

Exploring impacts of Computer Aided Learning (CAL) on English language teaching in secondary schools in class ix-x in rural areas in Bangladesh

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Keywords

Computer Aided Learning, computer applications, computer literacy, challenges, constrains, English language, elicitation, effectiveness, four skills, implementation, interactive, impact, materials, multimedia classroom, nature, real life situation

Abstract

The study attempts to explore impacts of CAL (Computer Aided Learning) on English language teaching in secondary schools in class ix & x in rural areas in Bangladesh. The main aim of this study is to find out how far Computer Aided Learning (CAL) materials (English) are effective for the learners, what the nature and challenges of CAL are, what the hindrances / constraints are to implement it. The research is primarily based upon one of the modern theories in teaching, 'constructivism theory', which focuses on learning by doing and learning through technology (Shafaei, 2012). Both qualitative and quantitative approaches are used in this study. The data is gathered from seventy (70) students, seven (7) English language teachers and from seven (7) CAL English class observations in rural areas in Bangladesh. All the numerical data are analyzed and processed through statistical software in computer (SPSS). For the qualitative data analysis another mechanism (manually or discourse analysis) is used to interpret them. The findings of the study offer insights to the government and non-government agencies, primary and secondary school authorities and other researchers to take into consideration the present condition and challenges of ICT based teaching and learning in rural areas of Bangladesh. It is expected that the findings will help the concerned authority to deal with the challenges.

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List of Abbreviations

A2I (a2i) Access to Information

BMTTI Bangladesh Madrasha Teachers' Training Institute

CAL Computer Aided Learning

CALL Computer Assisted Language Learning

DPE Directorate of Primary Education

DSHE Directorate of Secondary and Higher Education

EFT English for Today

HSTTI Higher Secondary Teachers' Training Institutes

ICT Information and Communication Technology

MoE Ministry of Education

MoPME Ministry of Primary and Mass Education

NCTB National Curriculum and Text Book Board

PACE Post Primary Basic and Continuing Education

TQI-SEP Teaching Quality Improvement in Secondary Education Project

TTC Teachers' Training Colleges

Declaration

I declare that “Exploring impacts of Computer Aided Learning (CAL) on English language teaching in secondary schools in rural areas in Bangladesh in class ix-x” is my original work except the quotations and citations which are also acknowledged by means of complete references.

Signature:



Rawnak Jahan Jhumu

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CHAPTER-1

INTRODUCTION

1.1 Introduction

Computer Aided Learning (CAL) is an endeavor of Education Program for improving quality of teaching and learning in rural secondary schools by improvising digital presentation of lessons in the classroom. The support is provided on three core subjects: English, Mathematics and General Science for different grades from class six to ten. In the process of using CAL program, teachers have to receive a basic training on CAL materials at the beginning followed by refreshers at different stages. One of the prime objectives of CAL is to increase interest among students through visualization, animation with sound, simplification of difficult contents and active participation. Achieving goals and objectives of the support is much dependent on the effort of teacher as the teacher is the key figure for effective classroom teaching and learning. Willingness is not enough; skills for using CAL materials such as computer skills, dissemination skills, teaching skills, etc. are also needed. The study attempts to analyze the impacts of Computer Aided Learning (CAL) on English language teaching in secondary schools especially in class ix & x in Bangladesh. One of the leading N.G.O has taken initiatives to provide Computer-Aided Learning (CAL) support to a number of non-Government high schools under 11 districts in rural areas in Bangladesh. Two types of CAL set up exist in the program: multimedia set up (in most classes) and monitor set-up (in few classes). In the classroom with multimedia set-up, a projector is set in one side and the computer is set in front of the teacher. In classroom with monitor set-up a number of monitors are connected with a single computer in a specific classroom. The computer is mainly handled by the subject teacher and the monitors are put in front of the desk of the students (Prospectus for CAL).

1.2. Background and context

Computer Aided Learning (CAL) materials are developed as animation-based supplements on the national curriculum for English, mathematics and science. Materials for English include developing all four language skills namely listening, speaking, reading and writing (Sharmin & Roy, 2011). In classrooms, teachers traditionally rely on direct teaching method

where they mostly give lectures and pupils passively listen to them which hardly generate any interest among the students. CAL materials can be used as supplementary tools in teaching, a self-learning tool for teachers, learners and learning facilitation tools for classroom teaching. The aims of CAL are to improve the teaching process, to introduce technology in education, to make classroom-teaching more interesting, to make the students engaged, to improve teachers' capacity and to increase students' involvement in classroom interaction. The teachers of CAL supported schools are given training on computer operation and CAL materials. The teachers are then expected to teach incorporating CAL. In addition to core training, teachers attend both school-based and Learning Centre (BLC)-based refresher training/workshop for short duration (Prospectus for CAL).

1.3. Problem statement

CAL is commonly held by many teachers and learners to be effective in itself. However, like any other artifacts of educational technology, success of CAL depends on a number of complex factors often specific to particular learning context. Therefore, until such factors are taken into consideration integration of CAL has little chances to be effective.

1.4. Research questions

➤ General

- What are the effects of Computer Aided Learning (CAL) on teaching and learning English?

➤ Specific

- What is the extent of use of Computer Aided Learning (CAL) materials for teaching English especially in class ix & x?
- What are the challenges and constraints of implementation of Computer Aided Learning (CAL) materials for English language teaching in class ix & x?

1.5. Statement of purpose

The research is an attempt to encourage better ways of teaching and learning English through the use of Computer Aided Learning (CAL) for the benefit of both teachers and students. The main aim of this study is to know how far Computer Aided Learning (CAL) materials (English) are effective for the learners, what is the nature of CAL, what are the challenges, to what extent it has been implemented and what the obstacles are to implement it.

1.6. Limitations

There is hardly any research on Computer Aided Learning (CAL) in English in secondary school in Bangladesh. English in Action has a project on ICT based learning which is only audio materials. Hence, research articles, exploratory and experimental studies are hardly available in this field in Bangladeshi context.

1.7. Delimitations

It is very tough to collect data from all the Computer Aided Learning (CAL) supported schools from all over Bangladesh because of time constraint. So, for this small scale research the study is limited to 7 schools, 70 students, 7 English language teachers and 7 class observations in Gazipur and Tangail districts only.

1.8. Significance

Engaging in Computer Aided Learning (CAL) is a continuing challenge that requires time and commitment. Technology is not the only answer to solve all the problems. What really matter is how technology is used. Technology or computer can/will never substitute teacher but they offer new opportunities for better language practice. They may actually make the process of language learning significantly richer/comfortable. This study could be considered as a significant starting point, if anybody seeks to take up any observational study on CAL. This study will enhance the research literature in the area of Computer Aided Learning. It will be helpful for teachers, learners and material developers. This study will help the learners and teachers to practice language skills more thoroughly and solve language learning problems more systematically.

1.9. Operational definition

There are several terms used in this study that needs to be defined. The definitions are given below-

1.9.1. CAL

CAL means Computer Aided Learning. The aim of CAL is to make English language classes more interactive and engaging, to create a self-learning provision for both teachers and students, to familiarize the students and teachers from rural communities with modern computer technology in order to provide harmonizing learning environment to Non-Government secondary schools. (BRAC Prospectus for CAL)

1.9.2. CALL

CALL means Computer Assisted Language Learning. It may be defined as "the search for and study of applications of the computer in language teaching and learning" (Levy, 1997: p 1). Computer assisted language learning (CALL) refers to any process in which the learner uses a computer to improve foreign language competence. The technology includes not only computers but also smart phones, tablets, MP3 players, and consoles. CALL has been used or can be used for the purpose of language learning and teaching. The use of CALL can be divided as (1) Computer as Drill and Practice, (2) Computer as Tutor (3) Computer as Problem Solving, (4) Computer as Game, (5) Computer as tool for ELT teachers and learners, and (6) Applications of Internet for ELT. The main aim of CALL is to find ways for using computers for the purpose of teaching and learning language.

1.10. Thesis outline

The paper has been structured into five distinct chapters. The first chapter is the chapter dealing with the introduction. In the introductory chapter background and context, problem statement, research questions, statement of purpose, limitations, delimitations, significance, operational definition and thesis outline of the study are illustrated.

The second chapter is the literature review chapter. This chapter presents theoretical information about Computer Aided Learning (CAL) and Computer Assisted Language Learning (CALL), its history, different phases, and practicability of CALL in the third world countries, initiatives taken by the government of Bangladesh, necessity of CAL, advantages and disadvantages of CAL in English language classrooms.

The third chapter describes the research methodology. It represents the design of the study, theoretical framework, setting, sampling, research instrument, data collection procedure, data analysis procedure and obstacle encountered.

The fourth chapter analyses the responses and the findings of the student questionnaire, class observations and teacher interviews. It is the results and discussion chapter. The chapter is divided into three parts. First part of the chapter is a detailed discussion of the questionnaire results which were found from the students. Next part represents the results found from CAL English class observation. And the third part presents the results found from the teachers' interview.

Finally, the last chapter is the concluding chapter. This chapter presents the summary of the findings, findings from central research questions, recommendations, practical implication, further study, limitation and conclusion.

CHAPTER-2

LITERATURE REVIEW

2.1. Introduction

This chapter presents theoretical information about Computer Aided Learning (CAL) and Computer Assisted Language Learning (CALL), its history, different phases, practicability of CALL in the third world country, initiatives taken by the government of Bangladesh, necessity of CAL, advantages and disadvantages of CAL in English Language Teaching classrooms.

2.2. History of CAL and CALL

In Bangladeshi context, there is hardly any research on Computer Aided Learning (CAL) so; research articles are not available on this sector. However, there are a few articles on Computer Assisted Language Learning (CALL) in different contexts. For this research the researcher has tried to incorporate those articles in the best possible ways.

The origin of Computer Assisted language Learning (CALL) can be traced back to the 1960s and up to the late 1970s; CALL projects were confined mainly to universities. The PLATO project, initiated at the University of Illinois in 1960, was an important pointer in the early development of CALL. In the late 1970s CALL became wider because of the advent of microcomputers. “CALL emerged as a distinct field with the beginning of CALL-centered conferences and professional organizations that accompanied the spread of the personal computer in the early 1980s.” (Hubbard, 2009, p. 3)

Early CALL favored an approach that drew heavily on practices associated with programmed instruction. This was reflected in the term Computer Assisted Language Instruction (CALI), which originated in the USA and was in common use until the early 1980s. (Hubbard, 2009, p. 3)

In this connection, Mahdi (2013, p. 192) claims that “using computers in language teaching and learning became a "fashion/ style" for many institutions. Many universities and colleges established language labs which are equipped with different types of information and communication technology designed for language teaching and learning. CALL in EFL contexts cannot be implemented in the way as it is integrated at US, UK or other European universities. CALL integration can be different from a context to another (p. 192).

Comparing to Hubbard (2009) and Mahdi (2013), computer technology was just started at 1960s which had a whole lot different features than today’s CALL. At present the use of technology ranges from university to colleges and even in schools. From Hubbard’s article it is clear that CALL was applied mainly in the universities that means in tertiary level but not in the primary and secondary level.

2.3. Different phases of CALL

Different CALL (Computer Assisted Language Learning) practitioners and researchers have divided the history of CALL in certain categories. Following are what Warschauer and Healey (1998, p. 57) cauterized as three phrases of CALL- Behaviorist, Communicative and Integrative:

1. Behaviorist CALL is dated as 1970s–1980s. Behaviorist CALL could be considered a sub-component of Computer Assisted Language Instruction (CALI) informed by the behaviorist learning model. This mode of CALL featured repetitive language drills, referred to as drill-and-practice (p. 57).

According to Warschauer & Healey (1998), computers may have had useful roles in language learning, but were not prominently communicative except in very limited computer in student communication. Furthermore, the actual interaction involved was extremely limited at the time.

2. Communicative CALL dated to the 1980s and 1990s which was previously said to have “emerged in the late 1970s and early 1980s”. Communicative CALL corresponded to cognitive theories which stressed that learning was a process of discovery, expression, and development. Popular CALL software developed in this period included text reconstruction programs which allowed students working alone or in groups to discover patterns of language and meaning (p. 57).

The most important feature of this phase is the process of discovery. Here, this phase may be certainly realistic and valuable communication, but this is not a natural feature of CALL. It could be achieved by other means, without a computer also. So, it hardly counts as evidence for this period being a communicative phase of CALL.

3. The final stage of computer-assisted language learning is known as integrative CALL. Educators have advanced from a cognitive view of communicative language teaching to a socio-cognitive position that stresses real language use within a meaningful, authentic social context. Integrative CALL tried to integrate a variety of skills in language learning (listening, speaking, writing, and reading) and tried to incorporate technology more completely into language teaching (p. 58).

Memorization is seen as less important and it is suggested that students need the ability to respond and adapt to the changes rather than drilling (the single way) of any task. Teachers' roles have also changed with the times. Teachers are rarely the sole source of language information in these days. As a result the teachers have become facilitator of learning rather than the font of wisdom.

Warschauer (2004) describes the technological, methodological and strategic changes over the period of times in the following table (p.11).

Stage	1970s-1980s: Structural CALL	1980s-1990s: Communicative CALL	21st Century: Integrative CALL
Technology	Mainframe	PCs	Multimedia and Internet
English-Teaching Paradigm	Grammar-Translation & Audio-Lingual	Communicate Language Teaching	Content-Based, ESP/EAP
View of Language	Structural (a formal structural system)	Cognitive (a mentally constructed system)	Socio-cognitive (developed in social interaction)
Principal Use of computers	Drill and Practice	Computers Communicative Exercises	Authentic Discourse
Principal Objective	Accuracy	Fluency	Agency

Bax (2003) offers another set of definitions and descriptions of the three approaches and argues that they allow a more detailed analysis of institutions and classrooms. These are restricted CALL, open CALL and integrated CALL. (p. 19-22)

The first approach is Restricted CALL. In terms of its historical period and its main features it differs little from Warschauer and Healey's (1998) 'Behaviorist CALL'. It sees the teacher's role as being restricted to monitoring, the feedback restricted to closed responses and so on.

The second approach is Open CALL. According to Bax, (2003) this variety of CALL is more open in terms of feedback given to students, software types and the role of the teacher. It includes simulations and games. Bax argues that we are still using the Open CALL approach (p. 19-22).

The third approach is Integrated CALL. In contrast to Warschauer and Healey (1998), Bax (2003) uses the term "Integrated" instead of Integrative. In Integrative approach, students learn to use a variety of technological tools as an ongoing process of language learning and

using, rather than visiting the computer lab on once in a week basis for isolated exercises. The 'integrative phase' is also uncertain, if it is defined on the basis of approach to language and language teaching. Then it is indistinguishable from mainstream CLT as it has been developed.

Bax's (2003) view of Integrated CALL implies a process of 'normalization' that has still not been achieved in language teaching and learning. Integrated CALL will reach this state when computers will be used every day by language students and teachers as an integral part of every lesson, like a pen or a book. Teachers and students will use them without fear or inhibition, and equally without an exaggerated respect for what they can do. (p. 19-22)

Since the mid-1980s CALL (Computer Assisted Language Learning) has been gradually more used to describe the use of technology in teaching. CALL promotes the use of internet to circulate information. There are still some good reasons to use CALL rather than internet based technologies such as CALL is run directly from a CD or floppy disk drive or over a local network so the limitation of the internet - slow download times for multimedia materials may not apply (BRAC Prospectus for CAL).

At the end of the 20th century, the rise of computer-mediated communication and the internet has reshaped the uses of computers for language learning. Through internet, learners can communicate (e-mail, chat, download) so quickly with others all over the world (Warschauer & Healey, 1998, p. 13)

2.4. Practice of CALL in different countries

Several studies have been conducted in CAL and a number of deficiencies could be traced in them. For example, Bilbatua and Herrero de Haro (2014) took only interview of few teachers of Australia and Spain but not of the students. There was no conclusive-research towards CALL in which both teachers and students were involved where they were interviewed and surveyed questionnaires. The sample was not random and the response was also limited. There was investigation of students' attitudes towards the use of CALL and it focused on whether they prefer computer or teacher-led instruction in different contexts.

Bilbatua and Herrero de Haro (2014) found, “Out of the five Australian lecturers interviewed, only one teaches language courses exclusively through the medium of CALL, while the rest of them use CALL to complement face-to-face instruction.”

Spanish and Australian teachers found some positive factors for CALL. Motivation is an important factor for the success of CALL, students like using e-Learning because it is an environment in which students feel comfortable with and they find its content very valuable for their learning, the exercises are interactive that the teachers promote participation among students and that they make things more entertaining for students. Moreover there are enough materials available online.

According to Bilbatua and Herrero de Haro (2014) Spanish and Australian teachers also found some negative factors for CALL. She added that teachers use jokes, non-verbal language and laughter in face-to-face communication with their students, but they are concerned that it will be a challenge to incorporate these in online teaching. However students have several online materials but still like having face-to-face interactions and asking questions to teachers in person. She also mentions teachers do not have many online listening exercises so they find it difficult to incorporate them into the e-Learning platform. They also think that e-Learning requires much more work from the teachers. Students treated teachers as a very important point of contact and the teacher does not think that online components will replace teachers in the classroom. Students still prefer grammar lessons, gap fillings, and communicative activity, which is what teachers are used to. They can use CALL, but they still need to rely on their teacher for many aspects of the course, such as for explanations. Students also think that teacher’s language is alive and more authentic (p.15-29).

Mahdi (2013) indicates that, the integration of CALL in most Arab world countries requires a particular educational, administrative and technological environment. Most Arab world countries face many problems in the incorporation of CALL. For example, few students have their own computers. The majority of the students use common lab facilities to access computers. In many cases, labs are open only during working hours and usually scheduled for

different groups of students. However, political and economic dealings can affect the integration of CALL. Frequent workers strikes and long electricity power cuts are examples of political and economic affairs. A very serious problem in most of the third world countries is the low quality of education. So, the focus in most of these countries is on theoretical education. Moreover lack of teachers' technical support and inadequate budgets are crucial problems for the integration of CALL in the third world countries (p. 195).

It is very clear that Mahdi has unfolded the real scenario of under privileged countries. The same kind of situation exists in Bangladesh also. Most of the people of Bangladesh are not economically and technologically sound enough.

“Technology without human beings cannot create a good environment for language teaching and learning” (Mahdi, 2013, p.196). The users of technology have very important roles in the processes of language teaching and learning. Mahdi also added that many issues related to individuals (i.e. teachers, students, and administrators) that should be considered when CALL is integrated. There are some external factors that influence the teachers' use of CALL in their teaching. These factors are: ICT knowledge, support from administrators, training, and accessibility, preparing lessons, connectivity, and home access. Mahdi also mentioned the internal factors that influence the teachers' use of CALL in their teaching (e.g., teachers' attitudes, and teacher beliefs).

Hubbard (2009) mentioned that CALL was applied mainly in the universities that means in tertiary level CAL is used but not in the primary and secondary level (p. 3). Whereas Mahdi (2013) claims that “using computers in language teaching and learning became a fashion/ style for many institutions” (p. 192). Many universities and colleges have established language labs which are equipped with different types of information and communication technology designed for language teaching and learning. CALL in EFL contexts cannot be implemented in the way as it is integrated in US, UK or other European universities. He also added that CALL integration can be different from one context to another (p. 192).

It is clear that at present the use of technology spreads from universities to colleges and even in schools.

2.5. Initiatives taken by the government of Bangladesh

The Ministries of Education, and Primary and Mass Education have realized the potential of ICTs in elevating the educational quality and have organized initiatives to develop digital materials for school education. Realizing the inadequacies of the digital platforms in schools, especially the absence of them in primary schools, the ministries have started with digital materials for teacher education. This is a crucial area of building the capacity of teachers who are going to build the soldiers for Digital Bangladesh. Innovations like use of TV and Video in classrooms are being tested in several instances. Radio based adult education program has already shown great prospects. Use of videotaped TV program as learning tools is becoming popular among the farmers. Initiative to use digital media and e-learning platforms are being undertaken to provide on-demand and on-the-job training and skills building for the public servants. Payment of utility bills through mobile phones, SMS-based railway ticketing information, etc. are some of the pioneering initiatives of the government which can be cited as examples of ICT-based service delivery. These initiatives enable common citizens to receive information and services in a manner that is most convenient to them. For example, the initiative that allowed customers to pay dues to Titas Gas Distribution Company Limited liberated the customers from standing in long queues to pay their dues, and instead, afforded them alternative ways to settle their bills any time and from anywhere matching their lifestyles. (Digital Bangladesh concept note, 2009)

The aim of Access to Information Project (a2i) is to make teaching and learning more effective and enjoyable for both students and teachers using ICT. A2I has followed 3 approaches in its efforts to remodel education: establishing Multimedia Classrooms in secondary schools, training teachers on making ICT aided educational content and make electronic versions of text books available in primary and secondary levels including technical, vocational and Madrasa institutions. As part of the education reform driven by the Ministry of Education, a2i through public private partnership has so far established 500 multimedia classrooms in secondary schools and trained about 4500 teachers through 400 trainers of public training institutes.

The a2i introduced Multimedia Classrooms in 500 secondary schools, using one laptop with internet connection and a multimedia projector per classroom. This approach proved to be much cheaper than a full-fledged computer lab and thus economically more feasible. For executing these initiatives, a2i has worked in partnership with Ministry of Education (MoE), Ministry of Primary and Mass Education (MoPME), Directorate of Secondary and Higher Education (DSHE), Directorate of Primary Education (DPE), National Curriculum and Text Book Board (NCTB), Ministry of Education's Teaching Quality Improvement in Secondary Education Project (TQI-SEP), ICT for Education in Secondary and Higher Secondary Level Project (ICT Project), Teachers' Training Colleges (TTC), Higher Secondary Teachers' Training Institutes (HSTTI), Bangladesh Madrasa Teachers' Training Institute (BMTTI); Banglalink, Intel, Hosaf Group and other private partners(a2i policy document).

2.6. Necessity of CAL

CAL is not just about teaching language in a classroom, it is more about giving the students a tool for their language acquisition. It is something which the teacher could use in the classrooms, and again, the students can use it at their homes without someone's help. It is actually making teachers' role more effective. In a language teaching classroom, a teacher is more of a facilitator, whose duty is to facilitate his students with all the tools and materials the students need. In this way students learn language practically using real life materials. Prensky (2001) mentions, today's digital natives are living in a world surrounded by technology like computers, videogames, digital music players, video cams, cell phones, and all the other toys and tools of the digital age. Their days start with alarm clock in mobile phone and end with browsing face book in mobile phones (p. 1).

2.7. Advantages and disadvantages of CAL

One of the most important advantages of the growth of CALL is that software vendors and language teachers no longer feel bound to grammar practice as the main goal of computer use in the language classroom. The vocabulary software has started to be contextualized and to incorporate graphics, audio recording and playback, and videos.

Though computers have an important role in language learning process in language classes, there are some disadvantages of CALL. No matter how simple computers and software are, students need to learn a great deal to use them. Some students can never really adjust to using computers. Very often they feel uncomfortable with computers and make mistakes. Moreover technical/ mechanical failure is a common factor (Gunduz, 2005, p. 207).

CHAPTER-3

RESEARCH METHODOLOGY

3.1. Introduction

This chapter describes the design of the study, theoretical framework, setting, sampling, research instrument, data collection procedure, data analysis procedure and obstacle encountered.

3.2. Design of the study

The study focuses on the impact of Computer Aided Learning (CAL) on English teaching in the secondary schools in Bangladesh in class ix and x. Both quantitative and qualitative methodologies are followed in this study. To collect data the researcher selected 7 Computer Aided Learning (CAL) schools at Gazipur and Tangail. The study used questionnaires, interview and classroom observation data. The data was gathered from seventy (70) students, seven (7) English language teachers and from seven (7) CAL English class observations.

3.3. Theoretical/ conceptual framework

This research is primarily based upon constructivism, one of the modern theories in teaching language theory. Constructivist theory focuses on learning by doing and learning through technology. According to constructivism, students learn most effectively when they are actively engaged in their education. They can perform better when they participate and engage themselves in their learning process (Shafaei, 2012, p. 109). In Computer Aided Learning (CAL) process students can learn from visual stimulus, they can relate the practical things from real life situations moreover they can actively participate for every task. Computer is one of the most beneficial and useful tools for the students/ learners.

3.4. Setting

The study took place at Gazipur and Tangail district. The researcher selected four high schools from Gazipur and three high schools from Tangail. The data has been collected from May 2015 to June 2015. The data is collected from the students through surveying questionnaire in a formal or natural setting classroom. The researcher also observed the regular CAL English classes. The data has also been collected from the English teachers at

their office room in a calm and quiet place. The researcher took permission from the head teacher and from the English teacher to record the interview. For each interview the researcher took approximately 10 to 12 minutes.

3.5. Sampling

In total 70 questionnaires were given to the students of class ix and x from seven high schools (i.e. 10 students from each school). Ten students from each school (class ix & x) were selected by means of random selection. Seven English teachers were interviewed who are assigned to take nine-ten English classes. Seven CAL English classes of class ix- x had been observed by the researcher. It is very tough to collect data from all the Computer Aided Learning (CAL) supported schools from all over Bangladesh because of time constraint. So, for this small scale research the researcher has limited her study to 7schools, 70 students and 7 English language teachers, 7 class observations only in Gazipur and Tangail districts.

3.6. Research instruments

The study was conducted in three ways: one is questionnaire sessions for the students, second is interview sessions for the English teachers and third is CAL English class observation. The researcher prepared MCQ (Appendix-A) or quantitative questionnaire for the students and she did not take interview to them because, most of the students are afraid of taking part in interview. Moreover, the researcher prepared interview question (Appendix-C) for the teachers and took interview to them so that the teachers can express their opinion easily. Finally, the researcher prepared checklist (Appendix-B) for observing classes so that the researcher can easily match students responses and teachers opinions. Before starting data collection, the instruments like questionnaire, interview question and class observation checklist were evaluated and finalized properly by the research expert (supervisor).

Students' questionnaire:

Question no. 4, 6, 8 and 11 from student questionnaire (Appendix-A) helped the study to find out the answer of the general research question; question no. 1, 2 and 3 (Appendix-A) helped the study to find out the first specific research question and question no. 5 and 7 (Appendix-A) helped the study finding out the answer for both general and first specific researcher

question. Question no. 9, 10, 12 (Appendix-A) helped the study to find out the second specific research question.

Observation checklist:

In the observation checklist serial no. 1, 2, 11, 12 and 13 (Appendix-B) helped the study to find out the answer of the general research question; serial no. 3, 4, 6 and 14 (Appendix-B) helped the study to find out the first specific research question and serial no. 5, 10 and 15 (Appendix-B) helped the study finding out the answer for both general and first specific researcher question. Serial no. 7 and 8 (Appendix-B) helped the study to find out the second specific research question.

Teachers' questionnaire:

Question no. 4, 5, 6, and 10 from teachers' questionnaire (Appendix-C) helped the study to find out the answer of the general research question; question no. 1, 2 and 3 (Appendix-C) helped the study to find out the first specific research question. Question no.7, 8 and 9 (Appendix-C) helped the study to find out the second specific research question.

3.7. Data collection procedure

The data was collected from seven high schools which are situated at Gazipur and Tangail. The data was collected through questionnaire, interview and from class observation. For this study the researcher visited seven different high schools for several days and times to collect data because the teachers and students were busy with their other classes. The researcher took permission from the head teachers to collect data from the respective respondents. While collecting data from the students the researcher requested the class teacher to leave the class so that students felt free to answer. The researcher explained each of the questions in Bangla and asked them to put tick mark on which they prefer most. After finishing one question she proceeded for the next question. The researcher took 20 minutes for each class. The researcher took interview to the teacher and she recorded the interviews with their permission and also took necessary notes. At the time of observing classes researcher followed the checklist and sat at the back bench to minimize distractions and interventions. The researcher took one month and half to collect all the data as there was summer vacation. Moreover in few schools she had to visit for several times as few teachers were busy for their upcoming examination.

3.8. Data analysis procedure

All the numerical data were analyzed and processed through statistical software in computer (SPSS). For the qualitative data analysis another mechanism (manually or discourse analysis) is used to interpret them. Later on, the percentages of the data were arranged in MS Excel then charts had been arranged in Microsoft Word. The qualitative data had been analyzed based on the answers provided by the Teachers (English).

3.9. Obstacle encountered

So far the researcher did not find any hassle except time schedule. Because teachers and students were busy for the half yearly examination. Few head teachers offered the researcher to come after half yearly examination. However, the researcher was able to manage the head teachers, English teachers and the students and finally she collected the data on due time.

CHAPTER-4

RESULTS AND DISCUSSION

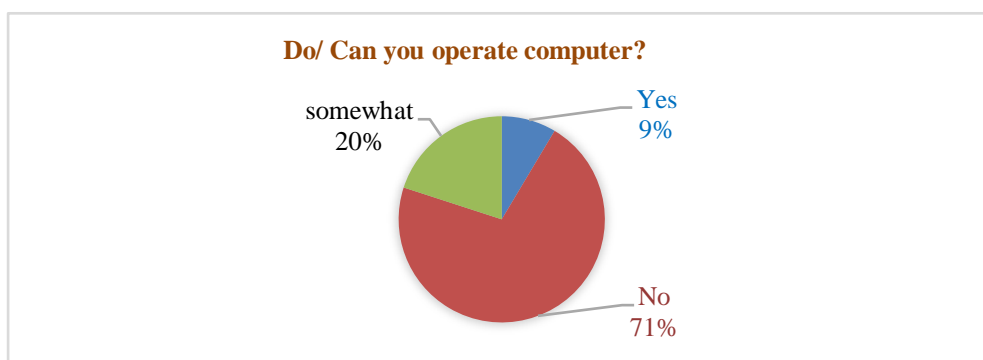
4.1. Introduction

This chapter analyses the responses and the findings of the student questionnaire, class observations and teacher interviews. After collecting the required data based on the data collection procedures and instruments, the researcher conducted both quantitative and qualitative analysis. All the numerical data were analyzed and processed through SPSS software. The qualitative data were manually analyzed. Later on, the percentages of the data were arranged in MS Excel. Then the tables and charts were arranged in Microsoft Word file. The qualitative data were analyzed based on the answers provided by the Teachers (in English). Most of the teachers replied in English but sometimes they spoke in Bangla too, which was later translated into English for the study.

4.2. Description and analysis of the students' responses (Student Questionnaire, Appendix A)

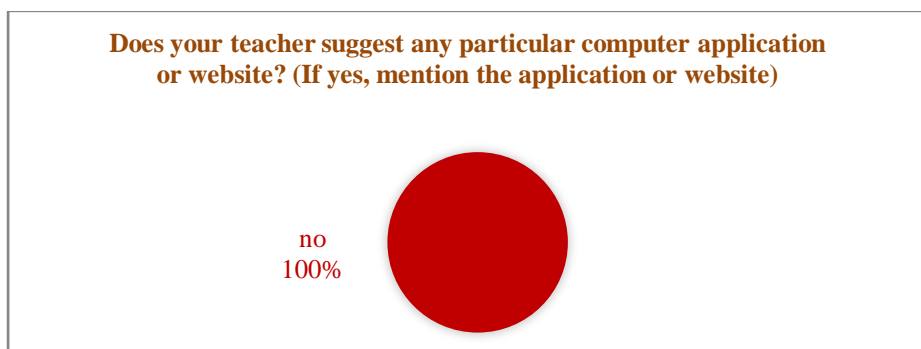
The result in here is demonstrated according to the questionnaires surveyed to the students. The data (students' responses) were gathered from the students through surveying questionnaire in a formal classroom setting and the researcher requested the teachers to leave the class so that the students had no chance to be influenced by the teachers. The researcher explained each of the questions in Bangla and asked them to put tick mark to the option they preferred most. After finishing one item in the questionnaire she proceeded for the next one. The researcher took approximately 20 minutes for each class. The data (students' responses) were gathered from seventy (70) students from seven high schools in the district of Gazipur and Tangail.

Figure: 4.2.1 Operating a computer



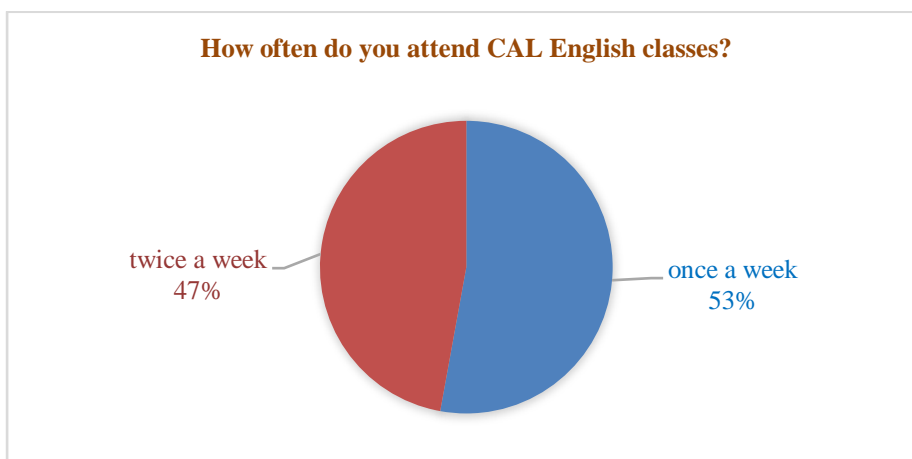
In response to the 1st question, only 9% (6 students out of 70) students reported that they can operate computer whereas 71% students reported that they do not know how to operate computer. It is also found that 20% students know a bit/somewhat to operate computer (See **Figure: 4.2.1**). The result differs because in rural areas some students are privileged but some are not. The researcher observed that in few schools there are lab facilities but not in every schools.

Figure: 4.2.2 Particular computer application or website



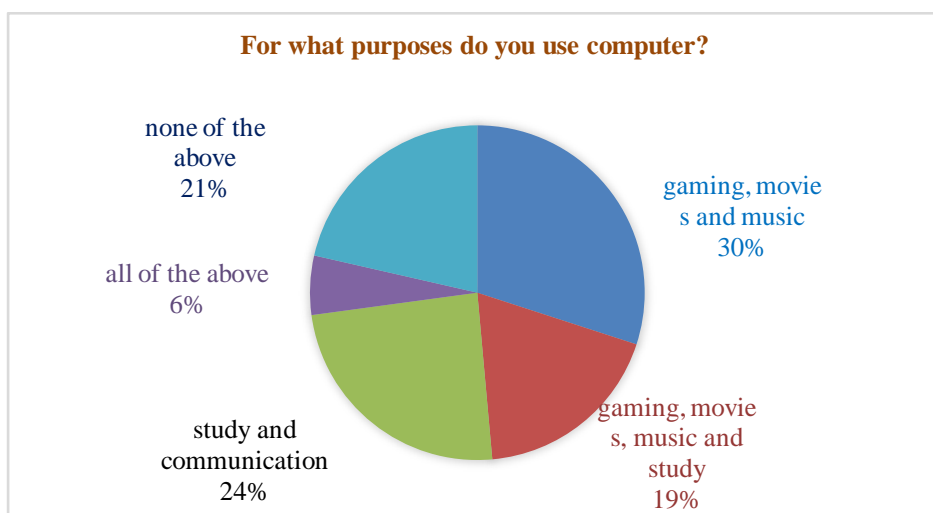
In answering the 2nd question, 100% students responded that their teacher never suggested any particular computer application or website to them (See **Figure: 4.2.2**). For this question no student put tick mark on ‘Yes’ or on ‘Sometimes’. Therefore, this may imply that the teachers are following only the specific CAL materials.

Figure: 4.2.3 Attending CAL English classes



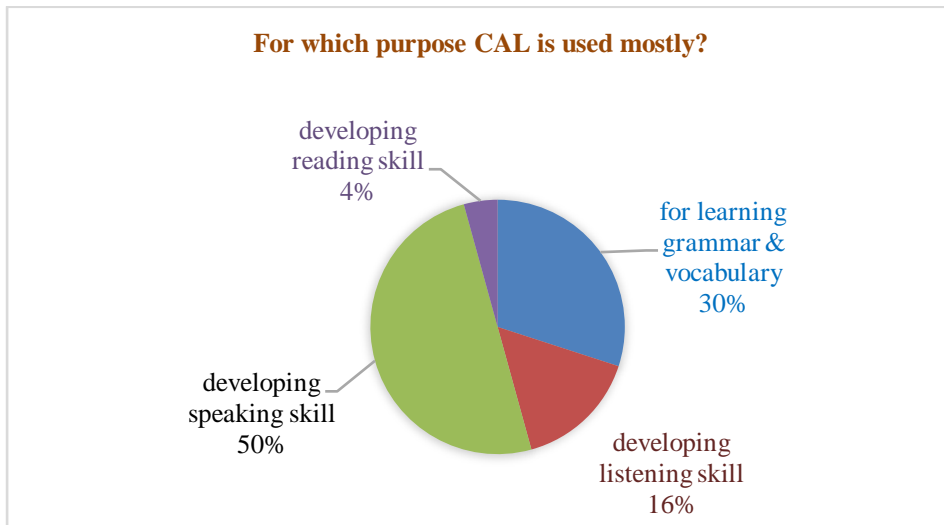
In response to the 3rd question, 53% students answered that they attend CAL English class once a week whereas 47% students answered that they attend twice a week. However no single student answered thrice a week or never (See Figure: 4.2.3). The result shows that in some schools teachers take CAL English classes once a week and in some other schools it happens twice a week.

Figure: 4.2.4 Purpose of using computer



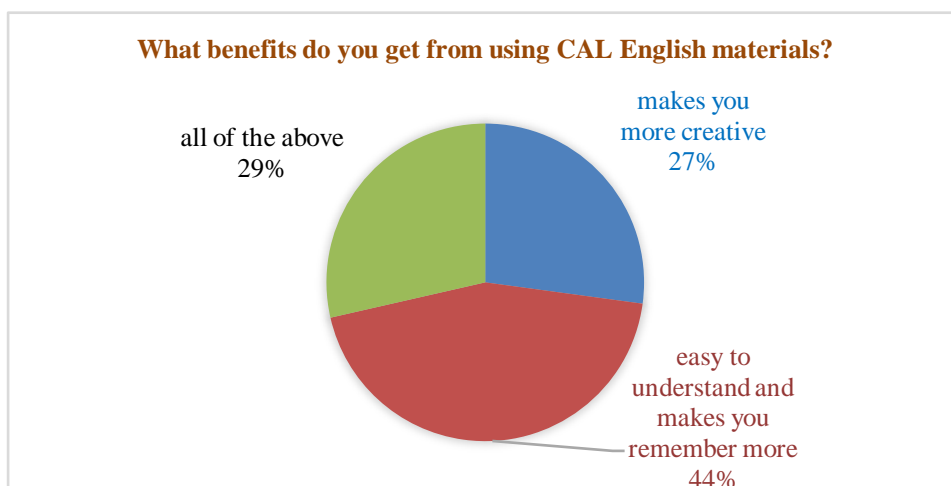
In answering the 4th question, 30% students said that they use computer for gaming, movies and music. 24% students use computer for study and communication purposes. 19% students use computer for gaming, movies-music and study purposes. In contrast, 21% students answered that they use computer for none of the above purposes. Interestingly, it is found that 6% students use computer for all of the above purposes (See Figure: 4.2.4).

Figure: 4.2.5 Mostly used CAL



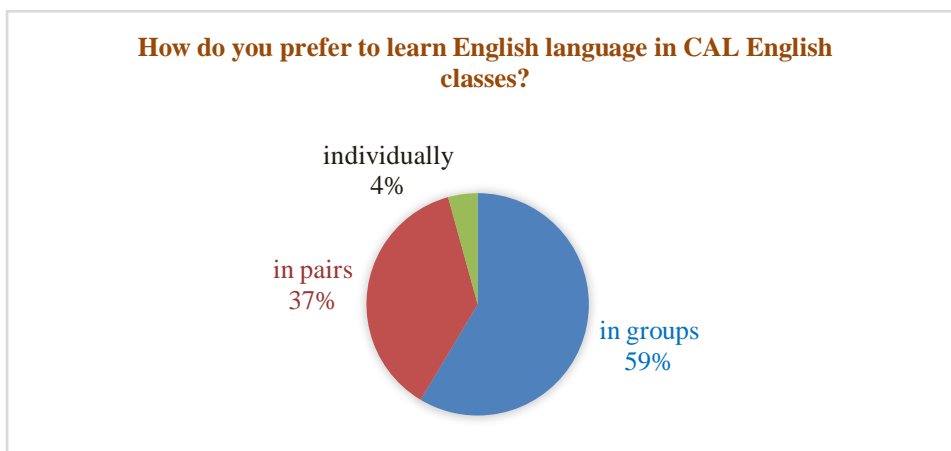
For the 5th question, most of the responses (50%) indicate that CAL is used mostly for developing speaking. Moreover, 30% students answered that CAL is used mostly for learning grammar and vocabulary. According to 16% students CAL is used mostly for developing listening skills and for 4% students it is used mostly for developing reading skills (See **Figure: 4.2.5**). The answers differ from students to students. The researcher observed several classes in several schools and she observed that individual teacher focuses on individual skills. Therefore, CAL is used for developing four skills along with grammar and vocabulary.

Figure: 4.2. 6 Benefits of using CAL English materials



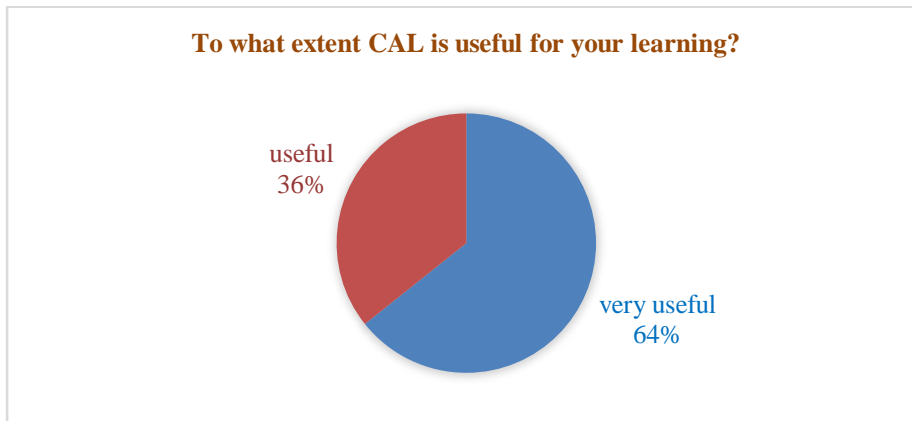
For the 6th question, according to 44% students CAL English materials are easy to understand and these help them remember more. However 27% students answered that CAL English materials make them more creative. 29% students answered that they get all of the above benefits from CAL English materials. None put a tick mark on none of the above option (See **Figure: 4.2.6**).

Figure: 4.2.7 Preference for learning English in CAL classes



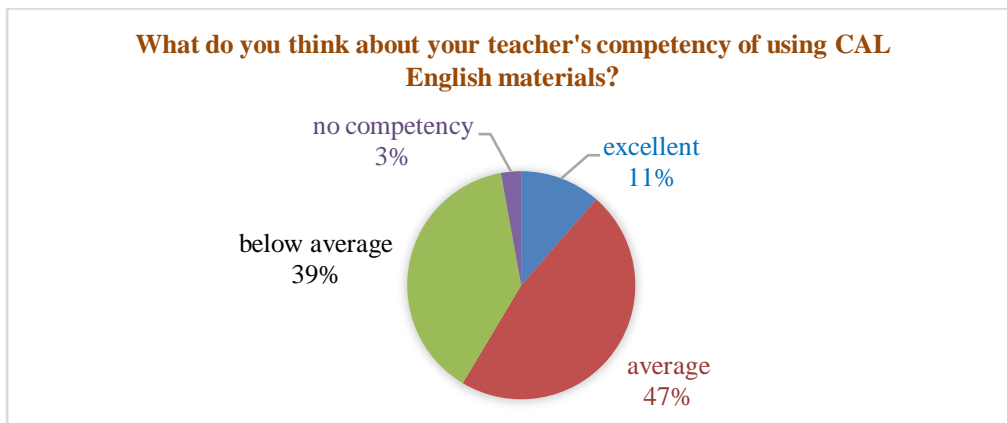
In response to question no 7, 59% students answered that they prefer to learn English in group work but 37% students responded that they prefer pair work for learning English and only 4% students preferred individual work to learn English (See **Figure: 4.2.7**). While observing classes the researcher observed that in many schools, it is not possible to give tasks in groups because of large classes. Therefore, in such cases teachers and students prefer pair work.

Figure: 4.2.8 Usefulness of CAL



For question no. 8, the table and chart (See **Figure: 4.2.8**) shows that 64% students think that CAL materials are very useful and the rest of the students (36%) answered CAL materials are useful. Nobody chose the third option 'no useful at all'. Therefore, it can be said that students think very positive regarding the usefulness of CAL English materials.

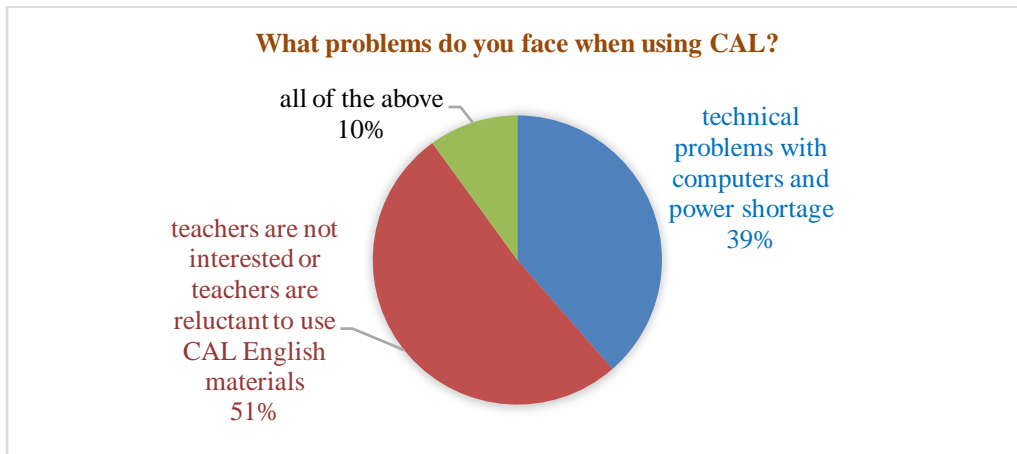
Figure: 4.2.9 Teacher's competency of using CAL English materials



From the responses to the 9th question, it is found that 3% students think that the teacher has no competency of using CAL English materials. However, 11% students responded that their teacher's competency of using CAL English materials is excellent. According to 39% students, teacher's competency of using CAL English materials is below average and 47% students think that teacher's competency is average in using CAL English materials (See **Figure: 4.2.9**). As the researcher observed many CAL English classes in the rural areas, it

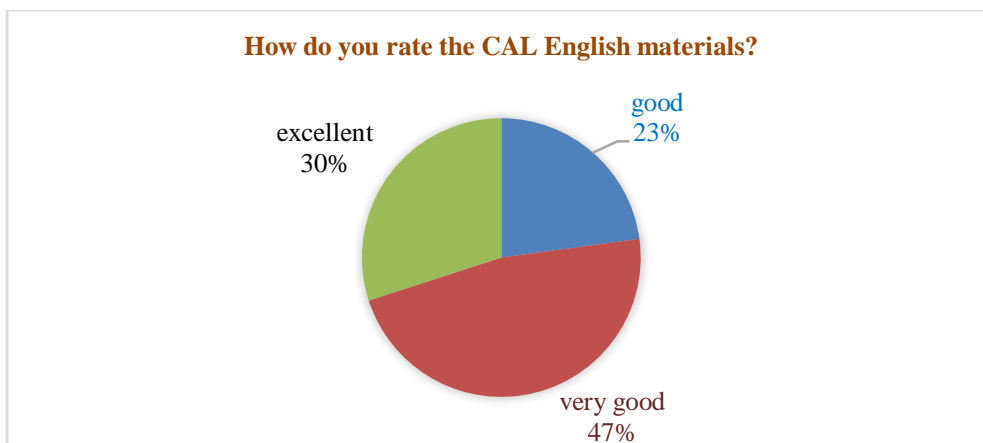
seems to her that in few schools the teachers specially the young teachers are very skilled in operating computer but in several schools the teachers are not interested enough in computer/ technology.

Figure: 4.2.10 Problems of using CAL classes



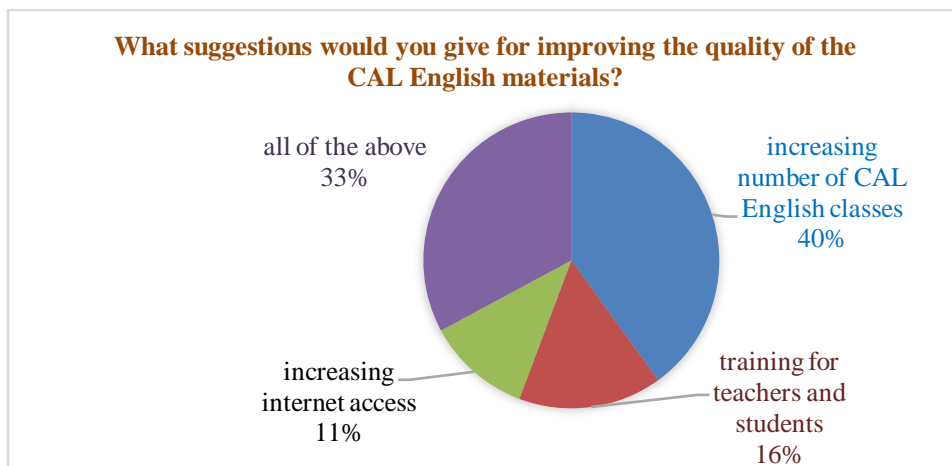
In response to question no.10, 39% students answered that they face technical problems with the computer and also power shortage. The most important point is that 51% students reported that they face problems with teachers. According to the students, teachers are not interested or are reluctant to use CAL English materials. 10% students claim that they face both these problems (See Figure: 4.2.10).

Figure: 4.2.11 Rating of CAL English materials



From the analysis of the responses to the 11th question, it is found that no single student opted for the 4th option (poor/ not good). Therefore, the quality of the CAL English materials is highly appreciated. According to 23% students the CAL English materials are good, 30% students' response is excellent and 47% students think the quality of the CAL material is very good (See Figure: 4.2.11). None put a tick mark on the 4th option i.e. poor (not good). Therefore, it is clear that the quality of CAL material is perceived to be very good and useful by the learners.

Figure: 4.2.12 Suggestions for improving CAL English materials

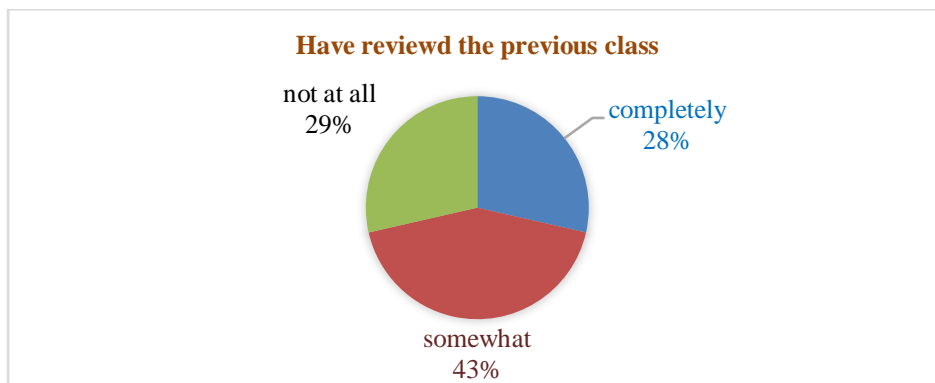


In answering the last question (question no. 12), 11% students reported that they must have more access to internet during the class, 16% students think training for the teachers and the students is required, 40% students suggested that the number of CAL English classes need to be increased. However, 33% students opted for all: teachers and students need to be trained, the number of CAL English classes need to be increased and the availability of internet access need to be enhanced too (See Figure: 4.2.12).

4.3. Description and analysis of the class observation (Class observation checklist, Appendix B)

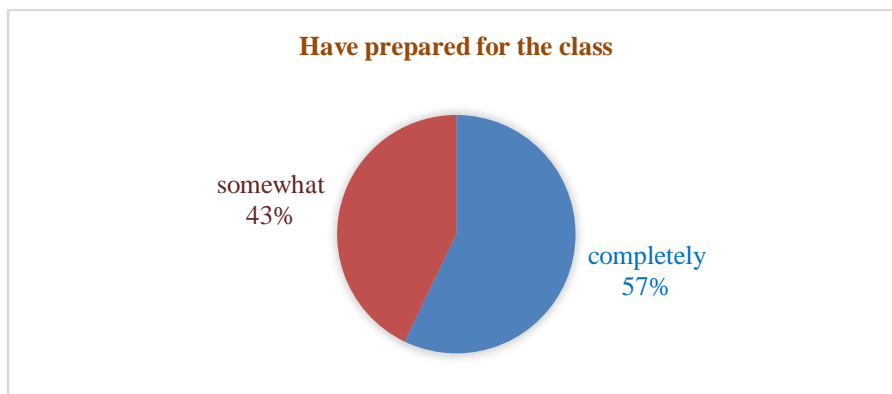
At the time of observing classes the researcher followed the checklist (**Appendix-B**) and sat at the back bench so that teacher and students did not feel uncomfortable. For analyzing the data the researcher followed the SPSS software.

Figure: 4.3.1 Reviewing previous class



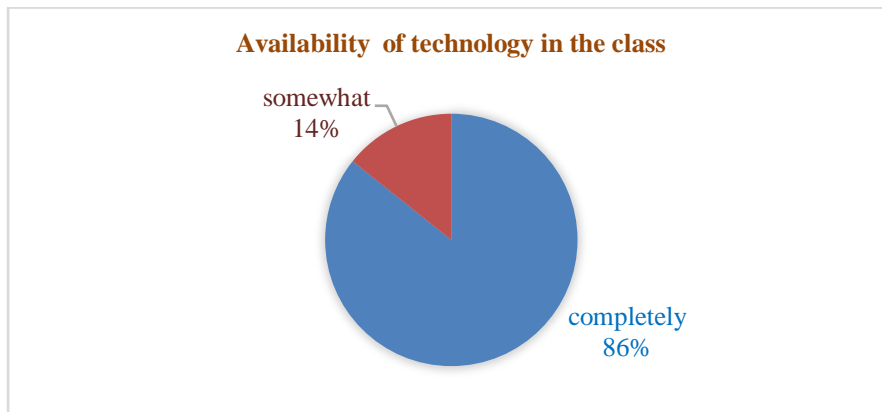
The researcher observed that among the 7 teachers 28% teachers reviewed the previous class or lesson. They asked the students about the last class and also asked them few questions related to the previous class e.g. one teacher asked, “What was our earlier topic? What did you learn yesterday? How was the video of mother Teresa? Did you enjoy the class?” However, about 29% teachers never reviewed the previous class. They entered the class and started the new lesson. 43% teachers reviewed somewhat or a little (**See Figure: 4.3.1**).

Figure: 4.3.2 Teachers’ preparation for the class



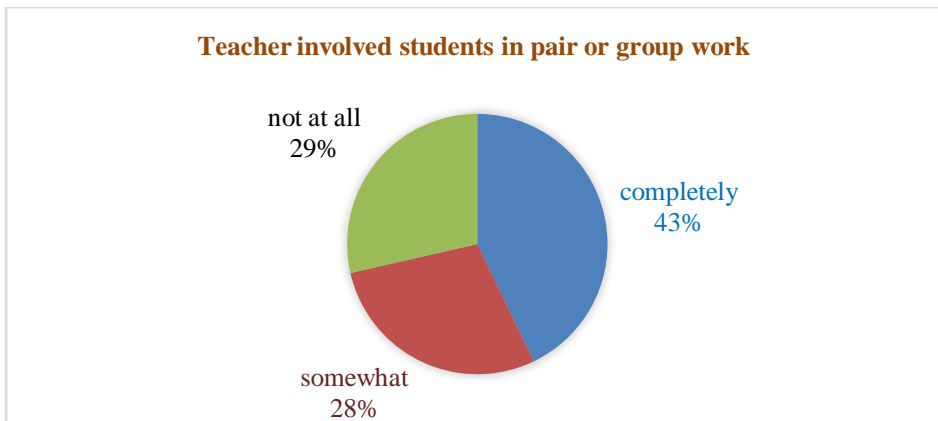
The researcher found that 57% teachers were prepared for the class. They had their materials ready and organized and they conducted the classes very smoothly. They led the classes in a way that students could easily understand the lesson. After finishing the class they elicited students' responses and the students replied well. On the other hand 43% teachers were not sufficiently prepared because they asked students what they (students) want to learn that day. Though they conducted the class, few of them could not operate the computer skillfully and took more time to go to the next slide and were unable to come back to the previous slides (See Figure: 4.3.2).

Figure: 4.3.3 Availability of technology



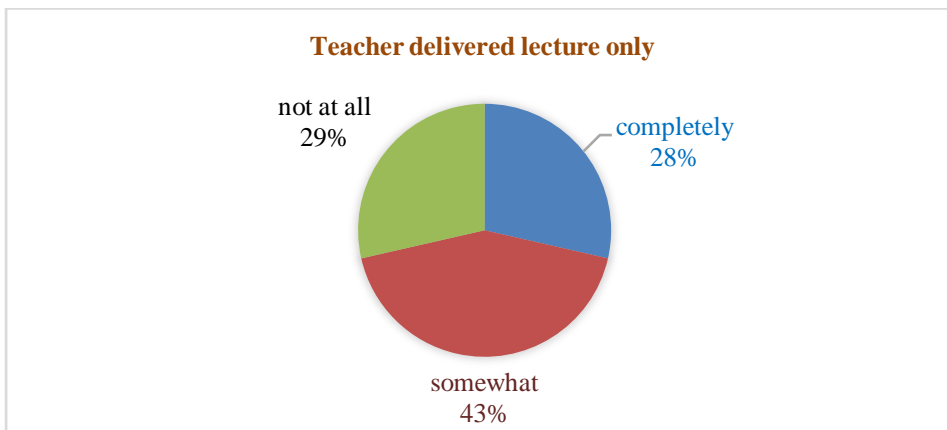
The researcher observed that in every school there is multimedia classroom (a projector is set in one side and the computer is set in front of the teacher) or monitor set up classroom (a number of monitors are connected with a single computer in a specific classroom). However 86% classes were completely functional but 14% classroom were not sufficiently equipped because there were technical problems with monitor, CPU, sound system or electricity. (See Figure: 4.3.3).

Figure: 4.3.4 Involvement in pair or group work



The researcher observed that 43% teachers involved students in pair or group work with different tasks most of the time. They requested them to make 5/ 6 groups or to make pair but 29% teachers never involved them with such task. The researcher also observed that 28% teachers try to involve the students to do pair work only (See Figure: 4.3.4).

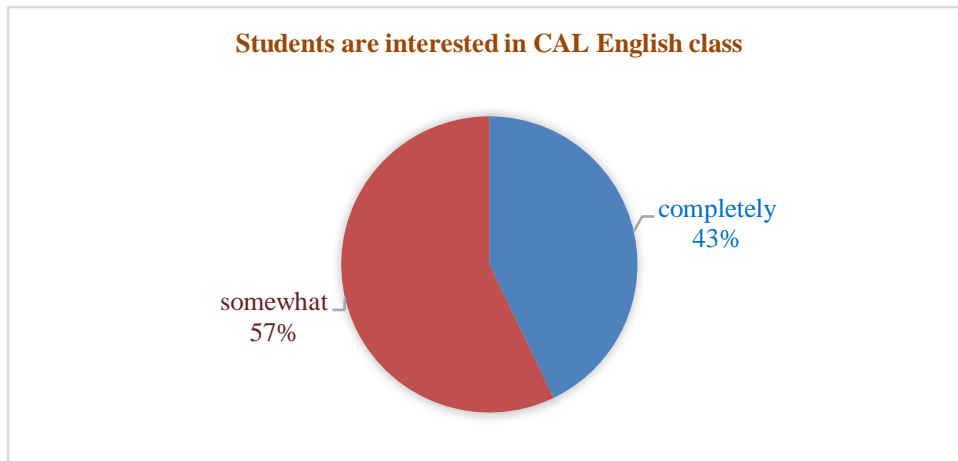
Figure: 4.3.5 Delivering lecture



The researcher found that 28% teachers delivered their lectures only and never asked the students any question nor did they try to understand whether the lecture was clear to them (students) or not. 43% teachers delivered lectures first and also gave them tasks. However, 29% teachers delivered lecture inductively. They involved the students in such a way that

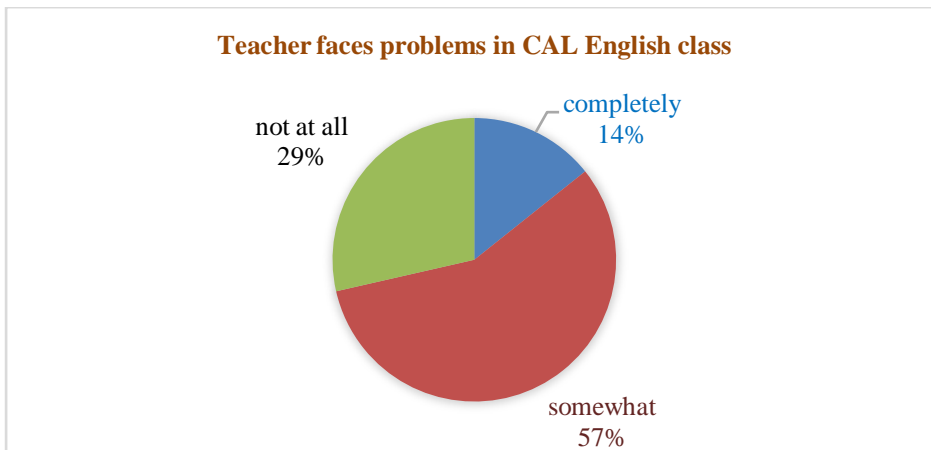
students became clearly involved the lesson. The teachers asked them to work in group, share and they (teachers) also helped them (students) whenever they needed help (See **Figure: 4.3.5**).

Figure: 4.3.6 Students' interest in CAL



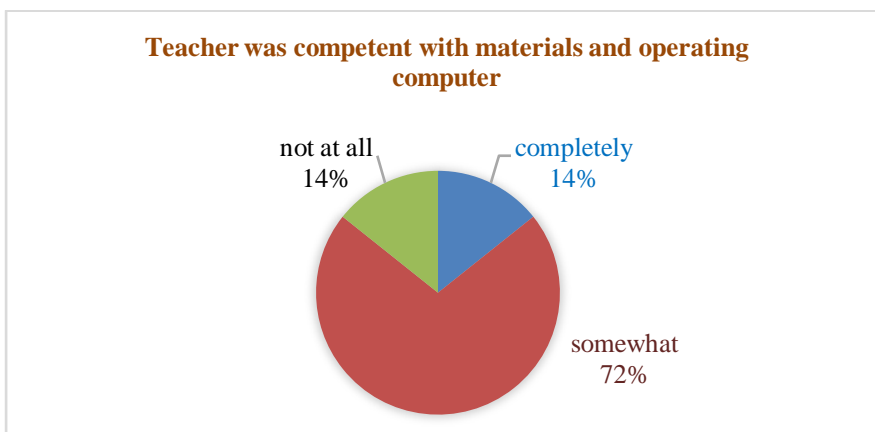
The researcher found that students are very much interested in the CAL English materials because they talked among themselves about the pictures and animations. Sometimes they laughed at the animation and sometimes they also reacted in different ways. The researcher observed that in 43% classes, students were completely interested because they participated. In 57% classes, students' interest was there but they were not so lively because they were bit quite. It was because of the teachers' presentation. Home teachers made the class funny and enjoyable and participatory but some were not (See **Figure: 4.3.6**).

Figure: 4.3.7 Problems facing in CAL English classes



The researcher observed that 29% teachers did not face any difficulty or problems whereas 57% teachers faced some problems, they did not understand from where to start and how to start. However, they somehow managed to conduct the class with CAL English materials. 14% teachers faced serious troubles in CAL English classes. They managed to start with CAL English materials but were unable to relate the materials with their lessons and did not involve the students in any task (See **Figure: 4.3.7**).

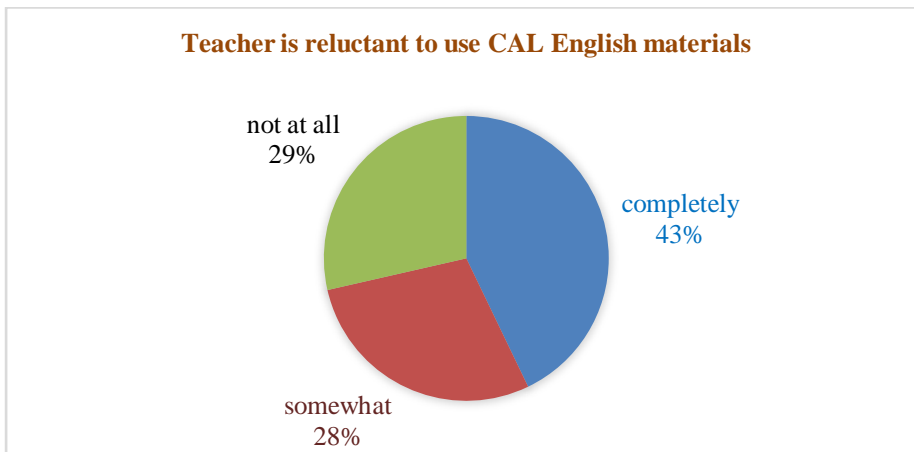
Figure: 4.3.8 Teachers' competency



The researcher observed that 14% teachers were sufficiently competent to operate computer, they did not hesitate to run the computer and the materials. 14% teachers were not competent enough to operate computer. They could operate computer but could not maintain the sequence properly e.g. one teacher gave a task to the students to fill in the gaps but did not

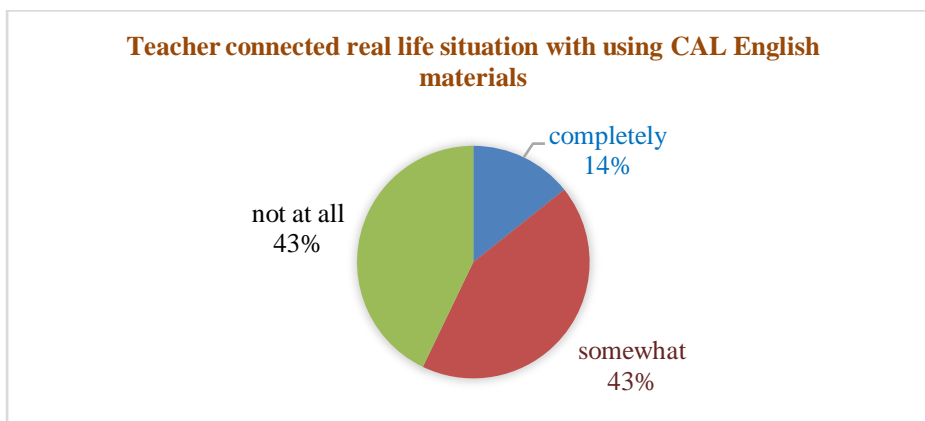
maintain the instruction that means he did not instruct them to read the text from section B and did not show the slide from where they could answer. As a result the students became nervous to answer. 72% teachers could somehow manage to operate computer (See Figure: 4.3.8).

Figure: 4.3.9 Teachers' reluctance in CAL



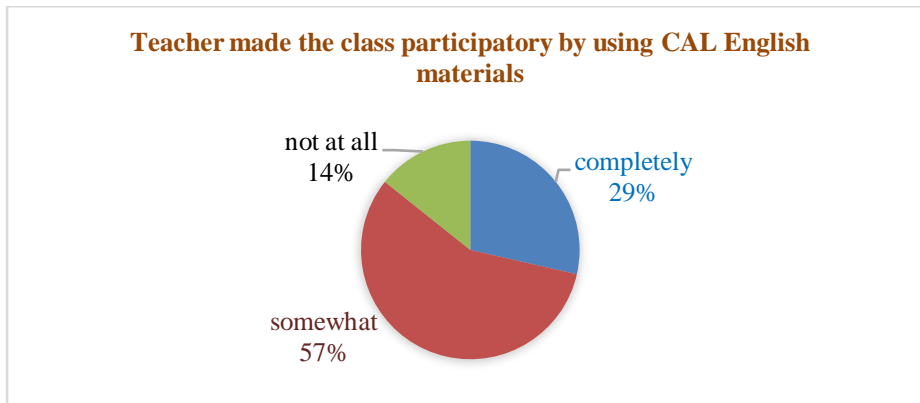
29% teachers were enthusiastic to use CAL English materials. They conducted the class and made the class participatory. The class was vocal and students were ready to talk. 28% teachers were somewhat reluctant to use CAL English materials and 43% teachers were completely reluctant to use CAL English materials, they did not touch the CAL English materials (See Figure: 4.3.9).

Figure: 4.3.10 Connected real life situation



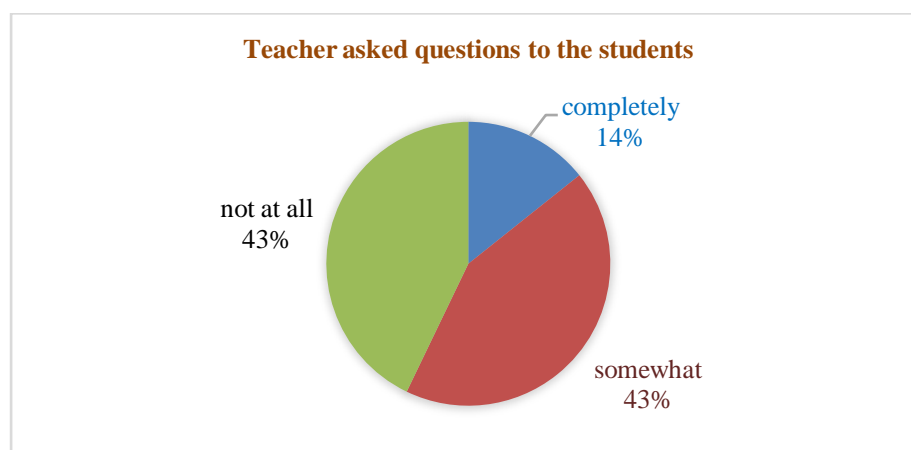
The researcher found that only 14% teachers connected real life situation while using CAL English materials. They gave example from practical life e.g. one teacher gave some examples on Pohela- Baishakh (Lesson). 43% teachers did not connect any and another 43% teachers tried to connect but were not successful enough to connect it (See Figure: 4.3.10).

Figure: 4.3.11 Participatory class by using CAL



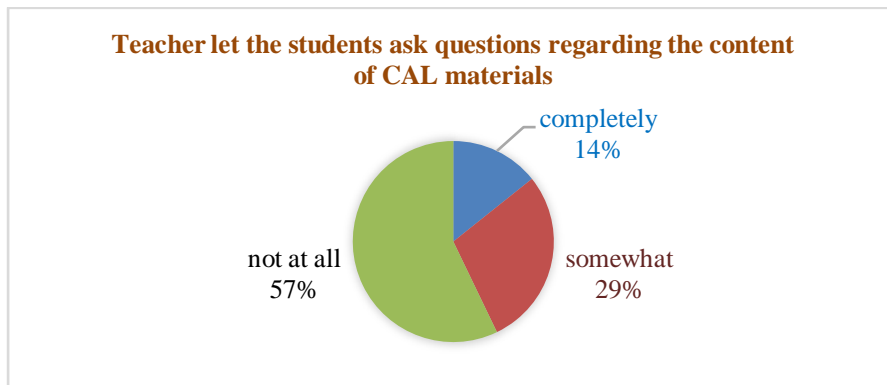
14% teachers did not make the class participatory because they did not ask questions to the students, did not involve them in pair or group work and did not allow students to ask questions to the teachers. On the other hand 29% teachers made the class very much participatory because they allowed the students to talk about the lesson picture and gave them tasks to solve with their partners/ peers and the students did it. 57% teachers made the class somewhat participatory. They did not manage all the students to involve in different tasks. Sometimes students did not listen to them (See Figure: 4.3.11).

Figure: 4.3.12 Asking questions to the students



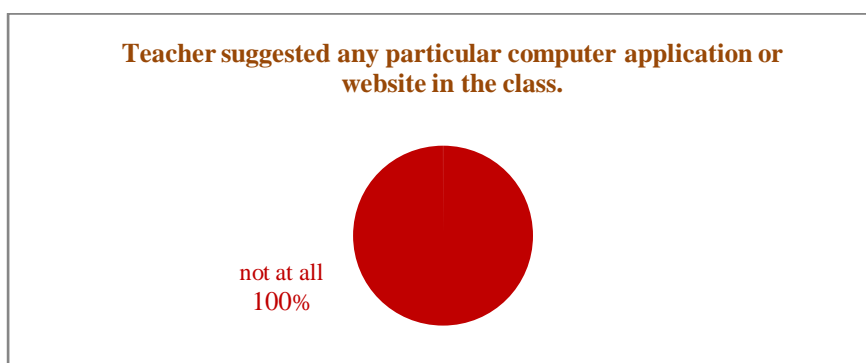
The researcher observed that 14% teachers asked questions to the students about the content and about problems students usually face. She noticed that 43% teachers did not ask any question. 43% teachers sometimes asked questions (See Figure: 4.3.12).

Figure: 4.3.13 Students opportunity to ask regarding the content



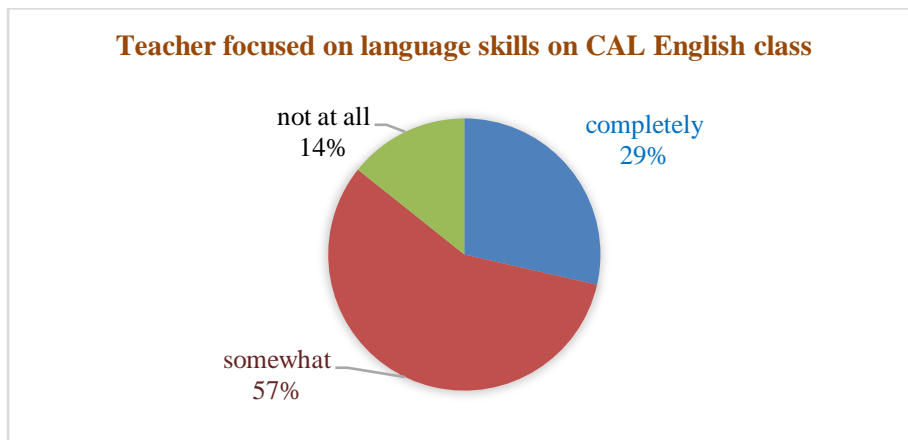
The researcher found that 14% teachers allowed the students to ask questions regarding the content of CAL materials. They also let the students to ask any question and many students ask questions. 29% teachers sometimes allowed one or two students to ask questions and the rest of (57%) the teachers did not allow the students to ask questions (See Figure: 4.3.13).

Figure: 4.3.14 Suggestions for computer application



The researcher found that not a single teacher suggested any particular computer application or website for the students in the class (See Figure: 4.3.14). Teachers used only the CAL materials not other application.

Figure: 4.3.15 Focusing language skills



The researcher found that 14% teachers did not focus on any language skill like listening, speaking, reading and writing. They actually conducted the class which was basically lecture based. However 29% teachers focused on language skills. For example few teachers emphasized on picture description (speaking), few teachers focused on activities which were based on listening, few teachers also focused on grammar and vocabulary. Moreover 57% teachers tried to focus little on language skills (See Figure: 4.3.14).

4.4. Description of the teachers' interview (Teachers Questionnaire, Appendix C)

The researcher interviewed 7 English language teachers. With the permission from the schools' headmasters and English language teachers she also recorded the interviews.

In response to the 1st question, out of seven English language teachers four teachers or 57% teachers replied that they take CAL English classes once a week, 29% teachers (two) replied that they take CAL English classes twice a week and 14% % teachers (one) answered that they take CAL English classes when possible that means sometimes once a week, sometimes twice and sometimes never in a week. The teachers did not take CAL English classes because they had to complete the syllabus in due time and therefore had to avoid CAL English classes.

In response to the 2nd question, seven English language teachers or 100% teachers answered that they never use any particular computer application or website for the students in the

class. One teacher told “we are busy to complete the syllabus and we do not bother about computer application or website.”

For the 3rd question, each teacher responded differently. One teacher said he uses computer in the class to make the class interesting and he uses computer in the class to get maximum concentration from the students. Another teacher said she uses computer in the class for developing all the four skills she also added that she can easily manage the class in this way. The fourth teacher said that she uses computer in the class for connecting real life situation in the class. According to the fifth teacher, to make the class participatory he uses computer in the class. The rest of the teachers (two teachers) said they use computer in the class to teach English easily.

In answer to the 4th question, all the seven English language teachers replied that CAL English materials are very useful. They said that students enjoy CAL English classes very much. Six of the respondent answered students learn practically and from real life situation through CAL English classes. One teacher also mentioned that students insist on taking more CAL English classes.

In answer to the 5th question, all the teachers (100%) said the benefits of using CAL English materials cannot be counted. Four teachers added that the materials are very helpful and students can easily understand. Another teacher also added that by using CAL English materials she gets more responses from the students. According to her, the students are more enthusiastic in CAL English classes. Furthermore, she said students can see visually and get interested to learn English language.

For the 6th question most of the teachers replied that by showing pictures, showing videos and involving students in group work or pair work they can teach CAL English best. However, 85% teachers also mentioned that most of the time it is not possible to involve students in group work because of large class. Therefore, depending on infrastructure of the class and class size they use different techniques and methods to teach English best in CAL English classes.

In reply to the 7th question, majority of the respondents' (57%) answered that they are not expert enough in operating computer. Moreover, they said that in the whole school there is only one multimedia classroom and for the large class like 100 students it is not possible to

take CAL English classes properly. The rest (47%) teachers answered that they are competent in operating computer but sometimes class is hampered because of load shedding and technical problems.

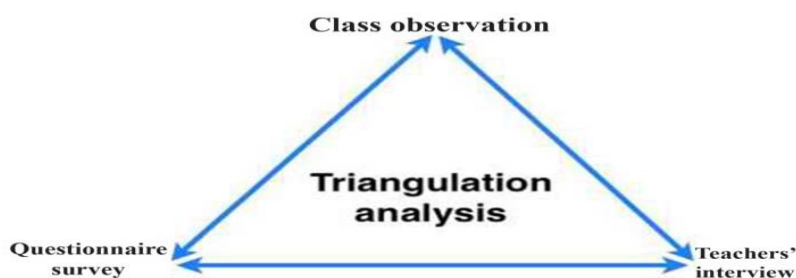
In response to the 8th question, 100% teachers replied that there is only one classroom with one multimedia projector and they have to maintain a large classroom. Moreover, most of the students and teachers have no personal computers at home. They think it's a great challenge for them to get benefits of modern technology.

In response to the 9th question, six teachers (85%) said that the CAL English materials are designed considering the students proficiency level. However, 15% teacher replied that the level of CAL English materials is bit higher than the students' proficiency level.

Finally in response to the last question, five teachers (57%) answered that the materials are excellent, the rest of teachers (43%) replied 'very nice'. They also mentioned that the visual effect of the materials play an important role for the students' learning.

4.5. Triangulation of the analysis

Figure: 4.5.1 Triangulation



From the above discussion, it is found that there are some inconsistencies between the findings from the observation and the interview. The study shows that most of the teachers replied that showing pictures, showing videos and involving students in group work or pair work they can teach best CAL English. However, by observing CAL English classes the researcher found that 28% teachers delivered their lectures only and never showed any

picture related to the topic, 43% teachers never asked any question to the students nor tried to understand whether the lecture was clear to them (students) or not. The study reveals that most of the students prefer pair or group work with different tasks. However, the researcher observed that in many schools teachers never involved them with such tasks. According to students' response it is found that teachers' capability in operating computer is average or below average, in some schools teachers (51%) are reluctant to use CAL English materials. The teachers also responded more or less the same. However, the researcher observed that few teachers were managed to start with CAL English materials but were unable to relate the materials with their lessons and did not involve the students in any participatory task. Moreover, from the interview, classroom observation and students response it is clear that teachers do not use any computer application or website in the classes.

CHAPTER-5

CONCLUSION

5.1. Introduction

This chapter presents the summary of the findings from central research questions, recommendations, practical implication, scopes of further study, limitations and conclusion of the research study.

5.2. Summary of the findings

The study shows that CAL is being implemented to a large extent in secondary schools situated in rural areas in Bangladesh. Still, there is considerable scope for further improvement. The researcher surveyed questionnaire to the students, interviewed English language teachers, observed CAL English classes to collect data against the research questions. The study shows that, CAL is used for developing four language skills in addition to teaching grammar and vocabulary. Moreover, the study reveals that CAL materials make the learning process more interesting, easy to understand and also help the learners think critically. From the study it is also clear that teachers in CAL schools do not use any particular computer application or website. However, the teachers and the students appreciate the quality of the CAL English materials very positively. The study also shows that in operating CAL English classes' teachers' competency is not satisfactory and most of the teachers are reluctant to use CAL English materials. They conduct CAL English classes once or twice a week only. Furthermore, large classroom size is another problem to make the class participatory. From the study the researcher found that among 7 English language teachers only one teacher tried to connect real life situation but six of them responded that students learn practically and from real life situation in CAL English classes. Finally from the findings it can be said that most of the students realize that the number of CAL English classes need to be increased, ICT based training is needed for the teachers and students, there should be availability of internet access and alternate ways of power supply.

5.3. Findings in terms of the research questions

Specific research question no. 1: What is the extent of use of Computer Aided Learning (CAL) materials for teaching English especially in class ix & x?

From the study it is found that most of the teachers take CAL English classes once a week but few teachers take twice in class ix & x. In every CAL schools technology is available. In some CAL schools teachers are very skilled in making the classes participatory and students are also very much interested in CAL English classes. In those schools students talk about the pictures or animations and learn four skills with grammar and vocabulary and teachers involve them in pair or group work. It is also found that teachers never suggested any particular computer application or website to the class. However, in some CAL schools, teachers' competency is not satisfactory. They do not make the class participatory. They still conduct the class in traditional ways even while using CAL English materials.

Specific research question no. 2: What are the challenges and constraints of implementation of Computer Aided Learning (CAL) materials for English in class ix & x?

The study finds that in each school there is only one multimedia classroom and for the large class (100 or more students) it is not possible to take CAL English classes effectively. Moreover, most of the students and teachers have no personal computers at home. They think it's a great challenge for them to get benefits from modern technology. In addition, most teachers are not to the level of operating computer. Sometimes class is also hampered because of load shedding and technical problems.

General research question: What are the effects of Computer Aided Learning (CAL) on teaching or learning English?

The study shows that Computer Aided Learning (CAL) is very much effective while it is implemented properly. Students learn the four skills through CAL English classes. They become fluent, creative and learn practically in the CAL English classes. From the study it is found that students can easily understand CAL English materials and retain information for longer period.

5. 4. Recommendations

This present study has relevance in the context of English language teaching and learning. Based on the findings of the study, the following recommendations are made:

- To ensure more CAL English classes a week.
- Teachers need to connect the lesson with real life situation while using CA English materials.
- To ensure effective ICT based training for teachers and learners.
- To create more opportunities for pair and/ or group work so that students can get abundant scope to practice English language especially in listening and speaking.
- Most of the rural secondary schools' teachers are from diverse backgrounds therefore more attention should be given to the enhancement of the teachers' skills both for English language and computer literacy.
- To ensure electricity by using generator or IPS.
- To ensure/ engage instant technical person to solve technical problems.
- Organize orientations with the schools authority to make them aware about the importance of CAL English classes.
- Enhance teachers' knowledge about other computer applications or websites (hotpotatoes, freerice, edmodo, audacity, COCA etc.) so that they can make the class more interesting and participatory.

5. 5. Practical implication

The research desires to make the government and non-government agencies, primary and secondary school authorities and other researchers aware about the condition of ICT based teaching and learning in rural areas of Bangladesh. It has attempted to show teachers quality and efficiency in handling CAL English classes, quality of infrastructural facilities and the factors/ constraints which are affecting the quality implementation of Computer Aided Learning (CAL) materials for English. It is expected that the findings will help the concerned authority to deal with the challenges.

5. 6. Further study

For this small scale research where the study was limited to seven schools only and it is also limited to the class observation, students' questionnaires and interview of the subject (English) teachers. Further studies may be done on the same topic but more data need to be collected. Other researchers may visit more CAL schools from different districts in Bangladesh. This study observed the students of class ix & x whereas; further studies can focus on more other classes. Furthermore, other researchers can collect data from not only students, teachers and class observations but also from head teachers and guardians.

5.7. Limitation

Due to lack of enough information and time constraint, the researcher failed to consider variables such as teachers' educational background, subject area, teachers' and students' socio-economic background. Though the number of CAL high schools are more than fifty (50) in the rural areas in Bangladesh but due to time constraint the sample schools and sample population in this study were relatively small.

5.8. Conclusion

The main aim of this study was to explore the impact of CAL on English in secondary schools in Bangladesh especially in class ix-x. The study tried to find out the effects, extent, challenges and constraints of Computer Aided Learning (CAL) in secondary schools. Several issues surfaced from the study. Until recent time, computers are not very common (neither available) amongst general mass. Moreover, the teachers graduated from the institutes; there is high probability that they were not trained in CAL approaches and its different tools. In every CAL school, one class is designed with multimedia set up or monitor set up. The students are interested to learn English language through the technology. The study suggests that the impact of CAL on English in secondary schools in Bangladesh is unlimited. Therefore, proper training (ICT based) for teachers and students is needed for the implementation of CAL in schools in rural areas in Bangladesh. The students are interested to learn English language through the technology. The study shows that when students get chance to interact with their teacher/ pair/ group members in CAL English class they can practice language well. Most of the student suggest that the number of CAL English classes

need to be increased, training is needed for the teachers and students, there should be availability of internet access and there should be alternate way of power supply. One of the leading N.GOs has taken a great initiative in the field of education sector especially in secondary schools. In many CAL schools the use of CAL is highly appreciated. However, the weaknesses have also been shown. The researcher feels that, instead of being stuck to CAL materials; the teachers need to start using other computer applications too. Teachers can also use hotpotatoes, freerice, edmodo, audacity, COCA etc. in the classroom which are specially designed for Computer Aided Language Learning. Teachers must become familiar with the technology available and understand how it could improve the teaching /learning of English through CAL. Teachers should keep in mind that students would need to be proficient both in computers and language. From the study it is clear that when some CAL schools are doing well because of proper implementation of CAL but some are doing far from satisfactory because of lack of the proper implementation of the existing resources.

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Appendix-A

Questionnaire for students

(The information will be used only for research purpose and will be kept confidential.)
Read the following questions carefully and put (✓) marks on the alternatives that you prefer most.

1. Do / Can you operate computer?
a) Yes b) No c) somewhat

2. Does your teacher suggest any particular computer application or website? (If yes, mention the application or website)
a) Yes b) No c) Sometimes

3. How often do you attend CAL English classes?
a) once a week b) twice a week n c) thrice a week d) never

4. For what purposes do you use computer?
a) gaming, movies and music
b) gaming, movies, music and study purpose
c) study and communication (email, face book etc.)
d) all of the above
e) none of the above

5. For which purpose CAL is used mostly?
a) for learning grammar & vocabulary
b) developing listening skill
c) developing speaking skill
d) developing read

6. What benefits do you get from using CAL English materials?
a) makes you more creative
b) easy to understand and makes you remember more
c) all of the above
d) none of the above

7. How do you prefer to learn English language in CAL English classes?
- e) in groups
 - b) in pairs
 - c) individually
 - d) none of the above
8. To what extent CAL is useful for your learning?
- a) very useful
 - b) useful
 - c) not useful at all
9. What do you think about your teacher's competency of using CAL English materials?
- a) excellent
 - b) average
 - c) below average
 - d) no competency
10. What problems do you face when using CAL?
- a) technical problems with computers and power shortage
 - b) materials are not interesting
 - c) teachers are not interested or teachers are reluctant to use CAL English materials
 - d) all of the above
 - e) none of the above
11. How do you rate the CAL English materials?
- a) good
 - b) very good
 - c) excellent
 - d) poor (not good)
12. What suggestions would you give for improving the quality of the CAL English materials?
- a) increasing number of CAL English classes
 - b) training for teacher and students
 - c) increasing internet access
 - d) all of the above

Appendix-B

(The information will be used only for research purpose and will be kept confidential.)

Subject:
District:
Present students:

S. No.	Observation checklist	Teacher			Remarks
		Compl etely	Some what	Not at all	
1	Have reviewed the previous class				
2	Have prepared for the class				
3	Availability of technology in the class				
4	Teacher involved students in pair or group work				
5	Teacher delivered lecture only				
6	Students are interested in CAL English class				
7	Teacher faces problems in CAL English class				
8	Teacher was competent with materials and operating computer				
9	Teacher is reluctant to use CAL English materials				
10	Teacher connected real life situation with using CAL English materials				
11	Teacher made the class participatory by using CAL English materials				
12	Teacher asked questions to the students				
13	Teacher let the students ask questions regarding the content of CAL materials				
14	Teacher suggested any particular computer application or website in the class				
15	Teacher focused on language skills on CAL English class				

Appendix-C

Questionnaire for Teachers

(The information will be used only for research purpose and will be kept confidential.)

1. How often do you take CAL English classes?
2. Do you use any particular computer application or website for the students?
3. For what purposes do you use computer in the class?
4. How useful do you think CAL English material is?
5. What are the benefits of using CAL English materials in your class?
6. How can you teach English best in CAL English classes?
7. What are the problems of using CAL English materials?
8. What are the challenges of a teacher in CAL English classes?
9. What do you think about the CAL English materials and the students' proficiency level?
10. How do you rate the CAL English materials?

Appendix-D

Pictures/ photos (observing classes, surveying questionnaire to students and taking teachers' interview)



