

CALL AND ENGLISH AT TERTIARY LEVEL: TEACHER COGNITION IN BANGLADESH

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ABSTRACT

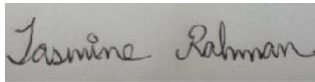
This research focuses on university teachers' cognition regarding the use of computers for teaching English in Bangladesh, one of the developing countries in the world. Though both teachers and students are leading players in CALL environments, teachers, particularly university teachers who teach English as a second language in Bangladesh, are the primary participants of the study. The study aims at seeking answers to the following questions: (1) What conceptions and attitudes do university English teachers hold about CALL in Bangladesh as a developing country? (2) What is the relationship between these conceptions and attitudes and teachers' reported practices regarding CALL? The research data, collected through online-based questionnaire and interview, reveal that university English teachers conceptualize computers mostly as essential tool in their CALL practices for various pedagogic and administrative purposes. They conceptualize themselves mostly as 'resource providers' and computers mostly as 'presenters of information' in CALL lessons. Teachers also hold favourable attitudes towards CALL due to their experienced benefits with CALL despite the presence of certain contextual constraints such load-shedding and slow Internet. They also hold positive attitude towards the future improvement of CALL in Bangladesh. All these conceptions and attitudes, namely teacher cognition is revealed to be a strong influence on teachers' reported practices which interacts with contextual constraints directly by altering their practices accordingly. Thus, the study explores the complexity of teacher cognition regarding CALL in Bangladesh.

STATEMENT OF CANDIDATE

I hereby declare that this thesis has not been submitted for any degree to any other university or institution. The sources of information used and the extent to which the work of others has been utilized have been indicated in this thesis in the manner conventionally approved in the research field in which the thesis fits. The approval from Ethics Committee has been obtained.

(Protocol Number 5201400379)

Signature of the Candidate: _____

A rectangular box containing a handwritten signature in cursive script that reads "Jasmine Rahman".

Date: 31/08/2015

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DEDICATION

To my parents,

With endless love, respect and gratitude

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I humbly thank God for lighting this path to knowledge and sustaining me throughout my journey. To Him I owe everything I have learned and all that I have become.

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ABBREVIATIONS

BANBEIS	Bangladesh Bureau of Educational Information & Statistics
CALL	Computer-assisted Language Learning
CBT	Computer-Based Technology
CLT	Communicative Language Teaching
DFID	Department for International Development
EFL	English as a Foreign Language
ELT	English Language Teaching
ESL	English as a Second Language
ICT	Information and Communication Technology
PAN	Pan Asian Network
UKAID	United Kingdom Agency for International Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development

CHAPTER 1: INTRODUCTION

1.1 Introduction

This chapter includes a brief introduction to the background of the study, the development of technology in education and teaching of English in Bangladesh, the aim of the research and the organization of the study. It concludes with the brief description of the key terms addressed throughout the paper.

1.2 Background of the Study

The research interest aligns with my interest in English and technology in combination. Since the secondary level of my education, I had fascination about English grammar and vocabulary and I decided to study in English from that moment. Till my HSC, I did not experience the technology in education apart from using it for communicating with friends. When I got into the university, my connection with technology gradually grew while submitting assignments online, reading journal articles as well as taking online quizzes. I decided to do further research on Computer Assisted Language Learning (CALL) while doing a specific unit for my undergraduate degree. I got a flavor of making websites, electronic posters, videos and even movies; using social-networking websites and also using various Microsoft Office skills for educational purposes in collaborative and encouraging learning environments. During that time, the environmental factors such as power outage or slow Internet hindered our fun-learning activities. After starting as a teacher, the influence of these factors continued to affect my professionalism as well but I kept trying to adjust myself with such problems and move on with experimenting with

technology in my teaching. Research on CALL was not new to my thoughts but researching it in teacher cognition framework is an addition to my inspiration.

Present day technology and education have created a strong bond across the world to encourage and motivate learners through authenticity, reality and simplicity; for example, the use of Facebook to encourage students for participating in group-discussions for problem-solving tasks. However, any successful lesson is prepared by teachers to ensure successful learning in non-threatening environments. Therefore, it is important to investigate teachers' perceptions, attitudes, values or beliefs regarding any issue of teaching and learning. With the interest for an experiment in Bangladeshi education context, my study aims at understanding teachers' cognition regarding CALL in Bangladesh. However, this study also aims to establish a connection between two broad aspects of Applied Linguistics research, teacher cognition and CALL.

1.3 Development of Technology in Education

With the passage of time, technology has become an inevitable part of the teaching-learning cycle. Veletsianos (2010) defines emerging technologies as tools, concepts, innovations and advances that can be new, evolving or upgradable in different educational contexts. The term 'technology' covers a wide range of innovations beginning from tape recorders to computers with the application of Internet, email, chat, multimedia etc. (Sharma and Barrett, 2007). The historical development of technology in education can be traced by the use of school or

classroom-based technologies such as Interactive White Board and e-portfolio; individual study tools such as electronic dictionary and grammar checker; and network-based social computing such as social networking and blog. Portable devices such as tablet PC or PDA, iPod and cell phone or smart-phone are also in this extended list of technology (Golonka et al., 2012). Hence, the summary on the contribution of technology to education, particularly language learning provided by Golonka et al. (2012, p. 70) is noteworthy:

At their best, technological innovations can increase learner interest and motivation; provide students with increased access to target language (TL) input, interaction opportunities, and feedback; and provide instructors with an efficient means for organizing course content and interacting with multiple students. At their worst, the use of new technologies can result in inappropriate input, shallow interaction, and inaccurate feedback; student frustration with software and hardware; distraction from the learning task; and a general over-emphasis on delivery modality over learning objectives.

In this quotation, Golonka et al. (2012) summarizes the benefits of using technology along with the risks of using it in teaching and learning. Such impacts can also be traced in language learning when using computer at different levels of education.

1.4 Teaching of English in Bangladesh

To cope with the demands of globalization, English has been necessary in almost every sector in Bangladesh but more importantly in educational and professional sectors. Therefore, with the

passage of time, Bangladesh has shifted from traditional chalk-and-board teaching to communicative language teaching (CLT) promoting communicative competence, which refers to language learners' ability to use socially, contextually and culturally appropriate language in communicative contexts (Savignon, 1997, as cited in Park & Son, 2009). Bangladesh, a country of Global South, is largely predominantly monolingual with Bengali. Nevertheless, English has already earned its status as the second language due to globalization and its official uses in the ministry and Government.

This section provides short summaries regarding the practice of English in education in association with technology and also constraints in the technological environment in Bangladesh.

1.4.1 English in education

The educational system in Bangladesh is broadly divided into three major stages: primary, secondary and tertiary education (BANBEIS, n.d.). The primary and secondary education sectors have specific English textbooks provided by the Government to practice English linguistic skills. In these levels, students learn English as the second language just to pass in the public examinations like Secondary School Certificate (SSC) and Higher Secondary School Certificate (HSC). In the tertiary level, the practice of English is enhanced because they have to prepare themselves for better future by ensuring good job and promotion with better communicative skills in English. Thus, all students from different academic departments such as Pharmacy,

Accounting, Law, Engineering and even English have to take some core courses on English for improving their academic as well as communicative English.

1.4.2 English and technology in education

The Bangladesh Government has decided to increase the use of Information and Communication Technology (ICT) in all spheres of its citizens' lives. Thus, English teaching with technology is gradually expanding in all educational levels in Bangladesh. There is a large project, known as English in Action, funded by UKAID to expand not only the use of English but also the experience of 21st century technologies such as computers and mobile phones in Bangladesh. With this nine year project (2008-2017), the Government of Bangladesh has aimed at improving the country's language and literacy education (Anwaruddin, 2015). Initiatives in three sectors- primary schools, secondary schools and adult learning, have aimed at providing teaching of English through the use of ICT in order to “increase motivation for learning, improve access to communicative English resources and enhance and extend the necessary learning and teaching practices” (Kirkwood, 2013, p. 867). The present and target implementation areas (English in Action, n.d.) are listed in **Table 1.1**:

Pilot Phase (2008-2011)	24 upazilas (sub-districts) 700 Primary & Secondary teachers 130,000 Students
Up-Scaling Phase(2011-2014)	70 upazilas (sub-districts) 12,500 Primary & Secondary teachers

	900,000 students
By 2017	112 upazilas (sub-districts) 75,000 Primary & Secondary teachers 10 million students.

Table 1.1: EIA implementation areas in Bangladesh

This £50 million project is conducted in collaboration with the British Council and the UK's Department for International Development (DFID). Its primary goal lies in “contribut[ing] to the economic growth of Bangladesh by providing communicative English language as a tool for better access to the world economy” (Walsh et al., 2013, p. 189). This project has also spread the use of technology in English language learning to adult learning which is concerned mostly with the common public in Bangladesh; for example, learning English through BBC Janala on mobiles. However, this project does not take tertiary education into account. In public and private universities in Bangladesh, university authorities have their own implementation strategy for technology use depending on available financial as well as technical facilities. Therefore, there is a need for researching about the contribution of technology to English language education at the tertiary sector in Bangladesh. This present study aims to take a step forward towards meeting this need by researching about university teachers' cognition regarding CALL.

1.4.3 Barriers in technology environment in Bangladesh

Though Bangladesh is moving towards the increased use of computer technology in education, there are some barriers in the support of technological environment such as low funding, slow

internet connection or speed and limited access to the international academic community (Bangladesh, n.d.). Another difficulty posed in technology implementation is pointed out by Kirkwood (2013):

Bangladesh is classified as one of the ‘Least Developed Countries’ by the United Nations....The generated supply of electricity fails to meet the demand and ‘load shedding’ (cuts in the power supply) occurs on a daily basis. (p.875)

Though in 2007, the finance and planning adviser of the country, Mirza Azizul Islam assured for load-shedding free Bangladesh by 2010 (Saifullah, 2009), Kirkwood’s comment shows the inability of the Government of Bangladesh for such improvement till now.

1.5 Aims of the Research

According to Borg (2003), teachers are the “active, thinking decision-makers who make instructional choices by drawing on complex, practically oriented, personalized, and context-sensitive networks of knowledge, thoughts and beliefs” (p. 81). Thus, while using technology in classrooms, teachers can make the difference despite the research showing how powerful computers can be (Bruce, 2002). As Stockwell (2012) highlights, when computers are used in classrooms for teaching and learning, the design of instructions is based on teachers who determine the way of using technology to achieve pre-determined goals. However, to understand teachers’ actions better, it is important to understand what they believe, what they know, their attitudes and feelings, as stated by Borg in an interview with Birello (2012). Thus, this study aims at understanding teachers’ mental lives, a directly unobservable dimension of teaching but only in terms of using CALL.

The study is unique in terms of its context; Bangladesh, one of the third world countries and a sovereign state of South Asia. The reason behind choosing this country as the context was the minuscule amount of research regarding the use of technology in education in Bangladesh. The three prestigious journals of English language teaching (ELT) and Applied Linguistics in Bangladesh, namely *Dhaka University Studies*, *The Journal of the Institute of Modern Languages* and *Harvest: The Journal of English Language and Literature* consist of research mostly done on English language skills and teacher education (Sultana, 2014). According to Levy and Stockwell (2006), the use of CALL often seems to take its own individual “flavor” depending on the country; they termed such practice of CALL as the “localization of CALL” (p. 218). Thus, this study looks at the localization of CALL in Bangladesh from the teachers’ cognitive perspective.

The study is also significant in making a bridging connection between teacher cognition and CALL research studies. With the passage of time, there have been research studies on different constructs of teacher cognition such as attitudes, knowledge, beliefs, perceptions, perspectives etc. associated with technology as well as CALL. However, there is lack of research looking at the united aspects of teacher cognition rather than separating these constructs. Besides, the lack of research also aligns with the significance of teacher cognition in classroom practice. Mostly, research studies have revealed about teachers’ positive attitudes, beliefs or perceptions towards technology but they overlook the quest for the influence of these constructs in teachers’ classroom practice. Therefore, despite being context-specific, this research study aims to contribute to the fields of both teacher cognition and CALL research by expanding its quest for understanding the significance of teacher cognition in CALL practice.

Tondeur et al. (2008) stressed the existing minimal relationship between educational beliefs and technology implementation. Therefore, this study aimed to contribute something new about technology implementation associated with teachers' perspectives to two broad fields of Applied Linguistics, teacher cognition and CALL regarding a specific non-English speaking context, Bangladesh. This aim has been achieved by investigating the following questions:

1. What conceptions and attitudes do university English teachers hold about CALL in Bangladesh as a developing country?
2. What is the relationship between these conceptions and attitudes and teachers' reported classroom practices regarding CALL?

It is important to investigate conception and attitudes in relation to practice because teachers' cognition may influence their teaching practice in classrooms. With the aim of exploring such cognitive influence, the first research question considers conceptions and attitudes together as important elements to understand the aspects of teacher cognition whereas the second research question investigates these elements in relation to practice. Teacher cognition is not a directly observable dimension of teaching and thus teachers' reported practice has been considered for this study. Hence, the research is conducted to explore the significance of teachers' cognition in relation to their reported practices in using CALL.

1.6 Organization of the Study

This thesis consists of six chapters. Following the introduction, Chapter 2 reviews literature relating to teacher cognition and CALL. It also contains accounts of several empirical studies carried out previously on teachers' perspectives related to technology implementation. The need for the present research and its theoretical framework are subsequently identified and the research questions are raised for the investigation.

Chapter 3 discusses the methodological approach adopted in the research. It justifies the use of the questionnaire and semi-structured interview as instruments for this exploratory research. Then it describes the construction of both of the instruments for the collected data. The process of collecting and analyzing data is also summarized.

Key findings from analysis of the research data are illustrated in Chapter 4. These include results based on the use of questionnaires and interviews. The findings from the questionnaire are presented using descriptive statistics. The interview data findings are provided in the form of case studies to present deeper insights into the questionnaire results.

Chapter 5 includes a detailed discussion of the findings by addressing the research questions. It also takes the previous relevant research findings into account to provide newly emerging insights about teacher cognition in relation to CALL in Bangladesh.

The last chapter of the thesis, Chapter 6, summarizes the key findings of the study along with pedagogical suggestions and limitations of the study. The chapter concludes by suggesting areas for future research in teacher cognition and CALL considering the researched context, Bangladesh as well as other developing countries including a broader context in the field of Applied Linguistics.

1.7 Description of Key Terms

The following key terms have been addressed throughout the paper:

1. Teacher cognition: “an often tacit, personally-held and practical system of mental constructs held by teachers and which are dynamic” (Borg, 2006, p. 35)
2. CALL: the process of language learning “in any context with, through, and around computer technologies” (Egbert, 2005, p. 4)

1.8 Conclusion

With the provision of background information about research interest and teaching of English in Bangladesh, this chapter focused on the aims of the present study with two research questions. The organization of the study along with a brief summary of the key terms also provided further information about the next chapters of the study.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter reviews the academic literature on teacher cognition and CALL with brief information about CALL in developing countries. A critical approach to some earlier studies relevant to both teacher cognition and CALL also identifies the research gap for the present study. The chapter concludes with the statement of the research questions of the present study.

2.2 Teacher Cognition

To understand the role of teachers in CALL practice, their knowledge, beliefs and thoughts about CALL have to be explored. After all, understanding their mental lives is significant for the process of becoming, being and developing as a professional teacher. Such studies are known as teacher cognition, a targeted aspect of language teaching for this study regarding CALL. This section focuses on the definition of teacher cognition and the influence of contextual factors on shaping teachers' conceptions.

2.2.1 Definition of teacher cognition

Teacher cognition, being a well-established field of research in the education sector, treats teaching as a thoughtful behavior. According to Borg (2003), teacher cognition addresses the cognitive dimension of teaching that answers questions regarding what teachers know, believe and think about any aspect of teaching and learning processes. This unobservable dimension of

teaching influences teachers’ pedagogic behaviors and classroom practices in different educational contexts such as distance learning, face-to-face learning and even blended-learning (Borg, 2006). The term ‘teacher cognition’ was first used in the ELT field in Woods’ research (1996) on eight Canadian ESL teachers. In his study, Woods (1996) considered cognition “as an enveloping term for covering states or processes that may be different or similar as beliefs, assumptions and knowledge (BAK)” (as cited in Feryok, 2010, p. 274). According to Borg (2006), teacher cognition embraces the complexities of teachers’ mental lives followed by “constructs such as knowledge, belief, attitude, value, perception and rationale” (Mori, 2011, p. 452). In fact, the following **Table 2.1** shows the inconsistent and confusing terminology under the roof of ‘teacher cognition’:

Terms used in language teacher cognition research (Borg, 2003, p. 87)	<i>BAK (beliefs, assumptions, and knowledge)</i> <i>conceptions of practice</i> <i>culture of teaching</i> <i>image/s</i> <i>maxims</i> <i>pedagogic principles</i> <i>pedagogical knowledge</i> <i>pedagogical reasoning</i> <i>personal pedagogical systems</i> <i>personal practical knowledge</i> <i>personal theories</i> <i>practical knowledge</i> <i>routines</i> <i>specific pedagogical knowledge</i> <i>theoretical beliefs</i> <i>theories for practice</i>
Additional terms used in language teacher cognition research (Borg, 2015, pp. 55-57)	<i>beliefs</i> <i>epistemological beliefs</i> <i>folklinguistic theories</i> <i>idealized cognitive models (ICMs)</i> <i>knowledge about language</i> <i>perception</i> <i>teacher cognition</i>

Table 2.1: Teacher cognition research terminology

Among all these inconsistent terms, this study uses the term ‘teacher cognition’ for “the beliefs, knowledge, theories, assumptions and attitudes that teachers hold about all aspects of their work” (Borg, 1999, as cited in Borg, 2015, p. 57). For this study, CALL is the context for investigating teacher cognition. Teachers’ conceptions about CALL can represent the set of their ideas; teachers’ thinking can portray their understanding about CALL whereas their interpretations of experience will be relevant to their beliefs about the future of CALL in Bangladesh. Besides, components of knowledge, beliefs, conceptions as well as intuitions are inextricably intertwined in the mind of a teacher (Verloop et al., 2001). Thus, ‘teacher cognition’ is consistently considered in the study to address all these terms.

Borg (2005) points out second language (L2) grammar teaching as the most focused area regarding teacher cognition along with some concentration on L2 reading and writing. Aspects such as L2 vocabulary, listening and speaking relating to teachers’ perceptions have seldom been studied. Moreover, in L2 research, teacher cognition has mostly been concerned with teachers who are native speakers of English teaching adults in higher education level. According to Ertmer (2005), little research has also been done on teachers’ beliefs linking to teachers’ classroom uses of technology. To the best of my knowledge, no research has been conducted regarding teachers’ cognition in CALL in anywhere including Bangladesh. Furthermore, in Bangladesh, almost all EFL or ESL teachers are non-native speakers but competent users of English and native speakers of Bengali. Therefore, this study aims to underpin the foundation of teacher cognition in the context of CALL in Bangladesh, particularly of tertiary English teachers. This research may also give insightful details about the status of CALL relating to teachers’

conceptions which can be utilized for future research in other developing countries regarding the concept of CALL.

2.2.2 Relationship between teacher cognition and contextual factors

Borg (2003) emphasizes the role of context in shaping teachers' mental lives by stating, "the study of cognition and practice without an awareness of the context in which these occur will inevitably provide partial, if not flawed, characterizations of teachers and teaching" (p. 106). Thus, teacher cognition can be regarded as highly context-sensitive (Borg, 2015). Borg (2006) also affirms the incongruent relation between conceptions and practice often to be influenced by contextual factors. Long time ago, Dexter et al. (1999) framed teachers as agents of change in need of a supportive context. However, in present days, sometimes social, pedagogical and even environmental factors beyond teachers' control can influence their teaching and even change their existing cognition (Borg, 2006).

The following **Figure 2.1** adapted from Borg (2003) represents the relationship between teacher cognition and contextual factors:

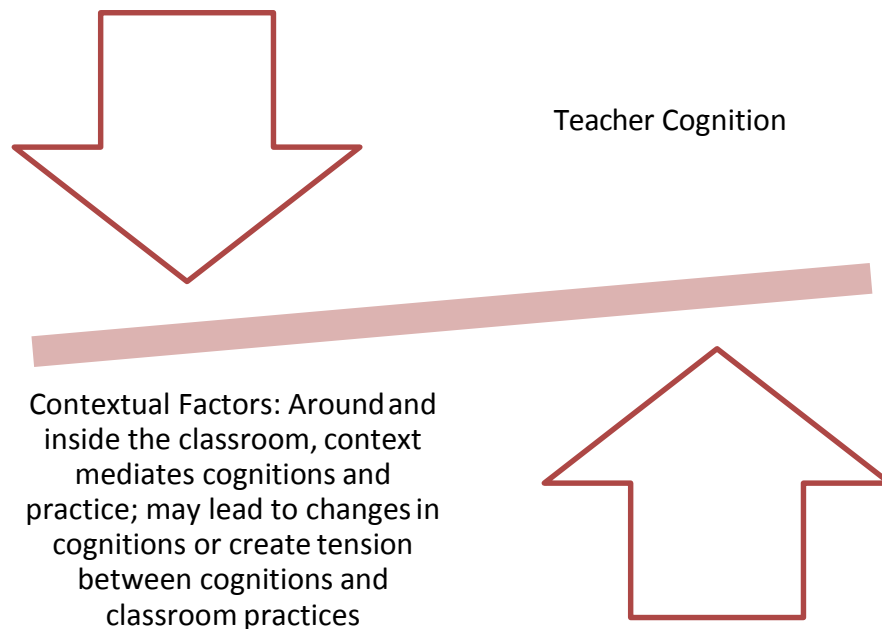


Figure 2.1: The relationship between teacher cognition and contextual factors

Figure 2.1 illustrates the imbalanced relation between teacher cognition and contextual factors; the influence of context on teachers' conceptions about any particular teaching and learning aspects. Borg (2015) claims that contextual factors can interact with teachers' conceptions in two ways: 1) they may lead to changes in their conceptions or 2) they may alter practices directly without changing the conceptions underlying them. According to Putnam and Borko (2000), teacher cognition is situated in particular physical and social contexts because what teachers do and think can be intertwined with particular contexts in which they work. Some other studies also found contextual factors to be a strong influence or constraint on the congruence between teachers' conceptions of teaching and their actual practices in the working place (Crookes and Arakaki, 1999; Tsui, 2003; Andrews, 2003; Xiaoqiong, 2005). Due to the influential relationship between teacher cognition and contextual factors, Borg (2006) characterizes teacher cognition as a tacit dynamic and practical system of mental constructs held by teachers personally.

2.3 Computer assisted language learning (CALL)

This section covers the definition and application of CALL followed by the development of CALL over time.

2.3.1 Definition and application of CALL

Language learning through technology requires efficient skill and knowledge to use certain available technologies. The computer has been one of the most used technical equipments for a range of actions in daily life such as typing, gaming, social-networking, watching videos etc. The field of language learning, as one part of the educational sector, uses computers as student-centered learning resources as well. The reasons for using computers in language teaching and learning include experiential learning, motivation, enhancement of student achievement, authentic study materials, greater interaction, individualization, independence from a single source of information and global understanding, as acknowledged by Lee (2000).

In 1997, Levy defined CALL as “the search for and study of applications of the computer in language teaching and learning” (p. 1). Through the historical development of computer technology and with the passage of time, the definition of CALL has accommodated itself in a new dimension known as “any process in which a learner uses a computer, and as a result, improves his or her language” (Beatty, 2003, p.7). However, for this research study, teachers’ use of computers is the focus for several reasons. Firstly, teachers are the one in CALL

environments whose use of computers varies. Their use of computers involves different teaching methods depending on learners' needs. Besides, the process of language learning involves how teachers use computer technology to achieve certain learning goals. Thus, for this research study, Egbert's (2005) definition of CALL has been taken into account where she considers CALL as the process of language learning "in any context with, through and around computer technologies" (p. 4).

With the passage of time, the trend of using computer-assisted devices in language teaching has increased worldwide (Haider and Chowdhury, 2012). CALL has also been well-known with other variable acronyms listed by Hampel & Lamy along with their acronym CMCL standing for Computer-Mediated Communication and Learning (2007, p. 7):

CALI	Computer-Assisted Language Instruction
CALL	Computer-Assisted Language Learning
CELL	Computer-Enhanced Language Learning
CBLT	Computer-Based Language Teaching
CMC	Computer-Mediated Communication
ICALL	Intelligent CALL
MALL	Mobile technology-Assisted Language Learning
NBLT	Network-Based Language Teaching
TELL	Technology-Enhanced Language Learning
WELL	Web-Enhanced Language Learning

Table 2.2: Acronyms in computer-assisted language learning

In recent times, Jarvis & Achilleos (2013) consider the term 'Mobile Assisted Language Use' (MALU) to address CALL as it covers the different range of technologies including desktop and laptop computers (as cited in Jarvis & Krashen, 2014). However, for this study, among all these

terms, ‘CALL’ has been used because the presence of computers cannot be denied in any electronic devices ranging from mobile phones to interactive whiteboards (Stockwell, 2012).

Application of CALL has many benefits for achieving expected learning goals and meeting learners’ needs for the successful language learning. CALL promotes independence among learners so that they can access materials and learn by disregarding time and place and participating in independent as well as collaborative learning environments (AbuSeileek & Abu Saaleek, 2012). Many articles (Wang, 2008; Bahrani, 2011; AbuSeileek & Abu Saaleek, 2012) have talked about the advantages of CALL but Wang’s review (2008) integrates them all in “three major advantages of CALL: authenticity, individualization and interaction” (p. 63). With authentic materials and real-life situations, learners not only learn the language but also apply their language skills in real-life situations like problem-solving. The CALL lessons also encourage learners’ participation in discussions or tasks without hesitation where everyone is sharing their ideas with only one single identity, the computer. Thus, CALL creates an interdependent relation among computers, students and teachers and ensures better language learning (Gruba, 2004).

2.3.2 Development of CALL

CALL gradually developed over the past several decades through three different distinct phases, namely *Structural CALL*, *Communicative CALL* and *Integrative CALL* as highlighted by Warschauer in 2000. Wang (2008) states all these phases being associated with certain levels of technology and pedagogical approach. Being implemented in the 1970s and 1980s, *Structural*

CALL focused on repetitive language drills entitled as “drill and practice” based on the model of computers as tutor. With the purpose of stimulating learners’ discussion, writing and critical thinking, the phase of *Communicative CALL* gained prominence in the 1980s and 1990s, when the “computer did not only serve as the knower of knowledge, the process of finding the right answer also involved a fair amount of student choice, control, and interaction” (Wang, 2008, p. 41). The challenge of integrating various aspects of the language learning process such as task or project-based approaches in authentic environments and integrating various linguistic skills such as listening, speaking, reading and writing was taken up by *Integrative CALL*. This phase became significant due to two main technological developments in the mid-1990s: the development of CD-ROMs (Multimedia CALL) and World Wide Web (Web-based CALL) (Wang, 2008). Ever since the development of network-based technology, people are able to share information resources and communicate with each other regardless of their place and time. Despite of such distinct phases of CALL, there are no certain sequences of proceeding from one stage to another in CALL environments (Beatty, 2003). After all, drill and practice tasks can still be found at the present time rather than only being implemented during 1970s. The practice of English in primary schools in Bangladesh can be one such example. Also, Feng (2012) mentions that there are no obvious beginning and ending technological tools to use in language classroom and he provides an overview of the historical development of CALL based on Warschauer(2000):

<i>Stage</i>	1970s-1980s: Structural CALL	1980s-1990s: Communicative CALL	21st Century: Integrative CALL
<i>Technology</i>	Mainframe Computers	PCs	Multimedia and Internet
<i>Goals for Language Learning</i>	Mastery of structures	Communicative proficiency	Communicative proficiency and self-control learning

<i>Role of Technology</i>	Tutor & teaching machine	Tool	Level-appropriate input provider
<i>Role of Teachers</i>	Monitor	Adviser/ Facilitator	Manager/ Facilitator
<i>Principal Use of Computers</i>	Drill and Practice	Communicative Exercises	Authentic Discourse

Table 2.3: The historical development of CALL

Table 2.3 is adapted from Feng (2012) to show the historical development of CALL. Each of the phases of CALL consisted of different kinds of technology according to the focus of their use for achieving pre-determined learning goals. Hence, the roles of technology as well as teachers have also transformed according to their use, as shown in **Table 2.3**. According to Warschauer (2004), the stages did not occur in rigid sequences as a shift from ‘bad’ CALL to ‘good’ CALL; rather “there has been a general transformation in CALL over the years, with new ideas and uses of computers being used” (p. 10).

The development of CALL can also be traced through the acronym of Information and Communication Technology (ICT) which shows how Information, Communication and Technology have risen or fallen in prominence at various times in the history of CALL. This development is interestingly presented by Fischer (2013) who has explored the articles of CALICO Journal since 1980s till 2013 and shown the changing trends of CALL since its emergence by emphasizing ICT in the following way (p. 6):

$$\text{ic}\underline{\text{T}} \rightarrow \underline{\text{I}}\text{ct} \rightarrow \text{i}\underline{\text{C}}\text{t}$$

As Fischer (2013) observes, from 1983 to 1990s, CALL Technology was the focus of practitioners due to the newness of the field so that they could know what technologies to be used which makes the T of ICT emphasized. Gradually, it was the phase of I of ICT where delivery of Information (lesson contents) turned into the center of attention of CALL researchers and practitioners since 1990s. Around the year of 2000, C of ICT became dominant for Communication in the phase of CALL which occurred as Computer Mediated Communication (CMC) either in text-based or audio-video-based forms synchronously or asynchronously. To describe the current phase of CALL, Fischer (2013) places CMC at the forefront of CALL. He also finds social-networking sites and Youtube as well as online dictionaries as some of the appealing CMC forms in recent times. Thus, communicative proficiency is still the main focus of CALL activities in the 21st century as Warschauer (2000) mentioned but the communication forms are changing day by day as identified by Fischer (2013).

As the historical development shows, CALL is designed to assist learning in various transformed forms over the course of its evolution; at recent times it is more communicative-focused compared to past. However, more teacher input is required both in the planning and usage stages, as stressed by Ertmer (2005). Thus, the importance of teachers cannot be ignored in CALL environments. Moreover, the main challenge for CALL is that computers, in a CALL classroom, can perform only as the learning or teaching tool only but cannot perform as a live teacher. Thus, the roles of teacher and computer in CALL are complementary to each other. This study hence

tries to understand the phase of CALL in Bangladesh from university English teachers' point of view.

2.4 Major Components of CALL

Computer Assisted Language Learning (CALL) promotes learner-centered learning giving learners opportunities to interact in the target language to negotiate meanings by participating in authentic tasks and producing varied and creative language and thus CALL encourages learner autonomy (Wang, 2008). However, teachers also play a significant role in making language learning easy, comprehensible and convenient for learners depending on their time, teaching materials and their experience of teaching. Therefore, Son (2000) identifies three important components in a CALL classroom via the following **Figure 2.2**:

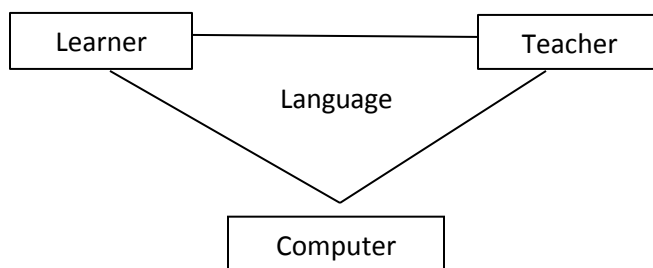


Figure 2.2: Model of three main components in the CALL classroom

In **Figure 2.2**, Son (2000) implies that all these components of CALL work as a team; the teamwork is mainly led by teachers to encourage other components to do their best. Therefore, teachers are vital to the operation of CALL in the classroom in order to find ways to enrich their instructional programs.

As this study is concerned only with teachers' use of computer in CALL, the following sections discuss the roles of teachers along with the roles of computers in CALL regardless of the existing knowledge, skills and attitudes learners bring with them into CALL environments regarding computers.

2.4.1 Roles of computers in CALL

According to Gunduz (2005), the computer is a flexible classroom aid in a CALL setting which can be used both by students and teachers in various ways. In 1994, Levy conducted a research based on roles for the computer established by Ng & Olivier (1987). They discovered that 'the computer as tool' was the most fundamental role of computers. These basic roles (p. 13) can still be found at the present time despite of the gradual improvement of CALL applications:

- (a) as a presenter of information and deliverer of exercises (in the varied strategies of drills, games, tutorials and simulations);
- (b) as an editor (in the use of word processors, and textual analysis software);
- (c) as a tutor and adviser, suggesting general principles, pointing out common errors and offering assistance in knowledge-specific domains (in dialogues, tutorials and intelligent tutoring systems);
- (d) as a facilitator (in its alliance with other technologies and in the creation of language-rich environments and activities);
- (e) as a partner (in games, and simulations)

Computers as tool was mainly in the focus in *Communicative CALL* as shown in **Table 2.3** and this role is still evident in empowering learners to use or understand language along with providing any language materials (Feng, 2012). However, regardless of what roles computers can play, the decision regarding whether and how to use computers for instruction and learning rests on the shoulder of classroom teachers, as stated by Ertmer (2005).

2.4.2 Roles of teachers in CALL

All these roles are carried out by computers but as one of the leading components, teachers also have some roles to play to make the implementation of CALL successful. Back in 1999, Dexter et al. emphasized the changing role of teachers due to the integration of computer technology in language teaching (as cited in Wang, 2008, p, 63):

The teacher's past role of being an information giver has changed to one of facilitator and mentor in the classroom. The teacher has the responsibility for: First, planning and providing careful organization of activities, and second, helping students to access information, process it and communicate their understanding. This role will allow students to become less dependent on their teachers as experts.

Thus, in such learner-centered learning environments, teachers have various roles depending on the circumstances of learners' needs. Sometimes teachers can be 'resource providers' when they provide students with different kinds of learning materials available online in vast amount instead of depending on one single resource like textbook. Peers and colleagues are also common sources to know about the new CALL activities (Egbert et al., 2002). When teachers become

‘monitors’, they observe learners’ activities and interaction and provide positive feedback to facilitate the interaction while performing the required tasks (Okonkwo, 2011); this role was found during *Structural CALL* phase as shown in **Table 2.3**. Sometimes teachers can be ‘managers’, a role played by teachers in the 21st century as showed in **Table 2.3**, to initiate learners’ interaction with each other for a task completion and make them work collaboratively (Okonkwo, 2011). There are other roles of teachers in CALL classrooms traced over time; for example, sometimes they can also play the role of ‘coach’ to guide students in every step of the given task to make them feel at ease and interact without any hesitation instead of being the only authority and decision-maker. As ‘researchers’, they can also look at the occurring problems in a CALL environment and look for solutions to the problems for encouraging successful learning. For example, teachers can research for various options to encourage students’ collaborative writing rather than focusing only on Google Docs to use for this purpose (Cunningham, 2013). According to Cunningham (2000), teachers’ roles as motivator, correspondent and challenger have also gained a vital importance. Besides transmitting new knowledge, teachers provide students with tools to acquire knowledge and recognize the value of what they see in books and other resources in CALL lessons (Bancheri, 2006). Teachers also can act as ‘immediate responders’ to learners’ questions when they face any unexpected learning problem which the computer cannot solve with its mere artificial intelligence (Bahrani, 2011).

2.5 CALL in Developing Countries

The localization of CALL is important as its application and sustainability may differ between developed and developing countries. With the increased trend of using computer-assisted devices

in language teaching worldwide, the application of CALL is mostly notable in developed countries where costs qualify the language learning with technology:

....CALL is used routinely in language instruction in highly developed countries, such as the USA, Japan, and Western European countries [...] to provide supplementary practice in the four skills writing, reading, speaking and listening, as well as grammar and problem solving. (Gunduz, 2005, p.195)

In developing countries, the picture is quite different compared to the producers of CALL programs. Many third world countries such as Colombia are just an end user or consumer of CALL software (Mosquera, 2001). This may be due to cost and sustainability issues (Kennedy & Levy, 2009). The widening gap in educational facilities between developed and developing countries may also raise the question of culture. Mosquera (2001) gives an example of imported CALL materials where a speaking activity on favorite rugby player or famous rock band in Britain may demotivate second language learners as the materials are just alien to them taken from the native language setting. To explore such differences, this study aims at one of the developing countries, Bangladesh to understand how tertiary teachers localize CALL in their English teaching.

In these developing countries, students were used to rote learning by relying on the teacher as the sole source of knowledge (Gueye, 1989). Such situation can be regarded as “drill and practice” in Warschauer’s (2000) *Structural CALL* phase in **Table 2.3**. This situation is now changing gradually with the emergence of technology in educational instruction and practices (Gulati, 2008) and moving towards *Communicative CALL or Integrative CALL* (**Table2.3**). Son’s (2002)

study found some teachers not being hopeful about the bright future of CALL in developing countries due to limitations of financial and technical support which endangers the sustainability of CALL. However, the scenario for CALL is changing in the developing countries. Many of the developing countries such as Turkey, Niger, China and Iran are overcoming their financial problem in integrating technology in education with funds from their Government or various agencies such as United Nations Educational, Scientific and Cultural Organization (UNESCO) (Gulati, 2008). About a dozen developing countries, including Samoa, Columbia, Niger, Mexico, and El Salvador received funds from various agencies such as the United States Agency for International Development (USAID), UNESCO and the French aid to North African countries, for primary school teaching over televisions to reach their deprived populations (Perraton, 2000). The training problem is also being attempted to improve the quality of teaching with computers in these third world countries. For example, a government supported project called Vidyakash in India supported teacher training to provide an institutional infrastructure to use Internet technologies in education (Sharma, 2005). India is also considered as a global leader in the out-sourcing of IT services, unlike most developing countries, for contributing to the technological revolution (Sharma, 2005).

CALL is quite a new dimension in Bangladesh despite its historical journey since 1960s (Joher, 2014). Bangladesh with its world famous grassroots, the Grameen Bank, also receives funds from the Pan Asian Network (PAN) for ICT infrastructure and research projects (Deb, 2011). However, the effective integration of ICT in education is a complex process due to “curriculum pedagogy, institutional readiness, teacher competencies and long-term financing” (Hoque & Alam, 2010, p. 100). Hence, social, cultural and economic harmonization is important for any integration or replacement of the use of technology in developing countries (Hoque & Alam,

2010). There have been several research studies regarding CALL in the context of Bangladesh, a country where the footprints of computer usage in education have just started to spread (Rahman, 2004; Chowdhury & Le Ha, 2008; Hamid & Baldauf, 2008; Shohel & Power, 2010; Hoque & Alam, 2010; Haider & Chowdhury, 2012; Joher 2014). All these studies have been conducted in primary as well as secondary education sectors in Bangladesh except Rahman's (2004) and Joher's (2014). These studies have mainly explored to understand how technologies, precisely computers, encourage learners. On the other hand, Rahman's (2004) research was only concerned with the effect of technology on distance learning at Bangladesh Open University and Joher (2014) looked at the change of trends in using technologies in language learning only in several private universities in Bangladesh. Relatively little is known about how Bangladeshi English teachers interact with emerging technologies in language pedagogy (Celik, 2013). Besides, the higher education level has been an under-researched area in the research field in Bangladesh in terms of Applied Linguistics. Therefore, lack of studies on CALL from university teachers' perspectives has encouraged the research to understand the relationship between teachers' mental lives and their experience of CALL in the specified context, Bangladesh as a developing country.

2.6 Recent Empirical Studies on Teachers' Perceptions about CALL

This section traces some of the studies recently done on teachers' perception or attitude towards CALL and provides the rationale for this current research based on these studies.

2.6.1 Teachers' attitudes and perceptions of CALL in recent empirical studies

Shin & Son (2007) is the first empirical study to be reviewed in this research. These researchers focused on Internet Assisted Language Learning, a way of conveying CALL in Korean secondary schools. This quantitative study, using questionnaire, collected data on 101 EFL teachers' perceptions of using Internet and their general opinions and comments about using Internet for language teaching in classrooms. The results found teachers' personal interest and abilities in Internet use and technical support in the institutions as key elements for their use of Internet in language teaching. The teachers expressed their interest of using Internet more in preparing teaching materials rather than directly using it with students in classrooms due to students' possible distraction for useless and irrelevant websites during web surfing in the class. The study findings also pointed out teachers' concern for in-service training courses to enhance their computer competence. However, the study also points to the need for investigating any available impeding factors for using Internet effectively in their EFL class.

While looking for the negatively dominant factors, the research done by Park & Son (2009) is noteworthy regarding the implementation of CALL in an EFL class from Korean teachers' points of view. In this mixed-method study, questionnaires and follow-up interviews with 12 Korean secondary school teachers explored for responses regarding their personal knowledge about computers, their CALL practice along with factors influencing their decision to the use of CALL. The research discovered teachers' positive and favorable attitudes towards the implementation and use of CALL considering computers as useful teaching tool for encouraging learning. Park and Son also revealed that teacher-related factors (termed as internal factors) and context-related factors (termed as external factors) can influence or affect the implementation of CALL and

teachers' decisions in using CALL. However, the study points out the need of representing any opinion regarding the future development of CALL in their context from teachers' perceptions.

Wiebe & Kabata (2010) investigated not only teachers' but also students' attitudes towards CALL in Canada. Conducting a mixed method study, the researchers collected data through questionnaire and focus groups and compared 7 teachers' responses to 183 students'. The study revealed a discrepancy between the students' and teachers' perceptions of the use of computers for language activities. Teachers used CALL for the learners' better, enjoyable and comprehensible language learning whereas students perceived teachers' use of CALL as a way of reducing their workload and utilizing time. However, teachers and students, both of the participants agreed about the effective consequences of CALL. Nevertheless, the influence of context was overlooked in this study from both groups of participants' views.

Another comparative study conducted by Jahromi & Salimi's (2013) in an Iranian context is remarkable. Their survey explored the human elements of CALL by analyzing 280 female participants' (40 high school language teachers' and 240 students) attitudes towards CALL and looking for influential factors in the practice of CALL. The researchers collected quantitative data regarding the participants' views on CALL attitudes, cultural perceptions, competence in computers and computer access. The study revealed that teachers were more competent in computers with their highly positive attitude whereas students were positive but less competent computer users for language learning activities. Teachers were also found to be less competent in accessing databases, making spreadsheets and other advanced program skills. The study recommended an emphasis on the importance of teacher training for CALL as well as increasing

students' computer competence by running computer classes. However, the researchers could rectify the shortcoming of gender by having some male participants to know about their attitudes towards CALL.

Similar to these previous ones, a recent study undertaken by Aydin (2013) in Turkey focused on Turkish EFL teachers' perceptions of using computers in classrooms. A voluntary survey was conducted with 157 Turkish elementary and secondary school teachers focusing on participants' five aspects: "(1) knowledge of computer software, (2) frequency of software usage for personal purposes, (3) computer attitudes, (4) perceived self-confidence in integrating computers and (5) school climate and support" (p. 220). The study collected data through questionnaire and found teachers' positive attitude towards CALL even though they held little computer competence. It also revealed that maximum use of computers was for Power Point presentations for language activities and communicating with students via computers. Though there was the presence of teachers' negative expressions about the instructional support and technical facilities, the findings implied the importance of teacher training programs and technical support from the education administration. However, the study points out the need for other investigative influencing factors apart from teachers' personal use which may indicate their attitudes towards the use of computers in teaching and learning process.

2.6.2 Rationale for the current research based on reviewed empirical studies

More research studies on teachers were conducted in other developing countries like Brazil (Andréa Machado, 2003), the United Arab Emirates (Almekhlafi & Almeqdadi, 2010), Iran (Bordbar, 2010) and Pakistan (Hafeez et al, 2011). All these studies investigated teachers'

attitudes, perceptions, beliefs or perspectives regarding the use of computers or other technologies, in a broader term, CALL. Some studies have looked at teachers' attitude towards computer or influential factors only; some lack in exploring teachers' opinions about the future development of CALL in their contexts. Therefore, these studies overlook teachers' knowledge and assumptions about CALL along with their beliefs about the further development of using CALL – the plausible proposition of teacher cognition in CALL. These studies lack in providing ideas about these propositions as a whole. Attitudes, perceptions, beliefs, knowledge or perspectives all these are different concepts in teacher cognition research but at the same time, it is difficult to recognize the distinction between these constructs as blurry at best (Borg, 2015). Therefore, there is a need for understanding these constructs under one shade which can be termed as 'cognition' but in a specified context. After all, Borg (2015) implies the significance of context where “instructional practice and cognition are mutually informing” (p. 54). Besides, there is a need for conducting similar research on university teachers who teach English as a second or foreign language because almost all of these empirical studies were based on primary or secondary school EFL teachers.

2.7 Theoretical Framework

The gap between teachers' mental lives and technology, namely computer can be drawn from Borg's existing teacher cognition bibliography of language teacher cognition research. He identified 25 articles in English published in 2011 regarding teachers' mental lives (Borg, 2012). Among these 25 articles, only one article by Li and Ni (2011) has been published on teacher's attitudes towards technology and it was based on primary English teachers (Borg, 2012, p. 13).

According to Borg (2012), the study of teacher cognition has given its concern for understanding the unobservable dimension of teachers' lives. However, the lack of research on university teachers' mental lives in the application of CALL has encouraged this study to find out what teachers know, think and belief about CALL. On the other hand, it is difficult to distinguish these constructs of cognition and thus, the study has looked at teachers' conceptions of CALL and attitude towards CALL together. At the same time, it has also focused on the teachers' described practice to understand the relationship between teachers' cognition and practice of teaching. After all, a particular context is unavoidable in teacher cognition research to understand these mental constructs in relation to classroom practice. Therefore, considering teacher cognition as a framework, the research has developed three main themes as shown in **Figure 2.3**:

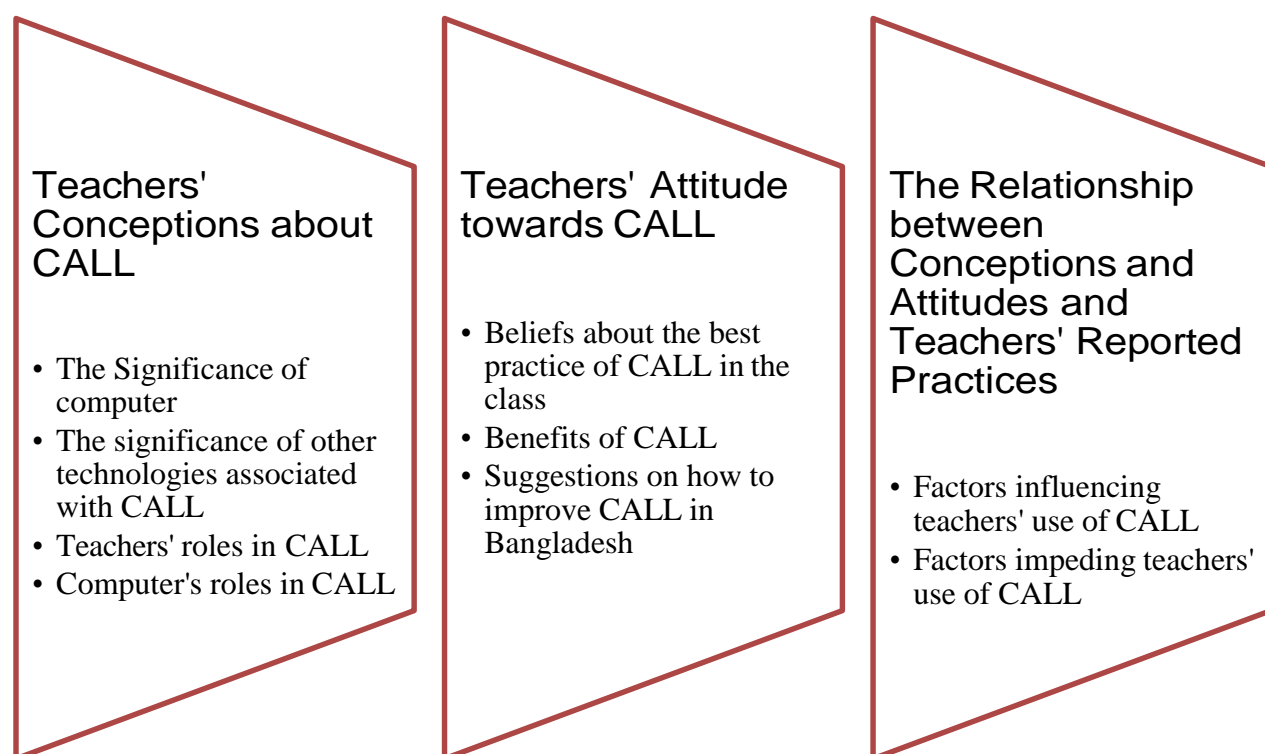


Figure 2.3: Themes for the research on teacher cognition in CALL in Bangladesh

In **Figure 2.3**, the first theme is concerned with teachers' conceptual views of CALL; the second theme is concerned with their attitudinal views on CALL and the third theme is constructed to understand the relationship between these views and teachers' reported practice. All these themes are constructed with the intention to bring teachers' knowledge, beliefs, assumptions, perceptions and such other constructs under one umbrella, 'teacher cognition'. Teacher cognition in no way excludes their relationship compared to the described classroom practice.

2.8 Research Questions

The aforementioned research studies focused on different educational contexts regarding teachers' attitude towards CALL or their perceptions of the use of computers in CALL lessons. These studies have mostly revealed teachers' positive attitudes towards CALL and efficient computer competence for using CALL due to their personal interests in computer. Some of them have also informed about the influence of contextual factors in CALL classroom from teachers' point of view. However, there is a need of redefining and localizing CALL from teachers' cognition by analyzing their ideas and understandings about CALL, their interpretations about the effectiveness of CALL along with the relationship between these ideas as well as interpretations and their reported practice; because Stockwell (2012) stresses that the experience and beliefs of teachers have a larger impact on technology use. Therefore, an exploratory research on teacher cognition in the context of CALL can help us to learn more about what teachers know, think and believe about CALL in their teaching and learning experiences. In such research study, teachers' conceptions, attitudes along with their classroom practice require to be

reported at the same time. To my best knowledge, such research has not been conducted either in developed or in developing countries to understand teacher cognition.

To bring about a change in the rigid curriculum and textbooks in Bangladesh, this research attempted to answer the questions of integrating books, teachers and computers into a greater unit for motivational language learning from teachers' cognitive perspective by connecting the bridge between teacher cognition and CALL. The study also looked at the congruence between teacher cognition and their described practice to signify the importance of teacher cognition in practice. Due to the lack of research on university teachers and the exploration on the aspects of teacher cognition in the context of CALL, this present research investigated university English teachers' cognition of CALL in Bangladesh by responding to the following questions:

1. What conceptions and attitudes do university English teachers hold about CALL in Bangladesh as a developing country?
2. What is the relationship between these conceptions and attitudes and teachers' reported classroom practices regarding CALL?

According to Belawati (2005), educating students and teachers to use computers and develop accessible infrastructures poses a critical challenge for developing countries. To meet this challenge, understanding teachers' mental lives is significant in providing proper teacher education. Hence, this research conducted in Bangladesh may serve as a starting point of teacher cognition research in the context of CALL for other developing countries to improve their teacher education for successful language teaching and learning process.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methodological approach and instrument design followed by the selection and piloting of instruments as well as selection of participants. The chapter also includes separate sections on ethics approval, data collection and data analysis procedure.

3.2 Methodological Approach

According to Singh (2007), exploratory research is the initial research which forms the basis of more conclusive research. Therefore, being the initial research on university English teachers in Bangladesh, this research is exploratory in nature to lay groundwork into teacher cognition in the context of CALL. Brown (2006) mentions that exploratory research tends to tackle new problems on which little or no previous research has been done (p. 43). Due to the lack of research on teacher cognition, this exploratory research is thus significant in providing rich and meaningful information about teachers' cognition in CALL at tertiary education level in Bangladesh. It also aims at exploring the relationship between teachers' conceptions and attitudes regarding CALL and their self-reported practice of CALL because teacher cognition is investigable through teachers' reported practice apart from being directly observable. Thus, this exploratory research will respond to the research questions regarding the “‘what’ and ‘how’ of the phenomenon” while providing guidance for further research on the topic (Bricki, 2007, p.3).

Various data collection strategies have been used to collect data on cognition and practice in teacher cognition research, including “interviews, questionnaires, observation, journals, stimulated recall, conferences, documents, written narratives and reflective group discussions” (Borg, 2012, p. 20). Borg (2012) also mentions the importance of deepening the quantitative analyses of language teacher cognition through qualitative work. Hence, to explore the research topic with varying levels of depth and find meaningful answers, the study was designed with two kinds of structured and self-reported methods; questionnaire and interview (Phellas, et al., 2012). Although, the addition of direct classroom observation could add more to the findings, especially on teachers’ practices, the researcher was unable to travel to Bangladesh to conduct the survey. Besides, as an exploratory research, this study mainly aims to know deeply about teacher cognition in CALL in Bangladesh for further comparative studies with other developing as well as developed countries. Therefore, when used along with a preceding questionnaire, the interview data is expected to help with better interpretation and understanding of the given situation and implication of the questionnaire data (Dörnyei, 2007). The questionnaire may indicate teachers’ general conceptions of CALL and attitude towards CALL quantitatively whereas the in-depth interview is expected to reveal more about their conceptions, attitudes and self-reported classroom practice. Such follow-up interview with a sub-sample of questionnaire respondents will help to analyze the relationship between teachers’ cognition and their described practice in using computers by exploring in detail issues addressed in the questionnaire.

According to Dörnyei (2007), online-based questionnaire and interview are suitable for the convenience of international access. Therefore, the research was conducted remotely in Bangladesh using online-based questionnaire and interview despite of the investigator’s

residence in Australia. Thus, the research was designed considering the following factors: (a) ensuring that instruments were constructed as well suited to examine the research questions posed, (b) considering criteria for sampling and participant selection, (c) gaining approval for human subject research and considering ethical issues, (d) piloting the instruments and making necessary corrections and (e) recruiting participants and collecting data via the internet within a limited timeframe.

3.3 Instrument Construction

Two instruments were chosen for collecting data in the research: questionnaires and interviews. This section focuses on the construction of each instrument separately.

3.3.1 Questionnaire

This sub-section on questionnaire includes a brief rationale for using questionnaire and accounts of using questionnaires in previous studies along with the details about how the questionnaire was designed for this study.

3.3.1.1 Rationale for using questionnaire

According to Brown (2001), a questionnaire is any written instrument that demands respondents' reactions about a series of questions or statements through their written answers or selection

from existing answers. The rationale for choosing a questionnaire as an instrument is summarized in Phellas et al.'s (2012, p. 197) words:

Self-completion questionnaires have the advantage of being cheap, but are more suited to issues where there are only a few questions that are relatively clear and simple in their meaning, and the choice of replies can be limited to fixed categories. They are especially useful in surveying people who are dispersed over a wide geographical area, where the travelling demands on an interviewer would be excessive.

Besides the simple and cost-effective characteristics of questionnaires, another advantage of using questionnaires via the internet is the high level of anonymity that enhances the level of honesty (Dörnyei, 2007). After all, using anonymous questionnaire has benefits in terms of the quality of data collection because “anonymous respondents are likely to give answers that are less self-protective and presumably more accurate than respondents who believe they can be identified” (Kearney et al, 1984, as cited in Dörnyei, 2003, p. 24).

3.3.1.2 Questionnaire in previous studies

In non-CALL teacher cognition studies, questionnaires have been the second most frequent data collection strategies (Borg, 2012). In several previous studies on teachers' attitudes or beliefs regarding technology or CALL, researchers (Aydin, 2013; Jahromi and Salimi, 2013; Wiebe and Kabata, 2010; Park and Son, 2009; Shin and Son, 2007) used questionnaires to collect data. The surveys were conducted in different countries namely Turkey, Iran, Canada and Korea.

3.3.1.3 Questionnaire design

The questionnaire, for this research on teacher cognition, was designed by the researcher by reviewing the relevant literature on CALL. Considering teacher cognition as a framework, the questions were drawn up based on the researcher's own verbal creativity for questionnaire design and such selection is termed as "item pool" by Dörnyei (2003). Thus, a list was generated based on three broad themes (**Figure 2.3**) to decide on the questionnaire and interview content and answer the proposed research questions.

The designed questionnaire did not borrow questions from the empirical studies reviewed in Chapter 2 because the study is intended to explore teacher cognition in CALL unlike other studies. Two of the empirical studies (Aydin, 2013 and Jahromi & Salimi, 2013) used established questionnaires from other previous studies on technology whereas the other three studies (Wiebe & Kabata, 2010; Park & Son, 2009 and Shin & Son, 2007) used self-designed questionnaires. This questionnaire is uniquely designed to elicit university teachers' responses in terms of their attitudes and conceptions about CALL in relation to their described classroom practice to address teacher cognition in the context of CALL. Most of the questions in the questionnaire were constructed based on the articles by Ng & Olivier (1987), Wang (2008), Okonkwo (2011), Bahrani (2011) and Golonka et al. (2012) which are reviewed in Chapter 2. The articles were considered by identifying the key points in the sections such as role of computers (2.4.1), role of teachers (2.4.2) etc. and mapping these key points with the listed three broad themes of teacher cognition (**Figure 2.3**).

The online questionnaire, in this study, consisted of 44 questions on teachers' conceptual and attitudinal views about CALL and their relation with reported practice (**Figure 2.3**) along with their demographic information such as age, gender, teaching location, length of teaching experience and reception of teacher training. Thus, it consisted of "attitudinal questions" and some "factual questions", as termed by Dörnyei (2003, p. 8). The questionnaire consisted of close-ended items with "the most commonly used scaling technique, the 5-point Likert scale" presenting a standard set of response options in the degree of agreement (strongly agree→strongly disagree) (Dörnyei, 2003, p. 36). The agreement scale has been considered to be more appropriate than the frequency scale as it can help to know about the teachers' unobservable dimension of appreciation for using CALL and understanding the relationship between teacher cognition and CALL. Some questions were also multiple choice-based where the participants could choose more than one option.

In the questionnaire, Questions 1 to 21 looked at teachers' conceptions about CALL with some sub-components as shown in **Figure 2.3**. Questions on the significance of computer (Question 1 to 3) and the significance of technologies (Question 4 & 5) were constructed based on the article by Golonka et al. (2012) about technology in education. Questions 6 to 12 focused on the usage of computers by reviewing literature on CALL. The question construction about the roles of teachers (Questions 13 to 17) was based on the roles mentioned by Okonkwo (2011) and Bahrani (2011). Questions about the roles of computers in CALL lessons (Questions 18 to 21) were constructed from the listed role by Ng and Olivier (1987). The rationale behind using such old study is its findings of basic roles of computers which can still be found at present time in CALL classrooms. All of the questions are presented in Appendix 1. The second theme in **Figure 2.3** is

related to Questions 22 to 29 in the questionnaire which explored the participants' attitudes towards CALL regarding its use to practice various linguistic skills from own interest or due to administration's instructions. Their attitude towards CALL was also measured by asking about the benefits of CALL (Questions 30 to 35). These questions were designed based on the article by Wang (2008) where he talks about the merits and demerits of CALL in general. Questions 36 to 40 included possible suggestions on how to improve CALL in Bangladesh to understand teachers' attitudes towards CALL. All these questions are listed in Appendix 2.

Question 41 was constructed from the researchers' personal experience in classrooms in Bangladesh to know about the participants' classroom management in the CALL environment. Questions 42 and 43 mainly concentrated on the participants' responses for influencing and impeding factors in using CALL in their teaching, based on the third theme listed in **Figure 2.3**. Questions were constructed by reviewing Wang's (2008) article and keeping the research context, Bangladesh in mind. These questions are provided in Appendix 3.

The last question on the questionnaire, Question 44 was an optional open-ended question to sum up the participants' experience about CALL in their teaching careers.

3.3.2 Interview

This sub-section on interview addresses the reasons behind using interview as another instrument relating to previous studies as well as the construction of interview questions.

3.3.2.1 Rationale for using interview

According to Roulston (2012), interviews are social interactions in which researchers ask people questions for the purpose of collecting data for social research. Roulston (2012) also adds that interviews are well-suited to examine questions regarding participants' reflections on experiences, life stories and perspective of activities and events. Being more flexible than the questionnaire, it can gather information of greater depth (Phellas et al., 2012). Thus, an in-depth interview was used as an instrument to collect data for an extensive understanding of the issues addressed in the questionnaire. Moreover, Dörnyei (2003) suggests that combining the questionnaire survey with other kinds of data collection procedures is the most effective strategy for enriching questionnaire data. For this reason, interviews were chosen as another medium of collecting in-depth data for this study. Moreover, the use of interview allowed gaining better understanding about CALL from participants' cognitive perspectives.

3.3.2.2 Interview in previous studies

In non-CALL teacher cognition studies, interview has been the most frequently used data collection strategy for research (Borg, 2012). Almost all of the reviewed studies used only questionnaires except Wiebe & Kabata (2010) and Park & Son (2009). In their Canadian study, Wiebe & Kabata (2010) used focus group interviews along with questionnaires whereas Park & Son (2009) used face-to-face, one-to-one interview along with questionnaires while researching in Korea. For both of the studies, the use of interview combined with questionnaires was successful for exploring their research questions. After all, sometimes questionnaire can be

unsuitable for examining an issue deeply due to the simplicity and superficiality of the answers (Kalton & Moser, 1985).

3.3.2.3 Interview guide

In this study, a one-off event “the typical qualitative interview” was conducted with the participants (Dörnyei, 2007, p. 134). The interview questions were semi-structured and open-ended to encourage interviewees to answer in an elaborated and exploratory manner (Dörnyei, 2007). The semi-structured questions which were designed to lead the conversation according to the responses of the interviewees are listed in **Table 3.1**:

<i>Themes in Teacher Cognition Research</i>	<i>Semi-structured Questions for Interviews</i>
Teachers’ conceptions about CALL	1. How do you use computers in your teaching?
Teachers’ attitudes towards CALL	2. For which skills do you use computers in your class mostly?
Teachers’ attitudes towards CALL	3. What advantages have you experienced while using computers in your class?
The relationship between conceptions and attitudes and teachers’ reported practice	4. Are there any internal or external factors that influence your decision to the use of computer?
The relationship between conceptions and attitudes and teachers’ reported practice	5. What problems do you face during using computer in teaching? How do you overcome them?
Teachers’ attitudes towards CALL	6. What do you think about the role of teacher training in using computers for teaching?
Teachers’ attitudes towards CALL	7. What do you think about the current status of computer usage for teaching English at universities in Bangladesh?
Teachers’ conceptions about CALL	8. What term would you give to the way

	you use computers in your teaching?
--	-------------------------------------

Table 3.1: Semi-structured interview questions for teacher cognition in CALL

As shown in **Table 3.1**, these questions were also based on the three broad themes addressed in **Figure 2.3**. Questions 1 & 8 were related to teachers' conceptions about CALL; Questions 2, 3, 6 & 7 were related to teachers' attitude towards CALL and Questions 4 & 5 were related to the third theme of **Figure 2.3**. Therefore, the interview was conducted to answer the proposed research questions in depth in comparison to the questionnaire data. However, the questions were not asked in the same order for each participant to follow the flow of the conversations (Lam, 2000). Rather than asking them direct questions using the term "CALL", the participants were asked questions using the term "computer" to elicit their conceptions about CALL better because indirect questions can be more productive than direct questions when cognition is considered, as stated by Borg in an interview with Birello (2012).

3.4 Selection of Participants

Previous empirical studies included various numbers of participants mostly from the school level of education in different contexts. For a comprehensive understanding, a summary is provided in **Table 3.2**:

<i>Empirical Studies</i>	<i>Context</i>	<i>Number of Participants</i>	<i>Data Collection Methods</i>
Aydin (2013)	Turkey	157 school teachers	Questionnaire

Jahromi & Salimi (2013)	Iran	40 school teachers	Questionnaire
Wiebe & Kabata (2010)	Canada	7 university teachers	Questionnaire and Focus group interview
Park & Son (2009)	Korea	12 school teachers	Questionnaire and Interview
Shin & Son (2007)	Korea	101 school teachers	Questionnaire

Table 3.2: Number of participants in reviewed empirical studies

Table 3.2 shows the different range of numbers of participants for these studies depending on the research aim and contexts. Therefore, considering the research focus and the context of this research, the participants were selected based on two kinds of sampling: criterion and convenience sampling.

3.4.1 Criterion and convenience sampling

There are many private and public universities in Bangladesh in various districts. However, the research focused only on university teachers who teach English in Bangladesh; in Dörnyei's (2007) word, it was "the predetermined criterion" (p. 128). There was no inclusion of specific criteria regarding the participants' age, gender, teaching experience or reception of teacher training, though the questionnaire asked for these demographic information.

Convenience sampling as "the most common sampling strategy" was also followed because of its practicality (Dörnyei, 2007, p. 129). For this study, convenience sampling was practical due to nature of the investigation from remote access and also the recruitment of participants from the Facebook page of professional language teachers in Bangladesh.

3.4.2 Demographics of the participants

The questionnaire respondents were 37 in number whereas the interview respondents were 5. 37 university teachers voluntarily participated in the online questionnaire among which 22 were male and 15 were female participants. They teach at different public and private universities in different cities such as Dhaka, Rajshahi, Khulna and Comilla in Bangladesh but mostly from the capital city, Dhaka. Most of the teachers (57%) did not receive any training prior or during their teaching careers. However, their duration of teaching experience varies from 1 year to 20 years.

In the semi-structured interview, five participants took part willingly in their convenient time. Among them, 4 were male and 1 was a female. Their duration of teaching experience varied from 1.5 years to 13 years. Two of them received pre-service training while studying higher education abroad whereas the others did not receive any training prior to or during their teaching careers. Three participants work in Dhaka, and the other two teachers work in Rajshahi and Khulna respectively. The names of these respondents are replaced with pseudonyms in order to protect their identities of the individuals (Kaiser, 2009). All the details are presented in the following **Table 3.3:**

Pseudonyms of the Participants	Zobair	Rana	Jafreen	Nazmul	Shahed
City of Workplace	Dhaka	Rajshahi	Dhaka	Dhaka	Khulna
Length of Teaching Experience	4.5 years	13 years	1.5 years	7 years	7 years

Reception of Teacher Training on technology	Professional training in abroad only (not in Bangladesh)	No pre-service or in-service training	No pre-service or in-service training	No pre-service or in-service training	No pre-service or in-service training
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Table 3.3: Demographic information of the interview participants

3.5 Ethics Approval

Ethics approval was granted by Macquarie University's Human Ethics Department (Appendix 4). The approval was followed by the submission of the research plan, proposed advertisement on Facebook page (Appendix 5), consent form (Appendix 6) and an application for conducting the research outside of Australia. Intention to record the interviews was provided in the application. The protection of participants' identity was ensured for the research and the identical information was available only to the researcher and her research team, as mentioned in the ethics application. Copies of signed consent forms are held by the researcher. The participation in the survey, for both questionnaire and interview, was voluntary as the researcher intended to use those who would be available and interested in giving their time to respond (Dörnyei, 2007).

3.6 Piloting of the Instruments

A research study requires piloting the research instruments before launching the project to the participants to ensure the high quality of the outcomes in the specific context and to avoid possible frustration and extra work later on (Dörnyei, 2007). The pilot studies for both

questionnaire and interview were small because the numbers of respondents were expected to be small due to the nature of the research. After all, Nargundkar (2003) warns about the possibility of smaller sample size in exploratory research.

3.6.1 Piloting of questionnaire

The questionnaire went through a piloting phase, “an integral part of questionnaire construction”, to collect feedback about its efficiency, clarity and objectivity (Richards, 2003, p. 63). The field-testing was done on two university English teachers from the professional Bangladeshi Facebook Page who belonged to the same group targeted for the real study (Phellas et al., 2012). The piloting revealed unanticipated problems associated with instructions and question wordings. In Questions 4, 5, 41 & 43, instructions were made clearer by mentioning that participants may choose more than one if required and giving space for naming “others” upon choosing. In addition, the word “load-shedding” has been added synonymously with “power failure” in Question 43 because “load-shedding” is the easier and more preferable term in the context of Bangladesh. Moreover, Questions 32 & 33 were split to make clearer statements rather than having a complex sentence for the participants. After all these alterations, the fine-tuned final version of the questionnaire was released online.

3.6.2 Piloting of interview

The interview was also piloted with only one university English teacher from the same Facebook group to identify any complication that may occur during the interview. The questions were

rephrased after the pilot study to make it simpler by replacing the acronym CALL with the word “computers”. The last question of the interview guide, Question 8 was added as the final question to ask for the participants’ responses about the definition of their practice of teaching ESL with computers. Therefore, throughout the interview, the term ‘CALL’ was deliberately avoided by the interviewer to check the teacher’s own understanding, thoughts and beliefs about use of computers. The natural conversational interview also aimed to make the participants feel at ease while giving responses about their pedagogic practice.

3.7 Data Collection

The participants in both of the pilot studies were excluded from the final sample while collecting data because “their experience of seeing the earlier instrument may make them answer the real thing differently” (Phellas et al., 2012, p. 197). For collecting data, participants were invited through an advertisement in the professional Bangladeshi teachers’ Facebook page. A formal authorization was granted from the page-administrator before posting the recruitment advertisement on the page. Response rate was targeted to increase by re-posting the advertisement once a week for a month to gain attention of the group members (Phellas et al., 2012). The Facebook page consists of almost 400 language teachers among which nearly 200 of them are university teachers but not all of them are English language teachers. However, it is usually much more difficult to get a larger sample with teachers than with students. In the case of university teachers, it was even harder as they are found to be busier than the teachers at school level. Therefore, despite of expected 140 university teachers for the sampling, the actual number of participants ended up with 37 university teachers for the questionnaire and 5 university teachers for the interview.

3.7.1 Questionnaire data collection

There was no written consent form for the questionnaire because the participation was voluntary and the completion of the questionnaire was considered as an indication of the consent of participants. The questionnaire was launched online prepared on esurv website at <http://esurv.org/> with a note of its completion time as of maximum 20 minutes.

3.7.2 Interview data collection

The semi-structured interview was conducted with voluntary participants working at different public and private universities in Bangladesh. The interviews were carried out using Skype for about 30-40 minutes. Before the interviews, the participants' written consent was obtained and the conversation was audio-recorded when they were being interviewed.

3.8 Data Analysis

The data analysis procedure for both questionnaire and interview are outlined in **Figure 3.1**:

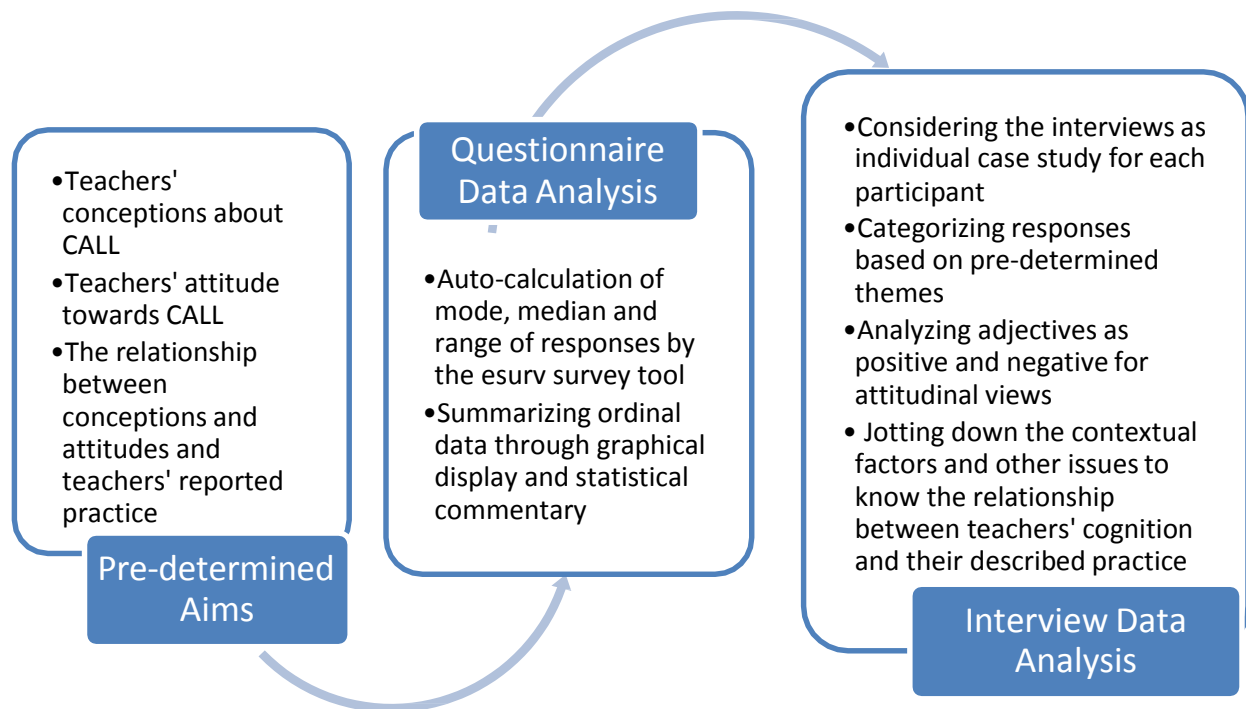


Figure 3.1: Data analysis procedure

Figure 3.1 shows that both questionnaire and interview data were analyzed sequentially to answer the two research questions:

1. What conceptions and attitudes do university English teachers hold about CALL in Bangladesh as a developing country?
2. What is the relationship between these conceptions and attitudes and teachers' reported classroom practices regarding CALL?

3.8.1 Questionnaire data analysis

To conserve time and space, collected questionnaire data was analyzed based on descriptive statistics, “a tidy way of presenting the data” (Dörnyei, 2007, p. 209). Due to the small sample size, only descriptive statistics were used to avoid making conclusions of the data beyond the sample (Dörnyei, 2007). The questionnaire was prepared online with esurv, a survey tool available at <http://esurv.org/>. The tool also calculated the responses into percentage immediately after participants completed the survey. The percentage was calculated for each point of every question on Likert scale. Thus, the system automatically analyzed all of the responses in ordinal data relating to Likert scale used in the survey. According to Blaikie (2003), the calculation of the mean and standard deviation are considered to be inappropriate for ordinal data (as cited in Jamieson, 2004). Thus, for comparing the consistency and variability of the findings mode, median and range have been analyzed for this research and the points on Likert scale were assigned a numerical value (Bertram, 2007) as shown in **Figure 3.2**:

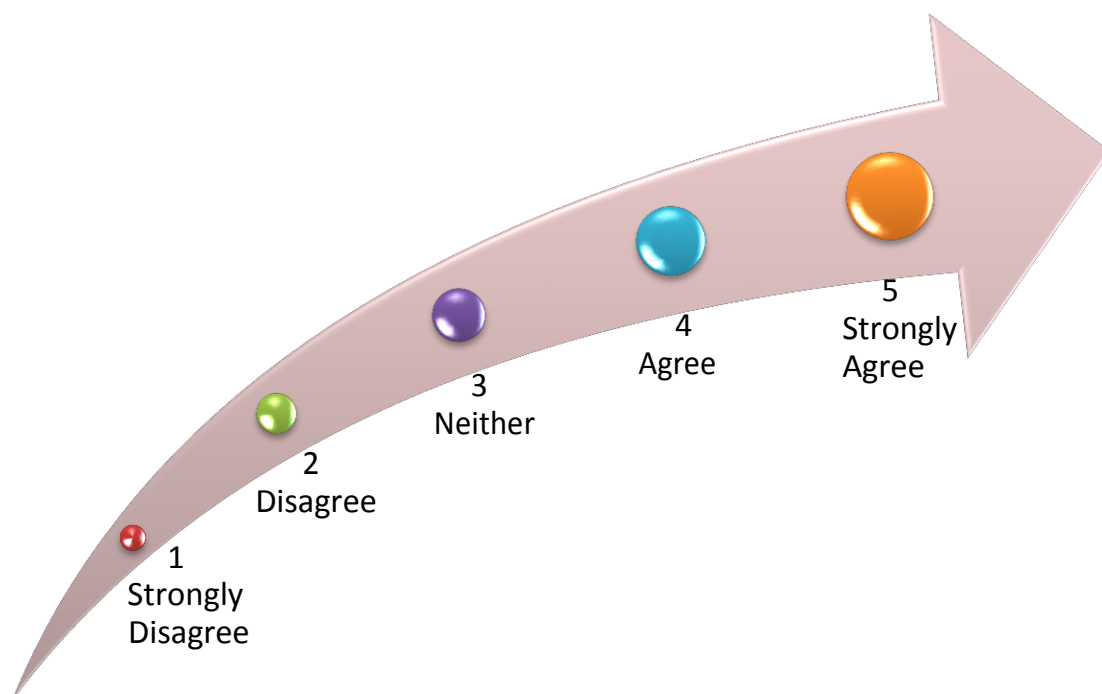


Figure 3.2: Numerical value for the designed Likert scale questions

This additional analysis was done by an online descriptive statistics calculator available at <http://www.calculatorsoup.com/calculators/statistics/descriptivestatistics.php>. The frequency table generated by the calculator also matched with the percentage provided by esurv. The data was also analyzed based on three pre-determined themes (**Figure 2.3**) following some constructed categories for the questionnaire data as listed in **Figure 3.3**:

Teachers' conception about CALL

- The significance of computer as a tool
- The significance of computer and other technologies
- Teachers' roles in CALL activities
- Roles of computers in CALL lessons

Teachers' attitude towards CALL

- Practice of CALL
- Benefits of CALL
- Suggestions on the improvement of CALL in Bangladesh

The relationship between teachers' conceptions and attitudes and their reported practice

- Factors facilitating the use of CALL
- Factors impeding the use of CALL

Figure 3.3: Constructed categories for questionnaire data

While using descriptive statistics sets of ordinal data was summarized using a combination of statistical commentary i.e. presentation of mode, median and range and graphical description i.e. stacked bars (Richards, 2003).

However, findings from Questions 6 to 12 caused error in findings because it was inappropriate to comprehend teachers' conceptions about computers by asking for their agreement in using computers for various purposes rather than asking for the frequency of such uses. Thus, statistical analysis for these questions has been excluded from presentation in Chapter 4.

3.8.2 Interview data analysis

The analysis of interview data was conducted to gain additional insights to the questionnaire data analysis. Thus, the analysis was language-based because “[it was] done primarily with words” (Dörnyei, 2007, p. 243). According to Richards (2003), the first step to any adequate analysis of such interview data is to transcribe. Therefore, transcriptions of each interview were produced as a basis for analysis with the help of Express Scribe, a “professional audio player software designed to assist the transcription of audio recordings” (Express Scribe, n.d.). The process of transforming the recordings into textual form allowed the researcher “to get to know [the] data thoroughly” (Dörnyei, 2007, p. 246). All these transcriptions were analyzed in terms of content analysis, an analytical method to develop themes or categories inductively from the data analyzed (Richards, 2003). This analysis has presented the five participants' interviews as individual case study for each for in-depth understanding of teacher cognition in CALL so that “new insights can emerge” (Dörnyei, 2007, p. 251). For the case studies, firstly, the researcher categorized the participants' responses according to the three pre-determined themes shown in **Figure 2.3**, namely teachers' conceptions of and attitudes towards CALL in relation to their reported practice. The responses were identified in terms of the sub-sections of these themes which were directly or indirectly elicited from the participants. Each transcription was read once

completely and then again from the beginning focusing on passages relevant to the pre-determined themes that were highlighted with a label on the margin of the hardcopy (Dörnyei, 2007). In addition, adjectives addressed by the interviewees were identified as positive and negative for associated issues to understand their attitudes towards CALL besides the identified sub-sections of the second theme in **Figure 2.3**. After that, their comments were analyzed to relate their conception and attitudes to their reported practice which shows the influence of teacher cognition on their practice of CALL. Various contextual factors were also identified in the transcriptions to understand their influence on the participants' decision of using computers. For detailed comprehension, interviewees' unedited statements are also presented "as a means of structured reflection" (Dörnyei, 2007, p. 254). Thus, interview data were analyzed and presented through the following constructed categories in **Figure 3.4** that were based on the theoretical framework:

Teachers' conception about CALL

- The significance of computer and other technologies
- Teachers' and computers' roles in CALL activities

Teachers' attitude towards CALL

- Associated adjectives stated by teachers
- Benefits of CALL
- Suggestions on the improvement of using CALL in Bangladesh

The relationship between teachers' conceptions and attitudes and their reported practice

- Facilitating and impeding factors for using CALL

Figure 3.4 Constructed categories for interview data

The discussion of the questionnaire data followed by in-depth analysis of interview data is presented in Chapter 5 to answer the two research questions of this study.

3.9 Conclusion

This chapter discussed the methodology applied in this exploratory research along with detailed discussion about selection and construction of the used instruments, namely questionnaires and interviews. The chapter also highlighted about the selection of participants and approval from the ethics department for conducting the research. The sections on data collection and data analysis procedure for answering the research questions focused on questionnaire and interview data separately in this chapter.

CHAPTER 4: RESEARCH FINDINGS

4.1 Introduction

This chapter presents the findings based on the analyzed data collected through questionnaires and interviews. Considering the pre-determined themes for this teacher cognition research in **Figure 2.3**, findings from the questionnaire consist of the presentation of mode, median and range, graphical presentation and statistical commentaries. On the hand, the interview findings are presented descriptively as individual case studies for each participant based on the same pre-determined themes (**Figure 2.3**).

4.2 Findings from the Questionnaire

The findings from the questionnaire will be discussed in the next three sections which focus on 1) Teachers' conceptions about CALL, 2) Teachers' attitude towards CALL and 3) The relationship between these conceptions and attitudes and teachers' reported practice. All these sections also contain sub-sections of findings from the questionnaire regarding the pre-determined themes (as shown in **Figure 2.3**). Most of the findings are based on the analysis of responses in the Likert scale ranging from Strongly Agree to Strongly Disagree. Mode, median and range for the responses are based on the numerical value assigned to the agreement scale (1 to 5) as shown in **Figure 3.2**. Few questions were multiple choice-based with the option of choosing more than (if required) and thus, the percentage of responses are presented for each option in the analysis.

4.2.1 Teachers' conceptions about CALL

This sub-section mainly focuses on how teachers conceptualize CALL in terms of their preference for computer as well as other technologies. It also includes the responses of their perceived roles played by themselves as well as computers in the CALL environment.

4.2.1.1 The significance of computers as tool

Question 1 asked participants' if they considered any kind of use of computer while language learning as the general definition of CALL. Among the 37 participants, no one disagreed or responded as neutral to the statement. Questions 2 and 3 asked participants about the significance of computers as tool in their English language learning class. The responses elicited their preferences for “computers as essential tool” and “computers as optional tool” in the agreement scale. The mode, median and range of responses are presented below in **Table 4.1**:

Question No.	Significance of computers as tool	Mode	Median	Range
Question 2	Computers as essential tool	5	4	3
Question 3	Computers as optional tool	2	2	4

Table 4.1: Mode, median and range for the significance of computers as tool

Table 4.1 highlights that the participants mostly strongly agree about the conception of computers as essential tool in their CALL classrooms compared to computers as optional tool.

The responses for these questions are presented in stacked bars in **Figure 4.1**:

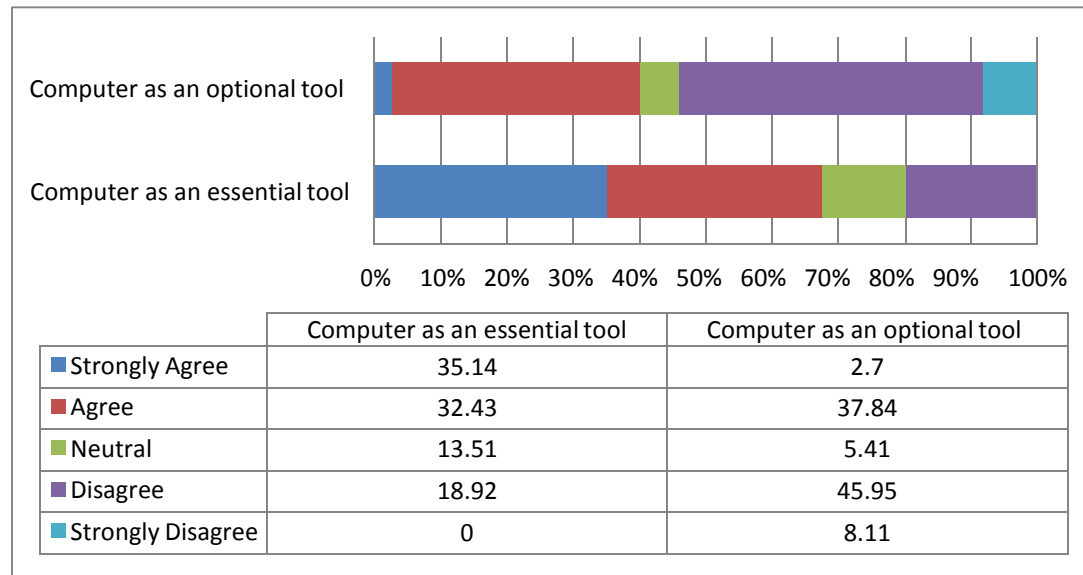


Figure 4.1: The significance of computers in participants' classes

Figure 4.1 clearly shows that participants conceptualize the computer more as an essential tool rather than an optional tool in the agreement scale.

4.2.1.2 The significance of other technologies associated with computers

In Question 4, participants were also asked to choose other technologies associated with their use of computers. The question was analyzed in terms of the percentage of responses for each technology because it was a multiple choice-based question. Thus, with the option of ticking

suitable answers more than one, the participants responded variedly which are illustrated in

Figure 4.2:

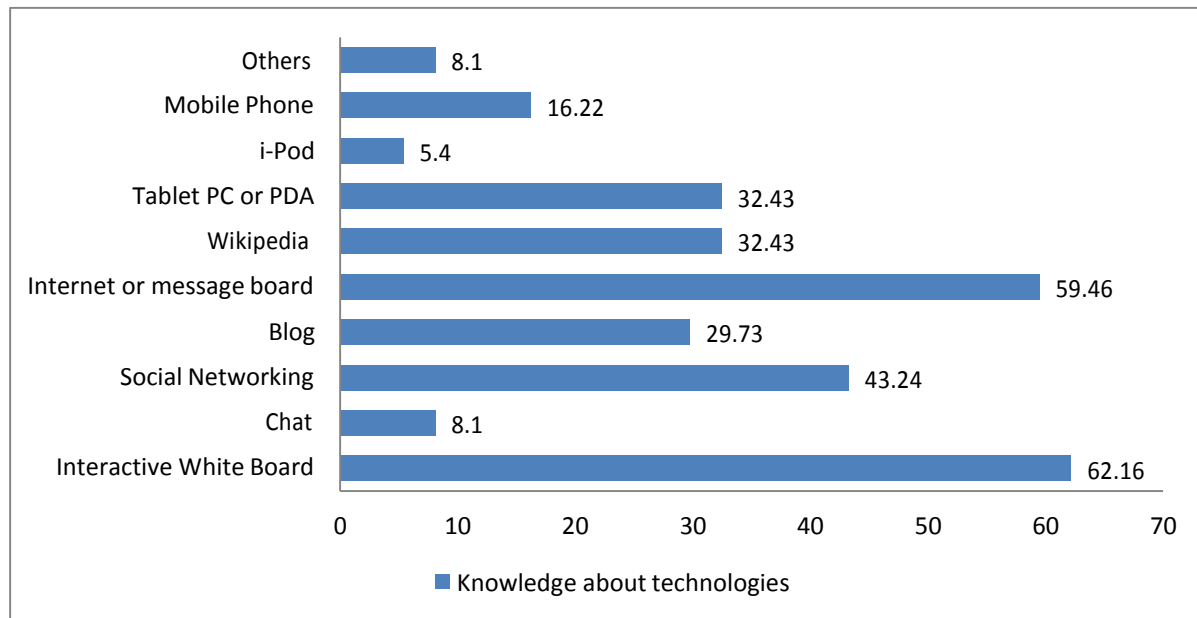


Figure 4.2: The significance of other technologies

Figure 4.2 shows that the participating university teachers report using Interactive White Boards (62.16%) and Internet or message boards (59.46%) in quite large numbers compared to other technologies. The use of social-networking sites (43.24%) while teaching English in their class is also noteworthy in their responses. However, mobiles (16.22%), chats and other technologies like overhead projector (8.1%) as well as i-Pod (5.4%) are not frequently reported to be used for teaching English as a second language in the class. Thus, **Figure 4.2** highlights that teachers mostly associate Interactive White Board and Internet with computers in their language teaching.

4.2.1.3 Teachers' roles in CALL activities

While using computers and other technologies in CALL lessons, the participants see themselves playing various roles depending on the kind of activities they execute using computers. For all the listed roles in Questions 13 to 17 reviewed from Okonkwo (2011) and Bahrani (2011), there were various ranges of agreements by the participants as shown in **Table 4.2**:

Question No.	Teachers' roles in CALL activities	Mode	Median	Range
Question 13	Resource provider	4	4	4
Question 14	Manger	4	4	4
Question 15	Coach for guidance	4	4	4
Question 16	Monitor	5	5	1
Question 17	Immediate responder	4	4	4

Table 4.2: Mode, median and range for teachers' roles in CALL activities

Table 4.2 highlights 'monitors' as the most common role played by teachers in CALL activities with the highest median (5). However, teachers' roles as 'coach for guidance', 'resource providers', 'managers' as well as 'immediate responders' are also positively responded by the participants. The graphical presentation for these questions is in **Figure 4.3**:

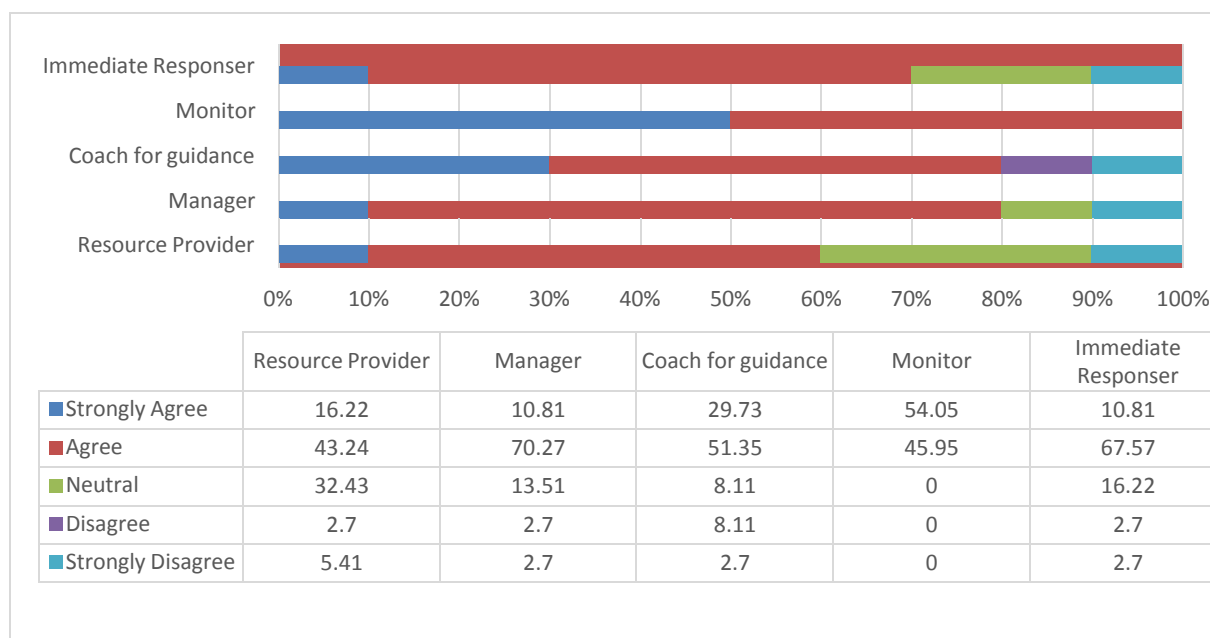


Figure 4.3: Role of teachers in CALL activities

Figure 4.3 clearly highlights that university teachers find themselves mostly in the role of ‘monitors’ besides all other positively demanded roles. This is the only role where all participants agreed without disagreeing or being neutral.

4.2.1.4 Roles of computers in CALL activities

While teaching various linguistic skills and components, the participants’ conceptions about the roles of computers, in Questions 18 to 21, were also revealed in this survey as presented in **Table 4.3**:

Question No.	Computer's roles in CALL activities	Mode	Median	Range
Question 18	Presenter	4	4	4
Question 19	Editor	4	4	4
Question 20	Advisor	3	3	3
Question 21	Mediator	4	4	4

Table 4.3: Mode, median and range for computers' roles in CALL activities

Table 4.3 reveals that computers as 'advisors' is found consistent with neutral but least responses. All other roles by the computer are positively conceptualized by the participants.

Figure 4.4 makes the responses comprehensible in stacked bars:

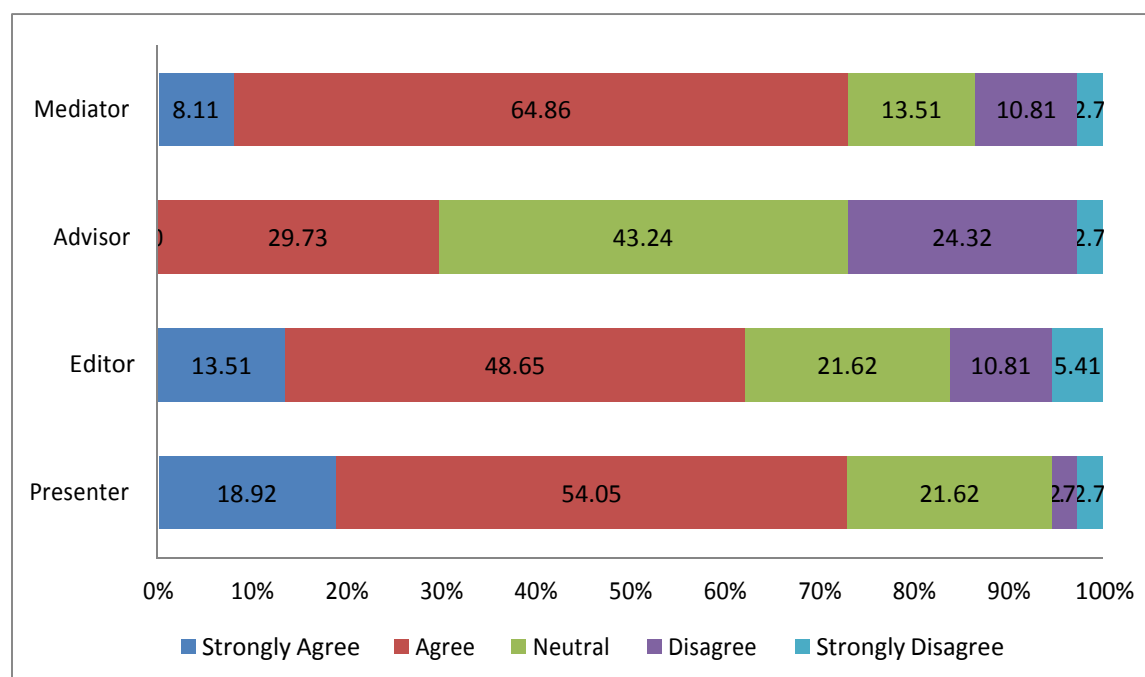


Figure 4.4: Role of computers in CALL activities

Figure 4.4 reveals that participants mostly conceptualize computers as ‘presenters of information’ and ‘mediators between them and learners’ in their classrooms.

4.2.2 Summary of teachers’ conceptions about CALL

From the questionnaire findings mapped to the sub-themes of what teachers conceptualize about CALL, the following summary can be drawn up:

- Participants’ conceptualize the significance of computers mostly as essential tool in their language classes
- Participants mostly prefer the use of Interactive White Board and internet as other technologies associated with computer
- Participants conceptualize themselves mostly as monitor in CALL classrooms to ensure learners’ successful task completion and better learning
- Participants conceptualize computers mostly as ‘presenter’ of information and ‘mediator’ between them and learners in the class

4.2.3 Teachers’ attitudes towards CALL

This sub-section discusses teachers’ attitude towards CALL in terms of their thoughts about teaching various linguistics skills with CALL and the benefits in using CALL. It also includes

teachers' responded suggestions on how to improve CALL in Bangladesh to understand their attitudes towards the future of CALL.

4.2.3.1 Beliefs about the best practice of CALL

The participants' best practice of CALL was identified by asking them about the linguistic skills in Questions 24 to 29 that they teach the most using computers. The analysis is presented in

Table 4.4:

Question No.	The best practice of CALL	Mode	Median	Range
Question 24	Speaking	2	3	4
Question 25	Listening	4	4	4
Question 26	Writing	4	3	3
Question 27	Reading	4	3	4
Question 28	Grammar	4	4	4
Question 29	Vocabulary	4	4	4

Table 4.4: Mode, median and range for the best practice of CALL

Table 4.4 suggests that listening, grammar and vocabulary are mostly agreed linguistic components to be best practices by CALL due to highest median. However, mode and range are quite varied for these responses. Graphical presentation for all these responses is in **Figure 4.5:**

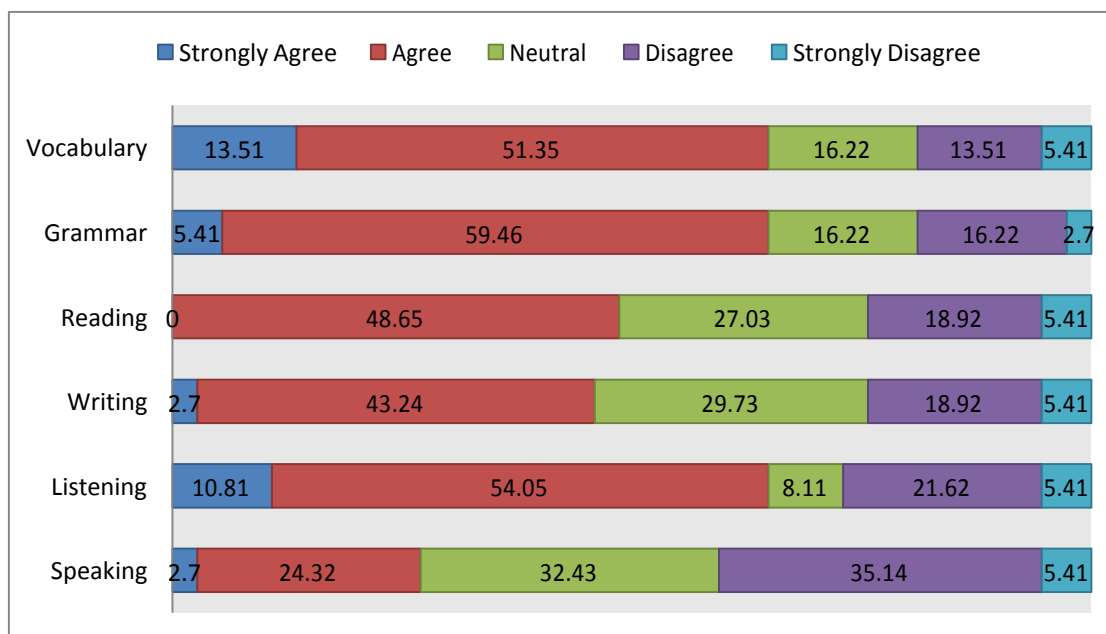


Figure 4.5: Practice of CALL for linguistic skills

As shown in **Figure 4.5**, participants consider that grammar is practiced best with CALL followed by vocabulary and listening respectively.

4.2.3.2 Benefits of CALL

The benefits of CALL were also experienced to an extent by the participants in their ESL classes which were expressed mostly by positive level of agreement (Questions 30 to 35). All the listed benefits are presented in **Table 4.5** with M and SD of the responses:

Question No.	Benefits of CALL	Mode	Median	Range
Question 30	Flexible learning environments	4	4	3
Question 31	Authentic materials	4	4	3

Question 32	Learner autonomy	4	4	3
Question 33	Interaction	5	5	2
Question 34	Enjoyable teaching	4	4	3
Question 35	Motivating ELT	5	5	2

Table 4.5: Mode, median and range for benefits of CALL

In my sample, as can be seen from **Table 4.5**, the participants mostly agreed for all the benefits experienced from CALL. The strongest response is for motivating ELT and interaction among learners and between learners and the teacher. **Figure 4.6** displays these responses in percentage in stacked bars:

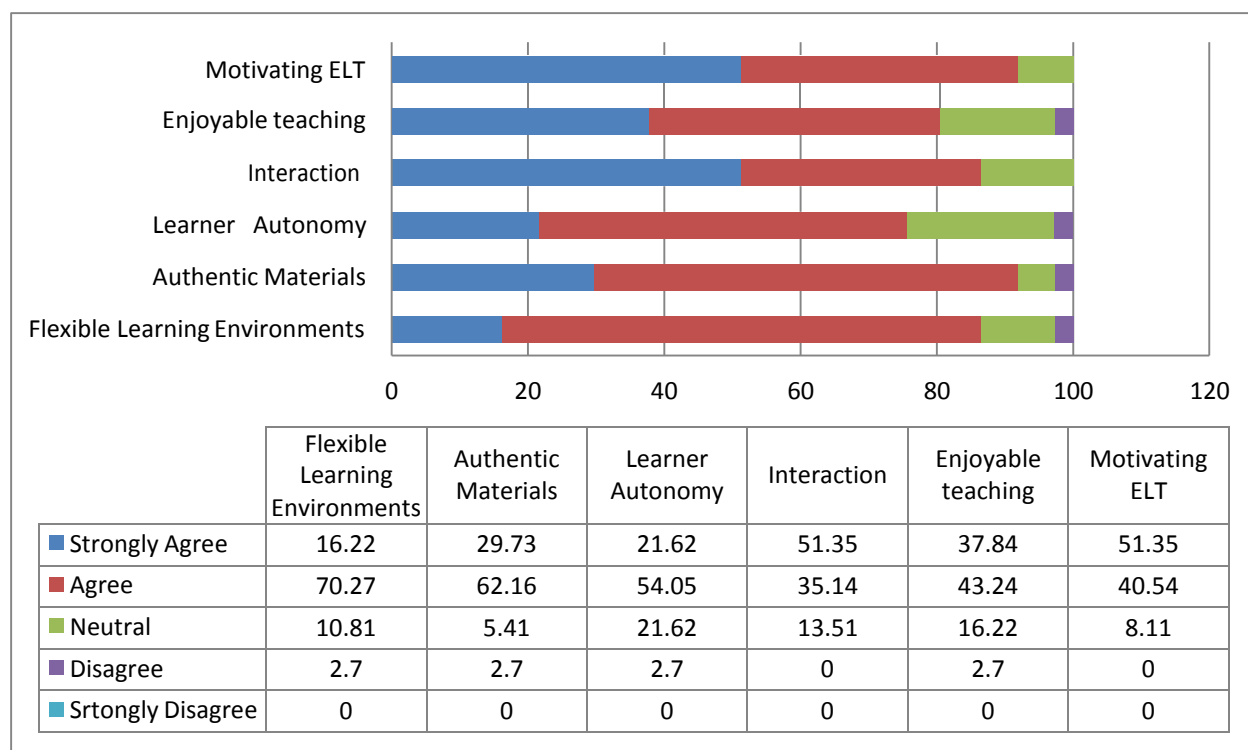


Figure 4.6: Benefits of CALL

As **Figure 4.6** suggests, participating university teachers consider motivating ELT as the most beneficial impact of CALL followed by increased interaction among learners.

4.2.3.3 Suggestions on how to improve CALL in Bangladesh

In Questions 36 to 40, the participants were asked to respond on suggested initiatives for the development of using CALL in language learning classrooms. The findings are presented below in **Table 4.6**:

Question No.	Suggestions for the improvement of CALL in Bangladesh	Mode	Median	Range
Question 36	Teacher training	5	5	2
Question 37	Expansion of computer facilities	5	5	1
Question 38	Administrative support	5	5	4
Question 39	Workshops on CALL	5	5	3
Question 40	Institutional encouragement	5,4	4	3

Table 4.6: Mode, median and range for suggestions on how to improve CALL in Bangladesh

As **Table 4.6** illustrates, all the suggestions received the highest level of agreement considering the median and mode. **Figure 4.7** will be helpful to show which suggestion has received the highest percentage regarding the sub-theme:

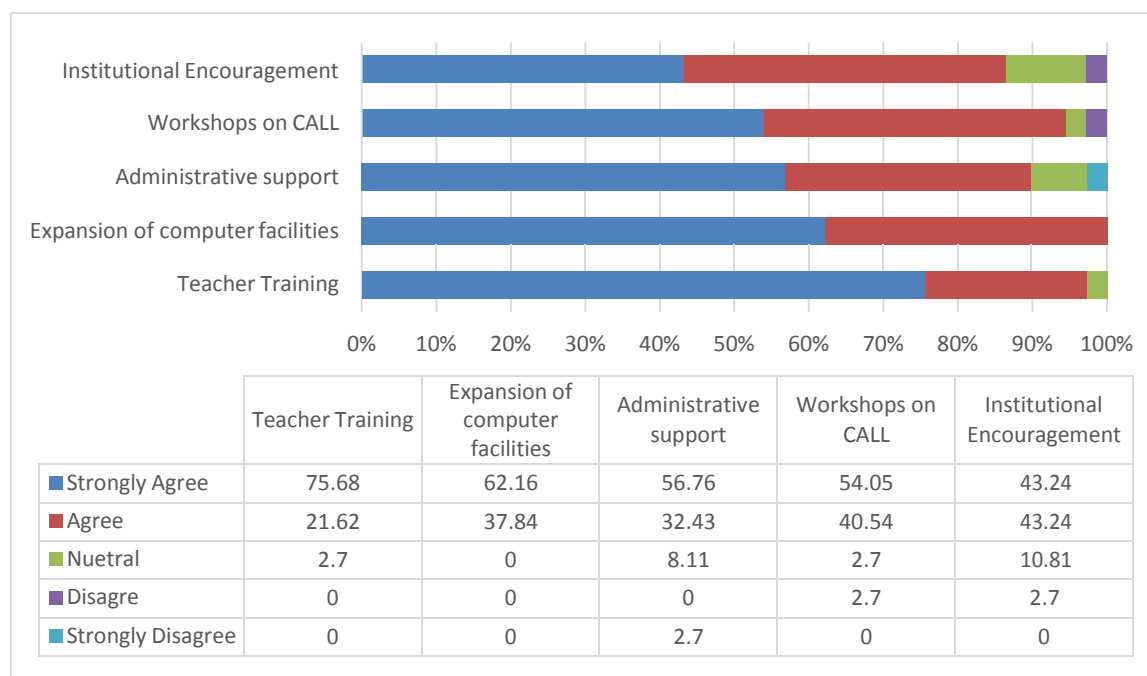


Figure 4.7: suggested initiative for the development of using CALL

Figure 4.7 clearly shows that, in my sample, the most positively responded suggestion on the improvement of CALL was the expansion of computer facilities followed by teacher training, workshops on CALL, administrative support and institutional encouragement.

4.2.4 Summary of teachers' attitudes towards CALL

From the questionnaire findings mapped to the sub-themes regarding teachers' attitude towards CALL, the following summary can be drawn up:

- Participants' hold positive attitudes mostly towards grammar as the best practice of CALL followed by vocabulary and listening

- Motivating ELT and increasing interaction among learners are the most frequent benefits of CALL assumed by the participants
- Though participants have positive attitude towards all the listed suggestions, expansion of computer facilities is more noteworthy for having the highest agreement

Like the divergent results for teachers' conceptions about CALL, teachers' attitude towards CALL also required further in-depth comprehension regarding such varied findings.

4.2.5 The relationship between Teachers' conceptions and attitudes and their reported practice regarding CALL

This sub-section shows the findings for facilitating as well as impeding factors in teachers' use of CALL in relation to their practice of teaching.

4.2.5.1 Factors facilitating the use of CALL

Question 42 asked about influencing factors for participants' decision to use CALL. With the option of choosing more than one, some factors have been identified that influence the participants to positively use CALL. The response rates for each of these options are shown separately in **Figure 4.8**:

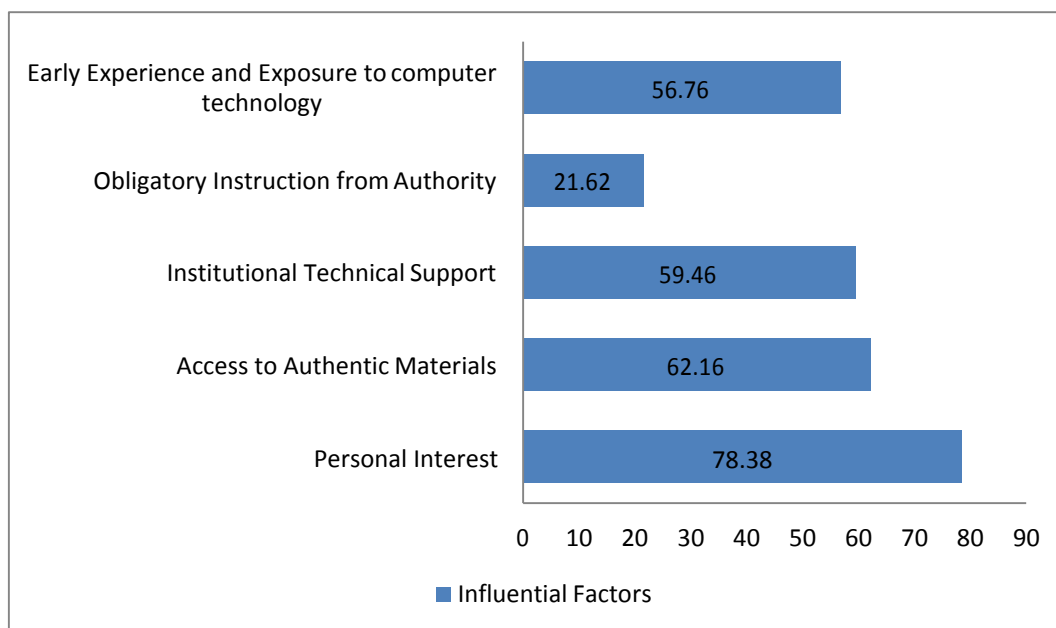


Figure 4.8: Facilitating factors in using CALL

Figure 4.8 shows the highest rate of responses for personal interest (78.38%) as the strong influence on teachers' decision to use CALL. Many of the participants (62.16%) have also identified the accessibility to authentic materials as another positive influential factor. Only few of the teachers (21.62%) have reported use of computers due to their university authority's obligatory instruction.

4.2.5.2 Factors impeding the use of CALL

In Question 43, participants were asked to respond to some listed impeding factors they experience in their teaching of CALL. Some impeding factors were found that influence these

university teachers' decision to use CALL. Participants could choose more than one factor and thus, the response rates are presented for each of these factors separately in **Figure 4.9**:

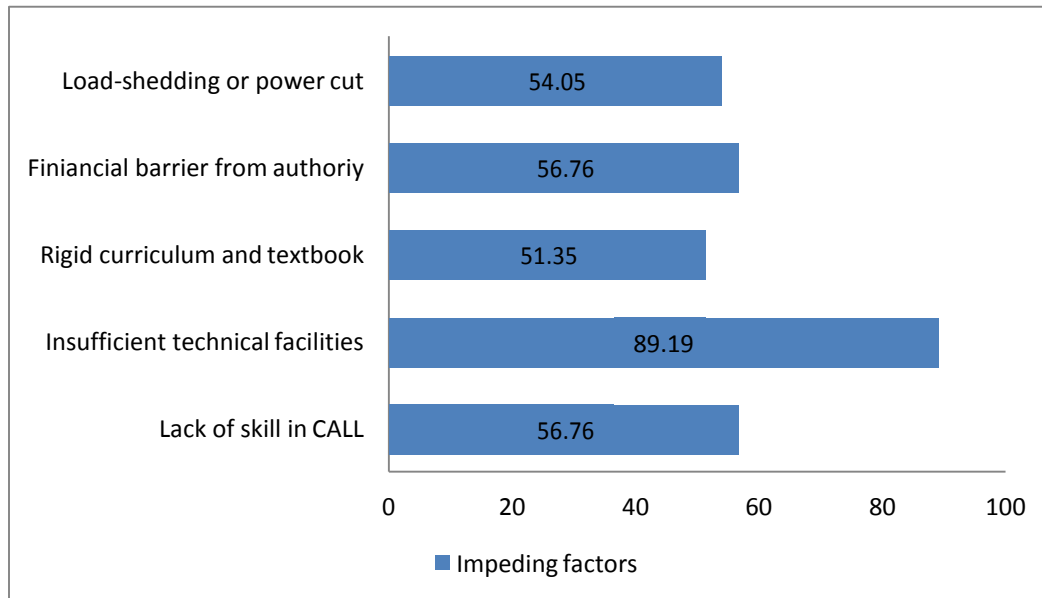


Figure 4.9: Impeding factors in using CALL

Figure 4.9 illustrates the strongest impact of insufficient technical facilities at the institutions (89.19%) on teachers' decision for using CALL in their ESL classes among all other impeding factors. More than half of the teachers are also found to response for other impeding factors in the use of CALL which include financial barriers, lack of skill and knowledge about CALL, load-shedding and rigid curriculum and textbook in the universities.

4.2.6 Summary of the relationship between teachers' conceptions and attitudes and their reported practices regarding CALL

From the questionnaire findings mapped to the third theme for the research, the following summary can be drawn up:

- Participants consider their personal interest in computer as the most influential factor in using CALL followed by the accessibility to authentic materials
- Participants report the lack of technical facilities as the most impeding factor in using CALL in their classes

However, for a better comprehension about the influence of these contextual factors on teachers' conception and attitudes regarding CALL, in-depth analysis was significant by knowing about some of these participants' reported practice in details.

4.3 Findings from the Interviews

Questionnaire findings highlight some disparity in the level of agreement for some notions of teachers' conceptions about CALL and their attitude towards CALL which required further in-depth interview analysis. Besides, interview provided the opportunity to elicit responses from participants about their classroom practice to understand the relationship between their cognition and their reported practice. Five participants from the questionnaire participants volunteered for the interview. Their responses have been analyzed in terms of the three themes of teacher cognition research (**Figure 2.3**) and presented in the form of case study for each participant

because the analysis intends to explore teachers' conception and attitude towards CALL in relation to their reported practice more deeply than the questionnaire findings. Each case study has three separate sections on: 1) participants' conceptions about CALL, 2) participants' attitude towards CALL and 3) the relationship between participants' cognition and reported practice.

4.3.1 Case Study of Zobair

4.3.1.1 Zobair's conceptions about CALL

This section is concerned with Zobair's conceptions of the significance of computer and other technologies associated with CALL along with perceived roles of his and computers in his reported practice.

4.3.1.1.1 The significance of computer and other technologies associated with CALL

Zobair perceives the way of using computer for tertiary education in Bangladesh as CALL but he conceptualizes computers as optional tool for his teaching. He mentions:

We can promote [the use of computers] as CALL in Bangladesh... I must say that computer is a supporting thing. Teaching skills is unique; a person learns by teaching more and more... Computer is just a supporting thing that will make your presentation better and help students to learn better.

Therefore, Zobair conceptualizes teaching skills as being more significant than the computer. During the interview, he also talked about other technologies and software that can be associated with computer. They include PowerPoint, projector, and websites such as YouTube and email as

well as e-books. He shared his experience of these applications while using computers in his language teaching for various purposes. One such example is, “I try to show them [lessons] using PowerPoint. Sometimes I do some listening activities...sometimes I like to show them some videos like recorded videos from YouTube”. However, to Zobair, the skills and encouragements of a teacher are more important compared to these applications of the computer.

4.3.1.1.2 Zobair’s role and Computers’ roles in CALL lessons

In his ESL class, Zobair mainly plays the role of a ‘resource provider’ because he directs students to videos, online newspapers, channels e-books along with various other websites depending on the practice of linguistic skills. However, he also mentioned about the challenge of playing the role of a ‘monitor’ in his CALL class, “if you give [students] to work in computer or online, it’s very difficult to monitor whether they are doing the task or they are doing something else”. Other roles of teachers in CALL lessons were not really evident in the statements of his reported teaching practice.

At the same time, some roles of computers were evident in his talk. As Zobair provides the resources to students through presentations on computer, the computer is found to work as a ‘presenter of information’ in his ESL class. Zobair also affirms the way of communicating with students via email which represents the computer as a ‘mediator’ between Zobair and his students. When students submit assignments online, the computer plays the role of an ‘editor’ for Zobair for checking assignments. Thus, computers’ roles vary according to Zobair’s purpose of using it in his language class.

4.3.1.2 Zobair's attitude towards CALL

This section highlights Zobair's attitudes towards CALL through analyzing his use of adjectives during the interview for CALL and other associated issues, his experience regarding the benefits of CALL and his suggestions on the improvement of CALL in Bangladesh.

4.3.1.2.1 Associated Adjectives stated by Zobair

Throughout the interview, Zobair used various adjectives associated with different issues in CALL. He used both positive and negative adjectives while talking about different aspects regarding the use of CALL. Zobair's stated adjectives are listed below in **Table 4.7**:

Positive Adjectives	Negative Adjectives
<i>large, motivated, helpful, structured, systematic, comfortable, more engaged, fruitful, very important, unique, better, preliminary, interesting</i>	<i>not good, not fast, shocking, difficult, not available, very dangerous</i>

Table 4.7: Adjectives addressed by Zobair

Positive adjectives were mainly associated with the impact and suggestions of using of computers whereas negative ones were used while talking about several contextual factors affecting the use of computers in his class. However, the more frequent occurrence of positive adjectives than negative adjectives denote Zobair's favorable attitude towards CALL.

4.3.1.2.2 Benefits of CALL experienced by Zobair

While teaching listening and writing skills through computers, Zobair experienced various benefits of CALL as expressed in the interview. Zobair experiences the benefit of flexible learning environments according to the practice of linguistic skills for achieving intended learning objectives. He also affirms the accessibility of large number of materials from various resources which helps him to run the class “systematically”. The benefit of learner autonomy from teachers was also evident in his statements, “I give them some work as homework; for instance a website or article to read online of their choice”. Motivating ELT was found to be another benefit in Zobair’s CALL class because he assured students’ motivation, interest, comfort and engagement in activities while using computers in ESL class.

4.3.1.2.3 Zobair’s suggestions on the improvement of using CALL in Bangladesh

In his 4.5 years of teaching career, Zobair received various kinds of teacher training and professional development courses including the use of technology. Thus, he recognizes the importance of teacher training, “before teaching, teacher should attend different kinds of professional training. They need to learn different kinds of skills that are required”. For such improvement, he provided suggestions for the institutions because he considers that universities “can arrange such professional development course to show them the importance of computers”. Zobair also talked about required initiatives by the Government. He shared his knowledge about how the Government is promoting the use of technology at school levels at present time. However, he suggested that it requires more:

it's not just only providing computers; rather [the government] needs to make sure that these things are being used fruitfully...So, providing technological support and at the same time creating awareness, creating opportunities for trainings, these all are important. The government is doing some things but that's not enough; they need to do more.

Despite the lack of technical facilities from the university where he works and hoping for the expansion of such facilities, Zobair also thought about the motivation of teachers. He suggested the increase of teachers' motivation for computer by saying "I should say it's not just the university to blame. Sometimes teachers need to be motivated to use computers but obviously in a fruitful way". Thus, Zobair expresses his attitudinal views not only about computers but also about the importance of teachers, university as well as the Government for the successful application of CALL in Bangladesh.

4.3.1.3 The relationship between Zobair's conceptions and attitudes and his reported practice

The significance of computers and other associated applications was evident in Zobair's reported practice because he mentioned how he can check submitted assignments online with the help of computer, "it helps me to detect if there is any plagiarism in the assignment". His various professional development courses and teacher training have also been found as an influence to his decision of using computers. Zobair assures the positive impact of being trained on his practice of teaching as training has helped him to learn about "how to use computers, how to use different kinds of software, how to use plagiarism and how to identify topic sentences" and some

other skills. Zobair also talked about the university's encouragement to use computer: "to be honest, the university encourages. Even though they don't have that sort of facilities but within their limit they try to provide whatever they can".

On the other hand, Zobair also mentioned some contextual factors which can be considered barrier between his positive views about CALL and practice of teaching as reported. These contextual constraints include load-shedding (a local term for 'power failure' in Bangladesh), lack of computer facilities in class, internet problems along with the challenge of monitoring students. Zobair has more than three years of teaching experience in the UK and thus sometimes he finds it shocking when any student cannot comprehend how to use computers. He also acknowledged the difficulty of following up on students' distraction from tasks due to chatting with friends or browsing Internet.

4.3.1.4 Key findings from Zobair's interview

In his interview, Zobair conceptualizes computers as optional tool to use for various purposes. With the teaching of listening and writing skills, he has experienced different benefits of using computers which denotes his positive attitude towards CALL. However, the incongruence between his views and reported practice was evident due to several contextual constraints. Despite of these barriers, Zobair is encouraged to use computer as he said, "I try to use it as much as I can".

4.3.2 Case Study of Rana

4.3.2.1 Rana's conceptions about CALL

This section is concerned with Rana's conceptions of the significance of computers and other technologies associated with CALL along with perceived roles of his and computers in his reported practice.

4.3.2.1.1 The significance of computers and other technologies associated with CALL

When asked about the significance of computers in his teaching, Rana replied, "to me, honestly, it's a tool and I think I am dependent on this particular tool". In this way, Rana expressed his preference for computers as essential tool. Rana also demonstrated knowledge about other technologies and software associated with CALL while talking in the interview regarding his practice of teaching. He shared his experience about how he uses multimedia, PowerPoint, email and Microsoft Excel along with mobile. He also talked about the importance of Overhead Projector (OHP) he came across at the beginning of his teaching career.

4.3.2.1.2 Rana's roles and computers' roles in CALL lessons

During interview, Rana talked about showing various learning materials to students online besides through presentation and that ensures Rana's role as a 'resource provider'. He also spoke about how he 'guides' the students for a particular lesson to assure they learn better. Rana communicates with his students via e-mail as well as mobile outside of office hours and thus, he

can be ‘immediate responder’ to students’ queries in need. As Rana mostly uses computers to deliver his lectures, the computer serves as a ‘presenter of information’ in his English class. He also keeps record of students in spreadsheets on computers and that makes computers perform as ‘editor’. Rana also said, “I do not encourage my students to rely on the [presented] slides; it’s just a communication approach”. Therefore, computers also work as ‘mediator’ between Rana and his students for communication approach while delivering lectures and maintaining contact over email.

4.3.2.2 Rana’s attitude towards CALL

This section highlights Rana’s attitudes towards CALL through analyzing his use of adjectives during the interview for CALL and other associated issues, his experience regarding the benefits of CALL and his provided suggestion on the improvement of CALL in Bangladesh.

4.3.2.2.1 Associated Adjectives stated by Rana

Rana’s use of computers is mainly concerned with delivering his lectures on PowerPoint slides and thus, he talked about different positive and negative notions about using presentation slides along with suggestions about required improvement in using computers in Bangladesh. He used various adjectives while addressing these issues in the interview which are listed in **Table 4.8**:

Positive Adjectives	Negative Adjectives
<i>Good, interesting, more important, well-organized, comfortable, new, likeable, helpful,</i>	<i>Incomplete, distracting, challenging, common, complicated, practical</i>

<i>better, permanent</i>	
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Table: 4.8: Adjectives addressed by Rana

Rana used these positive and negative adjectives while sharing his experiences of using computers in class. However, the use of more positive adjectives denotes his favorable attitude towards CALL.

4.3.2.2.2 Benefits of CALL experienced by Rana

Teaching reading and writing skills, Rana experiences the increasing motivation and encouragement among his students by using computers because he has found that “slides are good for [his] class” and “interesting to [his] students”. However, he also states the importance of his speech in the class as he said, “what I am saying is more important than what I am showing because the key words are [on the presented slides]”. He also talked about the convenience of making the presentation slides at home and how these slides save his time for repetition of any given lectures in coming semesters.

4.3.2.2.3 Rana’s suggestions on the improvement of using CALL in Bangladesh

Rana has experienced the new dimension of using computers in class despite his lack of professional training. Thus, he suggested that the Bangladesh Government can provide training

to teachers because “training can teach you how to use [the computer]”. He also added, “to my understanding, at school levels, our Government policies are providing computer training to teachers; it has just started achieving”. However, he placed the responsibility upon teachers who will use the computer by saying, “it’s about how you give your presentation...you can customize your use of computer accordingly with the plan of your class”.

4.3.2.3 The relationship between Rana’s conceptions and attitudes and his reported practice

Rana provided an example of his teaching which shows his interest and application of computers in the class:

I discuss few things through slides. Now to give them varied ideas, I usually ask them to browse few good journal articles; they can see how the idea develops. Firstly, they will read a journal article; then they will try to understand the ideas in the article. Now, they also try to apply these ideas or relate these ideas in their writing.

He also considers that his own interest in the computer inspires his decision to use it in class: “I think when I am using computer, and I can deliver a well-prepared, well-organized class”.

Though the university authority is encouraging the use of computer now-a-days, it does not impose directly on him or other teachers. Rana also appreciates how the preparation of slides saves his time, “I prepare the slides for permanent lectures because I am going to come up with the same class. I merely consider coming up with some changes...I know my slides are there, so it gets me through the class”. In his 13 years of teaching career, since Rana started using

computers, he has found that learning something new while using computers is as similar as “teaching myself”.

On the other hand, Rana also explained how the use of presentation slides hinders his teaching, “slides are good for my class but it is also kind of distracting for them because of they just look at the slides all the time, they will miss what I’m saying”. He also mentioned the common problem in country, load-shedding which makes his teaching complicated when the electricity goes off. He said, “I wrap up the class...in the next class I will just begin with the part I couldn’t finish in last class”. However, he did not provide any comments about how the Government can handle this situation for better application of computers in class.

4.3.2.4 Key findings from Rana’s interview

By interviewing Rana, it is found that he is very much dependent on computers and thus conceptualizes computer as essential tool for his teaching. Though he is aware of various applications of computer and other technologies, his use of computer mostly lies with the presentation of slides to deliver lectures to his students. Rana expresses favorable attitude towards the use of computers but he also acknowledges the disturbances caused by several contextual factors. However, Rana is usually comfortable to use computers in his class and thus “it is [his] own choice to use it”.

4.3.3 Case Study of Jafreen

4.3.3.1 Jafreen's conceptions about CALL

This section is concerned with Jafreen's conceptions of the significance of computers and other technologies associated with CALL along with perceived roles of her and computers in her reported practice.

4.3.3.1.1 The significance of computers and other technologies associated with CALL

Asking about the significance of computers in her teaching, Jafreen expressed her conception of computers as optional tool, "for me it's an optional tool because we, all teachers have to use some specific textbooks that are required as part of the university rules". However, the teaching of listening, speaking and writing skills involves the use of computer. Thus, she termed such way of using computers as "Computer Aided LSW" where LSW represents three practiced linguistic skills: listening, speaking and writing. Besides computers, Jafreen also acknowledged the application of other software programs which includes Microsoft Office program, social-networking site, Facebook and e-mail. During the interview, she addressed the significance of these applications in her everyday teaching career.

4.3.3.1.2 Jafreen's roles and computers' roles in CALL lessons

Jafreen directs students to different learning materials over Internet and PowerPoint lectures and thus performs as a 'resource provider'. When she uses Facebook for encouraging students'

learning, she also tries to act as a ‘manager’ as well as a ‘monitor’ to ensure their better learning. Jafreen also maintains her rapport with students not only over the email but also over the Facebook group for “instant notification” so that she can act as an ‘immediate responder’. When Jafreen accesses resources and shows them to students, the computer plays the role of a ‘presenter of information’. Computers also serve as ‘editor’ when Jafreen makes worksheets for her class or record students’ marks using Microsoft Word. Moreover, the role of computers as ‘mediator’ is also noticeable due to the occurring interaction between Jafreen and the students as well as among students over the Facebook group.

4.3.3.2 Jafreen’s attitude towards CALL

This section highlights Jafreen’s attitude towards CALL by analyzing her use of adjectives during the interview for CALL and other associated issues, her experience regarding the benefits of CALL and her provided suggestions on the improvement of CALL in Bangladesh.

4.3.3.2.1 Associated adjectives stated by Jafreen

When asked about the impact of using computers in class, problems faced during the use of computers and required initiatives to encourage the use of computers, Jafreen used various adjectives to demonstrate her attitude towards CALL and its other associated notions. The adjectives are listed in **Table 4.9**:

Positive Adjectives	Negative Adjectives
<i>Positive, new, more creative, greatest, real,</i>	<i>Biggest, frequent, traditional, reluctant, big,</i>

<i>stronger, actual, at ease, confident, good, instant, compulsory, better-prepared</i>	<i>basic, slow</i>
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Table 4.9: Adjectives addressed by Jafreen

Jafreen mostly used positive adjectives for saying about the benefits of CALL in her class and negative adjectives for some existing contextual issues. The presence of more positive adjectives compared to negative ones denotes her favorable and positive attitude towards CALL.

4.3.3.2.2 Benefits of CALL experienced by Jafreen

While responding to the impact of using computers, Jafreen considered the benefit of accessing variety of authentic materials according to her teaching needs as “one of the greatest things about using computers”. As Jafreen uses computers also for out-of-class activities via Facebook, she shared her experiences of having both independent and collaborative learning environment along with improved interaction among students. She also talked about the strong effect of seeing real life situations of native English speakers over Internet which makes students motivated and interested in learning the language.

4.3.3.2.3 Jafreen’s suggestions on the improvement of using CALL in Bangladesh

Being novice in teaching profession with one and a half years of experience, Jafreen stressed the importance of teacher training because she wants to use computer in more creative ways rather

than just using “for some basic things”. She addressed the Government to take such initiatives, “the Government should take some steps to, you know, incorporate the use of computers and I think all the teachers should go to some sort of training before they start teaching and this should be compulsory because that makes the teachers better prepared”. She also suggested that such training can change the perspectives of senior teachers to use computer in fruitful ways. She also expected some support from the institution in overcoming the lack of computers as stated, “if the university spends a little more fund into...providing more computers, then I could have saved a lot of time”. However, as “the use of computers has increased a lot in recent times”, Jafreen is hopeful about further fruitful and creative uses of computers in Bangladesh.

4.3.3.3 The relationship between Jafreen’s conceptions and attitudes and her reported practice

Jafreen’s preference for using computers aligns with both university’s obligation and her own interest. She said, “the English lab classes are requirements; it’s a requirement by the university but then I also use it in my own interest because I have a Facebook group for all my students”. Jafreen’s personal interest for out-of-class activities on the Facebook group lies with the benefit of students’ better learning as she explained, “I want them to practice what they are learning and I also want them to learn to express themselves”. She also talked about how some shy students interact on the group page without any fear of being observed and that’s what inspires her more to use computers for language teaching. For teaching listening, speaking and writing in the class, she also incorporates the use of computers by showing a documentary or a speech by some famous people and asking them to write a response of their comprehension. Her favorable

attitude towards computers is evident in her described practice: “When I show them a video instead of giving them a written version of it, what it does is that they’re exposed to all the tones, intonations and emotions as if it’s happening in front of them and that has a stronger effect”. She also shared her personal experience as a teaching assistant when she became motivated to use computers by seeing one of her teachers using Facebook in a creative way for fruitful academic purposes.

Despite of such encouraging use of computers in and outside of class, Jafreen’s described practice pointed out some impeding factors which shows the imbalance between her positive views and her way of teaching. She considers the biggest and frequent problem in her English class is load-shedding, “sometimes the electricity goes off; that means may be we were working on something and all the work is lost”. She also considers the reluctance of senior teachers as a barrier in her intended way of teaching with the use of computer. She explained, “there are some senior teachers who think that traditional teaching is the best and using computer for teaching is not really helpful. So that’s one problem because I cannot really use it the way I want to because the senior teachers do not agree with me”. Lack of computers in the lab class is another factor that hinders Jafreen to incorporate her favorable attitudes to CALL because “[she has] to take the same class twice because there are not enough computers”.

4.3.3.4 Key findings from Jafreen’s interview

Though Jafreen conceptualizes the computer as an optional tool, her attitude towards the use of computers is very positive and favorable. Her personal exposure and the benefits of using

computers trace the relationship between her views about using computers and her described practice. However, this relation can be imbalanced at times due to load shedding, the lack of computers as well as the reluctance of senior teachers. Nevertheless, Jafreen is aware of the significance of a teacher for using computers in class as she states, “we need all the teachers voting the same way; we could have used [the computer] a lot more, in lot more creative ways”.

4.3.4 Case Study of Nazmul

4.3.4.1 Nazmul’s conceptions about CALL

This section is concerned with Nazmul’s conceptions of the significance of computers and other technologies associated with CALL along with perceived roles of his and computers in his reported practice.

4.3.4.1.1 The significance of computers and other technologies associated with CALL

Asking about the significance of computers in his teaching, Nazmul states:

Computer is a helpful tool for me. I use it to achieve specific goals like my instructional goals. So the tool is not my main focus; my main focus is my instructional objectives. So what way to teach and how my teaching will be helpful for my students so that’s my main goal. And in order to meet that goal, I use computer as one of my tools. So, that’s my metaphor; computer as a ‘tool’ is my metaphor.

Thus, Nazmul conceptualizes computers as tool which is quite direct in his statements. However, he also places more importance on teaching and learning goals rather than on the tool itself.

Nazmul also acknowledges the significance of other technologies and some specific basis software such as Microsoft Office programs. He also prefers the use of various websites as he states:

I use websites; for example social media websites and university websites with resources for English language learners. And I also use some blogs and some other websites where you can create your own webpage.

He also talked about his sound knowledge about Web 2.0, a computer application which “doesn’t really require lots of experience”. He also affirms the significance of email for maintaining rapport with his students.

4.3.4.1.2 Nazmul’s roles and computers’ roles in CALL lessons

During the interview, Nazmul talked about various uses of computers in his English class which elicits different roles played by him during the tasks. Nazmul plays the role of a ‘resource provider’ when he shows different websites as well as delivers his own instructional materials to his students with PowerPoint presentations. He becomes a ‘manager’ as well as ‘monitor’ when he uses social media websites such as Facebook to encourage students’ language in outside-of-classroom activities. He also manages students’ progress on the Excel spreadsheets and evaluates their works on the Microsoft Word. Moreover, he is an ‘immediate responder’ because he

communicates with students via email not only for easy and quick contact but also for sending them any immediate notification or announcements.

During the interview, various roles of computers were also evident through Nazmul's statements. Computers play the role of 'presenter of information' when Nazmul uses computers to show his students resources available online and also when he delivers his teaching materials through presentations on computers. It can also work as an 'editor' as Nazmul uses computers "for making grade sheets [on Excel spreadsheet] and evaluating students' works [as Word documents]". The computer is also important as a 'mediator' between Nazmul and his students because he uses email on computers for maintaining interaction with students.

4.3.4.2 Nazmul's attitude towards CALL

This section highlights Nazmul's attitudes towards CALL through analyzing his use of adjectives during the interview for CALL and other associated issues, his experience regarding the benefits of CALL and his provided suggestion on the improvement of CALL in Bangladesh.

4.3.4.2.1 Associated adjectives stated by Nazmul

Nazmul used various adjectives to express his attitudes towards CALL and his experienced problems regarding CALL. The signified adjectives are listed in **Table 4.10**:

Positive Adjectives	Negative Adjectives
----------------------------	----------------------------

<i>helpful, essential, collaborative, constructive, convenient, easy, user-friendly, basic, implicit, interesting, meaningful, creative, innovative, enthusiastic, useful, important, supportive, positive and hopeful</i>	<i>serious, big, slow, outdated and not updated</i>
--	---

Table 4.10: Adjectives addressed by Nazmul

Positive adjectives were used while talking about the use of computers for activities, communication and also about the institutional support or encouragement along with the future of CALL in Bangladesh. On the other hand, the listed negative adjectives were expressed by Nazmul while talking about different contextual factors causing problems for his way of using computers.

4.3.4.2.2 Benefits of CALL experienced by Nazmul

While teaching a composition course and thus mainly focusing on writing skills, Nazmul experienced several benefits of CALL as he mentioned in the interview. In Nazmul's class, the benefit of independent and collaborative learning environments according to Nazmul's intended instructional goals and objectives is evident; for example the use of Facebook for collaborative writing project. There is the benefit of accessing authentic materials due to "learners' own learning and development". Interaction among students via Facebook and interaction between Nazmul and students via email is also another benefit, as stated by Nazmul. Not only students

but also Nazmul enjoys his teaching because he can use Web 2.0 to create his own webpage for his students with almost no technical expertise.

4.3.4.2.3 Nazmul's suggestions on the improvement of using CALL in Bangladesh

Nazmul showed his favorable attitudes towards the future development of CALL in Bangladesh with his positive hopes. He suggested that the provision of teacher training is important and helpful because Nazmul thinks that there is always a possibility of learning something new in training. He also expects the expansion of computer facilities in the institutions as well as greater administrative support for further improvement of using computers in meaningful and effective ways. Nazmul also showed his favorable attitudes for the Government's initiatives for encouraging the use of computers. He thinks the development is quite slow but it is moving towards a positive direction because he states, "recently the Government with the help of some donors like World Bank, [is]...establishing computer labs in the universities in remote areas outside the capital city. So, I am hopeful".

4.3.4.3 The relationship between Nazmul's conceptions and attitudes and his reported practice

Talking about the use of computers, Nazmul stated, "...computers are helpful tools for teaching and learning. And also with computers we can do much these days; so that's why I use computers." Thus, his conception of computers as tool influences his teaching which can be related to his reported practice.

During the interview, Nazmul explained how he uses social media website, Facebook to make students interact with each other:

I create a Facebook group for the class and the students [are] supposed to post their writing on the Facebook page and other students [are] supposed to read and write constructive feedback. So students were kind of peer reviewers for each other's works. So it was a collaborative writing project. We talked about this class and outside our class meeting we basically worked online in that collaborative project.

He also mentioned about using computers for communicating with students. Thus, he always encourages his students to share their email addresses on the very first day of the class. The influence of his preference for Microsoft Office programs was also identifiable in his statements, "Since I started teaching, I have been using Excel spreadsheet to prepare my students' grades and I also review their works using computers....as a Word document, I read their assignments on the screen and then I write my comments and send my comments back to them as an email attachment". The conception of websites was also found relevant to his reported practice as he says, "I remember once I created a webpage on Weebly.com and I uploaded different resources, assignments and instructions for my students so that they could download the materials from there. So basically, I use websites". Though Nazmul didn't receive any formal training on technical or computers' use for teaching, his personal exposure to computer during his undergraduate and post-graduation programs has been an influence on his teaching.

However, Nazmul explained, “the contextual factors like electricity and other things like whether or not the classroom is equipped with facilities like a screen and a projector, so all of these things will attract my ability to use computers”. Thus, contextual constraints, which include load-shedding, lack of computer facilities and internet connection, have been identified for the imbalanced relation between Nazmul’s views of CALL and reported practice.

4.3.4.4 Key findings from Nazmul’s interview

Nazmul conceptualizes computers as essential tool though the use depends on the subject matter and Nazmul’s instructional objectives. His personal exposure to computers as well as the experienced benefits of using computers matches together in his reported described practice. However, several contextual constraints affect his practice of teaching with computers. Nevertheless, Nazmul can distinguish that “using computer in class and using computer for meaningful technological purposes are two different things” and thus how the computer is used depends on the teacher, as explained in the interview.

4.3.5 Case Study of Shahed

4.3.5.1 Shahed’s conceptions about CALL

This section is concerned with Shahed’s conceptions of the significance of computers and other technologies associated with CALL along with perceived roles of his and computers in his reported practice.

4.3.5.1.1 The significance of computers and other technologies associated with CALL

Shahed conceptualizes computers as tool. He does not perceive himself or his colleagues utilizing the proper application of CALL as he mentioned, “the way I use computers, our colleagues use computer, it is not CALL in the true sense of the term; we just use computers, ordinary use of computers”. However, he acknowledges the significance of computers as essential tool for teaching as everything is changing with time. Asking about the way of using computers, Shahed also demonstrated his preference for associated technologies and software programs; these include PowerPoint slides, Microsoft Word, Excel, multimedia projector and email along with audio or video clips online.

4.3.5.1.2 Shahed's roles and computers' roles in CALL lessons

In his English class, Shahed mainly acts as a ‘resource provider’ while showing audio/ video clips on Youtube and delivering lectures through presentation slides. The role of ‘immediate responder’ is carried out by Shahed outside of classroom when he maintains communication with students via email in their needs. When Shahed shows resources online to students, computers become ‘deliverer of information’ for students. Shahed also mentioned about using computers for preparing students’ grade-sheets, presentation slides and lesson plans and that make computers perform as ‘editor’. Besides, the computer becomes a ‘mediator’ between Shahed and his students when he communicates with them via email. Thus, Shahed’s roles and the roles of computers are complementary to each other depending on the varied uses of computers.

4.3.5.2 Shahed's attitude towards CALL

This section highlights Shahed's attitude towards CALL through analyzing his use of adjectives during the interview for CALL and other associated issues, his experience regarding the benefits of CALL and his provided suggestions on the improvement of CALL in Bangladesh.

4.3.5.2.1 Associated adjectives stated by Shahed

While talking about various aspects regarding the use of computers, Shahed used different adjectives in his statements. His responses included both positive and negative adjectives which are listed below in **Table 4.11**:

Positive Adjectives	Negative Adjectives
<i>Convenient, helpful, interesting, interested, visual, motivated, not distracted, very effective, well-equipped, organized, benefited, good, possible, most important, better, compulsory, larger</i>	<i>Serious, difficult, frequent, time-consuming, horrible, not speedy, slow, not good, true, ordinary</i>

Table 4.11: Adjectives addressed by Shahed

Shahed used positive adjectives mostly for talking about the effects of using computers in his class and some for emphasizing the importance of motivation and training among teachers. His use of negative adjectives was mainly associated with the obstacles caused by contextual factors such as load-shedding, internet facilities and the use of whiteboard. Thus, more use of positive

adjectives in Shahed's statements shows his favorable attitude towards CALL despite of some impeding issues signified by negative adjectives.

4.3.5.2.2 Benefits of CALL experienced by Shahed

The benefit of accessing authentic materials is acknowledged by Shahed unlike other interviewees for using computers because audio or videos clips showed on computer can create visual impact on the students. Shahed also mentions about enjoyable teaching with the use of computers because “[he] find[s] it interesting”. Moreover, the benefits for students were not ignored by Shahed. He shared his experience of having his students motivated, interested and attentive in the class due to the use of computers in fruitful ways.

4.3.5.2.3 Shahed's suggestions on the improvement of using CALL in Bangladesh

In his 7 years of teaching career, Shahed did not receive any professional training on using technology, particularly computers. Thus, he looks forward to attending one if any university or the Government arranges such training because training can be helpful in the case of “construction, instruction and teaching using technology and computer”. He also suggested about organizing seminars or workshops by Bangladeshi researchers who can give some light in the use of computers by sharing their experiences. However, Shahed believes that motivation is the most important thing for any kind of expected change or improvement for computer usage. Therefore, he is hopeful about the increased development of CALL in Bangladesh as explained, “it's all about motivation...hopefully things will be better in the future; one day the Government

will be motivated, the universities will be motivated and things will change, [computer] will be used in larger scale”.

4.3.5.3 The relationship between Shahed’s conceptions and attitudes and his reported practice

When talking about the visual impact of computers on students, Shahed explained how this benefits his practice of teaching, “I downloaded some videos clips from the internet and used multimedia projector. I showed them and they liked it very much because...they can see how the speakers interact and communicate with each other; they see the gestures, the different accent”. Monotonous use of whiteboard for activities was time-consuming and thus Shahed showed his personal interest in the computer and incorporated it in his teaching. He responded affirmatively, “that is by choice, not by force”. However, contextual constraints such as load-shedding and slow internet have been issues in Shahed’s teaching as barriers. Lack of Shahed’s technical knowledge is another reason for the incongruence between Shahed’s views and classroom practice as reported by Shahed.

4.3.5.4 Key findings from Shahed’s interview

Interview with Shahed demonstrated Shahed’s significance of computers as essential tool. Using computers for various linguistics skills, Shahed has experienced benefits of CALL. His own interest and the use of whiteboard are the main influence on Shahed’s decision to use CALL though there are some impeding contextual factors in the classroom practice. However, Shahed

rests the major responsibility on teachers to use computers because Shahed believes that “it depends actually on the teachers” to decide on what they will teach, how they will they teach and what technology they will use.

4.4 Summary of Questionnaire & Interview Findings

The questionnaire findings show that teachers mostly conceptualize the computer as an essential tool, which is not an exception for most of the interviewees in the study. Though questionnaire results shows Interactive White Board as the mostly used program associated with CALL, interviewees are found to be more comfortable with the use of Internet for teaching various skills. The least played role as ‘resource provider’ by teachers, as found in the questionnaire survey, is the most common role played by the interviewees in their classrooms. Moreover, the roles of computers are somewhat different between the questionnaire and interview findings. The computer as a ‘presenter of information’ is similar in both surveys as the most common role. However, the role of ‘editor’ was not really consistent in questionnaire responses except being the second most common response in the interviews. The role of the computer as a ‘mediator’ between students and teacher is found to be more evident to maintain contact outside of classroom rather than inside the classroom, as deepened by the interviews. Such examples include teachers’ use of email for communicating with students and their use of Facebook for encouraging students’ interaction outside classroom.

Though in questionnaire survey grammar and vocabulary were the best practiced skills in CALL classrooms, interviews reveal that writing and listening are concerned with the best practice of CALL. Motivating ELT has been the most responded benefit of CALL in questionnaires whereas interviews enlighten access to authentic materials as the most appreciated benefit of CALL. Few interviewees talked about flexible learning environments similar to questionnaire respondents. Suggestions for the improvement of CALL in Bangladesh have been mostly concerned with the teacher training. However, the interviewees explained in detail why it is important and how the Government can incorporate it by making it compulsory. Questionnaire results also show expansion of computer facilities is another important required initiative for further improvement in CALL but interviews reveal motivation as the second highest priority for such initiatives.

While considering the relationship between these views and reported practice, the questionnaire suggests that personal interest is the most facilitating factor. The interviews also suggest this but interviewees explain how their person interests grew from early exposures to computers in their education. Various other factors such as benefits of authentic materials, monotonous use of whiteboard, motivating ELT have been found to make the relation between teachers' cognition and described practice smooth. However, impeding factors have also been a concern in this relation as exposed both in the questionnaire and interviews. Though the questionnaire has found insufficient technical facilities as the most impeding factor in CALL practice, interviewees reveal load-shedding to be the most concerned problem for fruitful practice of CALL. However, no suggestions have been made by the interviewees for dealing with such hindrances.

Therefore, there have been varied responses in the questionnaire and interviews. Such findings have occurred due to less number of interviewees to enlighten the questionnaire results.

Nevertheless, interview findings reveal that fruitful CALL practice is the responsibility of the teachers. They also discussed how their conceptual and attitudinal views about CALL influence their teaching along with the disturbance of few contextual factors. Despite such disturbances, interviewees are encouraged enough to use computers in their classes with the hope of a better CALL environment in future. Thus, the in-depth interviews complement the questionnaire findings and reveal that teacher cognition is an important influence on classroom practice.

4.5 Conclusion

This chapter presented the questionnaire and interview findings based on the pre-determined themes for this teacher cognition research (**Figure 2.3**). The analyzed questionnaire data were presented with graphical presentation and statistical commentary; the analyzed interview data were presented as individual case studies for each interviewee. The chapter ends with the summary of key findings from the questionnaire and interview data. These findings in relation to the proposed research questions are discussed in the next chapter to demonstrate the exploration of teacher cognition in CALL in Bangladesh as well as in broader contexts.

CHAPTER 5: DISCUSSION

5.1 Introduction

The research has been conducted to answer the following questions:

1. What conceptions and attitudes do university English teachers hold about CALL in Bangladesh as a developing country?
2. What is the relationship between these conceptions and attitudes and teachers' reported classroom practices regarding CALL?

This chapter answers these research questions with the discussion about teacher cognition and teachers' self-reported practice associated with CALL in a developing country. It also includes a brief description about what we already know and do not know about teacher cognition in CALL.

5.2 Present Knowledge about Teacher Cognition in CALL

Previous studies in teacher cognition in technology or computers mostly cover their attitude towards computers or the influential factors on their use of computers. Studies have found teachers' positive attitudes towards computers because computers can serve as useful technology and teachers experience several benefits. They have also found that several contextual constraints such as financial or technical barriers along with personal factors such as the lack of technical knowledge hinder teachers' use of computers in class. Studies have also showed

teachers' awareness for teacher training as a part of their professional development in using technology. Most of these studies are based on either primary or secondary school teachers who are native speakers of English.

However, at present time, we still do not know about the prominent roles of computers or even teachers in a computer-based classroom apart from knowing about the computer as a useful tool. We lack understanding about how teachers conceptualize the phase of CALL in their teaching contexts. Teachers may have positive attitude towards CALL but we still do not know about their attitudes toward the future development of CALL in their contexts. We still lack understanding about how teachers' conceptions and attitudes influence their decision to use computers despite the presence of various contextual factors. Besides, we lack our knowledge about mental lives of university teachers as well as teachers who are non-native speakers of English. No study has been conducted to bring all these issues under one roof to explore the phenomenon of teacher cognition in CALL.

5.3 Conceptions and Attitudes of University English Teachers about CALL in Bangladesh

This section discusses the conception and attitudes of university English teachers about CALL in Bangladesh regarding the roles of computers and teachers in CALL classrooms, their favorable attitude towards CALL and the phase of CALL in Bangladesh from their cognitive perspectives.

5.3.1 Roles of computers and teachers in CALL classrooms

In my sample, there were both female and male university English teachers who conceptualize the computer as an essential tool in their teaching which they utilize for various purposes. Their conceptualization of ‘computers as tool’ is same as revealed by Ng & Olivier (1987) long time ago but the uses of computers are now variable due to the development in technology. They use computers mostly for delivering lectures or directing students to various resources using Microsoft PowerPoint; a similar finding to Aydin (2013). However, this exploratory study has also added the use of Internet for directing students to various learning resources as a finding. The teachers also use computers for checking students’ assignments on Microsoft Word and recording their progress over Excel Spreadsheets. The use of email is also noteworthy to communicate with students outside of classrooms. Some of them use social-networking site, Facebook as a medium of instruction for encouraging learning and interaction among learners. All these various usage of computers make the roles of computers and teachers complementary to each other in the following ways:

- Teachers play the role of ‘resource provider’ when computers serve as ‘the presenter of information’
- Teachers play the role of ‘monitor’ for facilitating students’ learning when computers are used as ‘editor’ for checking students’ work and recording their progress
- Teachers are ‘manager’ of learners’ interaction utilizing social networking sites like Facebook when computers serve as ‘mediator’ between the teacher and learners and among learners in the Facebook

University English teachers use various resources and tasks with the help of computers and Internet and teach various linguistic skills and components depending on their target skills or lessons for the day. However, computers as ‘the presenter of information’ and teachers as ‘resource provider’ are the most commonly carried-out roles in CALL classrooms. These findings have been revealed through university teachers’ self-reported classroom practice in my exploratory research. Direct observation could give more insights about: 1) what kind of feedback teachers provide to students as ‘monitors’ when using computers, 2) when teachers play the roles of ‘guide’ or ‘immediate responder’ in CALL classrooms, 3) teachers’ frequency of using computers in their teaching of English and 4) if computers work as ‘mediator’ between teachers and students in the classroom.

5.3.2 University English teachers’ favorable attitudes towards CALL

Compared to Park & Son (2009), Wiebe & Kabata (2010) and Aydin (2013), this study has similar findings regarding teachers’ attitude towards CALL. Like school teachers, university English teachers hold positive attitude towards CALL. Such attitude is found due to computers’ ability to give access to authentic materials in large numbers, in Wang’s (2008) words, ‘authenticity’. As the teachers reveal, access to authentic materials over Internet as well as Youtube, motivates learners for learning and encourages teachers to use computers in future as well. The benefit of authenticity also lies in the use of social-networking site, Facebook, which promotes independent as well as collaborative learning environments, as reported by the teachers. Another great benefit mentioned by Wang (2008) is also found in the study and that is ‘interaction’. The use of CALL not only improves the rapport between the teacher and students

but also among students, especially over the social-networking site. One interesting finding is that the benefit of interaction is more noticeable in outside-of-class activities rather than it is inside of CALL classrooms. However, such findings raise the question about why teachers use Computer-mediated Communication (CMC) more outside the classrooms compared to inside of the classrooms. Besides, observation on any teachers' Facebook page could give more insight about how the use of social-networking site encourages independent or collaborative learning for what kind of linguistic practice.

As this exploratory survey reveals, university teachers also hold positive attitude towards the future development of CALL in Bangladesh because they believe the computer can be used as more than a tool in better and creative ways. To them, better and creative use of computers consists of not only using Internet or Microsoft Office programs but also various CALL software and applications. They lack technical knowledge in terms of using CALL but they believe that the provision of teacher training on the computer can enrich their knowledge about its fruitful use. They are hopeful for such changes in near future if initiated by the Bangladesh Government. However, it is important to consider what kind of CALL software or programs should be included in the technical training for teachers' professional development. Teachers also expect technical facilities to be improved by the institutions and the increase of motivation among reluctant teachers for using different CALL software. Thus, my study also raises the question of the sustainability and cost issues needed to be considered for CALL implementation in developing countries like Bangladesh.

5.3.3 The current phase of CALL in Bangladesh as a developing country in relation to teacher cognition

This study suggests that university English teachers use the computer mostly as a communication approach with students in the teaching and learning process. They use Microsoft Office programs, Internet, social-networking site and even Youtube synchronously or asynchronously for their teaching in CALL classrooms. Their teaching is not confined inside the classroom only but they also teach in authentic situations utilizing Internet and social networking site. Mosquera (2001) reports the quality of native language-dependent CALL materials being alien in non-native teaching contexts in developing countries. However, the study finds that teachers in Bangladesh enjoy teaching with native language setting CALL materials as they can experience the real-life situations of a native English context along with accents, pronunciations and intonations of native speakers of English; students are also motivated by such teaching context, as reported by the teachers. Thus, from teachers' conceptual and attitudinal views, it can be said that the phase of CALL in Bangladesh as a developing country is at the forefront of C of ICT which stands for communication in Fischer's (2013) stated phases of CALL.

Considering Warschauer's (2000) historical development of CALL and university teachers' cognition in relation to their reported practice, the practice of CALL in Bangladesh can be placed in between the phases of *Communicative Call* and *Integrative CALL* as presented in **Table 5.1**:

<i>Stage</i>	21st Century of CALL in Bangladesh as a developing country	The Phase of CALL
<i>Technology</i>	Multimedia and Internet	<i>Integrative CALL</i>
<i>Goals for Language Learning</i>	Communicative proficiency	<i>Communicative CALL</i>
<i>Role of Technology</i>	Tool	<i>Communicative CALL</i>
<i>Role of Teachers</i>	Manager/ Facilitator	<i>Integrative CALL</i>
<i>Principal Use of Computers</i>	Authentic Discourse	<i>Integrative CALL</i>

Table 5.1: The current phase of CALL in Bangladesh in relation to teacher cognition

As **Table 5.1** highlights, teachers use technology and play their roles of *Integrative CALL* but their goals of language learning and roles of technology matches with *Communicative CALL*. Direct classroom observation may bring any differences in these findings compared to teachers' reported practice. Besides, provision of teacher training in technical knowledge along with expansion of computer facilities and CALL software may encourage teacher cognition to use computers in fruitful and creative ways beyond essential tool for improving the state of art for CALL in Bangladesh. For other developing countries, it is also significant to trace the phase of CALL for successful implementation.

5.4 The Relationship between Teachers' Conceptions and Attitudes and their Reported Practices regarding CALL

This section discusses the relationship between teacher cognition and teachers' reported practice regarding the influence of teachers' conceptual and attitudinal views on reported practice and the influence of contextual factors on their reported practice followed by the complexity of teacher cognition in terms of classroom practice and contextual factors.

5.4.1 Influence of teachers' conceptual and attitudinal views on reported practices regarding CALL

The study has revealed the influence of university teachers' conceptual and attitudinal views on their reported practice. Their conception about CALL lies in computers' use as tool towards which they hold positive attitudes. Shin and Son (2007) found teachers' personal interest in using computers. This study has similar result but teacher' reported practice has also shown how their early exposure and experience in the computer's use motivated their personal interest in using computers despite their lack of technical knowledge; an addition to Shin and Son's (2007) study. These teachers' use of computers mainly lies with the benefit of accessing authentic materials over Internet but without any obligatory instruction from the institutions to use it. Monotonous uses of whiteboard and motivating ELT have also been found related to teachers' cognition influencing their classroom practice. All these conceptual and attitudinal views are additions to Aydin's (2013) study which found teachers' personal use of computer as an influencing factor for their positive attitude towards computers. However, the way teachers use computers in their

in-class or outside-class activities, they do not consider it “true sense of CALL”. Such conception may have occurred due to their limited applications of computers for English teaching such as using Microsoft Office programs, browsing Internet and using Youtube or Facebook. Though they are familiar with the term CALL and its different software, they cannot utilize it due to the lack of technical knowledge about CALL or lack of computer facilities in their institutions. As expressed by university teachers, they consider their use of computers at very basic level. Despite of teachers’ favorable conceptual and attitudinal views, teachers’ reported practice found computers as merely essential tool though they hope for a better development of CALL in Bangladesh in future. The influence of their cognition can be shown through **Figure 5.1**:

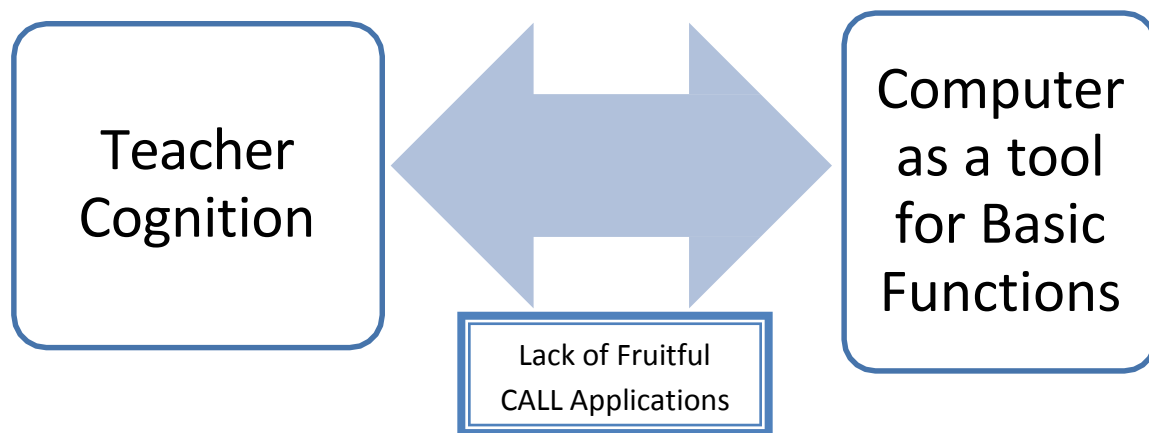


Figure 5.1: The influence of teacher cognition on reported practice

As **Figure 5.1** illustrates, the influence of teacher cognition on teachers' reported practice reveal the use of the computer as a tool for their basic pedagogical and administrative works. Teachers' personal interest and the benefits of computer encourage them to use computers even if it is at very basic level such as using PowerPoint slides for lectures. Thus, teacher cognition and the computers as a tool interact with each other according the learners' needs and teaching goals. However, in between their interaction, there is the lack of "true sense of CALL" for using CALL applications and software fruitfully and creatively because they are not available to teachers yet in Bangladesh. Direct observation or longitudinal study could show the frequency of using computers for teachers' basic pedagogical or administrative functions in CALL. This study also raises the question about why teachers perceive their use of computers as "the lack of true sense of CALL" when they have responded to any kind of use of computers in language learning as CALL in the questionnaire survey.

5.4.2 The influence of contextual factors on teachers' use of CALL in relation to teacher cognition

Compared to Park & Son's (2009) and Aydin's (2013) study, this research has found several contextual factors hindering teachers' successful practice of CALL. However, the most impeding factor is found to be highly context-dependent known as load-shedding, a common problem in Bangladesh as a developing country. However, no suggestions or expectation have been disclosed by the teachers for overcoming this problem. The finance and planning advisor of Bangladesh, Mirza Azizul Islam affirmed load-shedding free Bangladesh by 2010 (Saifullah, 2009) but my study has found the unchanged situation even in 2015. Despite of the influence of several other contextual constraints such as lack of computers, slow Internet and financial

barriers for purchasing computer software or upgrading available computer applications, teachers try their best to utilize the applications of the computer because they are aware of their responsibility for fruitful practice of CALL. Therefore, teacher cognition seems to be an important influence on classroom practice despite of the influence of contextual factors and their relation can be represented through **Figure 5.2**:

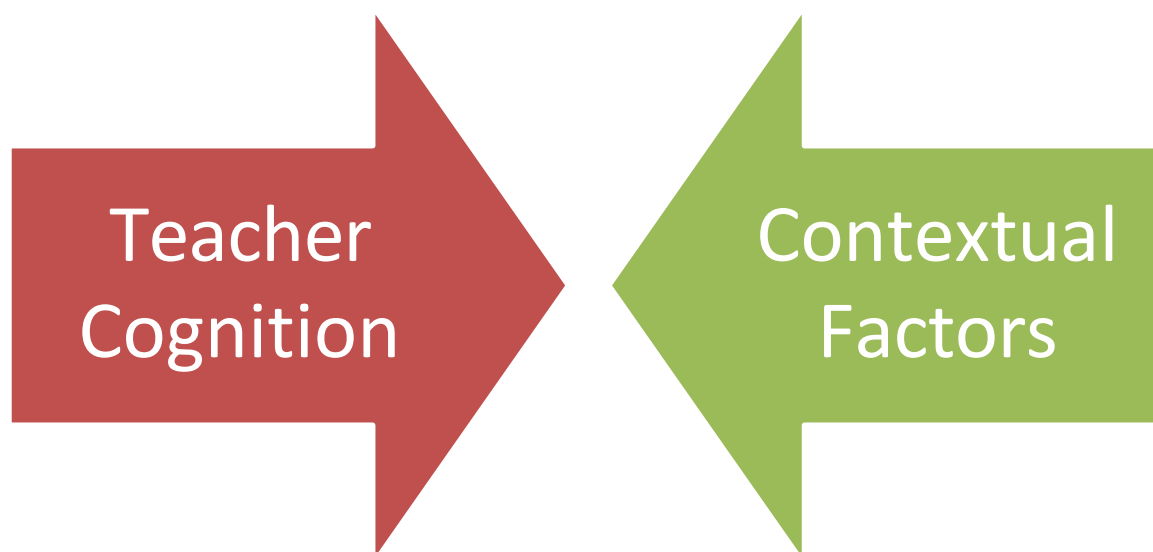


Figure 5.2: The relationship between teacher cognition and contextual factors

In Chapter 2, **Figure 2.1** shows the imbalanced relationship between teacher cognition and contextual factors. However, the study has revealed the relationship is quite direct between teachers' cognition and contextual factors. **Figure 5.2** illustrates Borg's (2015) statement about how contextual factors interact with teachers' conceptions and attitudes in classroom practice directly and alters teachers' practice without changing their conceptual and attitudinal views. For

example, teachers may wrap up the class while using computers due to load-shedding but may continue the activity in a group over the social-networking site for students' enhanced practice. Therefore, teacher cognition demonstrates a strong influence on university English teachers' classroom practice for CALL where contextual constraints are inevitable but manageable. However, the study points out the need of direct classroom observation to understand how the frequency of load-shedding or slow Internet consistently hinders teachers' practice of CALL.

5.4.3 The complexity of teacher cognition

Borg (2015) uses the term teacher cognition as an inclusive term for embracing the complexity of teachers' mental lives and such complexity of teacher cognition is noticeable among university English teachers for CALL in Bangladesh. University teachers hold positive attitude towards CALL while they conceptualize computers as essential tool in their CALL lessons. These conceptual and attitudinal views influence their teaching as found from reported practice, though contextual constraints sometimes create a mismatch between teachers' cognition and their practice of CALL. This incongruence between teacher cognition and reported classroom practice occurs when contextual factors and teacher cognition directly interacts with each other. However, teachers alter their practice of CALL by adjusting to the contextual constraints. At one point, university teachers admit about experienced problems due to the influence of contextual constraints; on the other hand, they show their positive attitudes towards CALL. At one point, teachers consider computers as essential tool; on the other hand, they keep saying that computer is not their main focus for teaching. At one point, they do not consider their way of using the computer as CALL because it is just a tool to them for pedagogical and administrative use; on the other hand, they are interested in using computer for fruitful CALL applications. At one

point, they regret about their lack of technical knowledge; on the other hand, they show their awareness about teachers' responsibility for effective CALL practice. All these notions raise the question about the complexity of teacher cognition. Son's (2002) study showed teachers' anxiety about the bright future of CALL in developing countries due to financial and technical facilities. However, this exploratory study has found teachers' awareness and positive hope for the bright future of CALL in a developing country like Bangladesh – a change in teachers' perceptions of CALL with the passage of time. Findings may be similar or different in other developing countries when compared to Bangladesh. Nevertheless, the complexity and strong influence of teacher cognition is unavoidable both on reported classroom practice and contextual factors as shown in **Figure 5.3**:

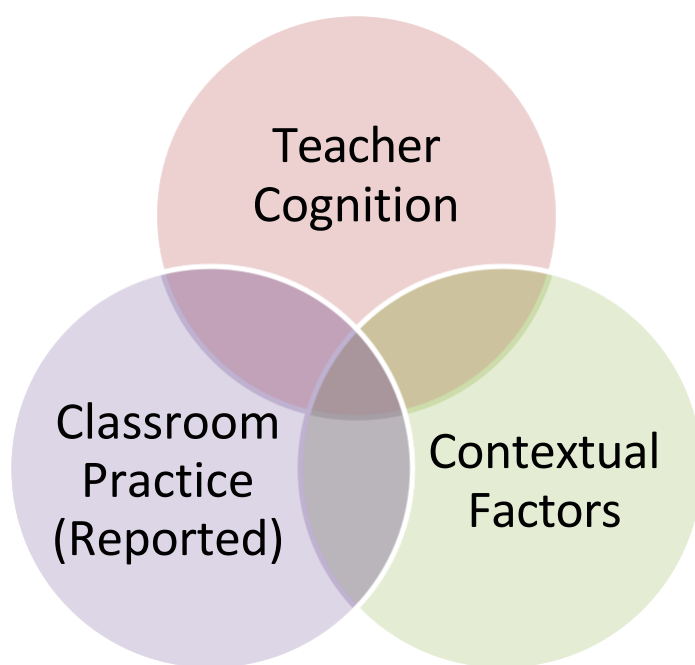


Figure 5.3: The complexity of teacher cognition in relation to reported practice and contextual factors

Figure 5.3 illustrates the complexity of teachers' mental lives which interact with their reported classroom practice and contextual factors directly. They face problems due to the contextual constraints which imbalance the relation between their cognition and classroom practice but at times, they manage to alter their classroom practice by adjusting to the contextual factors mostly without changing their cognition. For this study, university teachers conceptualize the computer as a tool in their reported CALL practice and hold favorable attitudes towards CALL; at the same time, they want to encourage their cognition about CALL practice for its effective implementation in spite of experienced contextual difficulties. Therefore, teacher cognition is found to be a strong influence on their reported practice considering CALL in Bangladesh, one of the developing countries. However, direct observation could be better to comprehend how teacher cognition, contextual factors and CALL practice interact with each other to ensure successful language learning.

5.5 Conclusion

The chapter discusses the study findings in a broader concept to explore teacher cognition in terms of teachers' conceptual as well as attitudinal views about CALL and teachers' reported classroom practice in relation to these views. The discussion also revealed the phase of CALL in developing countries like Bangladesh from teachers' mental lives.

CHAPTER 6: CONCLUSION

6.1 Introduction

The chapter highlights the key findings of the research study with its key findings followed by pedagogical suggestions and the limitations of the study. It concludes by addressing implications for future research.

6.2 The Research Study and its Key Findings

The primary aim of this research study was to explore teacher cognition in CALL by understanding university English teachers' conceptions about CALL, their attitudes towards CALL and their reported classroom practice of CALL in relation to their cognition. In a broader way, the study aimed to comprehend the significance of teacher cognition in relation to teachers' classroom practice. The study was carried out remotely in Bangladesh, a South Asian country with university English teachers as voluntary participants. An online questionnaire and semi-structured interview over Skype were chosen as instruments for collecting data from a Facebook Page of professional language teachers of English in Bangladesh. The questionnaire helped to identify participants' teacher cognition in CALL in terms of the theoretical framework and interviews added deeper insights to the findings of questionnaires.

I have found teachers' conception of the computer as a tool in CALL lessons. They use computers for various pedagogical as well as administrative activities from their personal

interests rather than any obligatory instruction from the institutions. One interesting finding in my study has been teachers' use of social-networking site, Facebook for encouraging students' use of English outside of classrooms. Teachers' are also found to hold positive attitudes towards CALL due to the authenticity of materials and other experienced benefits both in and outside of classroom for language teaching and learning. This study on teacher cognition has amazed me about how teachers associate their conceptions with their practice, how they express their positive attitude towards computer whereas negative attitude towards various contextual issues; in an overall sense, the complexity of teacher cognition in relation to the reported practice and contextual factors. Despite the presence of several contextual constraints, teacher cognition plays a strong influence on teachers' classroom practice as reported. The complexity of teacher cognition also reveals teachers' hope about the bright future of CALL in a developing country like Bangladesh where currently the phase of CALL belongs to the phase of communication but with limited applications such as Internet and social networking sites.

6.3 Pedagogical Suggestions

My study has found university teachers conceptualize computers just as tool in their teaching due to their fundamental uses of computers and lack of knowledge about advanced technology. From the findings, the present study also predicts that the learning of English language could be better and more motivating due to fruitful using of CALL software about which teachers' knowledge lacked. Therefore, the research suggests about teachers' professional development course about CALL and other technology which should be provided by academic institutions or the Government. Suggestions about arranging seminars or workshops on the pedagogical use of

computers are also applicable for in-service university teachers. After all, by learning more about CALL, teachers can get an opportunity to improve their ESL teaching and change their cognition for using the computer more than a tool.

The study also found that training about computer technology was not enough because contextual constraints may influence the practice of CALL. Lack of technical and financial support from the university authority found to be an influential factor in the use of CALL. Therefore, the research suggests for efficient support from the university administrations in terms of providing enough computers associated with other technologies and updated software and hardware, even the basic ones for the improved quality of ESL teaching and learning. Apart from administrative contextual factors, another pivotal role could be played by the Government of Bangladesh. Power outage, “load-shedding” as locally termed in Bangladesh, has been found to be one of the biggest obstacles for successful use of computers by the teachers. Because of frequent power outage, teachers may gradually lose the interest of using technologies in their class for enjoyable and confident teaching. Thus, the study also suggests the electricity supply commission and the Government of Bangladesh to pay more attention in facilitating ESL learning with the use of computer technology through proper and required power supply in the institutions.

6.4 Limitations of the Study

Due to small sample size, the findings of my study may not be generalized beyond the context and participants. However, the implication of findings can be compared for other future studies in teacher cognition research associated with technology. It was beneficial to employ questionnaires and interviews to complement each other's findings in the specified context for this study. This study helped me to understand the significance of teacher cognition in teaching but within the limited aspect, CALL. I have also comprehended how teachers in Bangladesh may perceive CALL in relation to their practice of English Language Teaching. With my interest for CALL and teacher cognition, I have been able to establish a connection between them through the context of Bangladesh but the future of CALL in Bangladesh has not been well-explored and well-addressed in this survey. However, my study was further limited by overlooking the influence of other variables such as age, gender or teaching experience on teacher cognition in relation to their reported practice.

The research findings were also limited in terms of instrumental method. Constructed questionnaire had flaws so that conclusions drawn from the questionnaire are very limited. Besides, due to short duration of the research and inability to travel in Bangladesh, I could not directly observe the real practice of CALL but depended only on teachers' reported practice. Direct classroom observation of CALL practice could give more insights about: 1) teachers' frequency of using computers for teaching, 2) the observable roles of computers and teachers, 3) how the frequent load-shedding or slow internet hinders teachers' use of CALL, 4) what makes teachers use CMC more outside of classroom, 5) how teachers incorporate flexible learning

environments using CALL, 6) if there is any influence of individual differences on using CALL and most interestingly, 7) why teachers' do not consider their use of computers as "true sense of CALL". These concerns are raised through the discussion of questionnaire and interview findings of this study. Any comparative studies with developed countries could identify the localization and phase of CALL in developing countries at present time from teachers' perceptions. However, as an exploratory research, this study has helped me to identify the phase of CALL in Bangladesh from teachers' cognitive perspective and their hopeful expectations about the bright future of CALL in developing countries like Bangladesh.

6.5 Implications for Future Research

Implications for future research can be suggested not only for Bangladesh but also for broad aspects in terms of developing countries as well as teacher cognition and CALL research.

6.5.1 Future research in Bangladesh

The present research serves as a foundation for teacher cognition research in Bangladesh in terms of CALL. The research was carried out from my personal interest in CALL and teaching.

However, more research can be done not only on university teachers' cognition but also school and college teachers' cognition based on various other aspects of language teaching and learning.

As the Government is working hard to improve English usage among the nation through projects like English in Action or BBC Janala, school and college teachers can provide more information about the practice of English through technology being early experienced. In a CALL

environment, learners are also important like teachers and computers. Therefore, the status of CALL in Bangladesh can also be understood by investigating learners' perceptions. Due to the small scope of time and distance as well as small sample, the study could not take large numbers of participants into account. Thus, longitudinal study can be conducted based on regional places in Bangladesh for better understanding of teacher cognition or CALL. Being at a preliminary stage of implementation and experimentation, studies can be conducted to establish a model for successful implementation of CALL in near future.

6.5.2 Future research in broader aspects

Providing a basis of understanding of teacher cognition in relation to CALL in a foreign or second language setting, the present study can guide other studies regarding CALL, particularly based on teachers' conceptions. True sense of CALL can be identified by further research from teachers' mental lives to make the bridge between teacher cognition and CALL better. Studies on the significance of in-service teacher training or professional development course on computer technology can be conducted for the spread of CALL research. Another area of study can be the impact of individual variables like age, gender or experience on teacher cognition for using CALL in their practice.

This research can also serve as an initial exploratory research to underpin future studies on teacher cognition in other developing countries in relation to technology. This study tries to explore teacher cognition while looking at the phase of CALL from teachers' cognition in

Bangladesh. Similar studies can be conducted in other developing countries for a stronger relation between teacher cognition and technology research; comparative studies between developed and developing countries are also a possibility for establishing such connections.

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Appendix 1

The Significance of computers

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Any kind of use of computer while language learning or teaching is CALL					
2. In my language class, computer is a must teaching/ learning tool					
3. In my language class, computer serves as an optional tool					

The significance of other technologies associated with CALL

4. Circle the following technologies you use while teaching English to your students (you can choose more than one):

☐ Interactive white board
 ☐ Chat
 ☐ Social Networking
 ☐ Blog
 ☐ Internet or message board
 ☐ Wiki
☐ Tablet PC or PDA
 ☐ i-Pod
 ☐ Mobile phone
 ☐ Others

Please, specify:

5. Circle the CALL programs you are familiar with and have used in your class (you can choose more than one):

☐ Word get
 ☐ Web teacher
 ☐ Educational freeware
 ☐ English world builder
 ☐ AWL gap maker
☐ Vox pop
 ☐ Hot potatoes
 ☐ Java script quiz maker
 ☐ Total recorder
 ☐ Others

Please, specify:

Usage of computers

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
6. I use PowerPoint slides for delivering lectures					
7. I use computer for making spreadsheets					
8. I prepare on-line quizzes or tests for my students					
9. I use social-networking sites such as Facebook to encourage my students' discussion					
10. I mark assignments on the computer and return them to my students online					
11. I communicate with my students via e-mail					
12. I use specific CALL software like hot potatoes for my language class					

Roles of teachers in CALL lessons

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
13. I am resource provider of authentic materials in my CALL lessons					
14. I manage my learners' interactions for task completion in my CALL lessons					
15. I guide my students as a coach for completing given tasks rather than being the only decision maker in my CALL lessons					
16. I monitor my students' activities and try to provide them positive feedbacks to facilitate their interaction in my CALL lessons					
17. I am immediate responder to my students' questions during their unexpected learning problems in my CALL lessons					

Computers' roles in CALL activities					
Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
18. In my CALL lessons, computer serves as a presenter of information or deliverer of exercises					
19. In my CALL lessons, computer is an editor for text analysis and making spreadsheets					
20. In my CALL lessons, computer serves as a tutor and adviser to my students for guidance and task completion and facilitate their learning					
21. In my CALL lessons, computer works as a mediator between me and my students.					

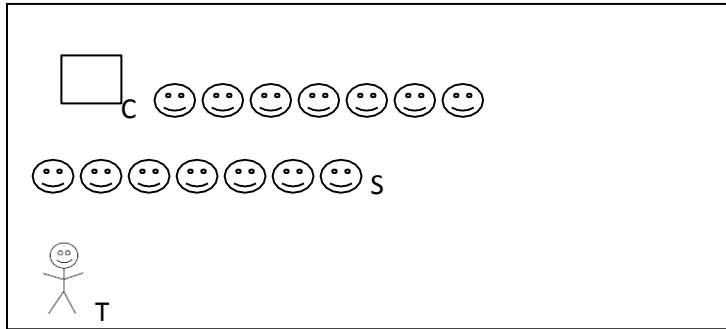
Appendix 2

Practice of CALL in the class					
Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
22. I use CALL with my own interest with available technical facilities in the institution.					
23. I am obliged to use CALL in my lessons according to the institutional authority's instruction.					
24. I use CALL mostly for teaching speaking English					
25. I use CALL mostly for teaching listening English					
26. I use CALL mostly for teaching writing English					
27. I use CALL mostly for teaching reading English					
28. I use CALL mostly for teaching English grammar					
29. I use CALL mostly for teaching English vocabulary					
Benefits of CALL					
Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
30. The use of computer promotes independent as well as collaborative learning environments in solving tasks					
31. Computer makes authentic materials accessible to both teachers and students					
32. The use of computer encourages learner autonomy from teachers					
33. The use of computer improves interactions among learners regardless of place and time					
34. I enjoy teaching English by using computers					
35. I find teaching and learning English language effective and motivating while using computer					
Suggestions on how to improve CALL in Bangladesh					
Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
36. Teacher training is important for CALL development					
37. Computer facilities should be expanded for the use of CALL in my institution					
38. Administration support like generator-based power supply during load-shedding is required for using CALL					
39. Workshops on CALL software and programs can improve my CALL lessons					
40. Authority should approve the use of CALL besides fixed course readers					

Appendix 3

41. Which of the following diagram represents your CALL class:

a.

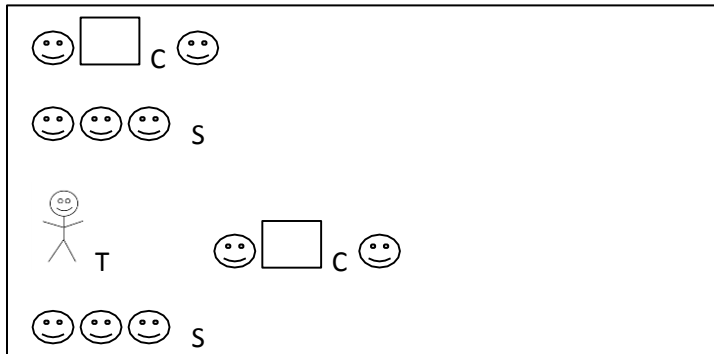


C = Computer

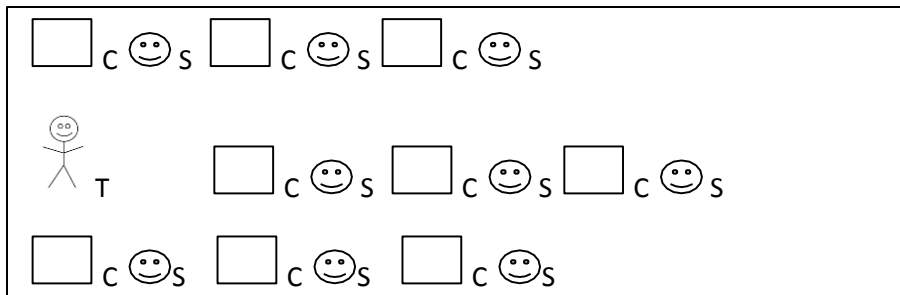
T = Teacher

S = Students

b.



c.



Factors Influencing the use of CALL

42. Which of the following factor/s determine the way you use CALL (you can choose more than one):

- ☐ Your personal interest in computer and internet
- ☐ Technical support at the institution
- ☐ Compulsory instruction from the administration for using CALL
- ☐ Your early experiences and exposure to various CALL activities
- ☐ Access to authentic materials to utilize time
- ☐ Others

Please, specify:

43. Which of the obstacle/s you face for the successful implementation of CALL in your class (you can choose more than one):

- ☐ Lack of skill and knowledge about computer and CALL software
- ☐ Insufficient technical facilities
- ☐ Rigid curriculum and textbook
- ☐ Financial barriers from administration
- ☐ Load-shedding or power failure
- ☐ Others

Please, specify:

Appendix 4

Macquarie University Student Email and Calendar Mail - RE: HS Ethics... <https://mail.google.com/mail/u/0/?ui=2&ik=9d6d563521&view=pt&sea...>



JASMINE RAHMAN <jasmine.rahman@students.mq.edu.au>

RE: HS Ethics Application - Approved (5201400379)(Con/Met)

1 message

Fhs Ethics <fhs.ethics@mq.edu.au>

Tue, Apr 29, 2014 at 10:46 AM

To: Professor Phil Benson <philip.benson@mq.edu.au>

Cc: Dr Maria Dahm <maria.dahm@mq.edu.au>, Miss Jasmine Rahman <jasmine.rahman@students.mq.edu.au>

Dear Professor Benson,

Re: "CALL and English at Tertiary level: Teachers' Perspectives in Bangladesh"(5201400379)

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 29th April 2014. 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:

Dr Maria Dahm
Miss Jasmine Rahman
Professor Philip Benson

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: 29th April 2015
Progress Report 2 Due: 29th April 2016
Progress Report 3 Due: 29th April 2017
Progress Report 4 Due: 29th April 2018
Final Report Due: 29th April 2019

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



MACQUARIE
University

JASMINE RAHMAN <jasmine.rahman@students.mq.edu.au>

RE: HS Ethics Application - Final Report Approved (5201400379)

Fhs Ethics <fhs.ethics@mq.edu.au>

Tue, May 26, 2015 at 1:45 PM

To: Professor Phil Benson <philip.benson@mq.edu.au>

Cc: Dr Maria Dahm <maria.dahm@mq.edu.au>, Miss Jasmine Rahman <jasmine.rahman@students.mq.edu.au>

Dear Professor Benson,

Title of project: 'CALL and English at Tertiary level: Teachers'
Perspectives in Bangladesh' (Ref: 5201400379)

FINAL REPORT APPROVED

Your final report has been received and approved, effective 26th May 2015.

The Faculty of Human Sciences Human Research Ethics Sub-Committee is grateful for your cooperation and would like to wish you success in future research endeavours.

Yours sincerely,

Dr Anthony Miller
Chair
Faculty of Human Sciences
Human Research Ethics Sub-Committee

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Email: fhs.ethics@mq.edu.au

<http://www.research.mq.edu.au/>

Appendix 5

The Advertisement on Facebook Page

Hello Members.

My name is Jasmine Rahman and I am doing my Master of Research at Macquarie University. My Research topic is “CALL and English at Tertiary Level: Teachers cognition in Bangladesh” for which I need help from you, university English teachers in Bangladesh. I have prepared a questionnaire. Please feel free to complete the online questionnaire and send it back to jasmine.rahman@students.mq.edu.au at your convenience within two weeks. It will not take more than 10 minutes. Participation in this study is voluntary; so don't feel pressured to fill it up against your will.

I will also be conducting interviews regarding the topic. If you are interested in being interviewed, please let me know by email at the same address by next week. The interview will be less than 40 minutes. I would appreciate your interest and voluntary participation.

Your identities will not be disclosed and your answers will only be used for the research. If you have any queries regarding the study, please contact me on +61414630750 or by e-mail at jasmine.rahman@students.mq.edu.au.

Thank you all in advance for your valuable time to read the post and show interest in the study.

Kind regards,

Jasmine Rahman

Master of Research

Macquarie University

Appendix 6



Department of Linguistics
Faculty of Human Sciences
MACQUARIE UNIVERSITY, Sydney, NSW 2109, Australia

Phone: +61 (0) 2 9850 8740
Fax: +61 (0)2 9850 9199

Email: lingadmin@mq.edu.au

Professor Philip Benson

Department of Linguistics

Macquarie University, Sydney, NSW 2109, Australia

Participant Information and Consent Form

Name of Project: **CALL and Teacher Cognition: English at Tertiary Level in Bangladesh (Teacher's interview)**

You are invited to participate in a study of Computer Assisted Language Learning (CALL) in Bangladesh. The purpose of the study is to understand teachers' perception and attitude towards use of CALL at tertiary level of education in Bangladesh. In this developing country, use of technology is immensely emerging in almost every sphere of life. However, not much research has been done to understand the role of technology in this country. This study seeks to know about university teachers' perspectives on the use of technology, specially CALL in Bangladesh which will help to identify further required implication of CALL in developing countries like Bangladesh.

The study is being conducted by Jasmine Rahman, a research student from the Department of Linguistics and who can be contacted on +61414630750 or by e-mail at jasmine.rahman@students.mq.edu.au. This research is being conducted to meet the requirements of Master of Research under the supervision of Professor Philip Benson of the Department of Linguistics (Tel: +61-2-9850-8756; e-mail address: philip.benson@mq.edu.au). Participants are advised to contact them for any queries regarding the study without any hesitation.

If you decide to participate, you will be asked to participate in an interview on CALL. You will be required to answer some open-ended questions regarding CALL in Bangladesh. The interview will be audio-recorded via Skype without video so that it can be analyzed later, and will take less than 40 minutes. You are entitled to see the interview questions before deciding whether or not you wish to participate. You may discontinue the interview at any time, without having to give a reason and without any consequences as participation in this study is entirely voluntary.

Any information or personal details gathered in the course of the study are confidential, except as required by law. The information gathered will be used only to write the thesis of the research. In the paper, the real names of participants will **not** be used. The information will not be used for any other purpose. Only the research team including the investigator will have access to the audio-recorded information. After the interview has been completed, a summary of the results of the data can be made available to you on request. The findings can be posted on the Language Teachers' Professional Learning Facebook page of which you are member.

I, *(participant's name)* have read and understand the information above and any questions I have asked have been answered to my satisfaction. I agree to participate in this research, knowing that I can withdraw from further participation in the research at any time without consequence. I have been given a copy of this form to keep.

Participant's Name: _____

(Block letters)

Participant's Signature: _____ Date: _____

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'S [OR PARTICIPANT'S] COPY)