem it would be really good, right? When you want to use the tablet apps in the class room, do you have the problem that you have to spend more time preparing for the lesson? The problem of you having to expend more energy in your thinking than before? Or is it relaxed?

T: Oh? Not at all.

I: You feel it's not difficult.

T: Not difficult.

I: You feel relaxed, it's like , try it out, if it's aligned I will make use of it.

T: Yes.

I: You don't have to stress about aligning the content.

T: Yes, we just look at the subject to see if they're aligned with the curriculum, and pull that up to use it.

I: You feel you can do it.

T: Sometimes I don't use all the lessons in the tablet. I only use some parts.

I: Therefore, for yourself it's not at all difficult, right?

T: Yes.

I: Oh? Suppose that you were able to improve the apps in the program, for instance, increase the grammar, increase the writing, increase something else, what would you want to do? Suppose that you were able to do it.

Um. I would like to increase grammar, conversations so that the kids could have more conversations.

I: You want to increase the grammar and conversations. There are conversations in the app, right?

There are, but I feel that the emphasis is on vocabulary.

I: You see that the conversations emphasise vocabulary, there isn't enough variety.

Yes.

I: With broad conversations.

It doesn't repeat so the kids can chat and respond to each other.

I: It doesn't repeat the sentences, right?

Yes.

I: They are sentences that have repeated words for the kids to learn.

The cartoons keep on talking, like this. There is no going back on what the cartoons are saying, what it translates as.

I: What it is repeating, what it translates as. Oh?

T: Yes, yes.

I: If, you say that if there were an app with content emphasising conversation sentences, and repeated the sentences

Yes.

I: The sentence forms, the meaning, the kids understand better, right? Actually, the app develops listening, speaking, reading and writing for the kids. But if you were to look at what kind of skill it develops the most, or do you see the app does all four, or you may see that it develops one skill more than the others. You can look at it in many ways.

Um, development? I think it develops listening and speaking, pronunciation.

I: Why do you see it as listening and speaking?

The kids are used to the Thai accent, the teacher's Thai language.

I: Yes.

T: In the tablet I feel that, yes, we listen from the tablet. Hearing or listening, it, how do they say? Communication is not the same as our talking directly.

I: Oh?

T: They understand more. But if the kids are able to listen to this and understand, it shows that the kids can have better listening skills and can repeat afterwards. Their accent will be good.

I: Um, like as you repeat afterwards the accent gets good, right? OK, um, some kids learn quickly, some learn slowly. Do you think the app helps in this regard? For the kids who learn quickly?

T: Yes.

I: Is it a problem or is it useful? Some people learn quickly, in a jiffy they have finished. Some people learn slowly, they aren't too bright, they tap repeatedly. Is that a problem or a good thing?

T: But from what I have taught, the slow learners, the fast learners help the slow learners.

I: Oh? It becomes ...

T: See, they chat. They have me up to this point, like this, the fast learners will help their friends. Like this. It's like this.

I: Therefore it becomes helping each other out. It means learning is better.

T: The kids are more interested.

I: Both those who learn..

T: The slow learners mostly are those who don't want to learn, like this.

I: Oh? Kids who aren't very interested in learning. When they get the app it helps them to like it more. Their clever friends may help them, they might get together in the class, right?

T: Yes, they don't dare to ask the teacher. They will ask their friends.

I: Oh? Some people will ask the teacher, from what I've seen in the class, but some people don't dare to ask.

T: Yes.

I: Oh? They will ask their friends. For you, do you think it is better to have the tablet or not?

T: Um, you can look at it from two angles.

I: You see two angles? What is angle 1?

T: Angle 1 is that it is good because it helps the kids to practise various skills.

I: Yes.

T: Angle 2 is that the kids will write less.

I: Mm, why will they write less?

T: Because they will just listen to the tablet. They won't use their exercise books, they won't use things.

I: Oh. Some people just tap and listen, but some people will write, but some will tap and listen only.

T: They write letters incorrectly.

I: If they kept on writing, you say they would write better.

T: Yes.

I: OK, if there was no tablet, some people say they don't see it as a necessity, the tablet apps. Other materials can be used to help the kids, suppose, listening, watching videos, like this. Do you see it as the same, or different? If we were to use teaching materials instead of the app, or do you think they can't be used instead, that they are different things.

T: They are similar.

I: Similar. If there was not [the other], they could be used instead?

T: Yes.

I: You see that they can be used instead. It's not the single most important, essential thing.

T: Yes.

I: Not all classrooms have to use it, right? OK.