

USE OF INFORMATION AND COMMUNICATION
TECHNOLOGY TOOLS IN THE SECONDARY ENGLISH
LANGUAGE IN URBAN CLASS

By

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A thesis submitted to the Brac Institute of Languages in partial fulfilment of the
requirements for the degree of
Master of Arts in TESOL

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Declaration

It is hereby declared that

1. The thesis submitted is my own original work while completing degree at Brac University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I have acknowledged all main sources of help.

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Approval

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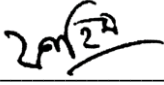
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Ethics Statement

I declare that the thesis titled “USE OF INFORMATION AND COMMUNICATION TECHNOLOGY TOOLS IN THE SECONDARY ENGLISH LANGUAGE IN URBAN CLASS” is submitted to the Brac Institute of Languages (BIL), Brac University, in partial fulfillment of the degree MA in TESOL. I want to add that no part of this dissertation copied or plagiarized from other published or unpublished work of other writers, and all materials borrowed or reproduced from other published or unpublished sources have either been put under quotation or duly acknowledged with full reference in the appropriate place(s). I understand that the program conferred on me may be canceled/ withdrawn if subsequently it is discovered that this portfolio is not my original work and contains materials copied, plagiarized, or borrowed without proper acknowledgment.

Abstract

Learning English is a significant factor in terms of socio-cultural and economic phenomena in Bangladeshi society. It is evident that Bangladesh has been focused to make use of every possible approach and opportunity in order to develop and advance. The nation has demonstrated exponential potential and capabilities in the last few decades in terms of development. The study has also laid down a brief amount of discussion regarding the methodology of the research adopted by the researcher. The positivist research philosophy has been utilised throughout the course of the investigation. The research has provided analysed and conducted the primary and secondary research. In the first part of the research, a concise and clear discussion regarding the subject as well as analysis of the collected data has been presented in the form of graphs and tables which has been focused to ensure that interpretation of the results is done in a proper manner. The data gathered from the survey has been graphically and statistically represented with MS Excel. Via the means of secondary research which has been conducted using thematic analysis a wide amount of articles and journals have been analysed which has brought about various underlying factors regarding the subject of the study. Thematic analysis has produced various underlying data and information that have not been possible to be understood via the means of primary data research and thus the thematic analysis has supported the whole of the research performed. It has discussed the findings of the research from both primary and secondary research, to meet the research objectives effectively. The research has found that the extent of ICT integration is quite low, and there are several factors influencing the same. Ineffective policies are one of the main reasons behind the inadequate digital penetration in several parts of Bangladesh; furthermore, ineffective infrastructure, lack of connectivity, as well as lack of adequate training for the teachers also impact ICT integration. Access to computer teachers is also significantly limited in various regions of the nation, which also has an effect on the use of ICTs in English teaching in the nation.

Dedication

My sincerest thanks go out to my mother and father, who have been my steadfast sources of support and inspiration. Their unwavering faith in me has imbued me with confidence in my abilities and given me the courage to believe in myself. This is a humble expression of my love and gratitude for everything they have done for me.

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Chapter-01: Introduction

1.1 Background of the study

English language education highly recommends open-access resources, virtual classrooms, online courses, and various social networks that are dependent on information technology (Karim *et al.*, 2019a). English Language Teaching is attaining huge space in Bangladesh and other countries as well (Rahman *et al.*, 2019a). The reason behind the enhancement of the English language is that it is the most common form of language that is highly used in everywhere including education and business (Karim *et al.*, 2021b). Bangladesh is introducing an information and communication technology program in their high schools for better growth of youth in future (Khan & Kuddus, 2020). The widespread adoption of ICT tools, within the education system of Bangladesh, has shown potential in improving the access to different information course curricula and online language training programmes enhancing interaction between teacher and students along with that it also helps in effective communication and simultaneously help in enhancing skills in digital literacy (Zubairi *et al.*, 2021). Adoption of ICT in the education system of Bangladesh has made the accessibility of the education and course curriculum developed by teachers that are based on ICT platforms. Majority of the programmes developed in this context have been developed has emphasised on English language training programme, to improve the efficiency of the students of Bangladesh in improving their skills in communicative/conversational English language and as well as use of the same in creative and academic writing (Rahman *et al.*, 2019a). The developed course curriculum includes “playing” with the language and using English language for creating, exploring, and discovering new creative things while producing study content. For example, writing blogs can be a good way to be creative for high school students of Bangladesh (Hridi *et al.*, 2021). With the rapid advent of technology secondary institution settings of Bangladesh, teachers have become more equipped about ICT tools and are able to use the same effectively (Karim & Mohamed, 2019). Other than this, e-communication tools based on ICT technology are very effective in promoting communication in English language classes. Communication promoting software’s is divided into two categories. Firstly, synchronous is a type of software that allows real time interaction with students like conversations over the telephone, voice conferencing, instant messaging, and so on. Secondly, asynchronous this is a type of software that communicates with a time delay for

example email messages and discussion boards (Ahmed, 2018). Additionally, reading as well as writing-facilitative e-tools help in English language teaching to the students of Bangladesh who are studying in high school. Some ICT tools such as online journals, online boards, blogs, e-books, and wikis can effectively boost learning as well as teaching (Hridi *et al.*, 2021). The scope of using ICT tools in secondary-level English language classes is very high as students of secondary level are striving to learn the English language so that they further their careers in a better way (Huda, Kabir & Siddiq, 2020).

1.2 Problem Statement

The current research has been conducted to address the overarching research problem of key challenges and issues relating to the use of ICT tools in the English language and training programmes in the secondary education system of Bangladesh. For this purpose, the current research has assessed the scope of the utility of ICT in English language training programmes in urban areas of Bangladesh. Based on the assessment and evaluation of the application of such technologies in urban secondary schools in urban areas the key challenges and issues are to be identified and a comprehensive mitigation plan has been developed for the same. The main problem as suggested by multiple studies suggests that Bangladesh is somewhat lagging behind in terms of adapting the ICT in the English language training programme. Therefore, improvement needs to be done at the foundation level starting with the secondary and high school levels (Rahman *et al.*, 2019a).

It is a globally well-acknowledged fact that ICT tools provide flexibility for both teachers as well as high school students, therefore. However, there are several problems and issues that crop up at the time of its implementation that needs to be addressed for successful integration of the same as such students in educational settings get interested in partaking in such learning programmes (Alkamel & Chouthaiwale, 2018). Bangladesh is one of the fastest growing economies of South Asia and is rising rapidly through the ranks in the international business sector because of its well-developed garments sector that produces the finest fabrics. English is the most common knowledge that is used in international business operations. In this context, there is a need for English training programmes to empower the current and future population of Bangladesh with the necessary skills in to improve their competence in the arena of international business operations (Hoque *et al.*, 2021).

As per the opinion of Sarker *et al.* (2019), the school dropout rate has increased in Bangladesh due to the poor economic health of some families. It is especially true after the global pandemic. Thus, the problem statement of the current research is that “how impactful is the implications of the tools of information and communication technology in establishing a concrete linguistic pedagogical interpretation in developing English Language for high school students in Bangladesh?” In this regard, the online English language and training programme can help the school dropouts to continue with skills and professional development. It can be achieved by making the education programme through the use of mobile platforms and smartphone technology. In this aspect, there is a need for addressing the issues and challenges arising out of the integration of ICT in the English language and training programmes.

1.3 Aim of the study

The ultimate aim of this research project understands the uses of ICT tools for secondary-level students in providing English language classes.

1.4 Objectives of the study

- To identify the significance of ICT tools such as mobiles, computers and internal software in English language learning of Bangladesh’s high school students.
- To evaluate the ways, the application of ICT can improve the outreach of English Language Training amongst school students.
- To determine strategies that can help in improving the ICT tools for high school students of Bangladesh.

1.5 Research questions

Q1) What is the significance of various ICT tools and internal software for English language learning in Bangladesh high schools?

Q2) How can ICT help enhance the English language training programme outreach for Bangladesh high school?

Q3) Which strategic can help improve ICT tool for high school students in Bangladesh?

1.6 Rationale for the study

The main rationale behind this research study is that multiple surveys have indicated that there is a scope for improvement in terms of English communication among students in Bangladesh (Hossain & Tollefson, 2017). Students studying currently in high school require English learning classes as it is possible that most of the students will go outside of Bangladesh for studying different courses in various colleges located abroad (Mahtab, Islam, & Rahaman, 2018). In foreign universities, most of the course curricula are imparted in English. Therefore, developing the strong background of the students through an English training programme would considerably improve their competence in the arena of international education (Mahbub & Hadina, 2021). Improvement in the English language and command over the language is not just required to improve competence in the area of higher education in foreign universities. It is a well-known fact that the English language has long been used in the area of business operations. The majority of business operations and organisations these days are rapidly becoming transnational in their operation (Mallick, Maniruzzaman & Das, 2020). For example, in the context of Bangladesh, the textile sector of Bangladesh is rapidly gaining attention in the international market space because of its quality produce. Now in the arena of international business operations, the English language is the most common language and medium of exchange in international business transactions. Most of the candidates currently studying in high grades have come from backgrounds where they had taught their local language. Providing English classes to high school candidates will help in furthering their education in Bangladesh society. The rationale of the study is to understand the importance of integrating information and communication technology such as mobiles, laptops, tablets and software in increasing the learning capacity of high school students in Bangladesh (Rahman & Ahmed, 2019).

1.7 Significance of the study

It is expected that the outcomes of the conducted research and associated findings would help in finding solutions to mitigate the challenges associated with the adoption of ICT in imparting English language education (ELE), to school students of Bangladesh. The outcomes of the report can clearly understand and address the critical challenges associated with the integration and implementation of ICT platforms in ELE programmes. It is important that schools must take responsibility for equipping their aspirants with a higher level of ELE. It can considerably

improve the scope of application of the programme all across Bangladesh. Improving the effectiveness of such programmes through ICT can considerably improve the outreach of such programmes across all areas of Bangladesh (Foutsitzi & Caridakis, 2019). It is a current need keeping in view the highly-competitive marketplace throughout the world (Milon, Alam & Hossain, 2018). For instance, it might help the aspirants in getting their desired job in multinational companies which are located in Bangladesh itself or outside of the country. Creating a strong base of students is necessary so that they can effectively withstand the competitive market (Nuby *et al.*, 2019).

This digital teaching technique has helped both teachers as well as students in this Covid-19 pandemic situation. Along the same lines, the other scope of application of ICT in improving the coverage and outreach of ELE programmes amongst the student population of Bangladesh has been assessed in the undertaken research. As mentioned by the researchers in their conducted study, there is considerable scope for improvement in improving the landscape pertaining to ELE programmes (Hossain & Tollefson, 2017). The scope of such programmes must not be restricted to the students at the school level. Rather the scope of the same must be extended to young-working professionals as well. In this aspect, ICT can play a critical role in broadening the scope of the application of such training programmes (Seraj, Klimova & Habil, 2021). Using ICT tools in English classes has a number of benefits, namely, enhancing communication, learning will be cost-effective, and automatic solutions can be provided to the students. In addition, it will also improve the scope of digital literacy amongst the students regarding the usage of productive ICT-based tools for personal and professional development (Guillén-Gámez, Romero Martínez & Ordóñez Camacho, 2020).

The significance of the study lies in the fact that this study would address the current needs of English pedagogy and linguistic development of students in high school. The research would help in identifying the stimulus of the students that helps in enabling the language acquisition techniques through effective and dynamic interactions between the teachers and students. The current research would also help in increasing the scope of learning the students and teachers regarding the English language (Rahman *et al.*, 2019a).

1.8 Limitation of the study

Difficulties in managing the courses online have not been focused on much and along with this with the advent of technology students have become smarter, as a result, they might misuse technology-based educational facilities. The same has not been discussed in the current study. In addition, due to digital learning platforms, the quality of handwriting might decrease considerably as people will not be focusing on writing down notes. This aspect of ICT needed to be focused on however it has not been addressed much.

1.9 Definition of terms

Keywords: Teaching English to Speakers of Other Languages (TESOL), Information and Communication Technology (ICT), e-learning, English Language Education (ELE), Pedagogy.

TESOL: TESOL is an international professional organisation of teachers originally founded in the year 1966. The aim of a such professional organisation is to impart English learning education (ELE) to speakers of another language – whose first language is not English (Rose *et al.*, 2020).

ICT: Information and communication technology refers to the components of the modern-day computing system and digital technology that facilitates real-time communication and exchange of information. It is rapidly being integrated and implemented across all areas of operation, especially in the areas of education and information sharing (Foutsitzi & Caridakis, 2019).

E-learning: The concept of e-learning (abbreviation for electronic learning) has evolved with the advent of the ICT where the learning programmes and the course materials are developed by making use of electronic media and are propagated over the internet and can be accessed anywhere through the use of modern-day digital devices such as computers, laptops, smartphones (Mayer, 2017).

ELE: English language education (ELE) classes can be termed as an English educational program that consists of the history of the English language, grammar construction, composition, language acquisition, reading, as well as English language development (Doff, 2018).

Pedagogy: Pedagogy refers to the process of practising teaching in a controlled environment of a subject related to academics. It is also known as the arts and science of teaching that concentrates

on the core relationship between the teaching process and theoretical aspects of the subject (Willey & Hilton, 2018).

Chapter 2: Literature Review

2.1 Introduction

The literature review consists of three important objectives that were demonstrated previously in the study. Firstly, an overview of Information Communication Technology tools is provided and after that, the importance of ICT tools in English language classes for high school students in Bangladesh is demonstrated. Here lots of aspects have been discussed in detail such as the pandemic, the cost-effectiveness of ICT tools, better communication and many more things. Furthermore, the significance of learning the English language for learners studying in high schools in Bangladesh has been discussed. Moving further, many strategies are recommended for improving the efficiency of ICT tools that will help students to learn in a much more productive manner. Lastly, at the end of the review of the literature, gaps in the literature has been demonstrated extensively.

2.2 ICT tools significance in English language learning for Bangladesh high school

As per the opinion of Lavrentieva *et al.* (2019), Information Communication Technology tools can be referred to as digital infrastructures such as laptops, data projectors, computers, scanners, software programs, interactive teaching boxes, and printers. Furthermore, it makes teaching as well as the learning process highly convenient for both teachers and students, respectively. ICT tools are extensively used in the educational sector all around the world as this is highly beneficial from multiple dimensions. High schools in Bangladesh also implement these ICT tools for educating their local students. Moreover, most of the ICT tools are based on advanced artificial intelligence technology and therefore it has the capabilities of running automatically and 24x7.

From the viewpoint of Khan & Kuddus (2020), tools made up of Information Communication Technology are significantly important for Bangladesh students who are pursuing English at high school level. Furthermore, these tools are significantly beneficial for creating animated material for English classes of students. Animation is something which easily attracts students and their learning interest increases. Along with this, teachers also find it easy to teach students using animated materials which are developed using ICT tools. Furthermore, teachers of Bangladesh

high schools strive for creating visual graphics for English classes as it helps students in learning at a quicker speed. It is well known that students tend to remember visual study materials more than anything else. Other than this, English language learning is very important for students of Bangladesh, especially high school students of Bangladesh as most of the students somewhat lag behind in the English language. This can potentially hinder their chances of furthering their education in foreign countries as most foreign countries prefer English as the main language. Therefore, it is significantly important that high school students in Bangladesh must be provided with high-quality English language classes where they will be able to learn.

According to Mallick *et al.* (2020), technology-based ICT tools are highly capable of providing product education to high school learners in Bangladesh. Study materials provided using ICT tools help in improving students' cognitive function and this in turn improves the learning process of students. Furthermore, mentally challenged students can also be educated using these ICT tools as it is helpful in developing attractive visual educational content. Teaching mentally challenged individuals in traditional classes is somewhat difficult as these individuals do not possess the capability of grabbing all the information quickly. Therefore, using ICT tools for making documented study material for these individuals will be significantly helpful. The English language is something which most mentally challenged individuals face difficulty in learning therefore it is even more important that teachers of high schools in Bangladesh must apply ICT tools for teaching these individuals English effectively.

From the viewpoint of Al Amin & Greenwood (2018), using ICT tools for English classes helps in minimising cost and at the same time saves cost for the educational institute. Cost is something that works as a de-motivating factor for students and their family members mainly in Bangladesh. Therefore, it is highly beneficial to introduce ICT tools to English classes as this is a cost-effective mode of teaching. Therefore, students' actual educational fees will also get reduced and in turn, they will enjoy learning with advanced technology at a lower cost compared to traditional classes. Teachers do not have to prepare the study materials again and again; they can just prepare once and modify the same whenever required to. This significantly contributes to its cost-effectiveness. Furthermore, papers are not used in this study system therefore paper cost for both students as well as for the educational organisation reduces. Nowadays, the cost of paper in

Bangladesh is constantly rising therefore using ICT tools for saving the paper cost will be beneficial.

As per the opinion of Rahman *et al.* (2021b), implementing ICT tools in online English learning classes for high school learners in Bangladesh is important as in the current scenario with the existence of Covid-19 students are not willing to attend physical classes. Even the students who are interested in going to school, their parents are not permitting them to do that. This is mainly as both students' family members and learners are afraid of coronavirus contamination. Therefore, almost every individual of high school in Bangladesh prefers online education using ICT tools. Students' family members believe that if their child remains healthy then they can later learn English therefore parents do not want to risk their child's life by allowing them to attend school physically. Other than this, Bangladesh is rapidly going towards digitisation therefore the internet is available in almost every person's home so taking online classes will not be an issue for them. Furthermore, vaccines have been rolled out in Bangladesh however there are no vaccines available for people under the age of 18 years and this is also raising concerns for students. In this pandemic situation, with the help of online classes and ICT tools education will be highly flexible and students will get more time to finish their lessons. Therefore, it is expected that interest towards learning English can grow for students in Bangladesh. There is lots of scope for growth in online classes as premade educational materials will reduce time wastage and teachers will be able to focus on improving the English skills of high school students. Teachers will not have to spend much time preparing study materials. Furthermore, online classes help in unlocking more learning opportunities for students and along with that affordability of online classes using ICT tools make it easier for locals of Bangladesh to afford it for their child.

According to Chowdhury, Arefin & Rahaman (2018), using ICT tools helps teachers easily manage students' needs as this method of teaching is highly flexible and requires less effort for teachers to create new study materials according to various students' needs. Furthermore, using ICT tools in English classes assists in enhancing the communication between teachers and learners. Other than this, automatic solutions can be gathered using these ICT tools which significantly reduce the work of teachers. For example, big calculations can be done in seconds using ICT tools and in certain instances calculations come into context in English classes. As per

the opinion of Sultana & Shahabul (2018), student-to-student communication can become much easier as educational institutes in Bangladesh adopt ICT tools as it can provide a smooth communication medium where study materials can be exchanged with each other. Most importantly, using ICT tools for educational purposes will help students in developing their IT skills although learners will get indirect knowledge of the same however some level of idea will develop among them after using these tools in their English study. Feedback gathered from learners of English suggests that ICT tools are much more helpful in understanding the English language in contrast to traditional classes. Furthermore, students enjoy learning in ICT-based online platforms and these tools act as guides for directing students to a productive career. Other than this, ICT tools help in fostering change in the educational process of Bangladesh and along with this promote change actively which ultimately helps in the positive development of the educational system in the 21st century. Furthermore, ICT tools effectively connect human resources with that technology and internet connectivity as a result it assists high school students in their English learning.

2.3 Significance of English language classes for Bangladesh high school students

From the viewpoint of Nur & Islam (2018), English learning is essential for high school students as it will effectively enable them to extend their education in highly developed countries. As a result, it will also provide greater job opportunities for the students. Furthering education in foreign countries will require high-quality researching skills and learning the English language at the school level will create their base for future research works. Researching skills in a student is significantly important as it provides greater scope for improving academic skills. The survey indicates that most of the high school students of Bangladesh dream of studying in England, Canada, and the USA and so on. For the same to achieve they need to be productive in their English communicability and this is one of the major reasons that high schools in Bangladesh must provide high-quality English language education to their students. As per the opinion of Quadir (2017), in Bangladesh society, individuals with high English communication capabilities are provided higher respect as local people tend to think that these individuals are highly educated. So, it can be said that to increase personal stature in society, learning the English language is important.

As per the opinion of Milonm & HasanandIpban (2017), improving English language skills is significantly advantageous for high school learners of Bangladesh as it will enable them in furthering their employment career. Most high students will be searching for jobs after completing their graduation and in that time students will require the English language for communication. Most multinational organisations due to cross-cultural differences only hire employees who can speak fluent English as this will help in establishing better communication with colleagues and business stakeholders. From the viewpoint of Sovacool, Axsen & Sorrell (2018), it can be easily said that almost all foreign countries' first and foremost job criteria are productive English communication. Therefore, learning the English language at the basic high school level is important for strengthening the students and for the same ICT tools can be extensively implemented. Other than this, among all the high school candidates many of them will try to develop their own business on the international stage and in this kind of scenario also English will be highly important. For example, in future, if any student tries to expand their own business in the United Kingdom then they will be required to have adequate English communicability as most of the stakeholders as well as suppliers speak English only. As per the point of view of Uddin, Hena & Shanil (2017), these factors highlight the fact that English language learning is very essential for high school candidates in Bangladesh. However, traditional teaching practices in English classes are not improving the causes for the school therefore it can be recommended that these schools of Bangladesh actively implement ICT tools in their education system.

According to Erling (2017), learning English will enable students to create an attractive curriculum vita which is necessary for every student at some stage of their career. A curriculum vita is a thing where students' achievements, skills, and many other things will be written. It has been seen that due to a lack of English capabilities among some students they tend to request their neighbours for creating an attractive CV. However, if they can get effective English learning training they will become capable of creating their own CV. Other than this, learning the English language enables students to have a better travelling experience around the world. There are many travel destinations where cross-cultural differences along with language differences exist, however one language is common in these types of areas and that is English.

This shows that the importance of learning the English language has more importance than an individual can imagine.

As per the viewpoint of Milonm & HasanandIpban (2017), English proficiency is important for ensuring greater access to technology. There is a great scope for technological growth in Bangladesh therefore it is of utmost importance that high schools of Bangladesh must introduce advanced English classes in their institute so that students can get more technologically equipped. This will enable the country to reduce the technological invention gap that is prevailing in Bangladesh. In fact, for the same purpose, more than 150 schools in Bangladesh have adopted the English language at the primary level so that students can have more access to technology later in their lives. Thereby youngsters will be able to contribute towards their society which is important for developing the country as a whole. From the viewpoint of Habib *et al.* (2018), effectively learning the English language improves the confidence levels of youngsters in Bangladesh and they do not shy away from having active communication with an outsider. Furthermore, many high students in Bangladesh are very much passionate about cricket and for achieving higher levels in cricket these youngsters will require adequate English communicability. If any of them get selected on the national side then they have to communicate with foreign coaches and in these kinds of scenarios, English speaking will be highly necessary. Otherwise, they will find it difficult to communicate their issues to their coaches.

From the viewpoint of Ashrafuzzaman Ahmed & Begum (2021), English language learning will help high school students in improving their problem-solving skills which are significantly necessary while dealing with any kind of problem. Furthermore, assist in enhancing the verbal as well as spiritual learning abilities of high school students in Bangladesh. Moreover, these are significantly beneficial in improving the long-term as well as short-term memory functionality of youngsters pursuing higher education in Bangladesh. Most importantly, helps improve the creative thinking skills of candidates and they tend to innovate by conducting extensive research on the internet. Emotional skill is something that has a positive impact on ICT-based English classes. According to Rahman, Uddin & Dey (2021), students who are unable to learn the English language in a proper way suffer lots of issues in their lives. This is because most multinational organisations prefer employees who can communicate in English therefore these types of organisations will not prefer individuals with a lack of English capabilities. Furthermore,

students who would be dreaming of starting their own business will only get restricted to the local area as expanding in the international level will require greater communication skills.

2.4 Strategies of improving ICT implementation

As per the opinion of Obaydullah & Rahim (2019), properly managing the operational procedure of ICT tools is very important for improving its productivity in the educational sector of Bangladesh. Furthermore, most of the teachers due to lack of technical knowledge tend to operate ICT tools in wrong way as a result properly advantage of these tools are unable to be achieved. Therefore, high school lecturers need to be technologically equipped or the educational institute must provide adequate training to them so that teachers can effectively use these tools for students' benefit. There are many lecturers who do not pose proper capabilities of handling projectors and these teachers must be provided extra training facilities so that they can improve themselves. Furthermore, creating greater efficiency for ICT tools is essential for its improvement in a positive manner. In the viewpoint of Sultana and Shahabul (2018), ICT tools such as laptops, tablets and computers are highly prone to security issues as nowadays hackers are getting smarter and pose the capability of breaking any digital security. Therefore, it is important that educational institutes of Bangladesh must implement artificial intelligence for strengthening the security infrastructure of various ICT tools that are prone to security breaches. AI technology runs in automation therefore it will provide 24x7 security infrastructure for ICT tools and any sort of misbehaviour will be notified to the owner of the tool. Therefore, educational material will be safe and secure. Other than educational belongings, laptops and computers contain lots of personal data and if these data get subjected to hacking then the owner might get into lots of trouble.

According to Imam, Hossain & Saha (2017), improving communications with parents will help in improving the utility of ICT tools which will enable students to learn the English language in a better way. Moreover, productive communication with parents will help teachers in communicating the homework of students and completion of the same under the observation of parents will be beneficial in developing English language skills. Furthermore, high school teachers of Bangladesh based schools must be provided digital literacy training which is significantly important for handling ICT tools and making it productive for students. High schools situated in Bangladesh need to invest on IT staff as this will assist in proper utilisation of

ICT tools such as projector, digital printer, computer, laptop, digital board and so on. Additionally, not every student will be able to purchase costly eBooks and therefore the educational organisation must take responsibility and try to create its own digital library where all the books will be free to access and read. Creating a digital library will help in increasing the interest levels of learners to gather knowledge about multiple new things that are available in the digital library and these are easy to access. In turn this will help in elevating English learning capabilities of high school learners studying in Bangladesh.

As per the opinion of Islam *et al.* (2020a), the notion of English language learning for high school students has lot to do with ICT tools and at the same time proper implementation of the same. Therefore, it is important that ICT tools must be constantly monitored so that it can be improved further. Teachers can pre-record classes to their students and if any confusion arises then students must note down the same and when they arrive in the classroom, they must communicate the same to teachers so that teachers can solve their queries. Another recommendation that can be provided for improvement is, during the live classes teachers can record the whole class and after the class end lecturer can provide that video to all the students using Drop box. This will be beneficial as while revising the study materials of that English class if any problem arises they can directly open those recorded visuals and simultaneously students' doubts will clear. Other than this, teachers can also use interactive whiteboards for improving the ICT based contents as a result English learners of Bangladesh will get great benefits out of it.

In the viewpoint of Colombo, Mercurio & Mezzanica (2018), extensively implementing artificial intelligence and machine learning in ICT tools will help in improving its productivity. Implementing machine learning in ICT tools will make these tools highly accurate and chances of any kind of mistakes will be very less. Algorithms of machine learning utilise historical data as their input and depending on that they predict the outputs along with this technology poses smart capabilities of predicting new things without having previous history. There are five best machine learning technologies available in the market namely, python programming language, R programming language, Julia, Java, and LISP. Implementing any of these will significantly improve the performance levels of ICT tools which will ultimately benefit high school students of Bangladesh pursuing English education.

2.5 Literature gap

In the above-described literature review almost all the areas are covered which has effectively shown the impact that ICT tools have on high school learners. However, there are also certain literature gaps remaining and these are taking examinations using ICT tools and evaluating the results using these tools. There was a lack of previous research regarding the use of ICT tools for the English examination of high school students in Bangladesh. At the same time, research regarding the assessment of students' results has also been lacking therefore literature has not been provided in these parts. However, it provides a greater research scope for researchers in this regard where they can find the effectiveness of taking examinations applying ICT tools.

2.5 Conceptual framework

Theoretical or conceptual framework refers to the structure of the research paper that is associated with the help of the theories and concepts. In this current study, there are both dependent and independent variables. The dependent variables of the framework process of implementing ICT tools in the English Language and the independent variables include Government ICT policy, school interventions, pedagogical influence, and the capacity of the teachers.

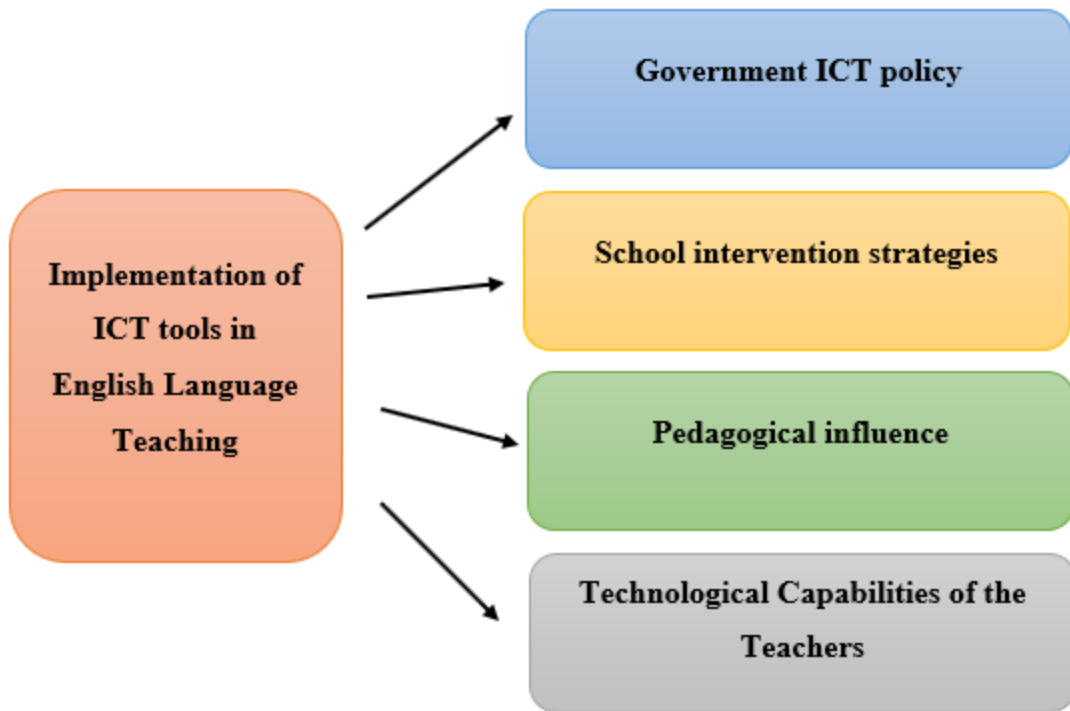


Figure 1: Theoretical or conceptual framework of the study

(Source: Created by the learner)

Chapter 3: Research Methodology

3.1 Research philosophy

Research philosophy is found to be dealing with the source of the knowledge, the nature of the knowledge as well as the development of knowledge, in other words, it is the belief that is adopted by the researcher for the collection of data, for its analysis and for its interpretation. In general research, philosophy can be divided into four types such as positivism, interpretivism, realism and pragmatism. All these philosophies are being incorporated by the researcher as per the need and requirement of the research content and further reach out to a meaningful conclusion (Tamminen & Poucher, 2020).

The research has made use of the positivist research philosophy. Positivism is the research philosophy which is found to be adhering to the idea that knowledge is truly factual and is collected only by the means of observation using sense which also includes measurement and thus the collected information is trustworthy. In inclusion to that, positivism is also found to be enabling the researchers to perform the research in an independent manner or regardless of the views and ideas of the individual performing or conducting the research which leads to the extraction of outcomes from the studies and leads the research to achieve the goals and targets of the research study (Žukauskas, Vveinhardt & Andriukaitienė, 2018). Hence, for these reasons, positivism has been given preference over other philosophies.

3.2 Research approach

The approach of the research or the research approach is defined as the strategy or the plan which has been devised by the researchers so as to collect the data, analyse it and interpret it. Researchers needed to adhere to the research approach in order to present a quality research study. There are two major approaches to research which are inductive and deductive. The inductive research approach is defined as an approach which is targeted towards reasoning in an inductive manner and initiates with the use of observations and theories which are proposed towards the finishing of the research as an outcome of the observation performed (Woiceshyn & Daellenbach, 2018). Consequently, the inductive approach is found to be enabling the researchers to identify patterns in a series or a sequence of hypotheses. It is also significant for the researchers to ensure that they do not present any theories or hypotheses in the initiation of

the research which can lead to the alteration of research direction and which can lead to distorted outcomes in the research study (Azungah, 2018). Again, the inductive approach to the research is found to be having a significant amount of advantages or benefits and for these above discussed reasons, the inductive research approach is being used. Using an inductive research approach has helped the researcher to ensure that the data is collected properly, analysed properly and interpreted properly which ultimately led to a quality research study which is reliable, valid and credible.

3.3 Research design

Design of the research or research design is a model or a framework which is comprised of different strategies, methods and techniques that are used by the researcher for the effective conduction of the research study. The research design can be divided into four types which helps the researcher to design the method of data collection as per the requirement.

Out of all the four forms, the following research study has made use of a descriptive research design which has been due to various reasons and factors (Sovacool, Axsen & Sorrell 2018). Descriptive research design is found to be focused on the proper description of the phenomena or the situation faced or experienced and in this manner true and more factual data is presented by the researcher. Again, a descriptive research design is also found to be used for different research methods or in other words, the descriptive research design is found to be quite compatible with various methods of data collection in the research. So, the researchers are able to deal with the different variables in the research study in a proper and effective manner which leads to the conduction of the research in an appropriate sense or manner. Finally, descriptive research design helps the researcher to define each variable in the research in a broader manner and this leads to a better understanding of the variables being discussed and better research outcomes (Leavy, 2022).

3.4 Methods of data collection

Data collection methods are found to be the most integral part of the research study; researchers are required to adopt proper research data collection methods as it is found to be having a wide amount of influence over the outcomes of the research. The researcher can collect the data with

the help of primary and secondary methods and further gather credible data as well (Clark & Vealé, 2018).

For the research, primary as well as secondary data collection methods is used. Both the research method are qualitative data collection methods as per the nature of the research study. For the primary data collection, a questionnaire has been produced which was offered to 100 participants each answering one of the available options from the presented questionnaire. Contrarily, secondary data collection was conducted using different sources such as articles, newspapers, journals, and governmental reports. Both methods are found to be complementary to each other.

After conducting primary research there are some areas that are left unanswered or there are certain gaps in the research and using the secondary data collection method those gaps can be filled which leads to the presentation of more complete and reliable research. Besides that, primary research enables the researchers to collect raw data which can be processed to extract meaning from it and thus a more valid research study is performed (Corti *et al.*, 2019). Therefore, for the above discussed reasons, a mixed approach was taken into consideration for the collection of data as well as analysis of data. Such an approach leads to a much better, high quality and more reliable research study which ultimately led to the meeting of the research aims, and objectives and proper answering of the questions of the research.

3.5 Data analysis method

As mentioned in the previous section that the research was performed by adhering to both primary as well as secondary data collection methods. Now, in the case of primary data analysis a process of descriptive analysis has been followed. To define descriptive analysis, it can be said that it describes, shows as well as summaries all the basic features related to the dataset (Clarke & Braun, 2021). On the other hand, the summary that was presented based on the descriptive data analysis was also describing the sample as well as the measurement of the data. It is also necessary to mention that the data has not been analysed based on the statistical tools such as MS-Excel as there are 100 participants will be involved in the research.

As mentioned secondary data collection had also been used in this particular research thus, the analysis of data was based on the process of thematic analysis. To define thematic analysis, it can be said that it is a method through which qualitative data is being analysed (Taguchi, 2018).

Analysis of qualitative data focuses on searching the data and by identifying the evidence based data and presenting them in a report repeated pattern.

3.6 Ethical consideration

Research ethics are another fundamental component of the research study; researchers are needed to make sure that they are abiding by the ethics of the research in a proper manner so that they are able to perform their research studies properly. Consideration of research ethics leads the researchers to ensure that no harm is inflicted on participants and no ill steps are adopted in the conduct of the research that breaks the morale of the research study (Hürlimann, 2019). Regarding the research about to be performed, the researcher has ensured that the participants are dealt with in a proper manner. To maintain the ethics of research the researcher has taken the informed consent of the participants and the whole of the reason for which the research is being conducted has been disclosed to the participants.

A safe and secure environment has been provided to the participants in which they provided their answers to the questionnaire being offered to them. The data collected has been kept in a secure manner thus maintaining the privacy, security and confidentiality of the data. Proper levels of anonymity has been maintained as well and the collected data would be destroyed after the achievement of the aims and objectives of the research study. It is also significant for the researcher to abide by the ethics of the research when they are performing secondary data collection (Hesse *et al.*, 2019). For this, the researcher has taken the permit of the authors and owners of the articles, journals, books and government reports that has been taken into consideration. All the data has been collected in an ethical manner and this will help maintain the credibility and authenticity of the research.

3.6 Research timeline

The timeline of the research has been attached below which shows that the whole of the research has been performed in 20 days from 30-11-2022 to 20-12-2022

Tasks	Start date	Days	End date
Choosing the topic of study	30-11-2022	1	01-12-2022

Formulating aims and objectives of the research	01-12-2022	1	02-12-2022
Conducting literature review of the study	02-12-2022	2	04-12-2022
Developing methodology of the research	04-12-2022	2	06-12-2022
Performing primary research	06-12-2022	4	10-12-2022
Performing secondary research	10-12-2022	2	12-12-2022
Analysing the collected data	12-12-2022	2	14-12-2022
Interpreting the data collected	14-12-2022	2	16-12-2022
Documenting the research study	16-12-2022	3	19-12-2022
Concluding the whole of the research study	19-12-2022	1	20-12-2022

Table 1: Timeline of the research

(Source: Created by the Learner)

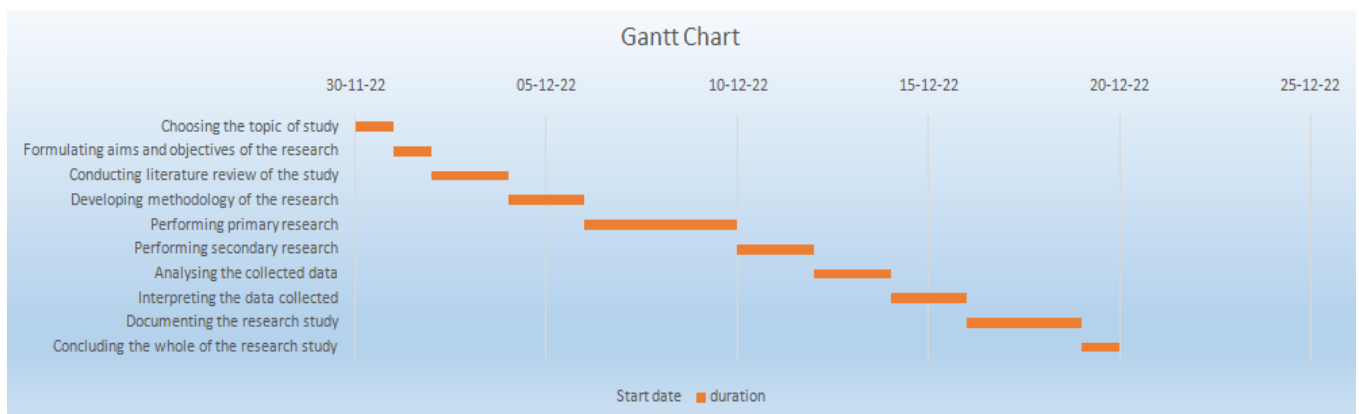


Figure 1: Gantt chart

(Source: Created by the Learner)

Chapter 4: Findings

4.1 Primary research

The presented study has made use of a survey questionnaire in order to gain a clear understanding of the responses of the participants regarding the use of ICT tools for making students learn the English language in Bangladesh in an effective manner. Along with that, the use of semi-structured interviews has brought about a brief understanding of the views of the participants regarding the application of ICT tools in learning the English language which has answered the first, second as well as third questions of the research study. In addition to that, the research has been also conducted in order to observe the learning preferences of the learners which have also been answered in the first, second and third questions of the study. In the table attached below the different responses of the participants regarding the different statements and questions made towards the participants have been laid down. A semi-structured interview regarding the different themes that have been associated with secondary thematic analysis has been performed. Both the observations from the classes as well as the data gathered from the interview have been laid down in this study.

Responses from Survey Questionnaire

Items	Statement	Yes	No	Not Sure
Item 1	What is your gender?	60%	35%	5%
Item 2	What is your age?	65%	25%	10%
Item 3	Implementation of ICT tools has improved the English language learning in Bangladesh High schools	65%	8%	27%
Item 4	The intervention strategies of schools required to be changed	66%	14%	20%
Item 5	What percentage of teachers are using ICT tools in teaching?	35%	25%	40%
Item 6	How often do teachers have access to workshop or other technological opportunities to improve their competence?	35%	45%	20%
Item 7	To what extent English language learning courses	10%	60%	30%

	are provided to the students?			
Item 8	Does technical support provided to the students of your organisation?	20%	55%	25%
Item 9	Does the organisation has a policy to support or promote the ICT-based innovation by teachers in their teaching?	45%	35%	20%
Item 10	Does Pedagogical Support provided to the teachers in your organisation?	40%	30%	30%
Item 11	To what extent do you feel comfortable using technology in the classroom?	50%	30%	20%
Item 12	In your opinion what extent of government policy impact on ICT use in schools?	45%	30%	25%
Item 13	How do you feel the educators value the necessity of using technology in the classroom?	40%	26%	34%

Table 1: Responses from Survey Questionnaire

(Source: Created by the Learner)

4.1.1 Survey questionnaire

Q.1 What is your Gender?

Options	Total respondents	Response collected	Response in percent
Male	100	60	60%
Female	100	35	35%
Do not want to disclose	100	5	5%

Table 1: Gender of the Participating individuals

(Source: Created by the Learner)

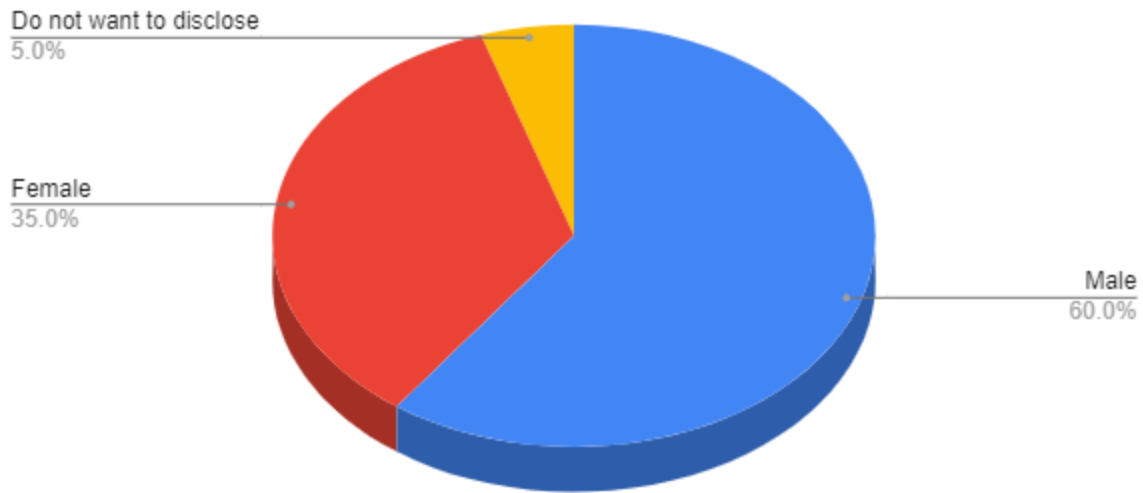


Figure 1: Gender of the Participating individuals

(Source: Created by the learners)

All the participants in the who participated in the survey were asked about their gender. In the survey total 100 participants were participated. From the result it was found that 60% of the respondents were male whereas the 35% of the respondents were females. Rest 5% of the respondents were reluctant to disclose their gender. When taking part in the survey, every participant was questioned about their gender. A total of 100 people took part in the survey. According to the findings, 35% of respondents were women, compared to 60% of respondents who were men. The remaining 5% of respondents were hesitant to reveal their gender.

Q.2 What is your age?

Options	Total respondents	Response collected	Response in percent
18-24 years	100	65	65%
24-35 years	100	25	25%
Above 35	100	10	10%

Table 2: Age of the Participating individuals

(Source: Created by the learner)

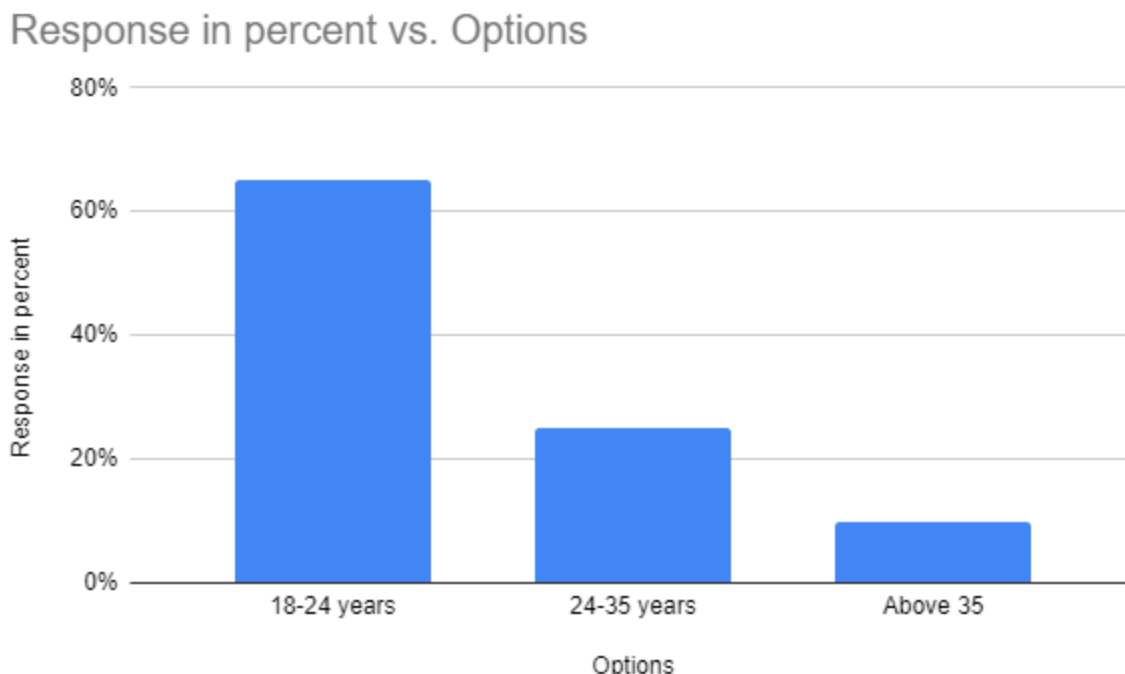


Figure 2: Age of the Participating individuals

(Source: Created by the learners)

The participants were asked about their ages and from the response it has been found that 65% of the participants were aged above 18 years. Sixty-five percent of the respondent's age were in between the range 18-24 years. 25% of the participants were above 25 years and below 35 years. Almost 10% of the participants were above 35. So it can be said that most of the participants in this survey was male and they were young as their age was in the range 18 to 25 years. When the participants were questioned about their ages, it was discovered that 65% of them were over the age of 18.

Q.3 Do you think that implementation of ICT tools has improved the English language learning in Bangladesh High schools?

Options	Total respondents	Response collected	Response in percent
Yes	100	65	65%
No	100	8	8%

May be	100	27	27%
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Table 3: Opinions regarding implementation of ICT tools

(Source: Created by the learner)

Response in percent vs. Options

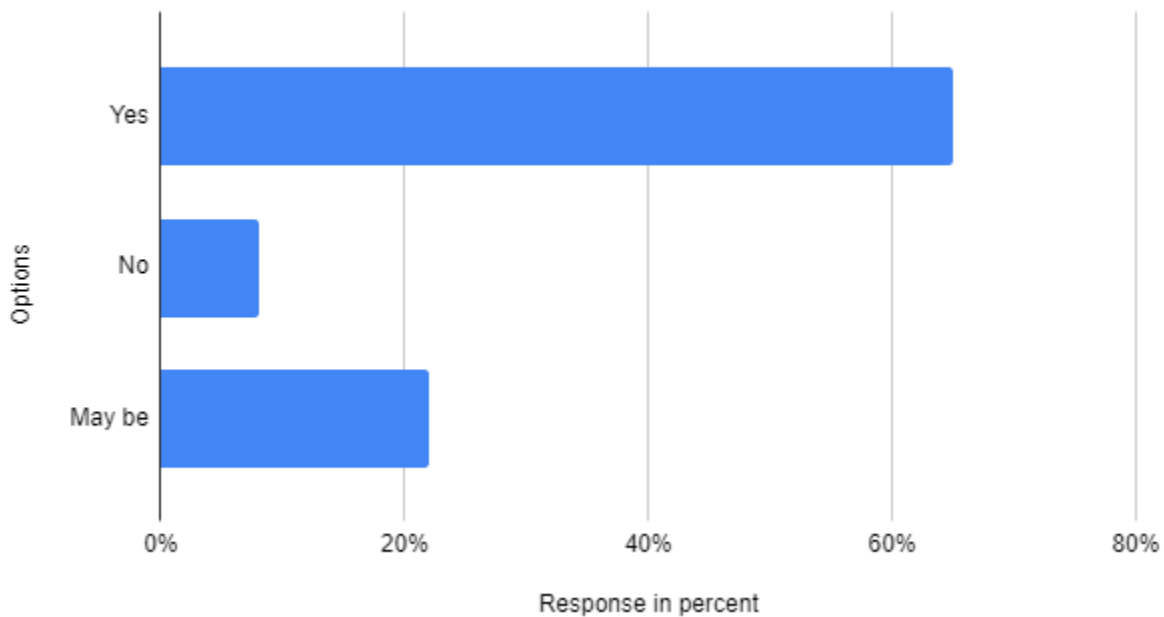


Figure 3: Opinions regarding implementation of ICT tools

(Source: Created by the learner)

From the opinions of the respondents, it has been obtained that most of the respondents has agreed to the fact that the adoption of ICT technology has efficiently improved the English language learnings in most of the schools in Bangladesh. According to the opinions of the respondents, the majority of the respondents agreed that the implementation of ICT technology has significantly improved the teaching of the English language in the majority of Bangladeshi schools. However, only 8% of the respondents have not agreed with this fact. Remaining 27% of the employees were not sure about whether the implementation of this technology has improved the language learning in Bangladesh High schools or not.

Q.4 Does the intervention strategies of schools required to be changed?

Options	Total respondents	Response collected	Response in percent
Yes	100	66	66%
No	100	14	14%
May be	100	20	20%

Table 4: Opinions regarding intervention strategies of schools

(Source: Created by the learner)

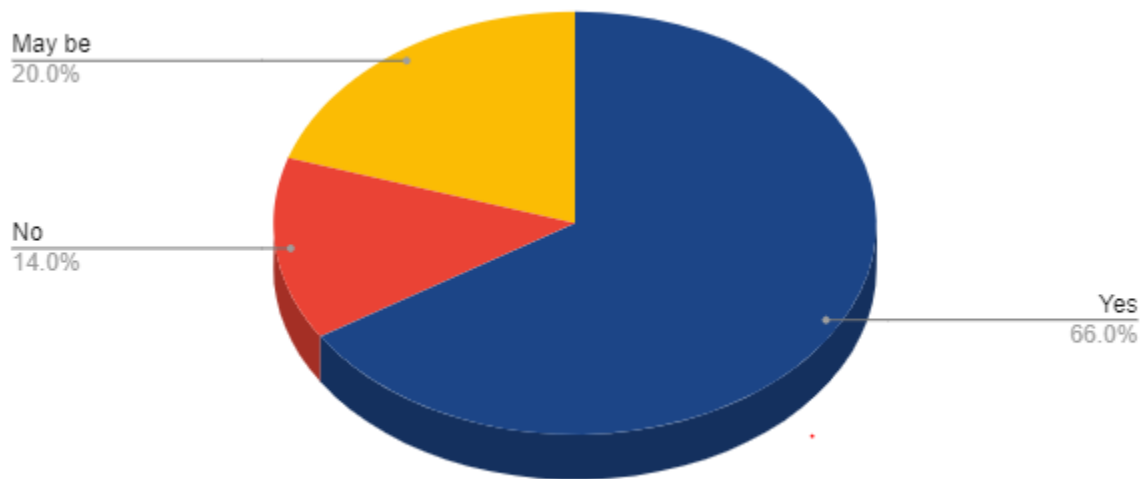


Figure 4: Opinions regarding intervention strategies of schools

(Source: Created by the learner)

All the 100 participants of the survey were asked to deliver their opinions about the fact that whether the intervention strategies that are used required to be altered or not. It was requested of each of the one hundred people who took part in the survey that they share their thoughts on the question of whether or not the intervention tactics that are currently being employed need to be modified. 66% of the respondents have stated that intervention strategies of the schools are required to be changed. 14% of the participants have stated that the intervention strategies are not required to be altered. According to 14% of the participants, the intervention tactics do not need to be changed. 20% of respondents have questioned whether or not there is a need for adjustments to be made within the intervention tactics that are employed in the schools, while 14% have acknowledged that the schools do need to update existing strategies. The vast majority

of participants have arrived at the conclusion that students are frequently not given the essential technical support in order to amplify the impact of their learning and teaching environment or process.

Q.5 What percentage of teachers are using ICT tools in teaching?

Options	Total respondents	Response collected	Response in percent
More than 75%	100	40	40
50-75%	100	25	25
25-50%	100	20	20
Below 25%	100	15	15

Table 5: Percentage of teachers using ICT tools

(Source: Created by the learner)

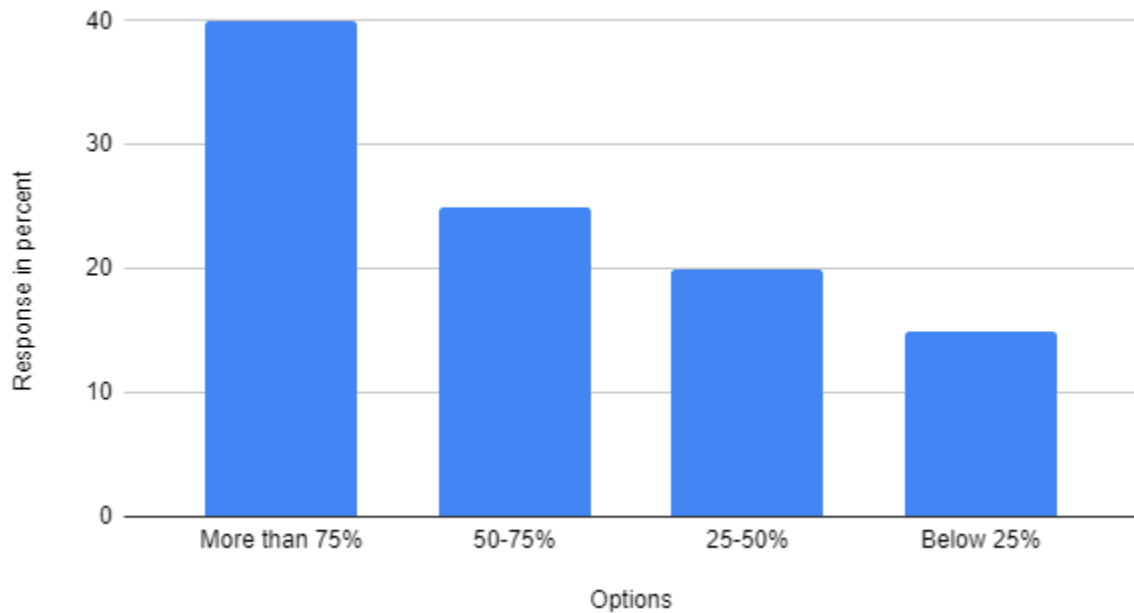


Figure 5: Percentage of teachers using ICT tools

(Source: Created by the learner)

The respondents were asked about their opinions on how much people use ICT tools for providing training in schools in Bangladesh. The respondents were questioned regarding their

thoughts on the prevalence of the usage of ICT technologies for the delivery of education in Bangladeshi educational institutions. 40% of the respondents have stated that more than 75% teachers are using ICT tools whereas 25% have stated that 50 to 75 percent of teachers are currently employing ICT tools. In addition to this, 20% of the participants said that they believe 25 to 50% of the respondents are using ICT. On the other hand, 15% of the respondents have stated that below 25% of the teachers have deployed ICT in teaching in Bangladeshi schools.

Q.6 How often do teachers have access to workshop or other technological opportunities to improve their competence?

Options	Total respondents	Response collected	Response in percent
Very often	100	35	35
Not often	100	45	45
Somewhat often	100	20	20

Table 6: Access to technological opportunities by the teachers

(Source: Created by the learner)

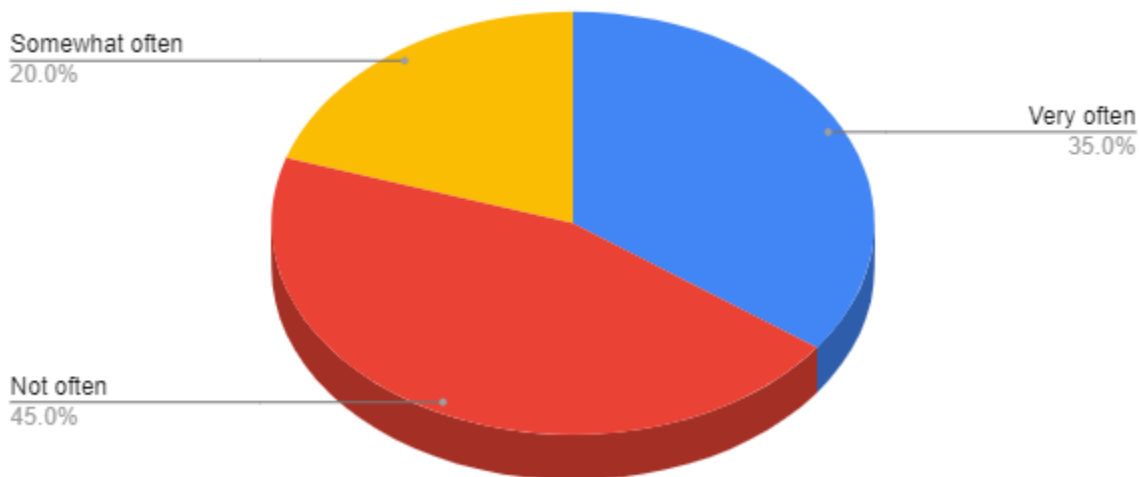


Figure 6: Access to technological opportunities by the teachers

(Source: Created by the learner)

Participants were asked about whether the teachers have the opportunity to improve their competence or not. 35% of the participants have said that the teacher gets technological opportunities very frequent. On the other hand, 45% of the participants have denied the statement. Participants were questioned as to whether or not they believed that teachers had the opportunity to increase their level of competence. 35 percent of the participants have indicated that they believe the teacher is exposed to numerous possibilities to use technology. On the other side, 45% of those who took part in the survey disagreed with the assertion.

Q.7 To what extent English language learning courses are provided to the students?

Options	Total respondents	Response collected	Response in percent
Not Provided	100	10	10%
Optional courses are provided	100	60	60%
Mandatory courses are provided	100	30	30%

Table 7: Availability to English language learning courses to the students

(Source: Created by the learner)

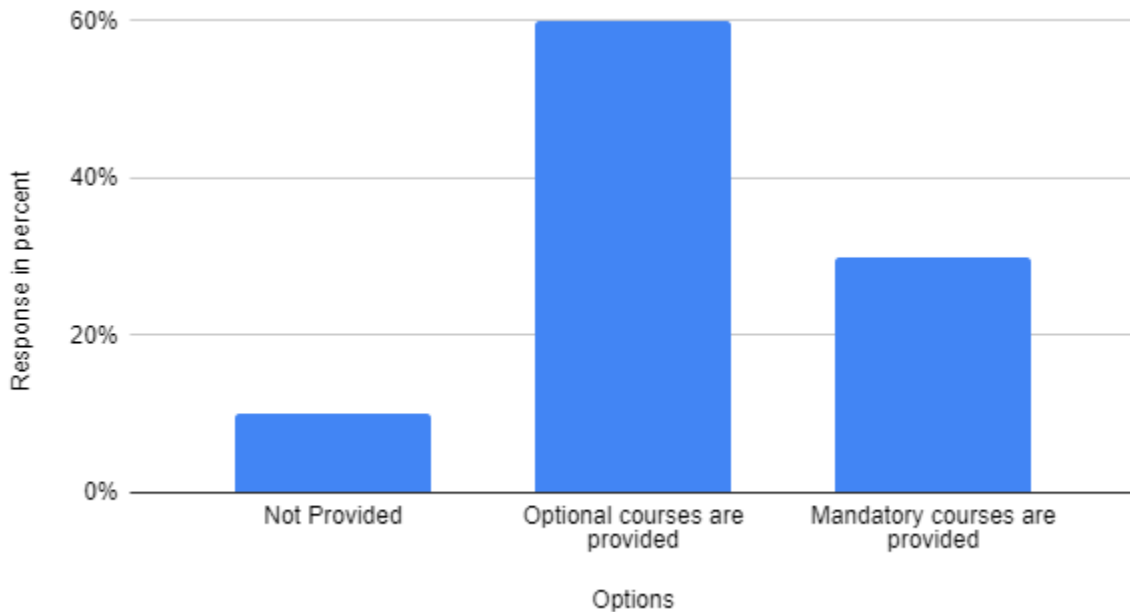


Figure 7: Availability to English language learning courses to the students

(Source: Created by the learner)

When the participants were asked whether English learning courses are delivered to the students or not. It is important to know whether the students have the access in English language courses or not. When the participants were questioned whether or not the pupils received English language instruction, many of them gave conflicting answers. It is critical to obtain the information necessary to determine whether or not the pupils have access to English language classes. 10% of the respondents have stated that English language learning courses are generally not provided to the students. 30% respondents have stated that students can pick up mandatory courses. On the contrary, 60% of the respondents have said that student can easily choose the subject as an optional course. It is essential to gather the data required to ascertain if the students have access to English language classes. 10% of respondents said that students are typically not given access to English language learning classes. According to 30% of respondents, students can choose their own required courses. On the other hand, 60% of respondents claimed that students could choose the subject readily as an elective course.

Q. 8 Does technical support provided to the students of your organisation?

Options	Total respondents	Response collected	Response in percent
Not provided at all	100	20	20%
Very limited technological support provided	100	55	55%
Provided to all the students	100	25	25%

Table 8: Availability of technical support to the students

(Source: Created by the learner)

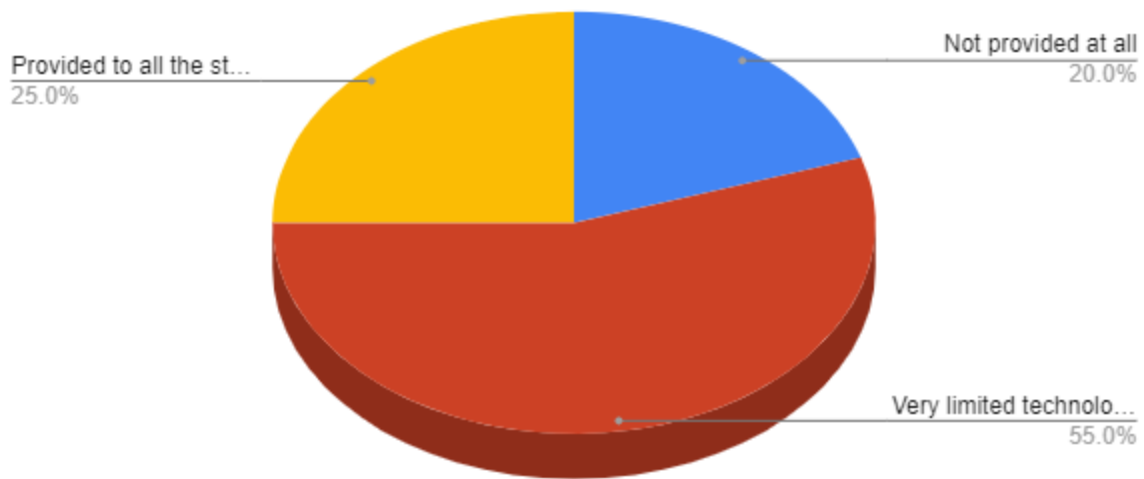


Figure 8: Availability of technical support to the students

(Source: Created by the learner)

From the data and information obtained from the result it is clear that, very limited technological access is provided to the students in most of the schools in Bangladesh. It is abundantly obvious, based on the data and information that was acquired from the results, that the majority of the schools in Bangladesh give their children with very restricted access to technology resources. 55% participants have expressed that students have not been provided with adequate technological support. On the contrary, 25% of the participants have stated sufficient technological supports are provided to all the students. Most of the participants have voiced their opinion that learners have not been provided with sufficient support in regards to technology matters. In contrast, twenty-five percent of the participants reported that enough technological aids were made available to all of the pupils.

Q.9 Does the organisation has a policy to support or promote the ICT-based innovation by teachers in their teaching?

Options	Total respondents	Response collected	Response in percent
Yes	100	45	45%
No	100	35	35%

May be	100	20	20%
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Table 9: Policy for promoting ICT based innovation

(Source: Created by the learner)

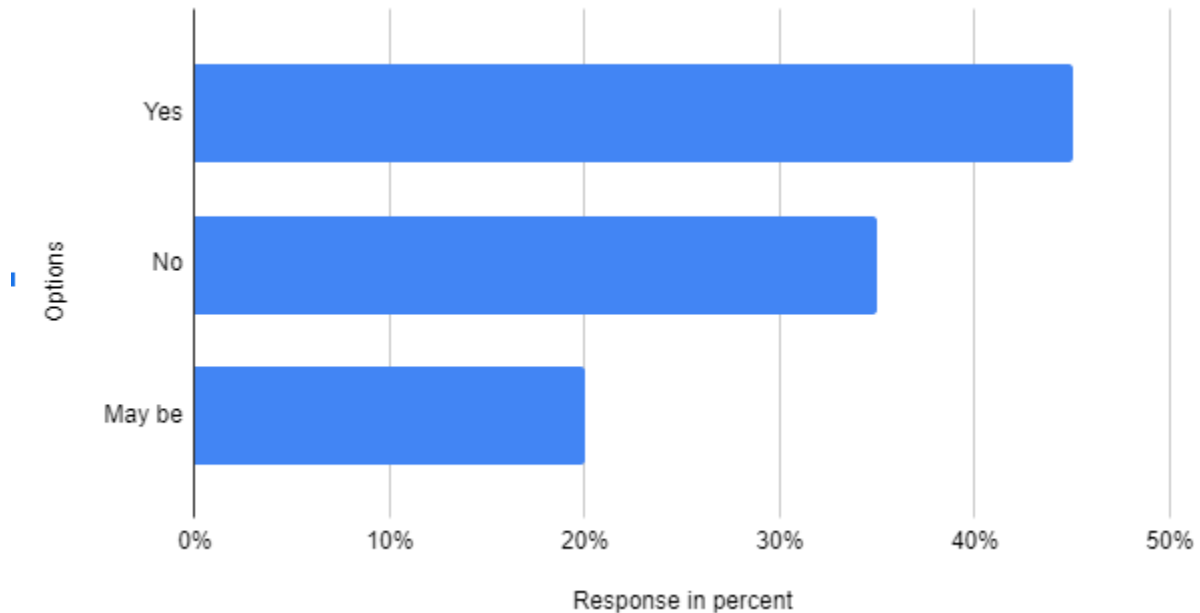


Figure 9: Policy for promoting ICT based innovation

(Source: Created by the learner)

From the result of the survey, it has been obtained that most of the educational institutes in Bangladesh are having a policy to effectively promote ICT based innovation. 45% of the participants have stated that the it is extremely important for promoting ICT based innovation. According to the findings of the survey, the majority of educational institutions in Bangladesh have a policy in place to actively support ICT-based innovation. This was one of the conclusions drawn from the findings of the survey. 45 percent of the participants in the survey agreed that it is very important to advance innovation that is based on information and communications technology. 35% of the total respondents have claimed that there is policy to promote ICT based innovation. About one-third of all respondents said no policy exists to encourage innovation based on information and communication technologies.

Q. 10 Does Pedagogical Support provided to the teachers in your organisation?

Options	Total respondents	Response collected	Response in percent
Yes	100	40	40%
No	100	30	30%
May be	100	30	30%

Table 10: Pedagogical support to the teachers

(Source: Created by the learners)

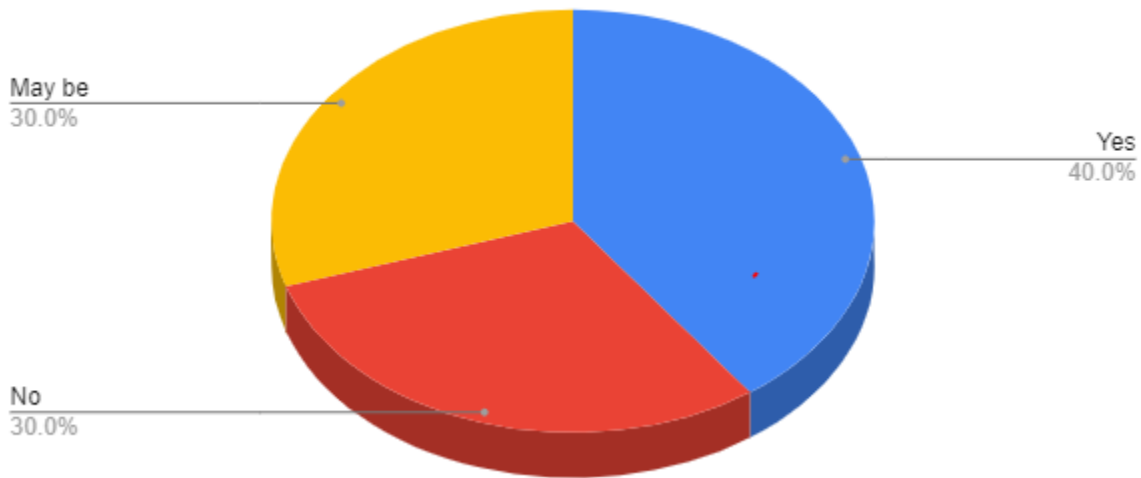


Figure 10: Pedagogical support to the teachers

(Source: Created by the learner)

When the respondents were asked about the pedagogical support, 40% participants have stated that pedagogical supports are available to the teachers. On the other hand, 30% participant have not agreed with it and they have said sufficient pedagogical supports are not available to the teachers. In response to a question posed to the respondents regarding the availability of pedagogical help, forty percent of the participants indicated that such support is made available to the educators. On the other side, thirty percent of the participants have disagreed with it and they have stated that there are not enough pedagogical aids available to the teachers.

Q.11 To what extent do you feel comfortable using technology in the classroom?

Options	Total respondents	Response collected	Response in percent
Very Comfortable	100	50	50%
Somewhat comfortable	100	30	30%
Not Comfortable	100	20	20%

Table 11: Opinions regarding comforts of using technology

(Source: Created by the learner)

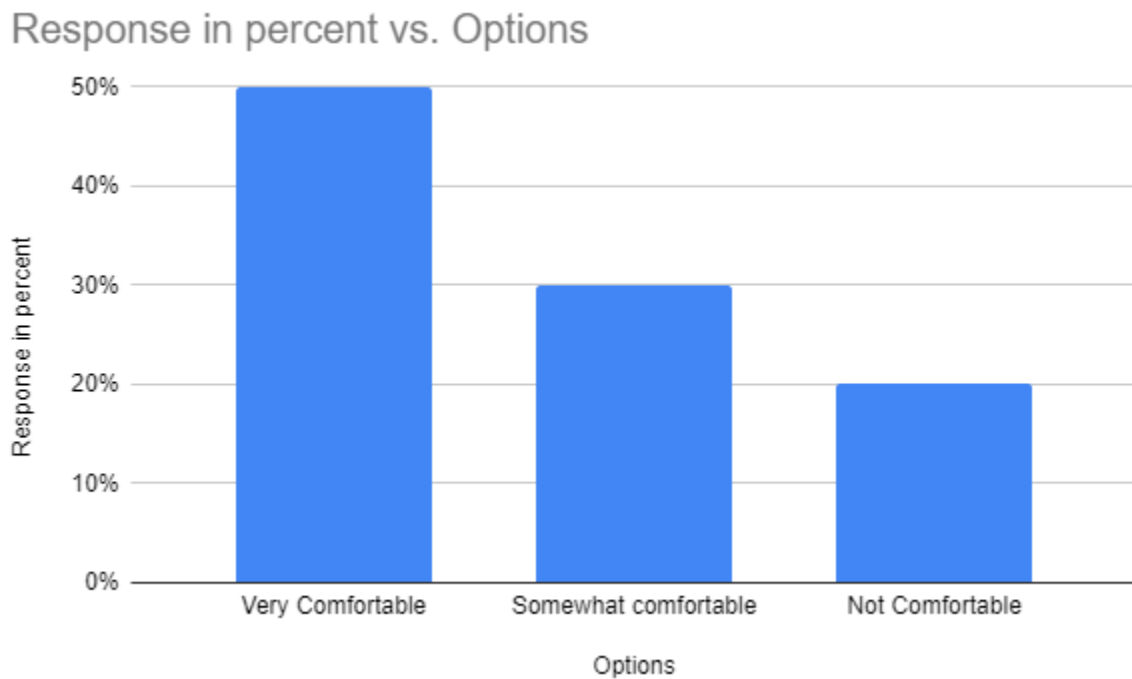


Figure 11: Opinions regarding comforts of using technology

(Source: Created by the learner)

From the survey, it has also been obtained that 50% of the respondents are very comfortable in using technology. 30% of the participants have stated that they are somewhat comfortable in using the technology. Only, 20% of the total respondent have stated that they are not comfortable with the technology. It has also been determined, via the use of the survey, that fifty percent of the respondents are highly at ease when it comes to utilising technology. Thirty percent of the people who took part in the study reported feeling some level of ease when it came to utilising

the technology. Only twenty percent of all respondents have indicated that they are uncomfortable with the technology in question.

Q.12 In your opinion what extent of government policy impact on ICT use in schools?

Options	Total respondents	Response collected	Response in percent
Strongly impacted	100	45	45%
Somewhat impacted	100	30	30%
Not impacted at all	100	25	25%

Table 12: Opinions regarding impact of government policy on ICT use

(Source: Created by the learner)

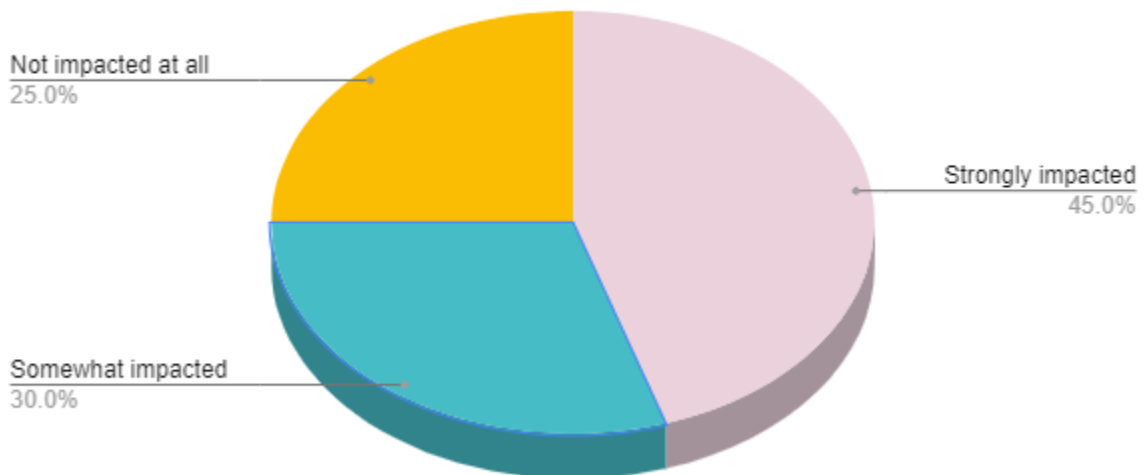


Figure 12: Opinions regarding impact of government policy on ICT use

(Source: Created by the learner)

Forty-five percent of the respondents have effectively stated that the government policy can effectively impact the ICT use in schools. On the other hand, 25% have disagreed with this fact as they have stated that government policies cannot impact the utilisation of ICT use in the organisation. 45 percent of those who participated in the survey indicated that they believe the policy of the government can successfully influence the use of information and communication

technologies in schools. Only twenty-five percent of respondents have argued against this reality by asserting that it is impossible for government policies to have an effect on the organization's usage of information and communication technology.

Q.13 How do you feel the educators value the necessity of using technology in the classroom?

Options	Total respondents	Response collected	Response in percent
Of some importance	100	40	40%
Quite great importance	100	26	26%
Very great importance	100	24	24%
No importance	100	10	10%

Table 13: Opinions regarding the necessity of ICT use

(Source: Created by the learner)

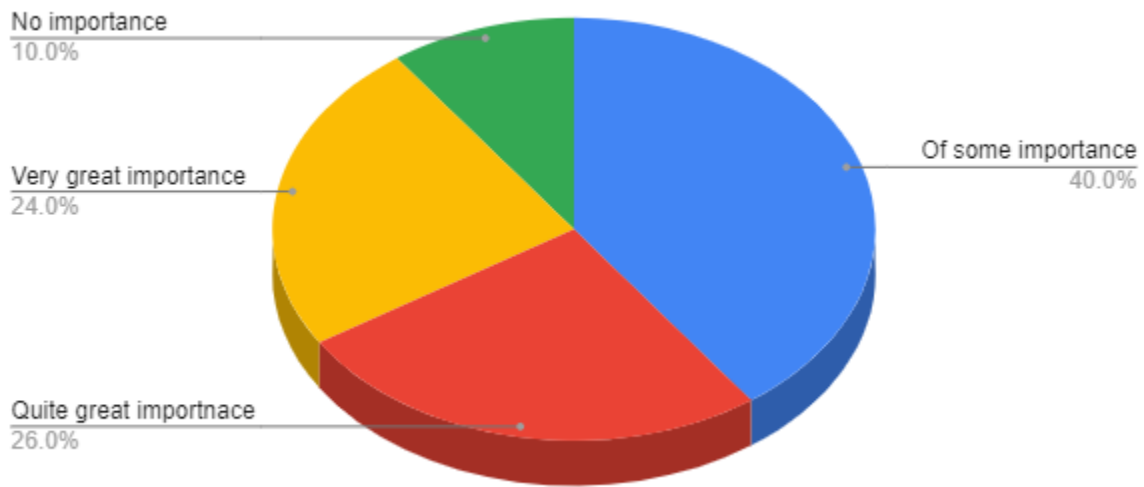


Figure 13: Opinions regarding the necessity of ICT use

(Source: Created by the learner)

40% of the respondents have stated that the necessity of using technology in the classroom is of some importance. 24% participants have said that the technology use in the classroom is of great importance. Forty percent of those who participated in the survey provided feedback suggesting that the use of technology in educational settings should be given at least some consideration. According to the responses of the participants, the utilisation of technology in the educational setting is of utmost significance in 24% of cases.

4.2 Secondary research

4.2.1 Thematic analysis

Sl. No.	Theme(s)	Articles or Journals	Author(s)	Year of publication
1.	The important role played by ICT tools such as computers, mobile phones and internal software	“Empowering ICT potentials in english language teaching.”	“Utami, D.M.A., Prihantoro, P., Apriani, E., Hidayah, J. & Handrianto, C.”	2021
		“Learning English through ICT tools”	“Calderón, S.S.”	2020
		“Blended learning: how to flip the classroom at HEIs in Bangladesh?. <i>Journal of Research in Innovative Teaching & Learning</i> , 13(2), pp.228-242.”	“Chowdhury, F.”	2020
		“The Importance of ICT in the Teaching English Language.”	“Qurbonovna, I.M.”	2021
2.	The effects that are made by the application of ICT to enhance English Language training among students	“Barriers of technology integration in teaching English”	“Singh, R.”	2019
		“Bangladeshi university students’ perception about using Google classroom for teaching English”	“Islam, M.S.”	2019
		“Use of mobile phones in teaching English in Bangladesh: A systematic review (2010–2020).”	“Seraj, P. M. I., Klimova, B., & Habil, H.”	2021

		Sustainability, 13(10), 5674.”		
		“ICT in EFL teaching and learning: A systematic literature review”	“Sabiri, K.A.”	2020
3.	The different methods that can be used to enhance ICT tools to make students of Bangladesh learn better	“Learning English language through literature: Insights from a survey at university level in Bangladesh”	“Ashrafuzzaman, M., Ahmed, I. & Begum, M.”	2021
		“Measuring the performance of e-primary school systems in Bangladesh.”	“Khan, W. & Rahaman, M.M.”	2020
		“The Medium of Instruction in Bangladeshi Higher Education Institutions: Bangla, English, or Both?.”	“Karim, A., Kabilan, M.K., Ahmed, Z., Reshmin, L. & Rahman, M.M.”	2021

Table 14: Thematic analysis

(Source: Created by the Learner)

Theme 1: The important role played by ICT tools such as computers, mobile phones and internal software

It is evident that in order to ensure that the learners are able to gather education or knowledge in a proper manner there is a need for the consideration of the approaches that are needed to be made in order to improve their functioning. ICT has been serving learners with the ability to gain new skills and advance themselves at their convenience and thus brings about a rise in the levels of creativity as well. ICT tools are found to be leading towards a rise in the levels of stimulation among the learners and thus bringing about a rise in the levels of effectiveness of gathering knowledge and information and thus increased amount of functioning as a learner. Moreover, ICT also grants learners to make use of various innovative resources in education which fosters conveniences in gaining of education and dealing with different issues and challenges that are present in learning and developing. ICT tools are also found to be leading towards an increased

amount of collaboration among the parties involved which brings about increased academic performance of the learners. With that being said, ICT tools such as computers are found to be leading towards an increased amount of communication among teachers and learners as well as among learners and thus in the present times, ICT tools which include various applications or software are found to be employed widely such as Google Meet, Zoom and Microsoft Teams (Utami *et al.*, 2021).

Mobile phones are also found to be functioning as a great tool for the enhancement of the learning of students especially when it comes to communicating in English as these applications are found to be initiated with English as a primary language. Moreover, the transmission of data and information is also found to be eased as well which has been another reason why ICT tools and devices such as mobile and computers are found to be widely used in order to foster English learning of learners in a proper manner in the universities of Bangladesh (Calderón, 2020). Furthermore, the use of ICT tools enables the learners to share data in a real time manner as well as brought a significant amount of improvement regarding the storage of data or information which widely supports the performance of the learners in an effective sense. A sense of modernity is also found to be leading towards a rise in the levels of motivation of the working class and thus such tools are needed to be adopted in the initial phases of learning English which widely fosters the academic improvement or development of the learners and brings about inclusive learning in the learning environment (Qurbonovna, 2021).

According to Chowdhury (2020), the importance of ICT tools and the application of technology in the education sector and learning environment has increased recently. Especially after the pandemic, ICT has helped students to continue their learning process, maintain communication with their trainer and peers. However, there is a significant amount of challenges in implementing ICT in the Bangladesh high schools; hence, the researchers have found that blended learning is one of the most effective methods implementing the same. Use of technology in a blended approach can significant improve the learning and teaching quality as well as the cost-effectiveness of the process.

Theme 2: The effects that are made by the application of ICT to enhance English Language training among students

Regarding the effects that have been made by the use of ICT tools for the development of learners it has brought about a rise in the enhancement of the levels of inclusivity of the learners and has also maintained the levels of motivation and interests of the learners in the educational setting and environment. ICT tools such as projectors, electronic textbooks, email, chat and software that are employed to instruct the workers are found to be employed widely in order to deal with the issues and challenges faced in the learning environment regarding the increased amount of inclusivity of the learners. These tools are found to be used widely in order to enable learners to gain knowledge and information which brings about sustainability and advancement in learning and acquiring education (Islam, 2019). It is found that via the use of ICT tools the learning environment expresses an increased amount of engagement from the learners as well as increased levels of inclusivity in the learning environment and thus these tools are needed to be used in proper manners in order to bring about stability and sustainable performance of the learning class.

In order to ensure that learners are able to gather education and knowledge in a proper manner, different universities in Bangladesh especially for students learning English have presented ICT tools such as information kiosks and multimedia based lessons that have increased the levels of instructiveness and have brought about improved performance of the learners as they are found to be having improved collaboration and coordination among the learners which has been a major factor that leads to continuous development and improvement of the learners (Sabiri, 2020). Learners are also found to be positively impacted via the use of ICT tools and technologies which has brought about increased levels of academic prowess. Tools such as digital whiteboards, interactive tables and projectors have widely helped the educational setting to ensure that the learners are continuously engaged with the learning environment by providing with numerous reasons on why they should be learning and gathering knowledge and information in a constant manner. Thus, the learners via the application of ICT tools and techniques have brought about significant levels of development and advancement of the learning class and these tools are found to be leading to increased inclusivity in the learning environment which has been another reason why these tools are found to be widely used in digital or online learning. These are needed to be used at every level of teaching and learning

which will widely enhance the performance of the learners and will bring about effective development and advancement of the learning class (Singh, 2019).

Seraj, Kimova & Habil (2021) has conducted an empirical study to explore the scope of using mobile applications as an ICT tool in English language training. The researchers have found that mobile applications are an effective tool for ELT as students in Bangladesh higher education system can easily access the resources, and it is also cost effective for them. However, researchers have found some limitations in this tool; for example, the screens of the phones are quite small thereby creating a significant barrier in understanding the materials. Furthermore, teachers and trainers have also failed to establish an effective rapport with the students using the mobile application, hence, it has not been able to leverage the significance of the mobile applications effectively.

Theme 3: The different methods that can be used to enhance ICT tools to make students of Bangladesh learn better

With that being said, ICT tools or Information and Communication technologies are perceived as key measures that have enhanced or enriched the experiences of the learners widely by granting with the ability to have access to various conveniences, activities and methods that have been found to be leading towards the increased academic performance of the learners. ICT tools have widely made positive impacts or effects on the skills of the learners and have also increased their levels of creativity in their tasks and activities. Moreover, ICT tools are also found to be leading towards the increased amount of motivation of the learners which leads to an enhanced amount of engagement and inclusivity in the learning environment. Hence, the use of ICT tools is a means to bring about increased development and advancement of the learners and widely fosters their performance (Ashrafuzzaman *et al.*, 2021). In the present times, ICT tools are serving as a basic means for the development of learners in different languages especially when it comes to English however, there are certain areas that can be enhanced in order to develop the experiences of the learners gained via the application of ICT tools. At first, the inclusion of AI or Artificial Intelligence is a major factor which will bring about substantial development and advancement of the learners and widely improve their performance. With that being said, Virtual Reality or VR is needed to be used as well in order to enhance the academic performance as well as learning experiences of the students of Bangladesh regarding the English language. AR or

Augmented Reality can also be integrated or applied in the learning environment in order to grant learners new experiences in learning and an understanding of how they can make use of the tools for the development of their learning progress (Khan & Rahaman, 2020). At last, ICT tools are needed to be applied or used continuously in order to foster the learning progress of the students of the English language in Bangladesh. Along with the discussed tools tablet devices can be employed which are found to be quite convenient when it comes to gaining knowledge or education. Moreover, learners are needed to be encouraged towards making use of technologies and digital techniques such as blogging, presentation, making interactive videos etc which will widely provide them support in their academics and will also lead them to have a fruitful career in the future. These have been some of the methods that are needed to be taken into earnest consideration by the universities that are making use of ICT tools for imparting education or knowledge to aspiring students (Karim *et al.*, 2021b).

Chapter 5: Discussion

The secondary research has found three key themes within the collected data from various academic and literary sources. The themes include roles played by ICT tools, the influence of ICT tools on English language learning, and strategies to enhance the use of ICT to help students learn better. These three themes help in developing a better understanding of the use of ICT in secondary English education in Bangladesh secondary schools. Furthermore, the themes also provide insight into the influence of ICTs on English education, as well as the various factors influencing the lack of ICT integration within the education system. Additionally, these have also explored the factors impacting EFL teaching and learning environment on a secondary level within the Bangladesh education system.

5.1 Significance of ICT tools in English language training in Bangladesh high Schools

In order to investigate the usefulness of ICTs in the context of secondary English education in Bangladesh, the researcher has conducted both primary and secondary research. The primary research has helped in developing quantitative real-time insight into the subject matter. A significant majority of the respondents believe that ICTs have definitely improved English language learning in Bangladesh; this is an indication of the perceived value of ICT. According

to the ICT policy, 2009 of Bangladesh ICT is considered a supplemental tool in the secondary education process (Ali & Hamid, 2020). Thus, it is found that the use of ICT tools for making students become proficient regarding English Language in Bangladesh's secondary education system has been leading towards increased levels of interactions among them and has been bringing about enhanced levels of academic performance. Therefore, ICT literacy has also been mandated for teachers as well. The aim of this policy was to reform the curriculum, teaching pedagogy, and the skills and competencies of the teachers using ICT as an essential tool. During the course of this research, it has been found that since the introduction of the policy, the integration of ICTs and computer teaching and computer training for teachers has also increased significantly.

The learners are also able to engage with their peers in an effective manner and the whole of the learning environment is found to be having increased levels of collaboration and team working which ultimately lead towards the achievement of the learning objectives and goals. The primary research has found that only 30% of the participants believe that English language learning courses are provided on mandatory bases, whereas, 10% believe that no such courses are offered. Rahman *et al.* (2019a) have opined that the significance of English has increased significantly given the current sociocultural and economic condition as well as due to the influence of globalisation of the labour market. The English language teaching process has made a significant switch from the traditional grammar-translation method or GTM to communicative language training or CLT. This has a profound impact on English language learning; however, this change needed to be backed by significant planning and implementation of the same. From the current situation in relation to English language learning levels in the Bangladesh secondary education system, it can be said that a lack of planning is significantly evident (Islam *et al.*, 2021b).

Moreover, the application of ICT tools also helps the learners to gain a core understanding of their learning styles. VARK styles of learning or Visual, Audio, Read and Kinesthetic learning styles are understood by the learners in an effective manner and proper learning styles are adopted by them bringing about increased levels of engagement in the learning environment. Furthermore, the primary research has identified a policy-related gap or challenges within the process influencing the use of ICTs in English language learning and teaching in secondary schools in Bangladesh. 45% of the participants have stated that their organisations have clear

policies promoting ICT interventions in their teaching. Additionally, 40% have also stated that teachers are provided with adequate pedagogical support in their teaching and curriculum delivery methods. With that being said, ICT tools also brings about enhancement of the skills and experience of the learners which also provides significant levels of support towards the academic performance of the learners and brings about increased personal as well as professional development of the learners.

5.2 ICT tools helping to enhance English language training outreach for Bangladesh high schools

In terms of the significance of ICT tools in secondary English language learning, it has been found that after the pandemic the use and importance of ICTs have increased significantly. During remote learning, English teachers have attempted to use ICT in various ways, and for different purposes (Utami *et al.*, 2021). However, the process had some difficulties for a wide range of reasons; for example, the expectations from the use of ICT between the students and teachers were not met. Organisations or schools could not prepare for advanced-level ICT tools, and individuals also ran into difficulties in setting them up. Furthermore, the teachers also failed to develop an interactive environment using various ICT tools such as computers, mobile phones, and digital software.

The investigation into the use of ICT in English education in the secondary schools of urban Bangladesh has aimed to develop an understanding regarding the significance of ICT tools such as computers, mobiles and software in English education. Research has shown that both primary and secondary research has found the influence of ICT on English education is significant. Shrestha *et al.* (2020) have opined that during the pandemic the use of ICTs has become necessary to deliver the curriculum. However, the resources available in developing nations such as Bangladesh are less than adequate, furthermore, teacher training is also another issue behind the inadequate ICT incorporation within the secondary education system. Furthermore, research has also shown that government policies surrounding ICT integration in the education system require significant reform. Additionally, the research has also helped in developing a real-time understanding of the ground-level challenges related to ICTs in the education system, especially in delivering English education in secondary schools.

In terms of understanding the influence of the application of ICT on English language learning it has been found that the use of ICT in EFL or teaching English as a Foreign Language is a global approach. It helps in promoting and implementing a student-centred approach to teaching. Singh (2019) has opined that there are only a limited number of ICT tools available in public secondary schools which can be further used to teach EFL. This has significantly impacted the teachers' abilities to inculcate ICTs within their curriculum delivery of EFL. On the other hand, Islam (2019) has argued that at a university level students have stated that ICT tools such as Google classroom help them to improve their communicative abilities in English. Digital tools such as Google classroom further help them to organise their work in a methodical approach thereby leading to improved learning.

From the research, it has been found that there is a regulatory and resource-related issue which has created a significant gap in the use of ICTs in English learning. According to Khan & Rahman (2020), the key issue with the lack of effective incorporation of ICT is associated with a lack of resources. For example, in the Dhaka division, the Government of Bangladesh has been able to provide only one piece of ICT equipment either a laptop or a projector. No one school has received all the necessary ICT equipment required for the successful integration of digital curriculum by the teachers. On the other hand, researchers have also found that the medium of instruction or MOI also plays a significant role in cultivating knowledge within the learners. Even though quantitative research finds that students prefer instructions to be provided in Bengali. The researchers suggest that a bilingual approach will help in improving the knowledge of English and enable students to effectively communicate in the same language (Karim *et al.*, 2021b).

5.3 Strategies to improve ICT implementation for high school students in Bangladesh

In order to understand the strategies which can have a positive impact on ICT integration in English education within secondary schools of English, it is important to understand the perception of technology. Digital penetration in several parts of Bangladesh is significantly low, furthermore, 'techno-phobia' is a significant factor contributing to this lack of digital technology (Das, Selvan & Yadav, 2020). The lack of digital penetration is also an important element in the insufficient incorporation of ICT integration in education. As mentioned earlier, unstable

connectivity, infrastructure, and personal perception of technology can have a significant impact on the teacher's ability to deliver the curriculum using online teaching tools. Furthermore, the researchers have also found that technology-based learning approaches such as active learning can help promote the use of ICT. active learning involves all the stakeholders such as students, teachers, and educators and encourages learning from each other's experiences (Sarkar *et al.*, 2019). It can allow teachers to use various ICT tools to help the students to learn from their experiences; for example, over video conferencing the teachers can share their experiences, create an interactive session for the learners, and so on.

In Bangladesh adopting an online education system is not a feasible option due to the lack of resources, yet it is considered the best pedagogical approach in the current scenario. Furthermore, the education budget for the financial year of 2021 is also less than ideal to accommodate ICT integration effectively. Khan & Kuddus (2021) have argued that even though the regulatory framework and policies have been in place for over a decade to integrate ICT in English education, the real-time implementation of the same is less than ideal. The researchers have concluded that with the use of ICTs, learners of English as a Foreign Language can be exposed to several native speakers thereby improving their knowledge and making the less interactive and autonomous. Furthermore, the teachers of EFL also show a positive attitude toward the use of ICT as it can help them deliver the curriculum easily and create an interactive session. However, challenges such as poor connectivity, lack of infrastructure, inadequate training the teachers, and so on are some of the significant hurdles in the secondary education system currently.

Syakur (2020) has stated that after the industrial revolution, technology has exponentially influenced the education sector, furthermore, the pandemic has accelerated the use of ICTs in the secondary education system. Almost all educational organisations are now using ICTs and online teaching as an integral approach to blended learning. The researcher has further opined that applications and software such as Google Classroom is an effective tool to deliver blended learning. Furthermore, it assists both teachers and students to enhance their teaching and learning process, especially in terms of English learning. According to Rahman *et al.* (2019a), the importance of learning English in Bangladesh is exponential; recent studies have shown that the tertiary education system in the nation is failing to supply talented and effectively educated

graduates in relation to the current job market. In the global workforce, English is a necessary skill; therefore, the importance of inculcating communicative English has increased at the secondary education level. Considering the sociocultural and political history of the nation in relation to the Bangla language, a global approach needs to be adopted in Bangladesh to improve the outreach of English as a language. Bangla can be the official language for education and all necessary opportunities within the nation, and English needs to be prioritised at the global level. However, Bangladesh has not been able to demonstrate its self-reliance in teaching and learning English. Even though the government has taken some appropriate steps toward reforming the English language learning framework in the nation, the implementation of such fails has remained largely incomplete.

5.1 Discussion

Chapter 6: Conclusion and recommendations

6.1 Conclusion

In the concluding section of the research report or dissertation it can be said that at the very beginning of the dissertation, an introduction to the topic of research has been provided quite effectively with the use of different concepts. For instance, a background to the study has been presented where the background information regarding the research topic has been evaluated followed by the statement regarding the research problem where the topic and the issues regarding this particular topic of ICT in the secondary English class have been presented in such a way that the reason for choosing this particular topic for research purposes has been identified properly. On the other hand, that particular chapter has also evaluated the aims as well as the objectives of the research based on which the whole research framework has been developed. Apart from that, the introduction section has also presented the research questions followed by the rationale and significance of the research. Moreover, the limitation and definitions of different research terms have also been presented. Followed by this particular section of the dissertation the section of literature review has evaluated the aspects of the identification of the ICT tools that have already been used in the secondary English classes of the schools of Bangladesh, along with the evaluation of the significance of the ICT tools in those classes.

On the other hand, a few strategies for the development of the ICT tools have also been recommended so that the improvement can take a bigger look. Following the second chapter of the research the third chapter contains the research methodology where the methods of research used have been effectively and elaborately evaluated. The research philosophy that has been used in this particular research was positivism philosophy, while the approach of the research was inductive. Followed by which the use of research design was evaluated and it can easily be seen that descriptive research design has been chosen for this particular research and its execution. On the other hand, both the primary as well as, secondary methods of research have been used where both quantitative and qualitative methods of data collection have been used. Based on the quantitative method of data collection the researcher has adhered to a questionnaire through which the latter has gathered the data for primary research. On the other hand, for secondary research purposes and data collection, the researcher has used qualitative data derived from academic resources such as books, journals, and articles. For the purpose of data collection, MS-Excel has been used while a thematic analysis has been used in order to analyse the secondary data collected. All the ethical considerations regarding the survey have been maintained and adhered to while conducting the research.

After that, the research headed towards the fourth chapter of the research which contains the aspects of primary research where the researcher has presented the data derived from the survey based on the charts and a brief evaluation of the opinions given by the participants of the research. All the questions along with the ratio of the participant's opinions have been presented with the help of charts and graphs in the form of ratios. Followed by that the research has presented the aspects of secondary research where the researcher has conducted a thematic analysis. In the section on thematic analysis, the researcher has presented three different themes based on which the data has been evaluated which were gathered and presented from academic resources such as academic books, journals as well as articles. The themes of the secondary research have covered the aspects of importance, application as well as methods of improvement of the ICT tools that are used at the Bangladeshi secondary school level especially, in the English language classrooms. Based on the opinions of the authors of those journals and articles the researcher has developed the thematic analysis where the latter has presented the authentic information presented by those authors on this particular topic.

The fifth chapter of the dissertation paper covers the aspects of findings and discussion where the findings from both methods of data analysis have been skilfully presented by the researcher so that the solutions or recommendations regarding the particular topic can be suggested by the very end of the dissertation. Finally, the final and ending chapter, the sixth chapter of the dissertation has presented a conclusion which is a well-written summary of the occurrences or research strategies that has taken place for conducting this particular research by the researcher. Apart from that, by the very end of the research, the researcher has also developed a strategy to suggest some recommendations for the overall improvement of the ICT tools and their use in English language classes and the recommendations has been given in the following section. Thus, it can be said that the research has presented almost every bit of information on the topic chosen in an effective way.

6.2 Recommendations

In order to ensure that the students in the English Language in different universities of Bangladesh are being able to learn in an effective manner via the use of ICT tools and technologies, there is a need for the consideration of some approaches which will lead to the development of their academic performance and enhanced levels of understanding regarding the approaches they are needed to adopt in order to deal with the issues and challenges that are faced by them during the process of learning English. The following recommendations are needed to be taken into consideration towards the application of ICT tools:

1. Based on the findings of the research it can be said that access and equity in terms of ICT implementation is one of the key challenges the Bangladesh high schools are facing. Therefore, the government needs to ensure that all the high schools have access to proper ICT tools such as computers, projectors, access to stable internet connection, and so on. Furthermore, teachers and trainers also need adequate training to operate the ICT tools, and guide the students to effectively use the same (Aparicio Gómez, 2020).
2. Additionally, the policies in the education sector especially pertaining to learning English as a foreign language and implementation of ICT requires significant reform. The significance of learning English has increased tremendously considering the contemporary labour market and socio-political scenario. Learning English has become a

necessity to perform effectively in the global workforce (Gross & Pawlak, 2020). However, Bangladesh does not have a clear and comprehensive language policy, which has created a gap between language training and existing policies.

3. The English learning students are needed to be provided with various opportunities in the learning environment so that they are able to collaborate with others and thus bringing about increased levels of team working and inclusivity in the learning environment. To do so, various activities such as Problem-Based Learning or PBL are needed to be used which will widely provide support to the learners and will provide them with areas that will enable them to push themselves further.
4. After that the learners are required to make use of digital tools such as Notion in order to bring about discipline in their duties and responsibilities which will widely help them to learn and will also bring about sustainable development regarding their personal aspects. This will also render the learners the ability to deal with different obstructions that are faced in a diverse learning environment and will ultimately lead them to have increased levels of collaboration and critical thinking and development of the learners (Lemmetty & Collin, 2020).
5. Assessment is one of the most important aspects of a viable education system, or learning and teaching environment. Without proper assessment of their progress, the English language training cannot be effectively fulfilled; without adequate training and access to technology and ICT tools teachers may not be able to design proper assessments (Lemmetty & Collin, 2020). Their inability to design comprehensive and diverse tools of assessment using ICT can negatively impact the progress of the learners. Hence, it is important to increase the use and application of ICTs while designing the assessment tools for the students.
6. After that, there is also a need for the consideration of methods that can be used to assess the performance or the progress that is being made by the learners. For this digital tools such as online quizzes like Socrative, Google Forms and others can be employed which will widely help in understanding how the learners are performing as well as the areas in which they are lacking which will lead to the provision of a further improved care

resulting to enhanced performance of the learners and meeting of learning objectives (Wen, Gwendoline & Lau, 2021).

7. Self-assessment is also a great means for the development and advancement of the learning class which is also needed to be taken into consideration by the learners. The learners are needed to be provided with digital tools of self-assessment such as Dedicated Improvement and Reflection Time or DIRT and Rubrics so that they are able to reflect on their own performance and are able to bring about development regarding their academic aspects (Nikolić *et al.*, 2019).

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Appendices

Appendix - 01: Survey Questionnaire

Q.1 What is your Gender?

- Male
- Female
- Do Not want to disclose

Q.2 What is your age?

- 18-24 years
- 24-35 years
- Above 35

Q.3 Do you think that implementation of ICT tools has improved the English language learning in Bangladesh High schools?

- Yes
- No
- Not sure

Q.4 Does the intervention strategies of schools required to be changed?

- Yes
- No
- Not sure

Q.5 What percentage of teachers are using ICT tools in teaching?

- More than 75%
- 50-75%
- 25-50%

- Below 25%

Q.6 How often do teachers have access to workshop or other technological opportunities to improve their competence?

- Very often
- Not often
- Somewhat often

Q.7 To what extent English language learning courses are provided to the students?

- Not provided
- Optional courses provided
- Mandatory courses provided

Q. 8 Does technical support provided to the students of your organisation?

- Not provided at all
- Very limited technological support provided
- Provided to all the students

Q.9 Does the organisation has a policy to support or promote the ICT-based innovation by teachers in their teaching?

- Yes
- No
- Not sure

Q. 10 Does Pedagogical Support provided to the teachers in your organisation?

- Yes
- No
- Not sure

Q.11 To what extent do you feel comfortable using technology in the classroom?

- Very Comfortable
- Somewhat comfortable
- Not comfortable

Q.12 In your opinion what extent of government policy impact on ICT use in schools?

- Strongly impacted
- Somewhat impacted
- Not impacted at all

Q.13 How do you feel the educators value the necessity of using technology in the classroom?

- Of some importance
- Quite great importance
- Very great importance
- No importance