

Acknowledgments

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Dedications

Each success needs strong efforts, patience, and support.

This work is hearty dedicated to

The memory of my Grandmother.

My beloved parents.

Special thanks go to my adorable sister Naïma who always encouraged me, who was a source of moral support and stood by my side all the time.

You are the best sister ever! May Allah bless you.

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To my friend Ryma.

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I dedicate our dissertation to my family. I will always appreciate all what they have done.

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I dedicate this work and give special thanks to my friend Zina.

Ryma

Abstract

This research examines EFL teachers and students' views towards technology literacy as a means of promoting lifelong learning. It deals with Third-Year students at the Secondary Schools Idris Ahmed and Brothers Hamdi in Tizi-Ouzou (Algeria). The goal is to get insights into the attitudes that the teachers and students have towards technology literacy to further the students' education throughout their lives. Alexander Romiszowski's Taxonomy (1981); which discusses the skills that students need to enhance to promote their lifelong learning. The research uses mixed-methods approach, gathering and analyzing data using both quantitative and qualitative methods. Eighty-one (81) Third-Year students who use digital devices are randomly chosen to receive a questionnaire, and six (6) teachers at the mentioned Secondary Schools are interviewed as part of the data gathering process. In terms of data analysis, the close-ended questionnaire items' numerical data are analyzed using the rule of three, and the open-ended interview and questionnaire questions' findings are interpreted using qualitative content analysis (QCA). The findings show that both teachers and students have positive views towards using technology literacy to foster lifelong learning. The results also show how important it is for learners to use technology literacy to develop a variety of skills, including cognitive, psychomotor, and reactive abilities, as well as factual and conceptual knowledge.

Key Words: Knowledge, Lifelong Learning, Romiszowski's Taxonomy, Skill, Technology Literacy, Information Literacy, Information and Communication Technologies.

List of Abbreviations

CBI: computer-based instruction

CBIV: Computer-Based Interactive Video

CT: Communication Technology

EC: European Commission

EFL: English as a Foreign Language

HP: Hypotheses

ICTs: Information and communication technologies

IT: Information Technology

LLL: Lifelong Learning

MMUTO: Mouloud Mammeri University of Tizi-Ouzou

P : Participant

Q : Question

QCA : Qualitative Content Analysis

TL: Technology literacy

UNESCO: United Nations Educational, Scientific and Cultural Organization

List of Symbols

X: The calculated percentage

Y: The total number

Z: The value of the answers

%: Percentage

=: Equals

×: Multiplied by

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General Introduction

Statement of the Problem

With the development of information and communication technologies (ICTs), the need to pursue an ongoing education has become a necessity to deal effectively with everyday world's requirements. In other words, with the technological advancements that the world is witnessing today, individuals and more specifically learners need to build new sets of knowledge and skills through continuous learning for a better integration in such a constantly progressing world.

In the past few years, learners tend to follow only the traditional way to learn and improve their knowledge and competences as no other options were available. At that time, learners were considered as empty vessels who stucked only and limited themselves to what their teachers provided them at schools. Additionally, those instructors were perceived as the only source of information along with the printed materials (Roy, 2019).

In modern times, however, thanks to the development of new technologies, the appeal to adopt lifelong learning as a new approach in the teaching and learning field is paramount. That is, among today's teachers' responsibilities is to prepare their learners to keep learning for a lifetime as learning is a journey that never ends. In the current era, learners are no longer seen as being passive participants. Instead, learners should be actively engaged and motivated to continue learning, constructing, acquiring and developing new skills and knowledge inside as well as outside the school's fences. That is to say, making use of the technological tools may have a positive impact on learners' learning process as they provide them with a direct and instant access to a variety of information, they allow them to be more autonomous and be able to direct their learning, so learners acquire and enhance their knowledge and competences relying on their teachers and also on themselves once they are outside.

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Nowadays, English has an international status and has become the language of science because of the technological development, so the need to learn it has emerged lately. Language is a crucial means of transmitting knowledge, but learning a foreign language is not an easy task as it does not happen all of a sudden, it rather requires a lifelong process. So, learners should not only rely on one source of information to improve it and reach its mastery as they should never stop after a specific period of time, they should rather have recourse to a variety of sources such as printed materials, teachers and making use of the new technologies.

At the present time, learners are more likely encouraged to learn what they need and what they desire and the ICTs offer them the opportunity to do so through online courses, electronic materials, blogs, forums, social media, video conferencing, etc. In the process of learning a foreign language mainly through the use of technology, learners may acquire different knowledge and skills like being fluent in writing, listening and reading a particular language and improve their communication skills in both formal and informal situations, gain new concepts. In addition to that, learners may become fluent users of the internet and the new technologies in general, build reflective, emotive, reactive and interpersonal skills. That is, learning a foreign language leads to the acquisition of new concepts and items that may contribute in the improvement of different competences in both productive and reproductive skills.

Currently, learners need to be flexible and update their knowledge and skills to be able to cope with every day's changes, thus self-directed learning, curiosity, creativity, being technologically literate are among the characteristics that are encouraged to be adopted by learners, in such a way, they are more motivated to take control over their own learning and to keep developing it through all life stages.

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A brief glance at the literature overview reveals that many researchers have turned their attention to lifelong learning. One study carried out by Ms. KETTOU Nadjiba at MMUTO, and it was mainly concerned with “Investigating Private School EFL Teachers’ Practices in Enhancing Learners’ Communication skills to form Lifelong Learners” in which the obtained results show that teachers recognize the importance of communication for learners as well as their awareness of the relation between the communicative activities and lifelong learning. On the other hand, their practices do not demonstrate that they teach communication for lifelong learning purposes. Another work conducted by Mrs. MOTSATSI ELIZABETH MOTSHEKGA-SEBOLAI at the Faculty of Education, University of Pretoria, in which the main focus was on “A Study of Lifelong Learning in Academic Institutions”, the findings demonstrate that institutions have positive response and attitudes towards lifelong learning.

In the Algerian context, the study of the use of technology as a means to foster lifelong learning has received little attention and interest, thus our research is original in the fact that no investigation has attempted to tackle this issue mainly at the level of the English department in MMUTO.

Aims and Significance of the Study

The first objective of the present research is to get insights into the teachers’ and students’ views about technology literacy in general. The second objective is set to investigate teachers’ and students’ views about technology (ICTs) literacy to promote lifelong learning in both Brothers Hamdi and Idris Ahmed Secondary Schools. In more precise terms, our research attempts to investigate whether an effective knowledge of the use technology plays an important role in promoting learning for a lifetime according to the teachers and students in

the mentioned context. To reach the stated goals, we have adopted the taxonomy (1981) proposed by Alexander Romiszowski.

This study is worth conducting, its significance lies in the fact that we are living in an evolving environment and in a digital age, so among the major concerns of today's education is to prepare learners to keep learning for their whole lives in order to cope with everyday changes, be effective and skillful doers mainly in their future workplaces. It also intends to value the notion of lifelong learning by letting the teachers and all the educational staffs be aware of its necessity, effectiveness and work on integrating it as a new approach in the teaching and learning process. Furthermore, to incite teachers to encourage their learners to make use of technology, to learn and also to motivate them to continue learning and acquiring knowledge even after classes.

We have opted for this topic as a subject of our inquiry for the sake of adding something new to the previous existing works, more specifically in the Algerian context. Similarly, we wanted to shed light on the substantial importance of lifelong learning in the world we are living nowadays. Moreover, enriching the literature regarding the subject at hand, in such a way students will be more motivated to investigate the present issue from different angles.

Research Questions and Hypotheses

The current study aims at answering the following questions

1. What are the teachers' perceptions towards the use of technology literacy to support learners' lifelong learning?
2. What are the attitudes that learners hold about the use of technology literacy to promote lifelong learning?

To answer the questions, we have set the following hypotheses

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H1: Teachers have positive views towards the use of technology literacy to support third year EFL learners' lifelong learning at Brothers Hamdi and Idris Ahmed Secondary Schools.

H2: Learners have positive attitudes towards the use of technology literacy to promote third year EFL learners' lifelong learning at Brothers Hamdi and Idris Ahmed Secondary Schools.

Research Design and Methodology

In order to conduct this inquiry, we have opted for the mixed method approach which combines both quantitative and qualitative methods for data collection and data analysis. To collect quantitative data, we have relied on a questionnaire delivered to Third-Year EFL learners at Brothers Hamdi and Idris Ahmed Secondary Schools. For qualitative data, on the other hand, we have used a structured interview addressed to some EFL teachers of the same schools. Regarding the analytical part, the rule of three is used for the analysis of the numerical data and content analysis to analyze, and interpret the non-numerical data.

Structure of the Dissertation

The structure of the present dissertation follows the traditional simple model. It consists of four chapters as well as a general introduction and a general conclusion. The "General Introduction" presents the research topic in a general sense and provides an insight to the subject matter. It involves the statement of the problem, the research questions, the aims and significance of the study, the research design and methodology and the structure of the dissertation. The first chapter is labeled "Review of the Literature" which reviews the previous studies related to the topic of investigation in addition to the theoretical framework adopted in our research. The second chapter is called "Research Design and Methodology" includes the description of the sample or the participants; along with the data collection and data analysis tools. The third chapter is entitled "Presentation of the Findings" deals with the exhibition of the collected data in a form of figures and tables. The fourth chapter goes under

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the name “Discussion of the Findings”, this section is devoted to the interpretation and discussion of the results gathered from the previous chapter and in relation to the other chapters. The dissertation finally ends with a “General Conclusion” which summarizes the main research points. It also includes the limitations faced and possible further research on the topic.

Chapter One: Review of the Literature

Introduction

The main goal of this chapter is to review the relevant studies about lifelong learning and technology literacy. This chapter is composed of five sections. The first section deals with the definitions of lifelong learning. The second section covers the elements, characteristics and stages of lifelong learning. Section three will shed light on the connection between technology literacy and lifelong learning. Clarification on lifelong learning using technology in EFL contexts will be provided in the fourth section. The fifth and last section will focus on Romiszowski's taxonomy (1981).

1 Defining Lifelong Learning

Experts have several definitions of what lifelong learning is.

Lifelong learning is traditionally defined as *“all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective”*. (European Commission ‘EC’, 2001:9). This means that lifelong learning is any educational endeavor carried out with the intention of enhancing knowledge, abilities, and competences from an individual, cultural, societal, and career standpoint.

In addition, Longworth & Davies (1996, p.21) presented a more thorough explanation of lifelong learning:

Lifelong learning is the development of human potential through a continuously supportive process which stimulates and empowers individuals to acquire all the knowledge, values, skills and understanding they will require throughout their lifetimes and to apply them with confidence, creativity and enjoyment in all roles, circumstances, and environment.

This definition described lifelong learning as the process of maximizing developmental capabilities by encouraging and enabling people to acquire all the information, competences,

and principles they will need over the course of their lives and to implement those skills and knowledge in a way that is creative, confident, and enjoyable in all kinds of situations.

Delors as quoted by Wilson (1998: 4) argues that *“Lifelong learning education should enable people to develop awareness of themselves and their environment and encourage them to play their social role at work and in the community”*. This indicates that people should be encouraged to perform their social roles at their workplaces and in the environment they are living in through lifelong learning, which should help them become more conscious of themselves and their surroundings. Students, for instance, must submit themselves to the rules of discipline to build a civilized society.

Butcher (1995: 1) points out that *“Learning should continue throughout life (rather than being limited to childhood) and should be a direct relevance to the needs and life experience of learners”*. This affirms that learning should be ongoing, instead of restricted to infancy, and directly relevant to learners’ needs and life experiences.

Lifelong learning denotes that learning should occur throughout one’s life (from birth to death). More recently, it has come to signify that *“learning should exist everywhere one goes in life, including at school, at work, at home, and in the community. As a result, the idea of a “learning society” is one in which everyone, regardless of where they are or how old they should be, has access to chances for learning”* (Pretoria, 2022, p.22). The idea of a "learning society" was born out of the belief that everyone should have access to educational opportunities, no matter where they live or how old they are.

2 Elements, Characteristics, and Stages of Lifelong Learning

2.1 Elements of Lifelong Learning

According to Nesbit, T., Dunlop, C. & Gibson, L (2007, p. 1564) *“There is widespread*

agreement on the importance and usefulness of learning at every level of life, and ideas like the information society, knowledge-based economy, and learning societies now play a major role in discussions of governmental and educational policy". That is to say, the value and utility of learning at every stage of life are widely acknowledged.

For cogent and complete LLL initiatives, Commission of European communities (2001, p.1564) recognized the following six essential components:

According to CEC (2001); Sultana, R G (2007, p.1564) "Working in partnership" is not only between national, regional, and local decision-making levels but also between public authorities and education service provides (schools, colleges), the corporate sector and the social partners, vocational counseling services, research centers. In addition, CEC (2001); Sultana, R G (2007, p.1564) claim that "*Understanding the need for learning in a society built on knowledge will require reconsidering basic skills to take into account, for example, modern information and communication technology*". This means; reviewing essential skills in order to take into consideration modern information and communication technology.

Furthermore, "having appropriate resources", according to CEC (2001); Sultana, R G (2007, p.1564) includes significantly more governmental and private investment in education. This calls for not only a considerable increase in public spending but also for efficient use of already available funds and the promotion of new investment avenues. In more precise terms, a large increase in both public and private funding for education is necessary. Besides, CEC (2001); Sultana, R G (2007, p.1564) state that "*facilitating access to learning opportunities*" is made by increasing their visibility, bringing in new services, and removing barriers to access, such as by opening more regional learning centers. Different groups, such as ethnic minorities, or those who live in rural areas, require special attention in this context. Said

differently, by making learning possibilities more visible, offering additional services, and lowering access barriers, access to learning opportunities can be made easier.

Moreover, CEC (2001); Sultana, R G (2007, p.1564) also argue that *“By using quality control and progress metrics, we are pursuing excellence”*. In more concrete words, criteria, directives, and systems for recognizing and rewarding accomplishments must be provided. It is necessary to make available the rules, norms, and methods for recognizing and rewarding achievements. Finally, according to CEC (2001); Sultana, R G (2007, p.1564) *“People now seek more control over their lives than ever before”*, they are expected to actively contribute to society, and must learn how to co-exist harmoniously with a variety of cultural, linguistic, and ethnic backgrounds. Along with these expectations, involvement in society and interpersonal harmony across a range of cultural, linguistic, and ethnic contexts are also anticipated. That is, creating a culture of LLL is a major project for the entire country, but notably for the government and those whose responsibility is to support and promote learning.

2.2 Characteristics of Lifelong Learning

According to Kashinath (2013, p.5), the following have been cited as characteristics of lifelong learning:

2.2.1 Informal Learning

According to Kashinath (2013, p.5), “Informal learning” refers to the lifetime process through which people learn from their daily interactions as well as the educational opportunities and resources available to them. The primary factors that contribute to providing individuals with informal learning opportunities include families and communities, work and play, the market, libraries, and mass media. For instance, these factors assist individuals in learning values, skills, attitudes, and knowledge from their daily lives as well as from the educational opportunities and resources available to them in their surroundings.

2.2.2 Self-Motivated Learning

As confirmed by Kashinath (2013, p.5) *“Lifelong learners are not identified by the kind of education or training they pursue, but by the personal traits that motivate them to do so”*. Individual qualities have a substantial impact on self-motivated learning. It is crucial that students have an interest in what they are learning, and become enthusiastic about it. For instance, a person's motivation to learn develops during the course of their life, either formally or informally. Individuals get the ability to study with confidence and a sense of involvement in the educational and training institutions.

2.2.3 Willingness and Motivation to Learn

The majority of people, in accordance with Kashinath (2013, p.5) are deterred from pursuing education and training due to social and personal factors, however some barriers are economic and can be overcome with financial assistance. Developing a “willingness” and “motivation” to learn is essential for people to acquire knowledge. They will be able to obtain an efficient knowledge to improve their lives when they improve willingness and motivation. For instance, as individuals become motivated and eager, they can learn how to effectively employ various aspects to improve their quality of life.

2.2.4 Universal Participation

“Lifelong learning”, as claimed by Kashinath (2013, p.5), is the dedication to ensuring that everyone has an access to education. The idea of universal participation encompasses all types of learning for social, economic, cultural, political, religious, and personal goals. In a period of fast social and economic change, universal engagement in lifelong learning is essential to fostering social cohesion. For illustration, all of these areas are considered as being fundamental to how people conduct their lives. In order for them to benefit, they must take part in all activities. Periodically, they go through changes in their life in

which they notice these changes in their personality, employment, profession, relationships, and daily routine.

2.2.5 Action Learning

Kashinath (2013, p.5) proclaims that “Action learning” is one of the most effective methods for giving people a real-world comprehension of the concepts. Participants create knowledge through actual task and activity performance. When people need to comprehend, they may enroll in a training facility or ask family, friends, or neighbors for help. For instance, learners are urged to participate in task implementation after receiving knowledge and training. As a result, they can enhance their learning while carrying out these tasks.

2.2.6 Improvement in Knowledge and Skills

The individuals, as stated by Kashinath (2013, p.5) must advance their “*knowledge and skills during the lifelong learning process*”. The advancements in knowledge and skills that individuals make are mostly motivated by the changes and developments that are occurring in their own lives. For instance, reading numerous books, articles, and other reading materials, using the internet, taking part in various tasks and activities, and communicating with people are the most crucial things that students need to be engaged in to expand their knowledge and skills.

2.3 Stages of Lifelong Learning

Kashinath (2013, p.3) declares that “*Learning is a continual process that begins at birth and lasts the entirety of an individual's life. Individuals learn knowledge and broaden their skills throughout their lives through family, friends, neighbors, educational institutions, employers*”. In other words, learning is a continuous process which lasts the entire life from birth to death. The members of the family, the person’s surroundings and the instructive organizations contribute in the expansion of someone’s abilities and knowledge.

Based on the perspective of Kashinath (2013, p.3), there are four stages of lifelong learning. The first stage includes “ages from 0 to 5 years”; in this age range, early years of life have a significant impact on informal learning. Children pick up knowledge from their surroundings, parents, relatives, and neighbors. They begin learning the distinctions between suitable and inappropriate behavior in the early years. They are raised with moral and ethical values instilled in (Kashinath, 2013, p.3). The second stage starts between the “ages of 6 and 24”. The majority of learning among individuals between the ages of 6 and 24 seems to take place in educational settings where people are actively looking for or participating in employment prospects. The main goal of learning throughout this time is to ensure that individuals acquire information, skills, and competences.

The third stage begins between the “ages of 25 and 60”. Individuals between the ages of 25 and 60 can obtain knowledge informally. “Informally enhancing learning”, according to (Kashinath, 2013, p.3) involves using technology, reading reports, books, articles, newspapers, and other materials, conversing with others, performing a variety of tasks, and participating in problem-solving activities. These individuals are conscious that moral and ethical values must be instilled in addition to using educational credentials to increase employment chances. “Ages between 60 and above” are included in the final stage. Kashinath (2013, p. 4) asserts that people who are 60 years of age or older are considered to be senior citizens. They want to learn things that will make their lives better and help their families and communities thrive. Typically, older women are allowed to be engaged in social work activities and apply their expertise and abilities.

3 Technology Literacy

3.1 Defining Information and Communication Technology

ICT has created an expanding area of activity market opportunities and generated new investment, income, and employment. According to Kim (2018, p.1), the fusion of

“electronics, computing, and telecommunications is known as information and communication technology (ICT)”. This means that the enormous technological innovation boom that has been generated will transform data collection, storage, processing, transmission, and presentation. ICT stands for information and communication technology combined.

3.1.1 Information Technology (IT)

According to the Oxford Advanced Dictionary as quoted by Kim (2018, p.1), information technology is *“The study of digital devices, particularly computers for storing forth information”*. This means; information technology is the creation, processing, storing, protecting, and exchanging of all types of electronic data using any computers, storage, networking, and other physical equipment, and procedures. Both computer technology and telecommunications are included in the business usage of IT.

3.1.2 Communication Technology (CT)

Kim (2018, p.1) confirms that the process of delivering, obtaining and communicating knowledge through network services with the support of IT and CT is known as “communication technology”. Any data can be altered at any time, from any location, and without consideration to geographic boundaries. This data transmission is made possible by the growth and global connectivity of the LAN (Local Area Network). Said differently, Communication technology refers to the delivery, acquisition, and exchange of knowledge via network services with the help of IT and CT.

“ICT”, as defined by Mahatra and Ramesh (2018, p.1) *“Is the product of the technical fusion of many single, previously inaccessible technologies, including computer technology, communication technology, information processing, and publishing technology.”* ICT is the outcome of the technological integration of a variety of unique, previously inaccessible

technologies, including computer, communication, information processing, and publishing technology. Besides, “Information and communication technologies (ICTs)” were outlined by Nwachukwu (2004, p.1) as the use of computers and the internet for the gathering, organizing, storing, retrieving and sharing of information. Information and communication technology, on the other hand, in this context refers to the use of electronic equipment like computers, telephones, the internet, and satellite systems to store, retrieve, and transmit information in the form of facts, text, images, and other formats.

Moreover, the American Library Association (1983, p.2) pointed out that “telecommunications technology” provides “information transmission technologies” that enable users to access databases and connect them with other communication networks at various spots. This means that computers are used to store and process data, while telecommunications technology offers information transmission techniques that let users access databases and link them with diverse settings. Finally, Rhine (2006, p.2) states that “Information and communication technologies” may be broken down into three parts: the technology itself; the information that the technology helps to transmit; and the communication process that the technology supports and acts as a conduit for the information.

3.2 The Potential Benefits of ICT

According to Bransford et al. (cited in Huffaker, 2003, p.357) “Active learning” offers students the option to decide whether they already understand a particular piece of information or not, and when they need to be aware of it. This active learning suggests “a self-directed learning”. That is, through active learning, students can decide whether or not they already understand a particular piece of information and when they need to be aware of it.

As stated by Jarold and Sue (1992, p.50), students that have access to the internet in class will no longer be reliant on their teachers. They can look for information online, copy

the data they require, and look for more information as they search. Students who manage their own learning are better equipped to learn independently and with motivation. In more precise terms, thanks to the internet, our potential to learn is not limited by the amount of time we spend in class, our geographic location, or the qualities of our teachers. Wherever we go, we always have access to the internet.

“E-learning”, in accordance with Uhomoibhi (2006, p.9), allows students to access information more quickly from any location at any time. ICT not only makes learning dynamic but also makes it possible for all of the school's human staff members to engage in collaborative learning and build learning communities. Said differently, we can overcome demographic borders with the assistance of technology. Rural students can study from peers or teachers in their own community or even from abroad.

According to Adonis (2006, p.16) the proper usage of ICT can enhance students' “literacy and numeracy”. Utilizing Microsoft Word, for instance, can encourage students to enroll in writing courses. Multiple new words typed on a computer by youngsters might thrill and amuse them. This is crucial to the fostering method used to try to increase children' literacy.

3.3 Technology and Lifelong Learning

Surendran (2015, p.130) argues that “the World Wide Web” has created a new era where individuals can freely communicate knowledge with one another anywhere in the world at any time. “Information literacy” is a critical and distinct skill in today's “information-updated environment”; it enables students to understand material, pursue their studies, develop greater self-direction, and take ownership of their learning. Students who are information literate are better able to comprehend the topic, continue their studies, and

show more self-direction. A new era where people can freely share knowledge with one another at anytime and anyplace has been made possible by the World Wide Web.

Surendran (2015, p.130) also confirms that in “knowledge-based societies”, lifelong learning is inevitable, so educational systems ought to have different priorities and features. However, there is still a tendency for evaluating schooling in terms of the accomplishments and goals that systems have selected for themselves. Instead of learning collections of “segregated” and “decontextualized” data, they need to study integrated and useful knowledge. Meaning that in a society that is based on information, there is still a desire to evaluate education in terms of the successes and objectives that the systems have decided upon for themselves.

3.4 Information Literacy and Lifelong Learning

3.4.1 Information Literacy Concept

In accordance with Surendran (2015, p.130), “information” is defined as a series of skills that requires people to be aware of when information is sought and to be able to find, assess, and use that information appropriately. To put it in another way, information literacy is someone’s ability to seek the needed knowledge, understands it, evaluate its validity and use it properly. In the words of Ruess (1994, p.131), “Information literacy” is a procedure of “ongoing self-education” that can be promoted by teaching students how to use information wisely in every circumstance, teaching students how to use information intelligently in every situation helps foster information literacy; that is a process of continuing self-education. That is, information literacy is a process of continuous self-instruction that may be improved through tutoring students about the appropriate use of information in each situation.

Surendran (2015, p.132) reasons that *“The capacity to access, assess, and utilize information effectively and efficiently is empowered by information literacy”*. Information

literacy calls for both the capacity to critically assess the data these tools provide as well as the knowledge of when, why, and how to use each of them. Put differently, information literacy refers to the ability of critically evaluating a specific information and being aware of its proper utilization.

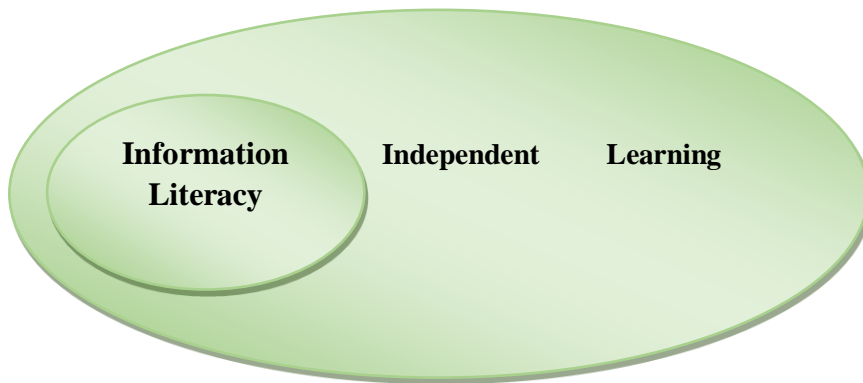


Figure 1 : Relationship of Information Literacy to Lifelong Learning (Kishore Kumar &B. Surendran, 2015, p.132).

4 The Taxonomy of Alexander Romiszowski (1981)

According to Romiszowski (2009, p.202), in order to define the scope and goal of this part, some interpretations of the ideas are being looked at as a starting point. Fundamental ideas like competence, performance, and knowledge are also included.

The most common definition of “knowledge”, according to Romiszowski (2009, p. 202) is the awareness of facts by an individual, group, or other entity. In addition, *“A skill is typically thought of as the capacity to carry out a task or activity with a given level of effectiveness, efficiency, speed, or another quantity or quality criteria”* (Romiszowski, 2009, p.202). For instance, the execution of a motor skill depends on the performer's emotional state and always incorporates some amount of intellectual (cognitive) engagement, as pointed out by Romiszowski (2009, p.202).

It is possible to group skills according to their level of complexity: “Reproductive skills”, as stated by Romiszowski (2009, p.202), can be thought as the selection and execution of a proper technique, or algorithm, for the task in question. These “repetitive” and mostly “automatic actions” include reproducing the same standardized practice every time they are performed. That means, the selection and use of the best technique for the task at hand.

“Productive skills”, according to Romiszowski (2009, p.202), are the planning of a course of action relevant to the particular situation by the use of theory, broad principles, and creativity. The knowledge underpinning these actions is heuristic rather than computational (Romiszowski, 2009, p.202). Put differently, productive skills refer to the process of selecting a path of action using theory, general principles, and creativity that is appropriate for the specific context.

Romiszowski (2009, p.202) claims that “a skillful action” may be positioned anywhere along the “reproductive-productive continuum” depending on how much thought is required to select how to respond. Any type of activity, whether it be interpersonal, personal, intellectual, or physical, can be referred to as an "act" in this context. In other words, a wise action can be located anywhere along the reproductive-productive range, depending on how much thought is required to select how to react.

“Ability” is interpreted in a number of ways, including as the capacity of a person to carry out a specific task, the quality that enables and promotes achievement, and having the skills necessary to accomplish something, especially “mental skills”; a skill that can be used in learning, working, or everyday situations, such as “manual dexterity”, “spatial awareness”, “conceptual reasoning”, or the ability to perform a mentally or physically function (Romiszowski, 2009, p.203). This means, an ability is a skill that can be used to learning, employment, or daily life problems.

“Competence” is sometimes described as the set of skills, talents, habits, personal traits, and knowledge necessary to successfully execute a given job in the present educational and corporate human growth contexts. For instance, “*Management competency includes emotional intelligence, systems thinking, and negotiating skills in addition to influence and negotiation skills*” (Romiszowski, 2009, p.202-203). In the modern contexts of education, competence is the combination of knowledge, personality attributes, and skills necessary to accomplish a certain job successfully.

4.1 The Importance of Differentiating Knowledge and Skill in the ID Process

Romiszowski (2009, p.204) claims that “Knowledge” is a “*go-no-go*” commodity; it is a quality that you either possess or do not, but the configuration of this stops you from using and accessing it. Learning is the process of adding new features to the knowledge store and rearranging both the old and new components to produce new knowledge structures skills. That is to say, learning involves reorganizing both the new and old parts of the knowledge store to produce new knowledge structures and skills.

Contrarily, “Skill” is something that can only be learned via practice and experience. To reach higher levels of competency, practice needs to be done repeatedly and appropriately. Even if two persons have the same skills, their levels of development may vary, as noted by (Romiszowski, 2009, p.204). Said differently, to reach higher levels of skills, practice needs to be done consistently and correctly. Two individuals with the same skills may be in different stages of development.

Naturally, in accordance with Romiszowski (2009, p.204), applying knowledge is necessary for “skilled performance”. As a skilled activity progresses and becomes more sophisticated, there is an increasing requirement for pertinent information and its appropriate

application. Most of the time, having an adequate knowledge foundation requires prior study., In other cases, however, obtaining the knowledge may be more practical when combined with skill practice (these are the cases where punctual training actually works). In other circumstances, a component of the knowledge basis may be external and utilized during competent performance, without ever having been officially studied, to supplement knowledge that is already internal. In more concrete words, merely training may be the most effective method to create a solid knowledge base for top performance. In other situations, a part of the knowledge base may be external and used to supplement internal knowledge during competent performance without ever having undergone a formal study.

Romiszowski (2009, p.204) states that *“When using the knowledge base properly, either internally or externally, it may be necessary to apply supplementary skills (like critical thinking) and knowledge (like problem-solving algorithms) needed for internal planning or task monitoring”*. That means, it may be important to use additional abilities and information required for internal planning or task monitoring when using the knowledge base correctly, either internally or externally. These “meta-skills” and “meta-knowledge” components, according to Romiszowski (2009, p.204) are internal and difficult to observe, but it is possible to infer their presence from the competence with which the skilled task is performed. The performer has the option of rating their own ability. This method is referred to as “reflection”, that is crucial to the growth of a talent the more dependent it is on knowledge. That is to say, their existence can be deduced based on the competence with which the skilled task is carried out. The ability to assess one's own talent belongs to the performer.

4.2 The Skills Schema

The schema shown in Table 01 (p.23) combines the *“reproductive-productive continuum* with a *four-domain taxonomy* of skills. *While the domains may have an impact on*

some parts of instructional decision-making (such as media selection), the position of a task on the reproduction-production continuum has a considerably greater impact” Romiszowski (2009, p.205). The position of a task on the reproduction-production continuum has a significantly bigger impact than the domains, even though the domains may have an influence on some aspects of instructional decision-making. For instance, as noted by Romiszowski (2009, p.205), choosing between “expository” and “experiential” instructional techniques or determining how important "deep processing" conversations are to the teaching method are both influenced by the position of a task on the “reproduction-production continuum”.

As explained by Romiszowski (2009, p.205). In Table 01 (p.23) also demonstrates how adding a “fourth category” related to the interpersonal skills section could increase the variety of learning objectives beyond the three generally recognized domains. Consequently, a model with four “content-related” domains is provided, which essentially relates to the abilities of controlling your thoughts, your body, your emotions, and social situations as well as other people's responses. However, in terms of “instructional concerns”, the position of a particular skill on the “productive to reproductive” dimension may be more significant than its position in one or more of the four domains.

	← The Skills Continuum →	
Discipline or Class of Skilled Activity	Reproductive Skills Knowledge content: implementing best practices (algorithms)	Productive Skills Knowledge content: utilizing guidelines and techniques (heuristics)
Cognitive Skills ●Decision-making ●Problem-solving ●Critical thinking	Applying a well-established process to a well-established class of "problems" (dividing numbers, writing a grammatically correct sentence)	Tackling new issues or developing a new method (providing a theorem, writing creatively)
Psychomotor Skills ●Physical action ● Perceptual acuity	Automatic or repetitive skills (typewriting, changing gear, running fast)	Planning or strategic skills (painting, defensive driving, playing football)
Reactive Skills ● Dealing with oneself: (attitudes and feelings, habits and self-control)	Conditioned actions and attitudes include attending, responding, and approaching and avoiding situations	Personal control abilities include self-actualization and creating a conceptual framework or value system
Interactive Skills ●Dealing with others: (social habits and skills)	Constructed societal reactions (good manners, pleasant tone of voice, socialized behaviors)	Interpersonal management skills (leadership, supervision, persuasion, salesmanship)

Table 1 : The Skills Schema Romiszowski (1981, cited in Romiszowski, 2009: 205)

4.3 The Skill Cycle

Wheatcroft (1973, p.206) claims that the creation of an idea or purpose in the performer's head is the first step in the "skilled activity cycle". This leads to: obtaining relevant knowledge ("S" for signal, stimulus, or situation), its correct understanding and perspective (a variety of skills are involved in this), a decision regarding the best course of action (cognitive processing skills involved), and finally, the action itself ("R" for response, reply, reaction or reflection). You'll then learn more about how your first action, perception, decision, and subsequent action turned out.

Figure 2 (p.25) illustrates the skill cycle by including the previously indicated requirement to have prior knowledge of the process to be conducted or of the principles to be applied to produce a suitable method (Romiszowski, 2009, p.206). According to Romiszowski

(Ibid.), *“It is possible to distinguish between automatic, reproductive (reflexive, closed) skills and productive (strategy, planned, open) skills using this approach”*. In fact, it is suggested that three criteria can be used to classify competent behavior:

“Skills that are entirely automatic and reflexive”, like typing, in which the sensory information that is perceived instantaneously triggers a physical action without requiring a lot of conscious cognitive processing, the loop of performance for these skills is denoted as S(Stimulus)– 1(Perceive)– 4(Perform)– R(Response) Romiszowski **(Ibid.)**. Because little cognitive processing is needed in this situation, the learner just perceives the stimuli and responds to it through performing.

“Skills that rely on the memorization of a fundamentally algorithmic procedure and the execution of a series of connected, sequential tasks”. The performance loop for these skills can be defined as S (Stimulus)– 1(Perceive)– 2(Recall Prerequisites)– 4(Perform)– R(Response) for various industrial and sports activities **(Ibid.)**. In this scenario, the student first perceives the stimuli, then recalls the prerequisites, and lastly responds to the task by performing it.

“Skills that rely on sensory information analysis to develop plans of action that are situation-appropriate and, presumably, to analyze different possibilities before selecting the optimum course of action”. The performance loop for these abilities is S(Stimulus)– 1(Perceive)– 2(Recall prerequisites) – 3(Plan) – 4(Perform) – R(Response) (Romiszowski, 2009, p.206). In this instance, the student first perceives the stimuli, then recalls the prerequisites, plans their response through analysis, and can finally respond to the activity by performing it. This is a simplification because a lot of internal looping may also occur, such as the repetition of the internal loop 1 - 2 - 3 – 4.

According to Romiszowski (2009, p. 206), “*The skills cycle emphasizes the importance of taking into account aspects like perception, memory, intellectual prowess, and cognitive strategies when teaching psychomotor skills*”. Additionally, when seen in conjunction with the skills schema that was previously presented, we can see how the fundamental model may be used to describe the full range of skilled activities.

Environment

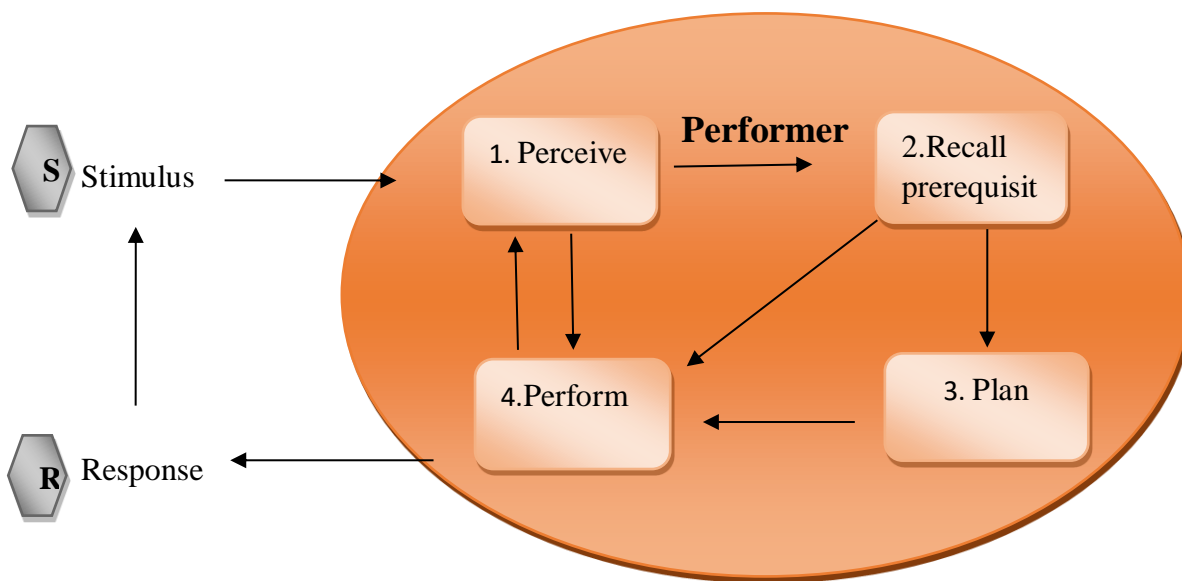


Figure 2 : The Skills Schema Romiszowski (1981, cited in Romiszowski, 2009: 207)

Conclusion

To summarize, this chapter is an analysis of the pertinent literature on the subject of our study, which is promoting lifelong learning through technology literacy: an analysis of teachers' and students' views. It demonstrates that the role of information and communication technology (ICT) in lifelong learning (LLL) is one of the empowerment, improvement of creativity, and support. The technology we have an access to today on our desktops, in our homes, and in our communities offers a potent toolset to support LLL. It also presents Romiszowski's Taxonomy (1981), which identifies a basic body of knowledge for the development of the skills needed by students to support their lifelong learning.

Chapter Two:

Research Design

Introduction

The present chapter is designed to present the methodology that has been used in this study. It aims at describing the research techniques and procedures of both data collection as well as data analysis used to carry out our investigation and to answer the fundamental research questions stated in the general introduction. In the first place, it is devoted to the description of the data collection tools which are the questionnaire and the structured interview. In the second place, it sheds light on the procedures of data analysis which are the Quantitative Content Analysis (QCA), as well as the Rule of Three.

1 Context and Participants of the Study

This inquiry took place in Brothers Hamdi and Idris Ahmed Secondary Schools in Yakouren and Ouadhia in Tizi-ouzou on September during the academic year 2022-2023. The targeted participants involved in this study consist of eighty-one (81) Third-Year students and six (6) teachers of English. Besides, we randomly selected the sample under investigation from the above stated population. We have opted for a random sampling for the purpose of generalizing the data to the whole population.

2 Procedures of Data Collection

This part describes the instruments we have used to gather the appropriate data needed to answer the research questions of our study. First, we have opted for a questionnaire which is administered to Third-Year students. Additionally, we have carried out a structured interview with teachers of English in both Idris Ahmed and Brothers Hamdi Secondary Schools in Tizi-Ouzou. Moreover, we have briefly introduced the topic of our investigation to the teachers and started interviewing them afterwards relying on a record for the sake of collecting their answers.

2.1 Description of Students' Questionnaire

A questionnaire is a research instrument which consists of a set of structured questions used by the researchers for the sake of collecting data from a large number of respondents about a specific issue. In this perspective, Brown (2001) declares that a questionnaire refers to any written tool which contains a set of questions to which the participants may either answer using their own words or through choosing one or more possible responses from the list provided to them. In order to reach the research objectives and gather additional data on the issue addressed in the current study, we have relied on a semi-structured questionnaire which consists of both closed-ended and open-ended questions. The former means that the participant is asked to answer back the question by selecting the right responses from the multiple choice list given to them, and the latter means that the respondent has the freedom to answer in their own styles and by using their own expressions. We have opted for this data collection instrument as it facilitates obtaining information from a large number of people.

The questionnaire of this investigation was designed and addressed to Third-Year classes of both Idris Ahmed as well as Brothers Hamdi Secondary Schools in Oudhia and Yakouren of Tizi-Ouzou. Eighty-five (85) questionnaires were handed to the above stated population. After having collected them, we have received only eighty-one (81) out of eighty-five (85). Furthermore, the questionnaire is made up of twelve (12) questions of both types: close-ended and open-ended. In fact, we have started with a brief introduction to inform the respondents about the subject at hand, and to explain to them the great importance of their collaboration. The questionnaire is divided into two (2) parts. We have started with **“Learners’ Attitudes towards the Use of Technology Literacy”** as a first section, we have then moved to the second one which is entitled **“Learners’ Views towards Promoting Lifelong Learning through Technology Literacy”**.

2.1.1 Piloting the Questionnaire

A pilot study has been conducted with six (6) Third-Year pupils who have been taken from both Brothers Hamdi and Idris Ahmed Secondary School in a form of a questionnaire before distributing its final version to the whole sample previously chosen to carry out the current research. We have undertaken such an operation to check the learners' understanding of the provided questions and their ability to answer them afterwards. So, we have relied on piloting the questions for the sake of making the appropriate changes when necessary and to ensure that they are fully clear and easily answerable.

In this investigation, we have opted for a structured interview as a second technique to gather data from the respondents. The interview is composed of a number of structured questions aiming at finding out whether English language teachers of Third-Year Secondary School classes have positive or negative attitudes towards using technology to foster their learners' lifelong learning. It is a form of a face-to-face and verbal conversation between the interviewer and the interviewee for the sake of gaining valid, an in depth data and a deep understanding on the subject matter. In this context, Richards (2001:61) asserts that *"Interviews allow for a more in-depth exploration of issues than is possible with a questionnaire, though they take longer to administer, and are only feasible for smaller groups"*. In other words, Interviews deal only with small amount of people; however, they provide an intense investigation and clarification of the topic, the reason why we have decided to add it as another helpful instrument along with the questionnaire.

The structured interview was carried out at the level of two Secondary Schools Idris Ahmed and Brothers Hamdi in Tizi-Ouzou. It encompasses ten (10) open-ended questions addressed to EFL teachers of Third-Year classes. The interview lasted from ten (10) to fifteen

(15) minutes for each of the six instructors; all of them have accepted to be recorded. Their answers have been transcribed afterwards.

3 Procedures of Data Analysis

The information gathered from the data collection tools are analyzed through the mixed method which combines the qualitative as well as the quantitative techniques of data analysis. The outcomes obtained from the close-ended questions of the questionnaire are analyzed through the Rule of Three whereas the results gained from the open-ended questions of both the questionnaire and the interview are analyzed through Qualitative Content Analysis (QCA).

3.1 Descriptive Statistical Method

In order to deal with the quantitative data analysis, we have adopted the descriptive statistical method. Said differently, numerical data collected from the close-ended questions are calculated with the help of the mathematical formula labeled Rule of Three used to transform the gathered information into statistics and percentages. The latter is applied as follows:

$$X = \frac{Z \times 100}{Y}$$

X refers to the calculated percentage, Z is the value of the similar answers, Y is concerned with the total number of the participants. The results we have obtained are presented by means of pie-charts, diagrams and tables.

3.2 Qualitative Content Analysis

In the current investigation, we have relied on the Qualitative Content Analysis (QCA) for the description, the analysis and the interpretation of the results obtained from the open-

Research Design and Methodology

ended questions of both students' questionnaires and teachers' interviews. In other words, Qualitative Content Analysis is a method used to interpret the texts, the respondents' opinions, and attitudes. A number of authors have dealt with its definition among which Hsieh and Shannon (2005:1278) who argue that QCA is "*a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns*". That is, this definition clearly illustrates that QCA is a scientific tool used for interpreting and analyzing the texts gathered from open-ended questions and decipher their meanings by means of transforming them into categories and topics.

Conclusion

To put it all together, this chapter has shed light on the description of the main methodological design used to carry out this inquiry. First, it has introduced the context and the participants of the study, it has then presented the data collection instruments on which the present investigation is based on, which consist of a questionnaire addressed to third year classes and a structured interview conducted with EFL teachers in Idris Ahmed and Brothers Hamdi Secondary Schools. Regarding the analytical part, we have opted for a mixed method approach which is made up of two sections, on the one hand, a quantitative method to analyze the data collected from the questionnaire; on the other hand, a qualitative method that has dealt with the analysis of the information gathered from the interview.

Chapter Three:

Presentation of the

Findings

Introduction

The present chapter revolves around the empirical side of this research. The results obtained from the data collection tools of both the questionnaire addressed to (81) EFL Third-Year classes in Brothers Hamdi and Idris Ahmed Secondary Schools in addition to the interview administered to (6) teachers in the same schools are presented in percentages and displayed in different forms such as tables, diagrams, and pie-charts. It is organized in two sections, while the first one deals with the findings of the pupils' questionnaire; the second section however, is devoted to the presentation of the results of the teachers' interview.

1 Presentation of the Learners' Questionnaire Results

We have opted for a questionnaire as a first instrument in order to gather the appropriate data regarding our study. Thus, the current unit accounts for reporting the findings of the learners' questionnaire which was handed to a sample of (81) Third-Year EFL students in Idris Ahmed and Brothers Hamdi Secondary Schools; it is composed of (02) different sections and (12) questions of both types: close-ended as well as open-ended.

1.1 Section One: Learners' Attitudes towards the Use of Technology Literacy

Q1. Technology literacy allows you to enhance your ongoing pursuit of knowledge and the development of interactive/interpersonal skills because:

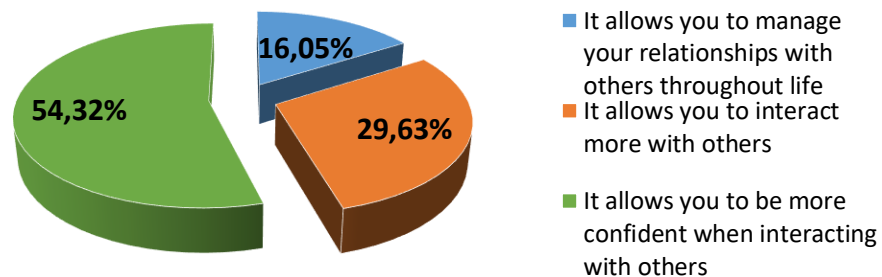


Diagram1: The Reasons behind the Development of Interpersonal Skills and the Ongoing Pursuit of Knowledge through Technology Literacy

Presentation of the Findings

As it is highlighted in Diagram 1, the overwhelming majority of participants (54.32%) consider that technology literacy enhances the continuous pursuit of knowledge and the development of interactive skills because it allows them to be more confident when interacting with others. Contrary to the majority, the minority of the students (16.05%) have claimed that it is because it allows them to manage their relationships with others throughout life, and the remaining participants around (29.63%) have declared that it is because it allows them to interact more with others.

Q2: How far do you agree with the following: “learners’ intellectual/cognitive skills can be improved by using technology literacy while continuing to learn for a lifetime”?

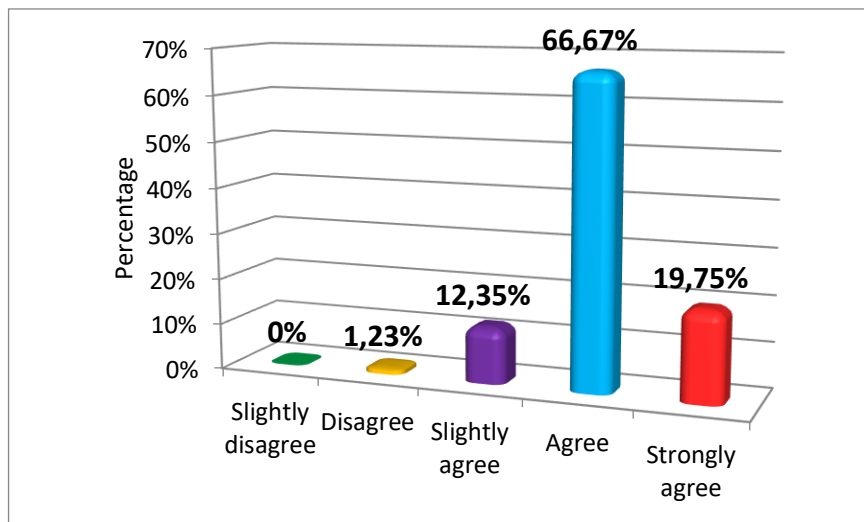


Diagram2: Learners’ Attitudes towards the Use of Technology Literacy to improve Cognitive Skills

As we notice from the above figure, more than half of the respondents (66.67%) do “agree” with the fact that technology literacy enhances their cognitive skills, whereas only (1.23%) of them have answered that they “disagree”. In addition, around (12.35%) of the participants declare that they “slightly agree”, and around (19.75%) of them assert that they “strongly agree” and no one has claimed that they “slightly disagree” with the same question.

Presentation of the Findings

Q3: Do you think that keeping learning the entire life allows learners to gain more conceptual knowledge relying on technology literacy?

	P	%
Yes	78	96.30%
No	3	3.70%
Total	81	100%

Table 2: Learners' Views on the Acquisition of Conceptual Knowledge through Technology Literacy in the Process of LLL

The outcomes displayed in this table illustrate that a considerable amount of the respondents (78) which is the equivalent of (96.30%) believe that the process of learning for a lifetime by means of technology literacy allows them to acquire more conceptual knowledge whereas (3) participants of the whole population representing (3.70%) have said that they do not gain such knowledge.

Q4: Do you think that it is better to make use of technology literacy to acquire more factual knowledge or without using?

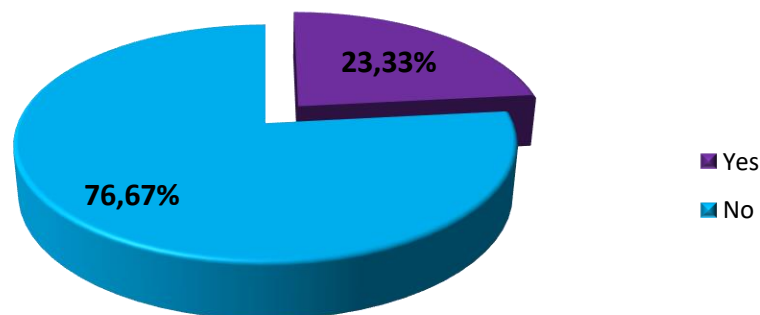


Diagram3: Learners' Perceptions towards the Acquisition of Factual Knowledge through the Use of Technology Literacy

Presentation of the Findings

As it is apparent in the pie-chart almost all the participants (76.67%) are in agreement with the fact that making use of technology literacy contributes considerably in the acquisition of factual knowledge, and only around (23.33%) of the target pupils have stated that it is better to avoid the use of technology literacy to acquire factual knowledge.

Justification

According to the participants, who have answered with “yes” have introduced different arguments to justify their choice, but all of them have agreed on the fact that technology literacy is the best way and source of information for the acquisition of a great number of terms covering different domains. Some of the pupils’ justifications are:

“I have learned terms that I thought they never existed thanks to social media”.

“Chatting with different people from different cultures provided me with different opportunities to acquire new vocabulary”.

“Because whenever I watch YouTube videos, and I use Apps; I can discover new terms”.

“Because technology literacy allows me to have access to e-books which are considered as the best source to learn words about different topics”.

Q5: What kind of learner you have become after using technology literacy as a way to pursue your learning?

Presentation of the Findings

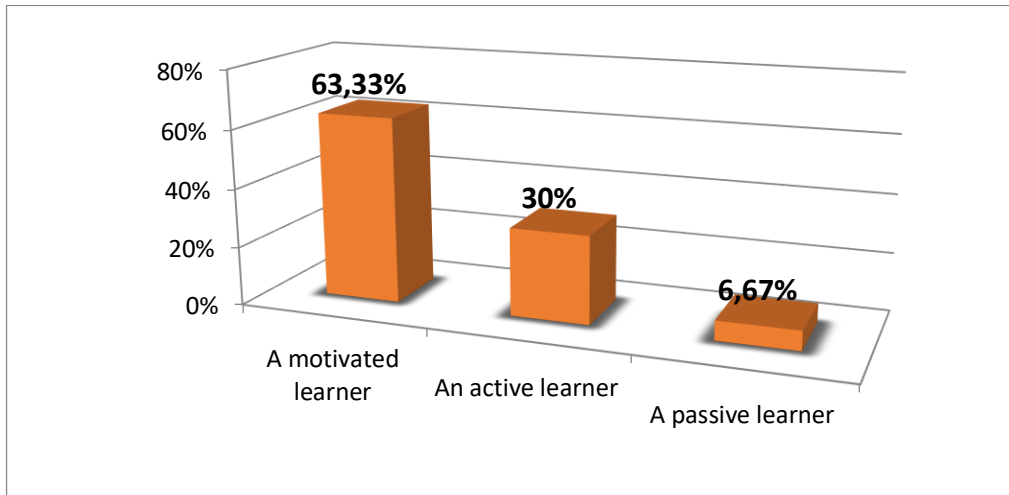


Diagram4: The Impact of Technology Literacy's Use on Learners

This graph denotes that approximately two-thirds of the respondents (63.33%) have asserted that the use of technology literacy has encouraged them in the process of learning, thus they have become “motivated learners”. About (30%) of the participants have confirmed that they are actively engaged in the process of learning thanks to technology literacy use, and for the remaining (6.67%), they have argued that they have rather become “passive learners”.

1.2 Section Two: Learners' Views towards Promoting Lifelong Learning through Technology Literacy

Q6: Does technology motivate you to continue learning outside the classroom?

	Participants	Percentage
Yes	77	95.06%
No	4	4.94%
Total	81	100%

Table 3: Technology's Role in Motivating the Pursuit of Knowledge outside the Classroom

The findings displayed in the above table indicate that the number of the participants who answered with “Yes”, which is higher than the other suggestion represent 77 individuals

Presentation of the Findings

with a percentage that is equal to (95.06%). They have confirmed that technology is at motivating them to keep learning outside the school fences; however, few of them (4.94%) have answered by “No”.

If yes,

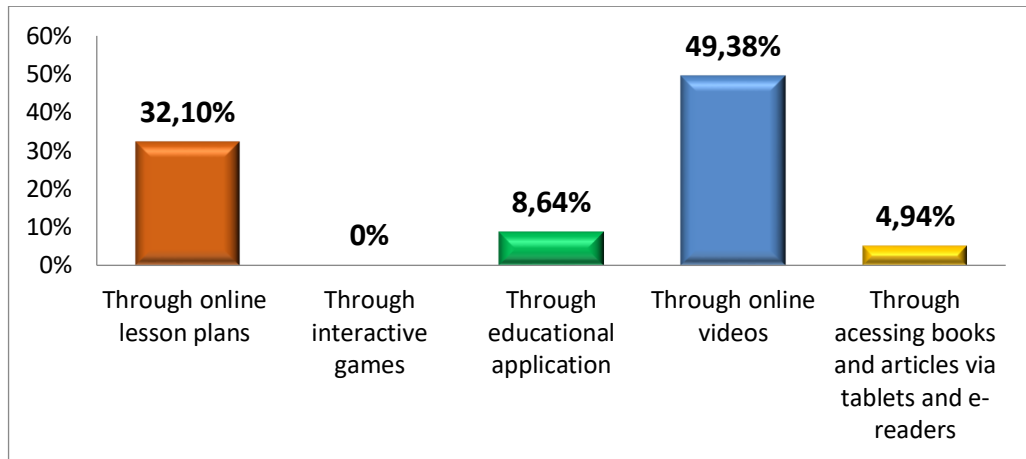


Diagram5: Technology Accessibilities for Continuous Learning Outside the Classroom

According to the data shown in the above diagram, (49.38%) of the learners assume that technology motivates them to continue learning outside the classroom through online videos, and a number of (8.64%) have selected the educational applications, whereas no one has selected interactive games as an option. About (32.10%) of them have opted for the online lesson plans’ suggestion, and the rest of the participants around (4.94%) have chosen books and tables as a way that allows them to keep learning once they are outside their schools.

Q7: How important is technology literacy for the development of your personal/reactive skills inside and outside the school contexts?

Concerning the results of this question, we have collected answers that meet and differ at some points. That is, the answers that the pupils have provided differ from one another; however, the data gathered from their responses reveal that the majority of them consider technology literacy as being paramount and crucial for the development of their reactive skills

Presentation of the Findings

whether inside or outside the school. Some of them declare that it is so important because having access to technology enables them to see how people react to situations in the right way, so these people's experiences inspire them to react the same way. Others claim that communicating with different people from different cultures via technology allows them to change their behaviors depending on the situation where they are. One participant has said that thanks to the actual events that are shared on the internet, he can develop the sense of creativity by being able to solve his own problems and face certain obstacles. Only a few of the respondents believe that technology literacy does not constitute an important means to improve their reactive skills.

Q8: Technology literacy has a positive impact on learners' lifelong learning because:

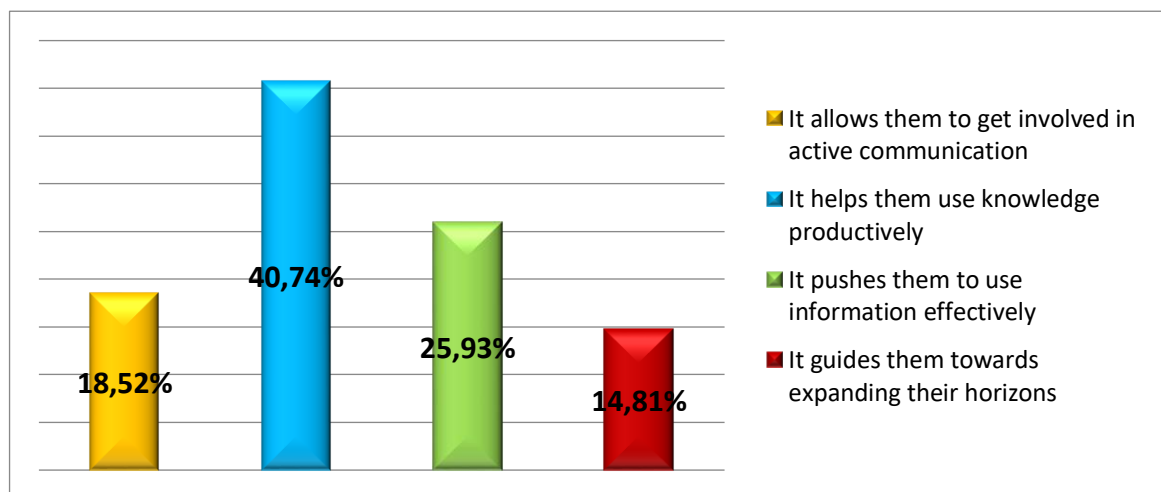


Diagram6: The Reasons behind the Positive Impact of Technology Literacy on Learners' LLL

Regarding why technology literacy has a positive impact on learners' LLL, the findings in the present figure demonstrate that a large number of the pupils (40.74%) have stated that it is because it helps them to use knowledge in a productive way. While over a quarter (25.93%) of the participants have said that it pushes them to use information effectively, a few of them (14.81%) have declared that it guides them towards expanding their

Presentation of the Findings

horizons, and the remaining participants about (18.52%) believe that it rather allows them to get involved in an active communication.

Q9: Do you think that technology literacy supports the acquisition of conceptual knowledge in the process of learning for a lifetime?

	P	%
Yes	69	85.19%
No	12	14.81%
Total	81	100%

Table 4: Learners' Attitudes towards the Acquisition of Conceptual Knowledge with the Help of Technology Literacy in the Process of LLL

As it is indicated in this table, a number of (69) participants out of (81) standing for (85.19%) consider that technology literacy supports the acquisition of conceptual knowledge while continuing to learn the entire life, in contrast (12) of them which represent (14.81%) assume that technology literacy does not support the acquisition of such knowledge.

Q10: How can technology literacy help the learners develop their interpersonal/interactive skills?

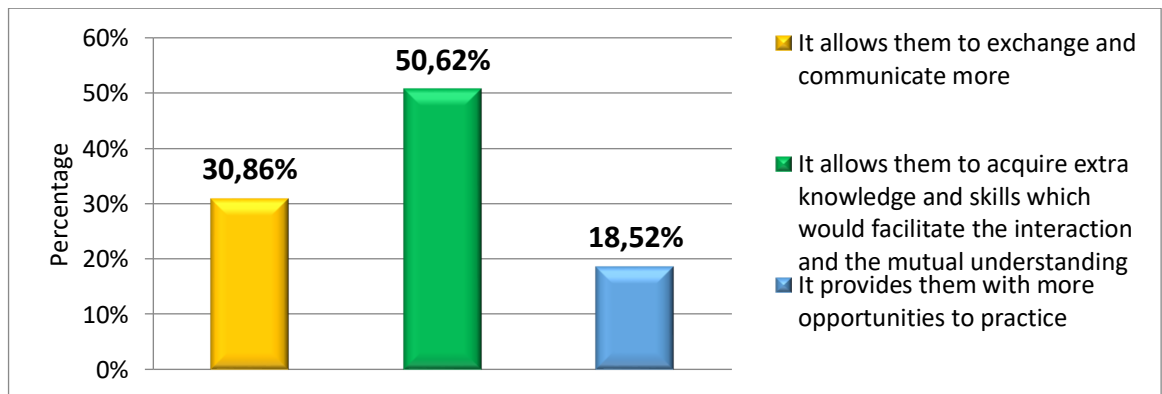


Diagram7: Technology Literacy's Abilities Towards the Development of Learners' Interpersonal Skills

Presentation of the Findings

As it is highlighted in this diagram, almost all pupils' answers around (50.62%) indicate that they do believe that technology literacy allows them to acquire extra knowledge and skills which would facilitate the interaction and the mutual understanding, and about (30.86%) argue that it allows them to exchange and communicate more, whereas only (18.52%) of the whole population state that it rather provides them with more opportunities to practice.

Q11: To what extent do you agree with the following statement?

“Joining lifelong Learning with technology literacy gives better outcomes in the process of learning generally and in developing psychomotor skills particularly”

	participants	percentages
Strongly agree	38	46.91%
Agree	28	34.57%
Slightly agree	13	16.05%
Disagree	0	0%
Slightly disagree	2	2.47%
Total	81	100%

Table 5: Learners' Agreement on the Effectiveness of joining LLL with Technology Literacy

The results presented in Table 5 indicate high percentages in the two first alternatives. Indeed, (46.91%) which represents (38) of the target participants assert that they “strongly agree” with the statement that stipulates that joining LLL with technology literacy will lead to the development of psychomotor skills (Psychological as well as Physical skills) in a particular sense and will give better outcomes in the learning process in a general sense, and

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over one-third (34.57%) which means (28) pupils show agreement with the same statement, in contrast no one has mentioned any disagreement with that, and only a number of (2) respondents standing for (2.47%) have said that they “slightly disagree” with this statement. Others, about (13) of them who corresponds to (16.05%) have declared that they “slightly agree” on that.

Q12: “The use of technology literacy would improve your personal/reactive skills” do you agree?

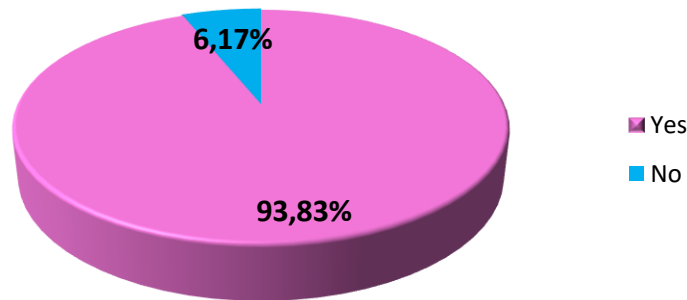


Diagram8: Learners’ Agreement on the Improvement of Reactive Skills through the Use of Technology Literacy

With regards to whether learners agree on the use of technology literacy to improve personal skills, almost the totality of the target respondents (93.83%) have answered that they “agree”, and the minority of them (6.17%) has responded by “No”.

2 Presentation of the Results of Teachers’ Interview

This part is mainly concerned with the presentation of the data that we have gathered through interviewing (6) teachers in both Brothers Hamdi and Idris Ahmed Secondary Schools. The responses obtained from the interview help to gain more insights and to bring more details to be able to prove or disprove the hypotheses and answer the research questions of our investigation. The data displayed below were analyzed following the QCA.

Question one: How long have you been teaching?

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The selected participants are all teachers of English in both Brothers Hamdi and Idris Ahmed secondary schools in Tizi-Ouzou. The above question is asked to determine teachers' experience with teaching English as a foreign language. On the one hand, the results revealed that almost all teachers (04) have taught English for more than 10 years. On the other hand, one (01) teacher stipulates that being a teacher of English has been her permanent occupation since twenty-three (23) years, and the other participant claims that she has an experience of seven (07) years as a teacher of English.

Question two: In your opinion, how might using technology tools help students develop their intellectual/cognitive skills (critical thinking, problem-solving, and decision-making) so they can become lifelong learners?

All the participants have shared the belief that technology tools considerably support students enhance their intellectual or cognitive skills, in a sense that they allow them to have access to numerous applications through which they are given the opportunity to practise their skills such as debating, negotiating by providing their own arguments and trying to make their own decisions. That is, reflecting on their own and process the information they get rather than simply receive it. They have also claimed that learners are nine times out of ten exposed to problem-solving situations while interacting with people in the virtual life. In other words, they are commonly put in unfamiliar situations that challenge their creativity, understanding, analysis and interpretation of every single information to be able to come up with appropriate solutions. According to them improving the intellectual faculties and the ability to think is one of the most fundamental life skills that every single student should work on continuously relying on technology devices.

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Question three: How do you guide your learners as they acquire the factual knowledge (including the nomenclature and particulars of a subject) they need to foster lifelong learning?

The interviewees have provided different answers regarding the way they guide their learners for the acquisition of factual knowledge, some of them do believe that technology is an essential means to keep learning the whole life and is the best way to acquire different knowledge and more specifically widen their vocabulary, so they have said that “we ask our learners to use online dictionaries in the classroom and even outside of it, read e-books, play educational games such as cross words”. Others argue that they have recourse to activities requiring technological tools and encouraging learners’ curiosity, like showing them videos in which the teachers select some words to be learned, memorized and used in a real context afterwards, thus learners will be inspired, and will be given some ideas on the possible methods they can follow once they are outside their schools to acquire factual knowledge that will support them to boost their lifelong learning.

Question four: What role does technology literacy play in developing learners’ interactive/interpersonal skills (such as verbal and nonverbal communication, dispute resolution skills, teamwork, empathy, and listening)?

All the respondents have agreed on the fact that technology literacy is more than necessary in the development of learners’ interpersonal skills mainly in today’s world. Two teachers out of six have declared that “technology creates an online setting where learners are able to share their thoughts and opinions which allows them discover new people belonging to a variety of cultures, the latter leads them to communicative practices situations”. The four remaining teachers stipulate that technology puts learners in actual circumstances and real life situations in which they are actively involved in communicating and chatting with people all

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around the world including the native speakers. They have added that online videos are among the best audio-visual instruments the learners rely on nowadays to develop their speaking and listening abilities. Moreover, technology literacy enables learners to be engaged in a teamwork where they are likely to express and exchange ideas.

Question five: How can technology be used to improve learners' psychomotor skills (movement activities that call on both cognitive and motor functions; in tasks like typing, tossing darts, kicking a soccer ball, driving a car, and letter-writing)?

Teachers' answers regarding this question were divided into two groups; the first one believes that video games like (Wii) are the best way through which learners can develop their psychomotor skills. They have also said that it is clearly noticeable that the modern games require both learners' cognition and motor or physical functions; therefore, they will be of great help for them in the learning process. The other group argues that there are numerous online activities that call on the use of both physical and cognitive abilities. They have also asserted that such activities will benefit learners in the future time, so every learner should take advantage of them to improve their skills.

Question six: How effective do you believe technology is at motivating learners to pursue lifelong learning?

Five of the interviewees share the idea that technology motivates learners in their pursuit of knowledge to a high extent. They believe that thanks to technology, learners are now able to self-direct their learning. That is, they may have control over their learning, being actively engaged in the learning process and keep developing their knowledge and skills on a daily basis, without being asked to through different online forums, videos, social media, e-books and others. One of them has said that we live in the twenty-first century, so technology makes it possible for learners to update their knowledge and abilities, adapt to daily changes

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that can “be less enhanced elsewhere”. Only one teacher disagrees with that, she justifies her answer by saying that a considerable amount of learners does not use technology to learn, they just waste their time on imagining and considering that all what is happening in the virtual life as being real. She has also confirmed that the majority of her learners do not focus on their classes due to the irresponsible use of their smartphones inside the classroom, so for her technology is a demotivating factor.

Question seven: How effectively does technology assist in the acquisition of conceptual knowledge (which includes reading, watching, listening, experiencing, and having reflective, critical thought processes) during lifelong learning?

The participants altogether consider that the effectiveness of technology in supporting the acquisition of conceptual knowledge lies in the fact that it allows learners to learn at their own pace and deepen their understanding of some new and difficult concepts, explore different subjects through reading e-books or articles in an online setting, hence gaining a large number of new concepts. Being in contact with other people through online platforms, exchanging and sharing ideas, thus leading them to the acquisition of some concepts that they have never heard about before. In addition to that, learners may also acquire more concepts through listening scripts. The totality of them stresses that today’s technological advancements are the best way through which learners can develop their conceptual knowledge while keeping learning the whole life.

Question eight: Being technologically literate, lifelong learners are able to expand their reactive skills (the ability to think quickly, creatively and yet logically when faced with an emerging situation to prevent problems). Elaborate

The totality of the target respondents thinks that the majority of learners embrace technology on a daily basis, so their reactive skills are more likely to be altered and developed

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as they learn from people's experiences, through their interaction, chatting and communication with people all around the world. They use their creativity whenever they face emerging and unpredictable situations as they are most of the time exposed to issues to solve in the virtual life.

Question nine: In your opinion, how might using digital gadgets help learners practise their technical skills (such as data analysis, web development, computer programming languages, graphic design, and writing)?

Four teachers maintain that learners who use the technological devices are more likely to be familiar and competent with them than those who do not; therefore, they are able to enhance their technical skills. The remaining participants assert that making use of technological instruments may benefit learners in different ways among which we can mention the following: they facilitate access to a variety of information, they allow learners to be involved in the learning process, and they enable them to improve their technical skills as well. According to their responses, the more learners use digital devices the greater their technical skills are.

Question ten: Technology creates countless learning opportunities so that learners are completely equipped with new skills. How essential is it for promoting lifelong learning?

Regarding the above question, almost all the participants have a positive view about learners' use of technology to acquire and develop new skills; they also believe that it is a necessary means that every learner should rely on to promote their learning the entire life. They have answered differently to explain their opinions. Two of them have mentioned the educational applications, they have stated that in today's life, learners have access to a variety of applications that are designed for educational purposes through which they can enrich their knowledge and skills, expand their horizons and foster their learning as well. Two other

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teachers stipulate that the integration of technology in schools will pave the way for lifelong learning by showing its usefulness to learners and motivate them to use it. Another respondent has confirmed that technology constitutes an effective assistance for learners in their learning process mainly when it is used in the right way. The last interviewee agrees on the fact that technology offers unlimited opportunities for learners that do encourage them to keep learning for a lifetime, but they should be guided either by their teachers or parents to make sure that they will acquire what they really need. She added that technology is two-folds; it is an effective means to learn when it is used effectively as it can destroy learners' motivation, creativity if it is used in a wrong way.

Conclusion

This chapter has dealt with the presentation of the findings we have gained from the questionnaires addressed to Third-Year students and the interviews conducted with teachers. From the results we have obtained, it is clear that the majority of both students and teachers have positive attitudes towards the sustainability of learning through technology literacy. In the light of presenting clarifications, the next chapter will be devoted to the interpretation, and discussion of the results we have obtained in this section.

Chapter Four:

Discussion of the

Findings

Introduction

The goal of this chapter is to discuss the findings obtained from the questionnaire that was given to eighty-one Secondary School students, and the interview that was conducted with six teachers. The findings are examined in relation to the literature review and Alexander Romiszowski's (taxonomy) theory, which is presented in the first chapter. The purpose of this study is to provide answers to the research questions and to support or refute the advanced hypotheses set in the General introduction. This chapter is divided into two sections. The first section examines the views of EFL students on using technology to support their lifelong learning and analyses the questionnaire's findings. The second section tries to determine the way teachers think about using technological literacy as a tool to encourage students' lifelong learning.

1 Discussion of the Findings of the Students' Questionnaire

1.1 Learners' Attitudes towards the Use of Technology Literacy

From the findings displayed in the previous chapter, it is clearly noticeable that the majority of the participants believe that technology literacy plays a vital role in their motivation to learn more, as well as in their active involvement in the learning process. This is confirmed by the students' answers on the fifth question (see Diagram 4: 36). Indeed (63.33%) of the respondents argue that technology literacy constitutes a source of enthusiasm in the learning process. That is, it allows them to get rid of the monotonous side of learning and encourages them to follow the areas that fit their levels and interests, increases their enjoyment, independence and confidence; the reason why they keep learning their whole life. As we have previously mentioned in the literature review, "*...it is crucial that students have interest in what they are learning, and become enthusiastic about it*" (Kashinath, 2013, p.5). In addition, "*...Developing a willingness and incentive to learn is essential for people to*

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acquire knowledge...” (Ibid., p.6). (see Chapter 1: 11). That is to say, the acquisition of knowledge is strongly related to the development of the willingness to learn.

The results have also shown that (30%) of the target participants have opted for the statement that stipulates that technology literacy makes them active learners and has a positive impact on their learning as it fosters their active engagement. In this context, Roy (2019: 358) argues that: “*Technology facilitates active engagement with the learning material*”. In other words, technology fosters the active participation and makes the learning process interesting and interactive. Moreover, these results go hand in hand with what Saydakhmatova (2020:209) states that “*Students are actively involved and feel motivated to complete technology-based tasks rather than doing paper version of the activity*”. That is to say, students’ motivation and active involvement lie in the fact that they prefer opting for technology to complete a given task instead of the hard version.

Additionally, according to some study, technology fosters the active participation and interaction that students are used to outside of the classroom but miss when forced to focus on the instructional contents. Students may easily revisit particular topics, go further into them, test concepts, and get feedback thanks to interactive learning (Francis, 2017). In other words, technology constitutes a means that encourages students’ active involvement mainly while interacting outside of the classroom. For instance, “games” are known to hold players' interest for hours as they actively participate for enjoyment or other reasons, such as competition. These advantages are also found in social media. The creators of learning tools may take advantage of these phenomena and use social involvement to advance academic learning whereas, (6.67%) of the respondents have selected the statement that technology literacy results in passive learning. This group of learners shows that they are dependent on what technology has to give and are not actively involved in learning. Additionally, it should be mentioned that youngsters who utilize technology to solve all of their academic problems

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gradually lose their capacity for problem-solving, which is a highly sought-after a set of talents.

The results obtained from the questionnaire have also demonstrated that technology literacy considerably contributes to the growth of the students' interpersonal skills as well as the improvement of their continuous learning (see Diagram 1: 32). More than half of the participants (54.32%) claim that technology literacy enables them to improve understanding and communication faculties between people, it also allows them to gain more confidence while interacting or exchanging with others as it facilitates greater engagement. As a matter of fact, a great number of students all around the world appear to view social media as a key tool for maintaining connections for academic objectives as well as engaging with their friends and relatives. The ease of use, functionality, simplicity, and flexibility of social technologies are some of the driving forces behind the use of social media as a tool to gather information for academic purposes. This aforementioned results stated that social technologies have been discovered to assist social constructivist learning strategies, which have subsequently improved student comprehension and encouraged student involvement.

Technologies provide a variety of opportunities for fostering cooperative and collaborative learning skills such as by assisting group members in finding common ground, outlining their thoughts, and understanding one another's perspectives. In the same context, Sundar Sethy (2012 :265) stresses that *“Participation in technological environment becomes crucial for learning to happen because it facilitates collaborative, cooperative, and lifelong learning. Thus, learning through technology is an inquisitive approach to effective learning.”*

Additionally, according to (29.63%) of the students, technology literacy has increased their ability to interact more with others. This highlights how social media and other

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technological advancements help people connect professionally and provide them the chance to express opinions and ideas with a much larger audience (Edwards, 2015).

Sixteen Point Zero Five Percent (16.05%) of students indicated that because technology literacy makes it possible for them to manage their relationships with others over the course of their lives, interactive/interpersonal skills can be developed. This highlights that technology fosters interpersonal harmony and improves ties. One example of this is when two people meet online and later go out in person for coffee, dinner, or drinks. Certain Internet platforms frequently enable people to connect with others they would never otherwise meet (Seunagal, 2022).

According to the findings of the second question, Diagram 2 indicates that two-thirds (66.67%) of the target pupils agree that adopting digital literacy while pursuing lifelong learning can help increase learners' cognitive/intellectual skills. That is, the majority of the respondents do believe that their insightful and critical thinking abilities grow stronger through the use of technology literacy. This shows how technology helps students progress beyond simply sitting and listening attentively and encourages more hands-on learning. In line with this, encouraging students to apply their knowledge to practical circumstances and hone their problem-solving abilities, improves critical thinking. People need to be able to learn new things constantly, adapt to change, and expand or update their existing knowledge as new technological advancements occur.

While the majority of the learners have agreed on the fact that technology literacy is one of the best ways everyone should rely on in today's life to improve the intellectual faculties, the minority of them around (1.23%) have shown their disagreement on that. Moreover, some other category of them about (12.35%) share a partial agreement on this fact, and the remaining pupils (19.75%) strongly agreed on the same statement.

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As far as the third question is concerned, the results show that (96.30%) of students use technology to increase their conceptual understanding. In other words, the findings demonstrate that almost all the participants have a positive view regarding the employability of technology literacy for the acquisition and the development of conceptual knowledge in the process of learning. This result explained that technology can also help them understand concepts and details quickly. In addition, (3.70 %) of students deny that using technology helps them acquire conceptual understanding. This group of students thinks that using printed materials and other traditional methods of education is better.

The outcomes have underscored that a large number of learners (76.67%) share the belief that utilizing technology literacy helps them gain more factual knowledge (see Diagram3: 34). The participants who have opted for "yes" to this question offered a variety of explanations to support their decisions, but they all agreed that technology is the greatest way to develop new terminology for various fields. One of them has said *"I have learned terms that I thought they never existed thanks to social media"* (see Chapter 3: 34-35). Social media play a significant role in vocabulary development because they help students learn new words and vocabulary and provide context that is conducive to learning since they can use social media tools for extended periods of time without feeling awkward or bored.

Another learner argued that chatting with people from various cultures aids in word learning. This result makes reference to Jafari and Chalak (2016, p.6) who has declared that *"... group chat discussions on WhatsApp can assist language learners find practical applications for words, retain them for longer periods of time, and apply words after learning them"*. Using WhatsApp as a group chat platform is advised, since it may allow the teacher to teach a huge variety of vocabulary terms, giving the students access to terms they might not have learned in the classroom. Group chat can undoubtedly increase students' enthusiasm to

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learn because it enables them to interact with the teacher and other students, especially shy students who would avoid face-to-face interactions.

Another pupil has asserted that Apps and YouTube are trustworthy and good resources for learning subject terminology (see Chapter 3: 35). Visual aids have an impact and make a presentation more engaging. They are able to spark excitement. Students can engage many senses simultaneously with the use of visual aids. Unlimited words can be evoked by a single image. As a result, students are better able to remember and memorize words in a motivating way and to recall them with ease when they are employed in practical contexts while they are listening to, seeing, or watching videos of native speakers, listening to tunes, or listening to stories.

One of the pupils cited e-books as the top resource for learning terminology related to various subjects. The qualities of available e-books, enable students to learn terminology on their own without the assistance of their teachers or peers. Learners can access more words using e-books since they enable them to quickly look up challenging terms in dictionaries while engaging in prolonged reading, combining multiple tactics on a single device.

1.2 Learners' Views on Promoting Lifelong Learning through Technology Literacy

The results of the second section reveal that the overwhelming majority of students (95.06%) have agreed that technology encourages them to continue learning outside the classroom by responding “yes” (see Table 2: 36). Students were given five options to pick from when asked how technology stimulates them to study outside the classroom, and (95.06%) of them chose a variety.

Thirty-Two Point Ten Percent (32.10%) of students concur that using online lesson plans to study outside the class is beneficial. Online lesson plans make it exceptionally simple

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to collaborate and create because everything is available from any location with internet access. The interactive game option was not chosen by any students (see chapter 3: 37). This demonstrates that students consider that internet games are not a trustworthy source to support their learning process. This could be for a number of reasons, including security; where there is always a risk of hacking; the fact that playing online games for an extended period of time can lead to addiction and physical health issues, and the fact that cyberbullying is one way that people will exploit you (Roor, 2021, p.1).

Another finding shows that (8.64%) of students concur that using educational applications outside of the classroom encourage them to keep learning. Students may access any information from anywhere with educational Apps. In this sense, Al-Jarf (2020: 2) asserts that *“Students can use the Apps anywhere, anytime and as many times as they need”*. Mobile Apps for education are thus the most engaging and beneficial ways to encourage learners to study and increase their productivity.

From the findings, we see that (49.38%) of them claim that watching videos online helps them learn outside of the classroom. Studies have shown that using online videos has many advantages, including improved "comprehension and retention of information," support for "multi-modal" learning, appeals to multiple learning styles, aids in students' comprehension of complex material, and fosters digital literacy. The ability to offer a more affordable learning solution is another significant advantage of employing internet video in education (Wilbert, 2021) in order to study outside of the classroom.

The option of accessing books and articles through tablets and e-readers was chosen by (4.94%) of participants. This demonstrates how flexible learning environments are made possible by e-books' ability to engage learners in the material. They can combine video elements, tests with real-time scoring, and questions on how to respond to homework in one

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location. A lesson plan in its entirety can be accessed using an e-book, either from a computer or a mobile device. Various websites for educational resources allow you to instantly download e-books and the lesson plans that go with them.

The majority of students who responded to the seventh question believed that technology is crucial for improving learners' reactive/personal skills. Although the opinions of the students varied, the general findings show that technology, particularly the internet and social media, give them access to real-world scenarios where they may learn from others' experiences, develop their creativity and knowledge to solve problems, and confront hurdles. Among the participants who have answered, one of them has declared that *“thanks to the actual events that are shared on the internet, he can develop the sense of creativity by being able to solve his own problems and face certain obstacles”* (see Chapter 3: 37-38).

According to Romiszowski, CBI and CBIV simulations rarely create an effect 'dialogue' with the learner to analyze and bring to consciousness essential concepts, principles and rules used in the simulations. Most of the feedback is composed of summative, qualitative statements analyzing the learners' responses in a 'book-like' fashion.

According to the findings of the eleventh question, almost the totality of the participants concurs that having a strong understanding of technology can help them strengthen their psychomotor skills and effect the learning process in a good way (see Table 4: 40). Since it shows how certain tasks may be carried out, technology is the ideal approach for learners to improve their psychomotor skills. Demonstrations might ease your anxiousness when practicing new skills. It has long been believed that actual demonstration is the best method for teaching skill improvement.

2 Discussion of the Teachers' Interview

When asked about their experience for the first question, teachers reported having an average of 10 years of experience. In general, experienced teachers are more successful in improving student achievements. This is true, but not merely because classrooms and schools with more advantaged students tend to hire more seasoned teachers. Even after making rigorous adjustments for this fact, researchers still find that teachers with more experience are generally more productive. It is evident that experienced teachers are more effective at raising student achievements in elementary, middle, and secondary schools alike (Ladd, 2013).

In the second question, the teachers were asked for their opinions on how using technology helps students' cognitive/intellectual skills improve. The findings reveal that the interviewed teachers agree that using technology tools assist students in developing their intellectual or cognitive skills because they give them access to a variety of applications that let them practise skills like debating, negotiating by presenting their own arguments, and trying to come to their own conclusions (see Chapter 3: 42). That is, instead of just receiving the information, they think about it and process it. They have also asserted that while interacting with people in the virtual world, students are nine times out of ten exposed to problem-solving scenarios. In other words, individuals frequently encounter novel circumstances that test their ingenuity, comprehension, analysis, and interpretation of each piece of information in order to find suitable solutions. They contend that developing one's mental capacities and capacity for thought is one of the most essential life skills that every learner should continuously rely on technological devices. Technology raises students' motivation, self-confidence, and academic success. In this sense, Sundar Sethy (2012: 266) argues that *“learning through technology not only inspires learners to engage in their learning activities but also supports them to achieve the study content areas, enable to think rationally and develop problem solving approaches, and deal with the regular workforce*

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tasks.” In other words, technology reinforces the development of rational and problem solving capacities as it constitutes a source of motivation to learners.

From the results displayed in the previous chapter, the interviewees have provided a variety of responses to the question on how they assist their students in acquiring factual knowledge necessary to support lifelong learning (see Chapter 3: 43). Some of them believed that technology was an essential tool for lifelong learning and the best way to expand students' vocabulary, so they advised asking students to use online dictionaries in the classroom and outside of it, read e-books, and play educational games. Others contend that they use activities that call for technological resources and foster learners' curiosities such as showing them videos in which teachers choose some words to be learned, memorized, and then used in a real context, in order to inspire students and give them ideas for possible strategies they can use once they are outside of their schools to gather factual knowledge that will support them in enhancing their lifelong learning. In this tune, Romiszowski (2009: 207-208) considers that *“Further knowledge is acquired as the learning process progresses”*. That is, the more an individual learns, the more they earn additional knowledge. An education App platform, to put it simply, is all about fusing technologies and learning management systems to provide a tailored, end-to-end learning solution. To put it in another way, an educational App that promotes and facilitates online learning, particularly self-learning. People can benefit from any form of remote learning with the use of an educational App.

A closer look at the results obtained from the interview with teachers regarding the fourth question demonstrate that everyone who responded agreed that, in today's society, digital literacy is more important than ever for the growth of students' interpersonal skills. Out of six educators, two have stated that *“technology creates an online setting where learners are able to share their thoughts and opinions which allows them discover new people belonging to a variety of cultures, the latter leads them to communicative practices*

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situations” (see Chapter 3: 43). That is to say, they stressed on the fact that technology offers an opportunity for exchange and communication with different people through online platforms. The remaining four educators agree that using technology places students in real-world situations where they are actively engaged in speaking and interacting with individuals from all over the world, including native speakers. Online videos are among the top audio-visual tools used by students today to improve their speaking and listening skills, they have noted. Additionally, technological empowers students to collaborate in a setting where they are more inclined to express themselves and share ideas. Blogs provide students with different ways in which they can convey and communicate their perceptions freely. Modern technology gives us the chance to introduce pupils to many parts of the world without having to leave the classroom. Utilizing digital resources to develop young learners into global citizens is essential now more than ever. Through virtual exchanges, students get a close-up look at the customs, traditions, and cultures of people who live thousands of miles away.

The fifth question addressed teachers on how technology helps students' psychomotor skills. Two sets of teachers responded to this question; the first one thinks that playing video games like the Wii is the greatest approach for students to improve their psychomotor skills (see Chapter 3: 44). Indeed, active video games play for children has been linked to benefits for eye-hand coordination, visual and attentional skills including memory as well as tactics and strategy. Children (average age: 12) who play active video games report feeling more energetic and moving around. Additionally, the respondents claimed that it is obvious that contemporary games demand both learners' cognitive and motor or physical abilities; as a result, they would be a big benefit to them during the learning process. The opposing group asserts that a variety of online activities need the use of both cognitive and physical skills. Furthermore, they claim that these exercises will help students in the future, therefore everyone should use them to develop their skills. This result is confirmed by Kashinath (2013,

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p.7) who stipulates that “*Participants create knowledge through actual task and activity performance.*” (see Chapter 1: 12).

Teachers’ interview underscore that five of the interviewees believe that technology greatly inspires students in their quest for knowledge. They contend that learners can now self-direct their learning because of technology (see Chapter 3: 44). In other words, individuals may take charge of their education, actively participate in the learning process, and continuously improve their knowledge and abilities every day—all without being asked to—by using various online forums, videos, social media, e-books, and other resources. Technology can facilitate self-directed, lifelong learning outside of the traditional classroom. Due to the widespread adoption of education around the globe and the readily available nature of ICT-enabled technologies, self-directed learning has seen a significant increase in the usage of ICT in education. Self-directed learning is now taking place in a different environment because to online education, easier access to technology, tailored learning opportunities, and new information sources. Schools are encouraging teachers to support this kind of learning in the classrooms as they increasingly recognize the value of self-directed learning (Saxena, 2013).

Only one teacher disputes that assertion, and she argues that many students do not use technology to learn but instead squander their time fantasizing about and taking seriously everything that occurs in virtual reality. Technology is a demotivating element for her because, as she has further revealed, the majority of her students are distracted from their lessons due to their reckless usage of smartphones in the classroom. According to Galle, it may be disruptive to students, disconnect them from face-to-face relationships, facilitate cheating, disadvantage some students, cause them to use unreliable learning resources, increase the cost or difficulty of curriculum planning, replace the teacher, raise privacy concerns, cause medical problems, cause children to lose track of time, and more Gaille

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(2018, p.421). Said differently, technology is more a harmful means to students than a beneficial one.

According to the answers to question seven, teachers believe that the effectiveness of technology in assisting with the acquisition of conceptual knowledge lies in the fact that it enables students to learn at their own pace and deepen their understanding of some new and challenging concepts, explore different subjects through reading e-books or articles in an online setting, and thereby gain a significant number of new concepts (see Chapter 3: 45). Establishing connections with others through internet forums, exchanging and sharing ideas, and learning about subjects they had never heard of before. Moreover, listening scripts can help students understand new concepts. This confirms the idea of Kashinath (2013, p.6) when she claims that *“Action learning is one of the most effective methods for giving people a real-world comprehension of the concepts”* (see Chapter 1: 12). The consensus among them is that the best way for students to expand their conceptual knowledge and continuing learning throughout their lives is through the technology breakthroughs of today. By providing powerful tools like Wixie that make it simple to generate things similar to those they see in their environment.

In response to question eight, teachers were asked whether lifelong learners who are technologically savvy are able to develop their reaction skills or not. The vast majority of the target respondents believe that learners generally use technology on a daily basis, which makes it more likely that their reactive skills will change and develop as they absorb knowledge from others' experiences through interaction, chit-chatting, and communication with people around the world (see Chapter 3: 45-46). They employ ingenuity anytime they encounter new and unusual events since they are frequently confronted with problems to resolve in virtual reality. Students have access to real-world situations where they can learn from others' experiences, develop their creativity and knowledge to solve challenges, and

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overcome obstacles thanks to technology, notably the internet and social media. This goes in accordance with Romiszowski's claim (2009:203) that "*skill is something that develops with experience and practice*". In other words, skill is not something innate or that happens at once, it rather improves through different life experiences that an individual goes through as it develops through the repetition of different activities.

Nearly all of the participants have a favorable opinion of how students use technology to study and develop new skills. They also think that it is an essential tool that students should rely on to further their education throughout their lives. They provided several responses to convey their differing viewpoints. Two of them have mentioned educational applications, saying that in modern society, students have access to a wide range of applications made for educational reasons via which they can broaden their horizons, improve their knowledge and abilities, and encourage their own learning. Two more teachers agree that by demonstrating to students its value and inspiring them to apply it, technology integration in the classroom will open the door to lifelong learning. Another respondent reaffirmed that, when used properly, technology can be a beneficial tool for assisting students in their academic endeavors. The final respondent concurs that technology provides learners with limitless chances that do inspire them to continue studying throughout their lives, but they should be directed by their teachers or parents to ensure that they will acquire what they really need. Technology, she continued, has two sides: when used properly, it is a powerful tool for learning, but when misused, it may kill students' motivation and creativity.

To guarantee LLL engagement in cultures that are changing quickly, technological literacy in particular, will be crucial. It is crucial to think about the best ways to provide ongoing educational opportunities to people who may be working five or six decades after finishing their formal educations because the demographic landscape of the future predicts not only a large proportion of older adults, but also potential labor shortages. Effective answers

Discussion of the Findings

must take into account at least three variables that could influence learning in later adulthood. Age-related reductions in the ability to process new knowledge, as well as changes in motivation and the preference for emotional well-being over learning, have both been well studied. The third factor influencing learning is researched in older persons, and it has to do with how ideas and preconceptions affect learning and motivation.

Conclusion

The results have been discussed in order to answer the research questions and validate the proposed hypotheses through the discussion of the findings from the two research tools. The findings show that most students and teachers have favorable opinions about using technology to encourage lifetime learning, thus the first and second hypotheses are confirmed. The findings also show that in order to succeed in modern life, both at job and in one's personal life, people must continually improve their talents as they age and thanks to technology people are given the possibility to do so. This confirms that technology literacy promotes the sustainability of learning throughout learners' lifespan by developing a variety of skills. LLL is the consequence of combining formal, non-formal, and informal learning to develop the capacity for ongoing quality-of-life improvement throughout one's lifetime. Nowadays, technology is interacting with practically every facet of our daily lives. The present resurgence of LLL is being fueled by the electronic distribution of ICT. New forms of education will be developed more quickly with the integration of technology and multimedia into the core processes of teaching and learning. With the help of technology, people may virtually learn whenever and wherever they want.

General Conclusion

General Conclusion

This present dissertation has been set out for the sake of exploring students' and teachers' views towards the use of technology to foster learners' learning all lifelong in both Brothers Hamdi and Idris Ahmed Secondary Schools. It has also been intended to seek out the extent to which ICTs can help learners to promote their learning for a lifetime. This work has been carried out on the basis of Romiszowski's Taxonomy (1981).

This investigation has been conducted as a case study, so in order to reach clear answers to the stated questions and to test the hypotheses that have been raised in the general introduction, a mixed method approach has been adopted. Therefore, we have combined both quantitative and qualitative techniques for data collection as well as data analysis. regarding data collection, we have relied on two instruments: namely a questionnaire designed to (81) Third-Year students in both Idris Ahmed and Brothers Hamdi Secondary Schools who have been randomly chosen and a structured interview conducted with (6) English teachers in the same schools. As for data analysis, on the one hand, the Rule of Three has been implemented to calculate numerical data obtained from the close-ended questions. On the other hand, for the sake of interpreting and discussing non-numerical data gathered from the open-ended questions, Qualitative Content Analysis has been used.

The findings we have obtained from the two research tools: the questionnaire and the structured interview have provided answers to the research questions that have been stated previously in the general introduction and have confirmed all the hypotheses suggested in this study. The results that have been displayed in the findings section revealed that the majority of the students of both Brothers Hamdi and Idris Ahmed believe to a great extent that technology literacy promotes the sustainability of learning through the continuous acquisition and development of different life skills. From what has been said, we deduce that the first hypothesis stating that "learners have positive attitudes towards the use of technology literacy

to promote Third-Year EFL learners' lifelong learning at Brothers Hamdi and Idris Ahmed Secondary Schools" has been confirmed. Regarding the second one which stipulates that "Teachers have positive views towards the use of technology literacy" to support Third-Year EFL learners' lifelong learning has been confirmed as well. Yet, teachers have asserted that making use of video games, educational applications, watching videos through the applications that have been designed for learning purposes or even through different online platforms strengthen learners' critical thinking, they are actively engaged in the learning process and are more motivated to continue learning the entire life because of the possibility of accessing audio-visual aids and making use of new technologies as a whole.

As many other academic researches, ours has also been subject to some weaknesses and limitations that should be considered by students for their future inquiries. To begin with, the major obstacle that we have faced during our research is the lack of books and other scientific materials related mainly to the theory that we have used. As for the second drawback, this investigation has been carried out only with EFL Third-Year classes in Brothers Hamdi and Idris Ahmed Secondary Schools. Therefore, the findings that have been generated from this study cannot be generalized to the remaining levels and to EFL learners as a whole. Finally, because of time constraints, our investigation has been based only on a questionnaire designed for learners and an interview addressed to teachers, thus interviewing learners as another means to collect data, would have provided better outcomes.

In the end, we hope that our research has contributed to the field of English Language Teaching in a good way and will open new doors for further research on the area. Recommendations for further investigations on the same issue can be conducted in a different setting (universities) with different levels (First, Second, Third year or Master One English students). In addition, our hope is that further empirical studies would attempt to use classroom observation as another data collection tool.

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Appendices

Appendices

Appendix (A) : Students' Questionnaire

Learners' Questionnaire

Dear learner,

We are conducting a research in order to get insights into your views about technology as a means to promote lifelong learning. We would really appreciate it if you could take the time to fill in the present questionnaire. For each question, please mark your response with a tick (✓) or provide a brief answer whenever required.

Thank you very much for your time and cooperation

N.B: lifelong learning means to continue learning for the entire life. It may take place either in formal or informal settings to enhance one's knowledge and skills for the sake of personal as well as professional satisfaction.

- "The provision or use of both formal and informal learning opportunities throughout people's lives in order to foster the continuous development and improvement of the knowledge and skills needed for employment and personal fulfillment."
(<https://www.collinsdictionary.com/dictionary/english/lifelong-learning>).

Section One: Learners' Attitudes towards the use of Technology Literacy

1. Technology literacy allows you to enhance your ongoing pursuit of knowledge and the development of interactive/interpersonal skills (such as verbal and nonverbal communication, dispute resolution skills, teamwork, empathy, and listening) because:

- يسمح لك العلم بأمور التكنولوجيا بتعزيز تعلمك المتواصل وتطوير مهاراتك التواصلية (مثل التواصل اللفظي وغير اللفظي ومهارات حل النزاعات والعمل الجماعي والتعاطف والاستماع) لأنه:

- It allows you to manage your relationships with others throughout your life.

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• يسمح لك بتسيير علاقاتك مع الآخرين طوال حياتك.

• It allows you to interact more with others.

• يسمح لك بالتواصل أكثر مع الآخرين.

• It allows you to be more confident when interacting with others.

• يسمح لك بأن تكون أكثر ثقة بنفسك عند تعاملك مع الآخرين.

2. How far do you agree with the following: “learners’ intellectual/cognitive skills (critical thinking, problem-solving, and decision-making) can be improved by using technology literacy while continuing to learn for a lifetime”?

- إلى أي مدى توافق على العبارة الآتية: "يمكن تحسين مهارات المتعلمين الفكرية والمعرفية (التفكير النقدي، حل المشكلات واتخاذ القرار) من خلال العلم بأمر التكنولوجيا عند التعلم مدى الحياة؟

Strongly agree أوافق بشدة Agree أوافق قليلا Slightly agree

Disagree لا أوافق Slightly disagree لا أوافق قليلا

3. Do you think that keeping learning the entire life allows learners to gain more conceptual knowledge (which includes reading, watching, listening, experiencing, and having reflective, and critical thought processes) relying on technology literacy?

- هل تعتقد أن مواصلة التعلم مدى الحياة يتيح للمتعلمين اكتساب المزيد من المعارف المفاهيمية (والتي تضم القراءة والرؤية والاستماع والتجريب وكذا امتلاك تفكير نقدي بالاعتماد على العلم بأمر التكنولوجيا؟

Yes نعم No لا

4. Do you think that it is better to make use of technology literacy to acquire more factual knowledge (including the nomenclature and particulars of a subject) or without using?

- هل تعتقد أنه من المستحسن استخدام التكنولوجيا لاكتساب المزيد من المعارف الواقعية (التي تضم قوائم المفردات والمصطلحات الخاصة بموضوع ما) أم يفضل عدم القيام بذلك؟

Yes نعم No لا

If yes, please justify إذا كانت الإجابة بنعم ، وضح كيف ذلك

.....
.....
.....

5. What kind of learner you have become after using technology literacy as a way to pursue your learning?

أي نوع من المتعلمين أصبحت بعد استخدامك لعلمك بأمرور التكنولوجيا كوسيلة لمواصلة التعلم؟ -

A motivated learner متعلم متحفز An active learner متعلم فعال

A passive learner متعلم سلبي

Section Two: Learners' Views towards Promoting Lifelong Learning through Technology Literacy

6. Does technology motivate you to continue learning outside the classroom?

- هل تحفزك التكنولوجيا على مواصلة التعلم خارج نطاق القسم؟

Yes نعم No لا

If yes, إذا كانت الإجابة بنعم، فهذا

•Through online lesson plans من خلال الدروس المتوفرة عبر الانترنت

•Through interactive games من خلال الألعاب التوافقية

•Through educational applications من خلال التطبيقات التربوية

•Through online videos من خلال الفيديوهات عبر الانترنت

•Through accessing books and articles via tablets and e-readers

من خلال الاطلاع على الكتب والمقالات عن طريق الألواح الإلكترونية والقارئ عبر الانترنت

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7. How important is technology literacy for the development of your personal/reactive skills (the ability to think quickly, creatively and yet logically when faced with an emerging situation to prevent problems) inside and outside the school contexts?

- فيم تكمن أهمية العلم بأمور التكنولوجيا بالنسبة لتطوير مهاراتك الشخصية /ردود أفعالك (القدرة على التفكير بطريقة سريعة ومبدعة ومنطقية عند مواجهة حالة مستعجلة تفاديا للمشاكل) داخل وخارج السياق المدرسي؟

.....
.....
.....

8. Technology literacy has a positive impact on learners' lifelong learning because;

يؤثر العلم بأمور التكنولوجيا تأثيرا إيجابيا على التعلم مدى الحياة لدى المتعلمين لأنه:

● It allows them to get involved in active communication.

●يسمح لهم بالمشاركة في تواصل فعال

● It helps them use knowledge productively.

●يساعدهم في استخدام المعرفة بطريقة مثمرة

●It pushes them to use information effectively.

●يدفعهم إلى استخدام المعلومات بطريقة فعالة

● It guides them towards expanding their horizons.

●يقودهم نحو توسيع آفاقهم

●It supports them when looking for details that are related to their objectives.

●يعينهم عند البحث عن تفاصيل متعلقة بأهدافهم

●It gives them a chance to become more responsible.

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•يمنحهم فرصة أن يكونوا أكثر مسؤولية

9. Do you think that technology literacy supports the acquisition of conceptual knowledge in the process of learning for a lifetime?

- هل تعتقد أن العلم بأمرور التكنولوجيا يساعد في اكتساب معارف مفاهيمية في عملية التعلم مدى الحياة؟

Yes نعم No لا

10. How can technology literacy help the learners develop their interpersonal/interactive skills?

- كيف يمكن للعلم بأمرور التكنولوجيا أن يساعد المتعلمين في تطوير مهاراتهم التواصلية؟

❖ It allows them to exchange and communicate more

- يسمح لهم بتبادل المعارف والتواصل أكثر

❖ It allows them to acquire extra knowledge and skills which would facilitate the interaction and the mutual understanding

- يسمح لهم باكتساب معارف ومهارات إضافية تسهل التفاعل والتفاهم المتبادل

❖ It provides them with more opportunities to practice

- يزودهم بفرص أكثر للممارسة

11. To what extent do you agree with the following statement?

إلى أي مدى توافق على العبارة الآتية:

“Joining lifelong Learning with technology literacy gives better outcomes in the process of learning generally and in developing psychomotor skills particularly”

“إن الجمع بين التعليم مدى الحياة والعلم بأمرور التكنولوجيا يؤدي إلى نتائج أفضل في مسار التعليم بصفة عامة وتطوير

مهارات نفسية حركية بصفة خاصة”

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Strongly agree أوافق بشدة Agree أوافق slightly agree أوافق قليلا

Disagree لا أوافق slightly disagree لا أوافق قليلا

12. "The use of technology literacy would improve your personal/reactive skills" do you agree?

"يؤدي استخدام العلم بأمرور التكنولوجيا إلى تحسين مهاراتك الشخصية وردود أفعالك" هل توافق على ذلك؟

Yes نعم

No لا

Appendix (B): Teachers' Interview

Teachers' Interview

Dear teachers,

The primary aim of this interview is to explore teachers' perceptions and views about the use of technology literacy as a means to promote learners' lifelong learning. All information that is collected in this study will be treated confidentially.

We value your opinion and thank you in advance for your time and cooperation.

1. How long have you been teaching?

.....

2. In your opinion, how might using technology tools help students develop their intellectual/cognitive skills (critical thinking, problem-solving, and decision-making) so they can become lifelong learners?

.....

.....

.....

3. How do you guide your learners as they acquire the factual knowledge (including the nomenclature and particulars of a subject) they need to foster lifelong learning?

.....

.....

.....

4. What role does technology literacy play in developing learners' interactive/interpersonal skills (such as verbal and nonverbal communication, dispute resolution skills, teamwork, empathy, and listening)?

.....

.....

.....

5. How can technology be used to improve learners' psychomotor skills (movement activities that call on both cognitive and motor functions; in tasks like typing, tossing darts, kicking a soccer ball, driving a car, and letter-writing)?

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.....

6. How effective do you believe technology is at motivating learners to pursue lifelong learning?

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.....

7. How effectively does technology assist in the acquisition of conceptual knowledge (which includes reading, watching, listening, experiencing, and having reflective, critical thought processes) during lifelong learning?

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.....

8. Being technologically literate, lifelong learners are able to expand their reactive skills (the ability to think quickly, creatively and yet logically when faced with an emerging situation to prevent problems). Elaborate

.....
.....
.....

9. In your opinion, how might using digital gadgets help learners practice their technical skills (such as data analysis, web development, computer programming languages, graphic design, and writing)?

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10. Technology creates countless learning opportunities so that learners are completely equipped with new skills. How essential is it for promoting lifelong learning?

.....

.....

.....