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Investigating the role of digital technology in promoting learner autonomy

**Dissertation submitted in Partial Fulfillment of the Requirement for the M.A.
Degree in Didactics of English**

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Dedication

This dissertation is dedicated to:

My parents for their support, care and patience

My brothers and the rest of my family for their encouragement throughout this journey

And for those who believed in me and pushed me to succeed

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List of abbreviations and acronyms

EFL: English as a foreign language

H: Hypothesis

E-learning: Electronic learning

Abstract

This work investigates the role of digital technology in learning which can be a valuable tool in enhancing learning. The aim of this research is to discover how digital technologies can allow learners to direct their learning process. It seeks to explore the significance of using technology to find solutions for the challenges that face EFL students. The research tool used in this study is the students' questionnaire. The questionnaire was given to thirty master one EFL students at Chedli Ben Djdid University, El Taref during the academic year 2022/2023. The obtained results show that learning through technology enhances learner autonomy in various aspects of the language, and it has many advantages which help students take control of their learning.

Key words: Learner autonomy, Digital technology, EFL students.

ملخص

هذا العمل هو عبارة عن بحث حول دور التكنولوجيا الرقمية في التعلم، والتي يمكنها ان تكون أداة قيمة لتحسين التعلم. الهدف من هذا البحث هو اكتشاف كيف يمكن للتكنولوجيا الرقمية ان تسمح للطلبة من التحكم في عملية التعلم. يسعى هذا العمل الى اكتشاف أهمية استعمال التكنولوجيا لإيجاد حلول للعراقيل التي يواجهها طلبة اللغة الإنجليزية كلغة اجنبية. أداة البحث المستعملة في هذه الدراسة هي استبيان الطلبة. تم إعطاء الاستبيان الى ثلاثون طالب في قسم السنة الأولى ماستر لغة انجليزية وآدابها بجامعة الشاذلي بن جديد ولاية الطارف خلال العام الدراسي 2022/2023. النتائج المتحصل عليها في هذا البحث تظهر لنا ان التعلم عن طريق التكنولوجيا تحسن التعليم الذاتي من مختلف جوانب اللغة، و لها عدة مزايا لمساعدة الطلبة من التمكن في التحكم في التعلم.

الكلمات المفتاحية التعلم الذاتي، التكنولوجيا الرقمية، طلبة اللغة الإنجليزية كلغة اجنبية.

General Introduction

Over the past few decades, the revolution of technology has influenced every aspect of our life and we have seen a considerable rise in the use of digital technologies in education. It is crucial to recognize the scientific and technical developments in this era. Technology became essential in everybody's life. The more technology advances the more benefits it provides for students to be autonomous in their learning. The growth of learner autonomy through the use of technology has been obvious globally. It helped them to direct their learning and break the classic barriers to experience a new opportunity and take responsibility in the learning process.

1.Statement of the problem

EFL learners have been looking for good ways to learn foreign languages effectively. Teachers throughout history tried to create the best methods and techniques to help learners achieve their purpose. However, the evolution of digital technology reached the educational level and made both teachers and learners wonder how they are going to use technology as a useful tool in the learning process. Few years later, the use of technology amongst learners has increased dramatically and they rely on it to look for information, make researches, and use electronic materials to improve their level. However, recently, learners who rely on technology to learn foreign languages are better than learners who rely only on the teacher only.

2.Research questions

Q1) To what extent Is digital technology helpful for learners?

Q2) Do learners get positive effects through technology?

Q3) Do technology create autonomous learners who are able to learn foreign languages independently?

3. Research hypotheses

In order to answer the previous research questions we have hypothesized the following:

H1: Digital technology is very helpful for learners.

H2: technology has positively effected learners' language learning

H3: technology promotes learner autonomy and independent learning.

4. Aims of the study

The main aim of this research is to explore the significance of digital technologies as powerful tools for learners to learn English as a foreign language. It aims also to investigate how learners will rely on themselves in their process of learning and take full responsibility on controlling their own learning. In addition to investigate how technology motivates learners to be autonomous.

5. Methodology

A quantitative method is used in this study, which is based on the learners questionnaire as the main data tool of the study. The questionnaire intends to investigate how learners learn the English language, and how they integrate technology in their learning. Furthermore, the questionnaire tries to investigate if technology succeeds to create autonomous language learners.

6. Population and Sample

The study targeted the EFL students in the Department of EFL at the University of Chadli Ben Djedid- El Tarf. The sample of the study who participated in this work were Master one students who are 46 students. However, the real number of students who participated in answering the questionnaire is 30 students.

7. Significance of the study

The study sheds light on the importance of incorporating technologies in foreign language learning. It attracts the attention of foreign language learners towards the benefits of digital technologies, and to spread awareness between students to be autonomous learners due to technology use. This study will provide important insights to decision makers, like policy makers, administrators and educators in order to make new decisions on incorporating technology to enhance learner autonomy.

8.The these structure

The these is divided into three chapters: The first chapter will review the related literature, to have previous information about learning and learner autonomy and studies that share the same scope; ie, technology and its contribution to autonomous learning. The second chapter is devoted to the study we made to answer the research questions. The third chapter is a combination between the implementations of this study and some recommendations to teachers and decision makers and limitations of the study.

Chapter one: Learning, Technology and learner autonomy

Introduction

According to Gayatri, V. (2020) The learning of the first language starts from understanding various sounds around, reproducing similar sounds and attaching objects to the sounds. Therefore, this chapter is advocated to review the literature regarding language learning and the use of technology in language learning. As a result, it is divided into two sections. The former represents the theories of language learning and the meaning of learner autonomy and the learning styles. While, the later provides the definition of technology in learning and the role of technology and finally how it influenced the modern situation of learning.

Section one: Learning and learner autonomy

1.1.Theories of language learning

Over the last century, many theories were introduced to explain the process of understanding and speaking the first language. There are three main theories Behaviorism, cognitivism and constructivism.

1.1.1.Behaviorism theory

Pavlov made an experiment called “salivating dog” experiment, Pavlov tried to ring the bell whenever he fed the dog few days later the dog start salivating every time he hears a bell ring. “The dog associated the bell ring with being provided with food so any time a bell was rung the dog started salivating, it had learnt that the noise was a precursor to being fed.” (Becton, L, 2023)

According to Becton, L (2023) this theory is founded by B.F Skinner. Skinner was inspired by Pavlov’ experiment. He claimed that imitation is crucial in the process of learning. That means learners imitate others on how words are pronounced. For instance, learners seek to imitate their teacher’s speech and actions, they repeat the

behavior they see and the words they hear, in other words, they learn by observing the adults' performance. Skinner claimed that learning is related to positive and negative reinforcement. For instance, if a teacher asks a question and the learner gives a correct answer to that question so the teacher responds by "that's good, excellent", this will stimulate the learner to try his best, give right answers to the next questions, and hear those encouraging words. In conclusion, the founders of this theory believe that stimuli and response are complement each other to enhance learning.

1.1.2.Cognitivism theory

Main, P. (2022) claims that this theory focuses on how our mind process the information like receiving information, storing it in the memory, and retrieving the information again. That means learning is a mental activity where learners use their cognitive process to analyze the information they receive instead of only responding to it. For instance, applying cognitivism in a classroom will bring many advantages like getting students involved in the lesson by interaction or by mental activities that allows them to use their brain and promote their thinking abilities. The main idea that cognitivism pursuit is that learning comes from engaging in activities were students solve problems and use their thinking skills instead of the classic passive learning that is based on memorizing information.

1.1.3.Constructivism theory

Ertmer, P. A., & Newby, T. J. (2013) argued that constructivism is a theory that equates learning with creating meaning from experience (Bednar et al., 1991). Although constructivism and cognitivism have some similarities as they both believe that learning is a mental activity however cognitivists think that the mind is a tool to understand the world and meanings while constructivists claimed that the mind analyze the world and create its own unique meaning.

According to Becton, L (2023), “Constructivism is based on the premise that we construct learning new ideas based on our own prior knowledge and experiences.

Learning, therefore, is unique to the individual learner. Students adapt their models of understanding either by reflecting on prior theories or resolving misconceptions.” In other words, students create knowledge by building conclusions from their experiences.

1.2. Definition of Autonomy:

“Autonomy comes from the Greek roots auto meaning "self" and nomos meaning "custom" or "law." This reflects the political sense of the word — a group's right to self-government or self-rule. When a person seeks autonomy, he or she would like to be able to make decisions independently from an authority figure.” Autonomy. (n.d.). It means that feeling free in making decisions or doing certain actions by choice without external forces. People are autonomous when they have the ability to choose their own path.

1.2.1. Learner Autonomy:

In recent decades, we have seen a considerable rise in the concept of learner autonomy. Throughout history, scholars went through discussions to make a specific definition to this concept but they did not agree on a detailed definition. However, there are various of definitions of learner autonomy.

In Holec’s paper “Autonomy and Foreign Language Learning” (1981), Holec defines the concept as “taking charge of one’s own learning” (p.3). That means the learner takes responsibility of his process of learning. The learner is independent in managing his time and choosing the subject, the content, the materials. The learner also decide which strategies and methods he uses in his learning process.

Another definition is provided by Little (1991 p4), learner autonomy is “essentially, autonomy is a capacity - for detachment, critical reflection, decision-making, and independent action” (Little, 1991: 4). In this definition, David Little describes autonomy as a capacity, the independency of the learner involves determining their needs and identifying their goals and how they monitor their advance in learning without any intervention from the teacher.

According to Professor J. C. Richards (2014) “The notion of learner autonomy means shifting the focus from the teacher to the learners. This means involving learners in decisions concerning setting objectives for learning, determining ways and means of learning, and reflecting on and evaluating what they have learned” In this definition, Richards defines learner autonomy as a way of learning that involve some approaches and methods that help learners depend on themselves in their learning process to boost their learning. In this case the role of the teacher becomes as facilitator.

Richards (2014) refers to principles of autonomous learning provided by Benson.

- Active involvement by students in their own learning
- Providing options and resources
- Offering choices and decision-making opportunities
- Supporting learners
- Encouraging reflection

From the previous definitions we realize that it is not easy to agree on one definition because everyone define it from different angle. Some of them describe it as a capacity and others define it as set of principles, and it can be seen as a behavior regarding various skills during the activity of learning.

1.3.Learning styles:

EFL learners have experienced different strategies and techniques in their process of learning foreign languages. This process of receiving information, storing it and retrieving it differs from learner to another. Recently EFL teachers realized that not all learners learn the same way. Some learners are visual, others learn by listening and practicing to learn, while others learn through writing.

After many studies made on students EFL teachers came up with a concept called “learning styles” this concept is based on creating courses for EFL learners based on the way each individual understand the lesson so teachers use different strategies during the class to make sure that all learners understood the lesson. Learning styles play great role for learners because knowing how to use it properly will help learners understand better. Part of the teacher’s responsibilities is to present the lessons in a way that allows learners to receive and retrieve information easily. “Scientists have for years tried to understand the best ways students learn through research. One of the popular theories, to this day, is the VARK model. This model identifies four types of learners: visual, auditory, kinesthetic, and reading/writing.” 8 Types of Learning Styles (2021). That means that there are four main types of learning styles and they are called VARK

1.3.1.visual learning styles

“Visual learners are individuals who prefer to take in their information visually—be that with maps, graphs, diagrams, charts, and others. However, they don’t necessarily respond well to photos or videos, rather needing their information using different visual aids such as patterns and shapes” 8 Types of Learning Styles (2021). It means that visual learners generally learn by seeing and observing things. They understand better when the information is presented in a visual way.

According to 8 Types of Learning Styles (2021), the most effective way to teach

a visual learner is by showing them the relationship between the ideas mentioned in the lesson visually. For example, teachers can explain a scientific process by using a flow chart. Moreover, teachers are required to master their body language because it is essential for visual learners.

1.3.2. Auditory learning style

“Auditory learners are individuals who learn better when they take in information in auditory form when it is heard or spoken. They are prone to sorting their ideas after speaking, rather than thinking ideas through before. Since, to them, saying things out loud helps them understand the concept” 8 Types of Learning Styles (2021). It means that auditory learners understand better when they listen to the information because they have good listening skills.

Based on 8 Types of Learning Styles (2021) these kind of learners process information effectively when they listen to the teacher carefully. They tend to learn faster when the information is supported with sound. They retrieve information better by remembering what they listened to better than written notes. In this case, the teacher is required to master his tone of voice to help auditory learners understand. The best way that helps auditory learners to learn is when information is presented to them through techniques that includes talking. For instance, lectures and group discussions. In addition to that, they learn more by having recordings of the lectures, group activities that require classmates explaining ideas, etc.

1.3.3. Kinesthetic learning style

“Kinesthetic learners are individuals who prefer to learn by doing. They enjoy a hands-on experience. They are usually more in touch with reality and more connected to it, which is why they require using tactile experience to understand something better.” 8 Types of Learning Styles (2021).

That means they would not be able to process information when it is spoken or heard but the best way for them to learn effectively is by putting things into practice. They tend to get involved by acting or through personal experience using their hands to touch to understand ideas.

1.3.4. Reading/Writing learning style

“Reading/writing learners consume information best when it’s in words, whether that’s by writing it down or reading it. To them, text is more powerful than any kind of visual or auditory representation of an idea. These individuals usually perform very well on written assignments.” 8 Types of Learning Styles (2021). In other words, the most effective way to for reading/writing learners is by getting them to read articles, books, and to let them write assignments. For instance, it’ better to have them describe and illustrate diagrams or charts by written statements, take written quizzes, or writing in diaries.

Section two: Technology and Learner Autonomy

1.4. Definition of technology

According to Technology – Podictionary Word of the Day (2009) The word technology trace back from a Greek word “Technologia”. It is originally divided into two words the first one is “techn” which means “art” and the second part is ”logy” which means “the writings on” or “the accumulated knowledge about.” It refers to the skills and techniques utilized in different crafts.

According to Luna (1994), throughout history the word technology was mentioned in Harvard University course on “application of the Sciences to the Useful Arts” in 1816. According to Encyclopedia Americana (1832, As cited in Introduction History of Technology), technology is defined as principles, processes, and nomenclatures. These previous definitions refer to technology as some kind of

techniques used in the process of accomplishing something.

Based on the National Academy of engineering (2014) “Technology is any modification of the natural world done to fulfill human needs or desires” this definition is broad as it covers all human-made things, whether it is simple objects and items or huge devices, machines, buildings designs or novelty of solutions to new problems as it has a great role in developing and shaping societies and evolve people’s lifestyle.

According to Merriam Webster dictionary (2023) technology is “a manner of accomplishing a task especially using technical processes, methods, or knowledge” it means applying useful systems and techniques to achieve something.

1.5.The revolution of modern technology

The human civilizations has been developing technology throughout history, and modern technology has flourished dramatically after the Industrial Revolution in the 18th and 19th centuries. Here are some crucial milestones in the emerge of modern technology.

According to Who Discovered Electricity?. (n.d.). Benjamin Franklin was a well-known scientist at his time in the 1700s, he was responsible for significant discoveries and inventions. One of his biggest discovery was “Electricity”, this event occurred when he conducted his famous experiment. This discovery assisted the progress and development of light bulbs.

1.6.Internet

According to Dennis, M. Aaron and Kahn, . Robert (2023), “The Internet is a vast network that connects computers all over the world. Through the Internet, people can share information and communicate from anywhere with an Internet connection.” It means that the internet has spread all over the world and allowed people to connect with each other from any location.

Based on *The Impact of the Internet on Globalization (2022)* the internet has a great role on breaking down geographical barriers and allow people to communicate faster and easier. This revolution led to a new concept called globalization. Writers, politicians and academics view internet as the fuel of globalization because it made the world is closer in various aspects of life. For instance, students are no longer restricted to their location or their limited resources but they can access resources from variety of platforms in the world and receive the information they need.

The Impact of the Internet on Globalization (2022) provides a figure that shows that the number of internet users worldwide has flourished in the previous decade with 4.95 billion user in 2022.

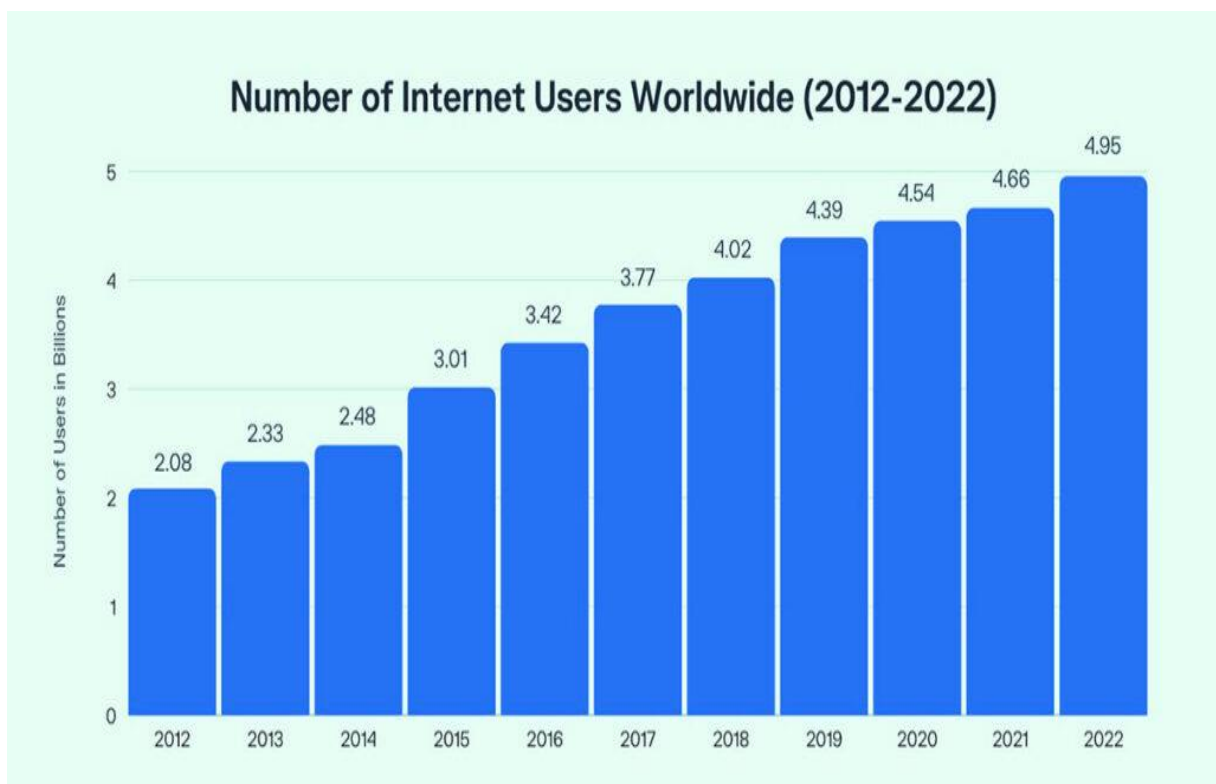


Figure 1: Number of internet users worldwide

<https://www.mywestford.com/blog/the-impact-of-the-internet-on-globalization/>

The figure contains the number of internet users worldwide and it is counted per

billions. It represents the number of users each year from 2012 to 2022. The number increases every year from 2012 by 2.08 billion user to 2022 by 4.95 billion user

Sebastian, L. (2023) provided another study that represents the number of users per region.

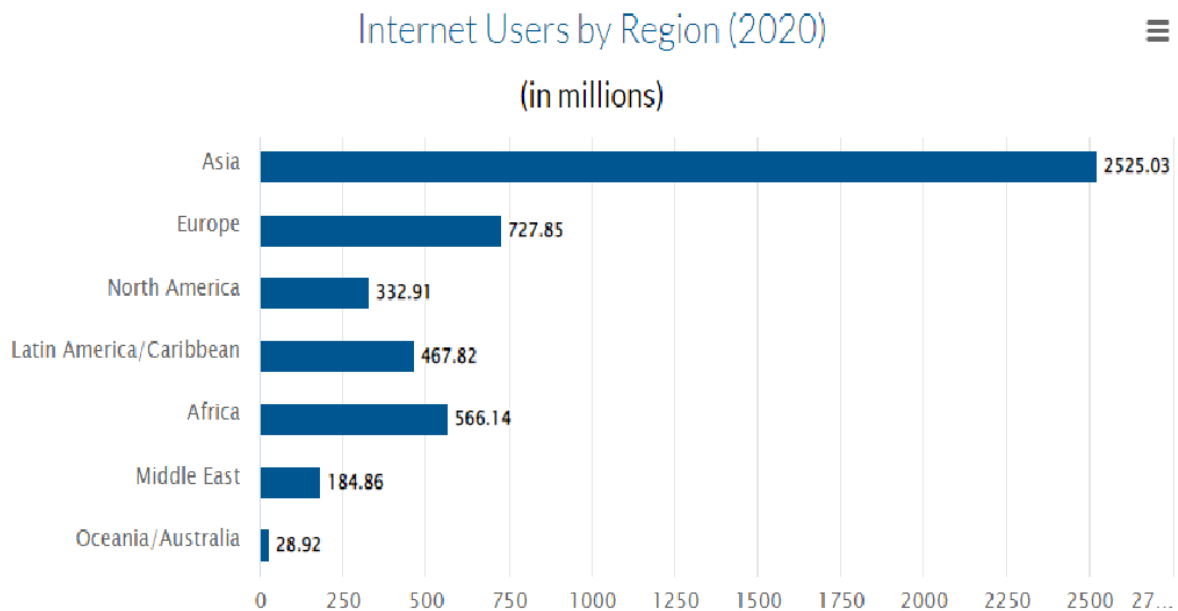


Figure 2: Internet users per region (2020)

<https://financesonline.com/number-of-internet-users/?msclkid=79676cffd03e11ec9d65b6248ce62e5c>

This above statistics shows the number of internet users in every region per millions in 2020. Obviously, Asia leads the statistics with 2525.03 million user. Europe took the second place with 727.85 million user. Then Africa is the third region worldwide with 566.14 million user of the internet. After that the rest of the region with less than 500 million user like North America, Latin America, Middle East and Australia.

1.7.E-learning

According to Oxford Learner's Dictionaries, e-learning is "a system of learning

that uses electronic media, typically over the internet”.

This definition shows that e-learning is more than the delivery of information, but the use of new developed tools that enhance the learning experience, and also involves the various processes during learning.

Clark and Mayer (2016, as cited in Tamm, S. 2023 What is the Definition of E-Learning?) stated that E-learning is “instructions delivered through digital devices to support learning” it refers to the use of any digital device that can be helpful for learning.

Paloff and Pratt (1999) defined e-learning as: "Electronic learning or E-learning is a general term used to refer to computer-based learning" (pp.15-6). Jones (2003) states that "E-learning is digital learning, computer-enhanced learning. So, no matter which tag is applied, and all aim to exploit web-based technology to improve learning for students" (p. 66). All these definitions entails that the integration of any technology that can access to the World Wide Web in education is considered as e-learning.

Online course platforms provide a better way for learners to learn. They are in a form of websites that includes courses and students from everywhere in the world have the ability to pay for that course and have access to it. It course makers are teachers who want to create an online course to help students who live in distant area to reach their courses. When learners use an online course platform they are allowed to direct their learning and manage their time. Moreover, this industry has increased dramatically during the COVID-19 due to public restrictions that led to closing of educational institutions. Aleem, A (, n.d.).

According to Anjana (2023) there are top six online platforms in the world that learners from everywhere in the world use to learn, and they are listed as follows:
Coursera, Skillshare, Lynda.com, Udacity, Udemy, edX.

According to Wood, J. (2022) Coursera has released a study that shows the number of online learners who registered and enrolled in its learning platform.

More learners are accessing online learning

The demand for online learning on Coursera continues to outpace pre-pandemic levels.

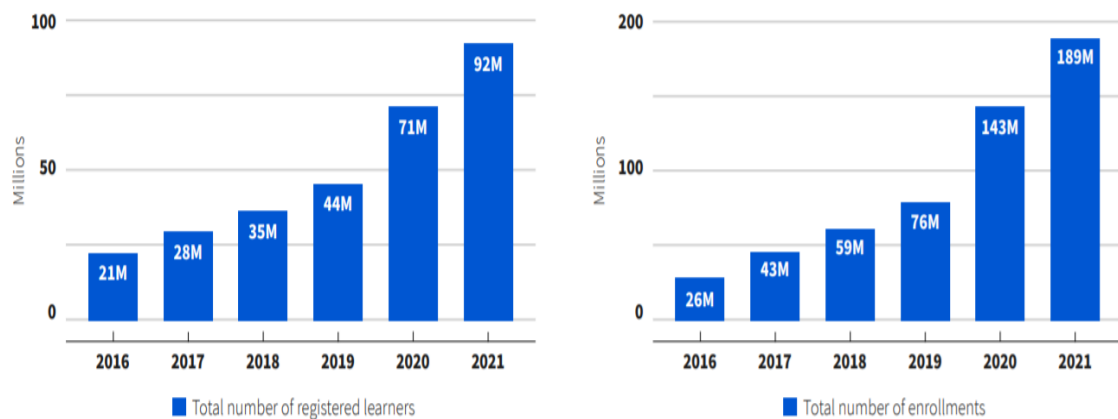


Figure 3: The number of online learners who registered and enrolled in coursera (2022)

<https://www.weforum.org/agenda/2022/01/online-learning-courses-reskill-skills-gap/>

There are two statistics in one picture. It represents the number of learners who use the internet to learn. It shows the number of learners per million in each year from 2016 to 2021. As we can see the number of learners increases every year whether they register or enroll in online learning. The total number of learners who registered went from 21 million learner in 2016 to 92 million in 2021. While the number of learners who enrolled went from 26 million in 2016 to 189 million in 2021. This study emphasize that learners are becoming more interested in learning through online courses.

1.8.Traditional situation (Teacher-centeredness)

The first requirement in the traditional situation is a physical classroom where the lesson takes place “Physical classrooms create a face-to-face environment for

students and teachers. They refer to a classroom set-up where everyone can communicate with each other and engage. A physical classroom has different materials and furniture in them.” Online classroom vs Physical Classroom (2023). The Teacher face the learners, explain the lesson to them, and write on the board what is essential.

And learning in a classroom has faced some challenges that decrease the learning and teaching process is overcrowded classrooms “An ideal classroom would be limited to 15 to 20 students, but many classrooms today have over 30 or even 40 students”, more number of students equals more noise and distraction. In addition, learners attention decrease when the number of learners is high this lead to less personalized instruction for learners who need more attention especially introvert learners. It also increase in illness risk for instance COVID-19 has spread everywhere and overcrowded classrooms couldn’t adapt with social distancing this led the virus to spread easier among learners. 5 Ways That Overcrowded Classrooms Affect Education (n.d.).

“With physical classroom learning, students must physically attend the courses to get credit for attendance. Therefore, those who must travel long distances to get to school must allow enough time to arrive on time, particularly when inclement weather is involved.” Online classroom vs Physical Classroom (2023). That means learners should travel to another area to learn the course that isn’t available in their local area, so it takes time to travel to class everyday.

According to Online classroom vs Physical Classroom (2023) “A campus-based learning experience means the class schedule is predetermined and not subject to change. Students must shape their personal schedules around school instead of the other way around. If plans unexpectedly change or an emergency comes up, the student

cannot adjust the class schedule to turn in the work at a different time. If a scheduling conflict arises between work and school, students are forced to choose between getting an education and getting a paycheck”

Moreover, teachers and learners should have a physical textbook as a tool to find lessons a measure the progress of learning. However, a huge problem face learners with textbooks is that generally they are outdated or inappropriate. Firstly, old versions of textbooks are still used nowadays with the same pictures and topics, and not even culturally relevant to the teaching context. Secondly, some of them are inappropriate because the majority of textbooks are Western-centric they may include topics that are not acceptable. *The Case For and Against Coursebooks* (2023).

1.9. Technology assisted teaching + teacher (modern situation)

Based on *How the Internet is Beneficial to Students* (2022) The revolution of the internet in last decades changed the world to extremely different level it changed our everyday communication, the way we purchase products, and most importantly it became a powerful educational tool. The learner now needs internet to connect to online platforms that contains ocean of courses. Learners and teachers from all over the world use the internet to access various sources to obtain the latest information.

Digital devices increase the learning process. “Technology-based instruction can reduce the time students take to reach a learning objective by 30-80%, according to the US Department of Education and studies by the National Training and Simulation Association”. *Should Tablets Replace Textbooks in K-12 Schools?* (2018). In other words Tablets can download and store tremendous amount of resources whether they are videos, pictures, e-books, articles...) and learners can also use it to do homeworks,

quizzes, and access other files, this lead the learners to no longer use pen and copybooks and reject the physical books and classroom materials.

Gupta, V. (2023) claimed that earlier learners had to travel to learn foreign languages. And this makes them spend so much money on expenses. Today, things have changed. The internet has made life easy and comfortable. Since the internet does not cost much money and the access to resources generally is free, learners living standards is not a problem anymore. That means you can learn English as a foreign language through digital technologies even if there is no teacher in your region. In addition, EFL learners will no longer face the challenge of timing since they can use the internet at any time of the day. They can have flexible scheduling to adjust their learning hours.

Another study from Online Education Trends Report. (2020). where students chosed online learning.

Reasons for Choosing Online Learning Options

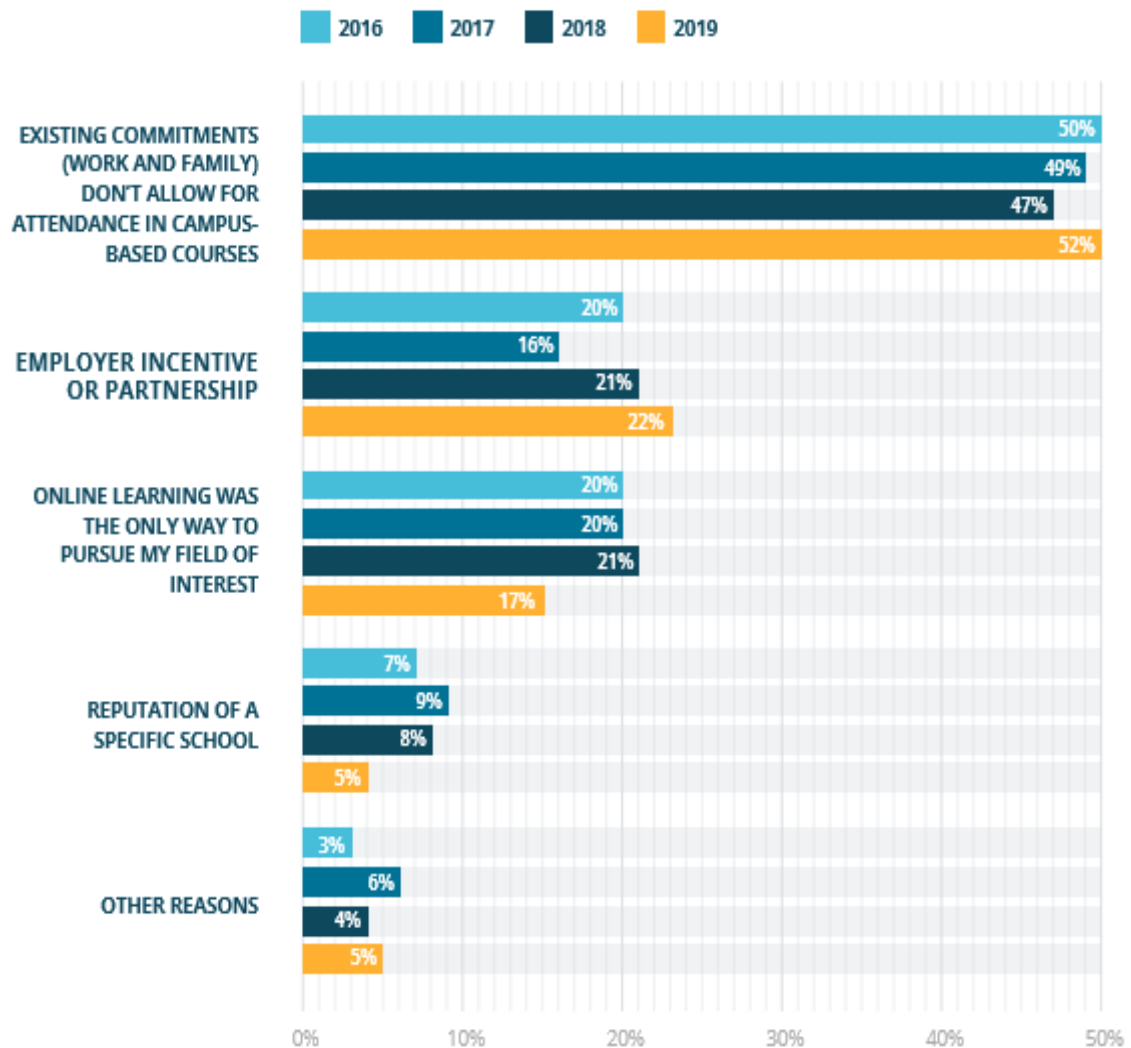


Figure 4: Reasons for choosing online learning options

<https://res.cloudinary.com/highereducation/image/upload/v1584979511/BestColleges.com/edutrends/2020-Online-Trends-in-Education-Report-BestColleges.pdf>

This study contains the reasons why students chose online learning over campus-based program. They were counted in percentages each year from 2016 to 2019.

Obviously, when they study around other commitments like work and family, it helps them to make flexible scheduling.

1.1.10. The role of Technology in foreign language learning

According to Nielson, K. B. (2019) “moving to a country that speaks the desired language is just not possible for most people. With technology, learners can still experience some of the benefits of immersion. Thanks to next-generation messaging and social networks, remote students can access fluent speakers of the languages they are learning, offering real-world language practice that is not possible in traditional classrooms.”

In other words, few decades ago the only way to be fluent in a foreign language is by traveling to the countries where that language is widely spoken so the learner communicate directly to native speakers. However, the problem that most learner face is that they cannot afford to travel, this challenge makes their learning slower. However, technology wiped this issue and made it easy for learners to communicate with native speakers directly through voice/video calls.

She(2019) also adds “In general, technology-enabled learning experiences encourage more consistent engagement among students, giving them access to peers and instructors around the clock and from anywhere in the world.” In other words, digital technologies allows learners to participate with other learners from other countries in online groups, and choose any instructor at any time of the day.

Nielson, K. B. (2019) also mentioned that digital technologies provides enormous electronic materials and tools to assist learners in real time. Learners have the ability to reach simplified dictionaries, create flashcards, and browse the internet in the language they are learning. They can find conversation partners, and online tutors. And they can reach plenty of examples of the languages they are learning From different websites instead of having limited examples from traditional textbooks. Social media apps provides daily articles, discussions, ect) this helps learners to mix social media browsing with language learning, that means learners immerse themselves in that

language.

Conclusion

In this chapter we have reviewed the different arguments between the founders of learning theories, and learning styles that illustrates how students receive information. Then the rise of interest of learners on taking advantage of the influence of technology in education to increase their learner autonomy in the past few decades.

Chapter two: Methodology

Introduction

As the research aims to investigate how digital technology can be used to enhance the independence of learners. This chapter will present the study we made to get a full report about students awareness of learner autonomy, and the importance of using technology in education and how it promote their self-sufficiency in learning. This chapter is advocated to demonstrate the research instrument, the participants, and the results of the questionnaire and the discussion of the findings of the questionnaire.

2.1.Participants

This questionnaire was conducted in the department of English language and literature at Chedli Benjdid University, El Taref, during the academic year 2022/2023, to thirty (30) master one students. In order to investigate their awareness and perceptions towards the use of digital technologies in their learning process in order to increase their learning.

2.2.Description of the questionnaire

The questionnaire consists of 19 questions. The types of questions are mixed between open-ended questions where we ask students to choose either “Yes or No” answer or multiple-choice questions where we ask students to pick one or more than one of the suggested answers, and close-ended where we ask students to provide their opinions and support it with examples if necessary. The questionnaire is designed to collect information about student’s points of view and the overall experiences with the use of technology and how it promotes their autonomous learning. The questions are categorized into four sections, and they are sectioned as follows:

Section one: Background information: (first question, Q1) this section contains one question to students to get information about their level in English language.

Section two: Technology and learning: (from Q2 to Q7) This section includes questions about the use of technology in learning English language.

Section three: The positive effect of technology in learning: (from Q8 to Q11) This section contains questions about how technology positively affected their learning experience.

Section four: The relationship between technology and learner autonomy: (from Q12 to Q19) it aims to collect information on how technology promote learner autonomy.

2.3. Analysis of the Students' Questionnaire Results

Section one: Background information

Q1: What is your level in English language?

options	participants	percentages
a	1	3.33 %
b	22	73.33 %
c	7	23.33 %
d	0	0 %
total	30	100 %

Table 1: Students' level in English language.

The given table represents the level of the students who answered this questionnaire, we notice that the majority of students have a good level in English language with 73.33 %, while 23.33 % have average level, and 3.33 % are excellent. But, no one have a bad level.

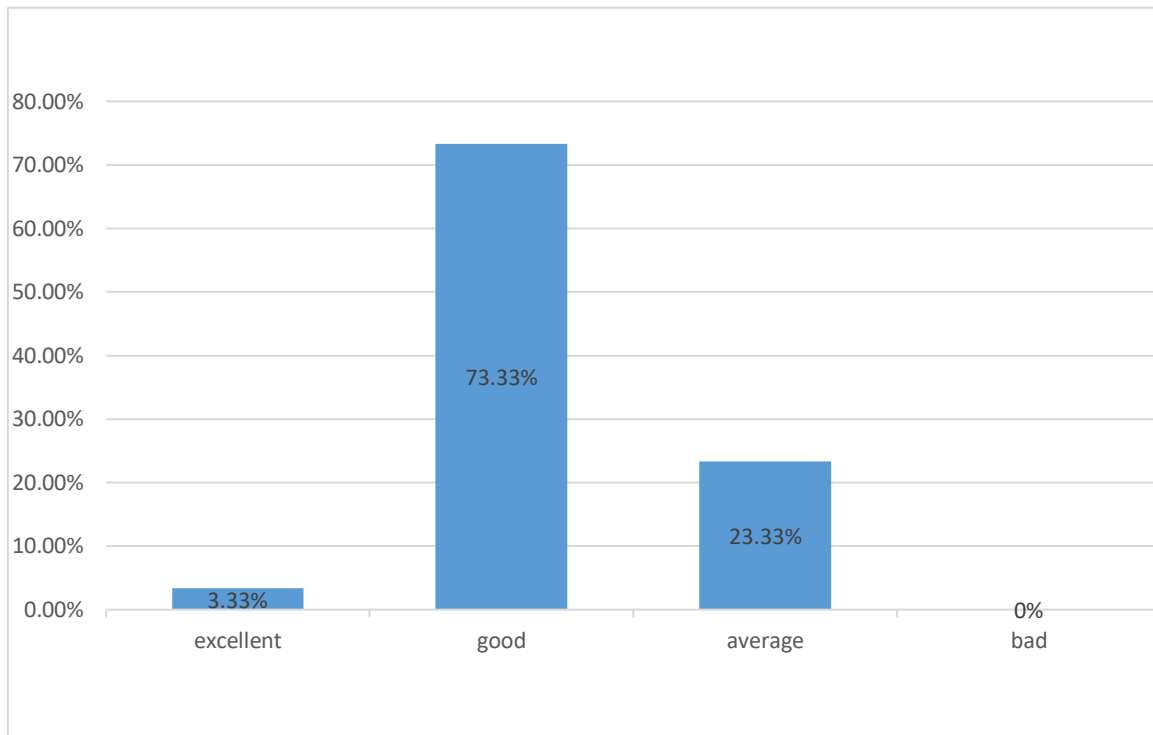


Figure 5: Students level in English language.

Section two: technology and learning

Q2- Do you consider digital technology an effective tool for learning?

options	participants	percentages
a	30	100 %
b	0	0 %
total	30	100 %

Table 2: Students' opinion in the effectiveness of digital technology for learning.

The given table shows an agreement of 100 % between students that digital technology is an effective tool for learning, while. None of them believed the opposite.

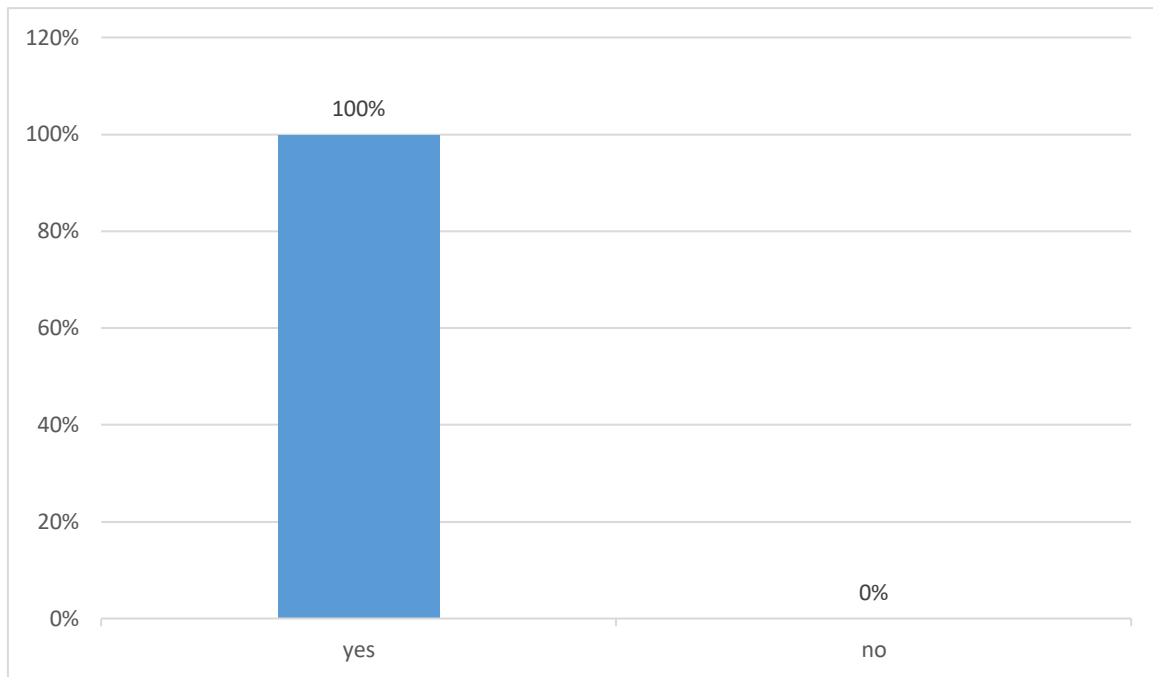


Figure 6: Students' opinion in the effectiveness of digital technology for learning.

3- Do you use technology to learn (smartphones, laptops, internet, videos)?

options	participants	percentages
a	30	100 %
b	0	0 %
total	30	100 %

Table 3: Students usage of technology to learn.

The table shows the results, and it clearly indicates that 100 % of the students responded positively with yes, indicating that they use technology in learning. None of them reported not using technology to learn.

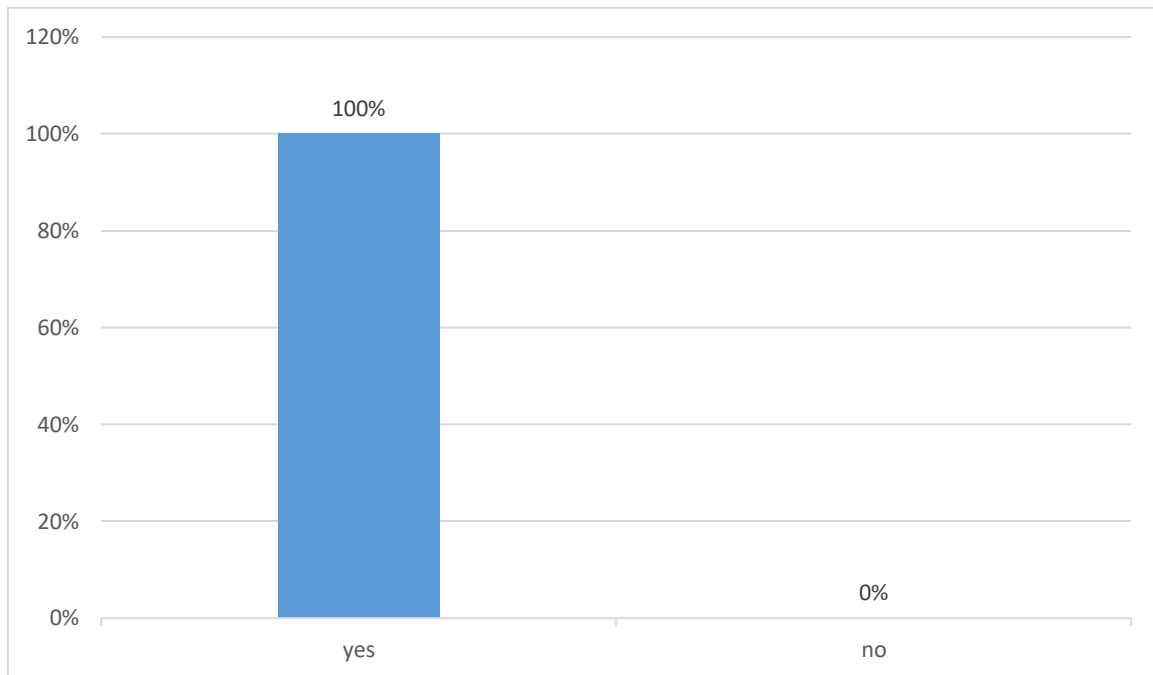


Figure 7: Students usage of technology to learn.

4- How many times do you use technology to learn English?

options	participants	percentages
a	16	53.33 %
b	14	46.66 %
c	0	0 %
total	30	100 %

Table 4: Students' frequency of using technology to learn.

The table provides a view of how frequent students use technology to learn English. It shows that the majority of students, 53.33 % use it very often. Furthermore, the chart indicates that 46.66 % of them use it sometimes. None of them rarely uses it.

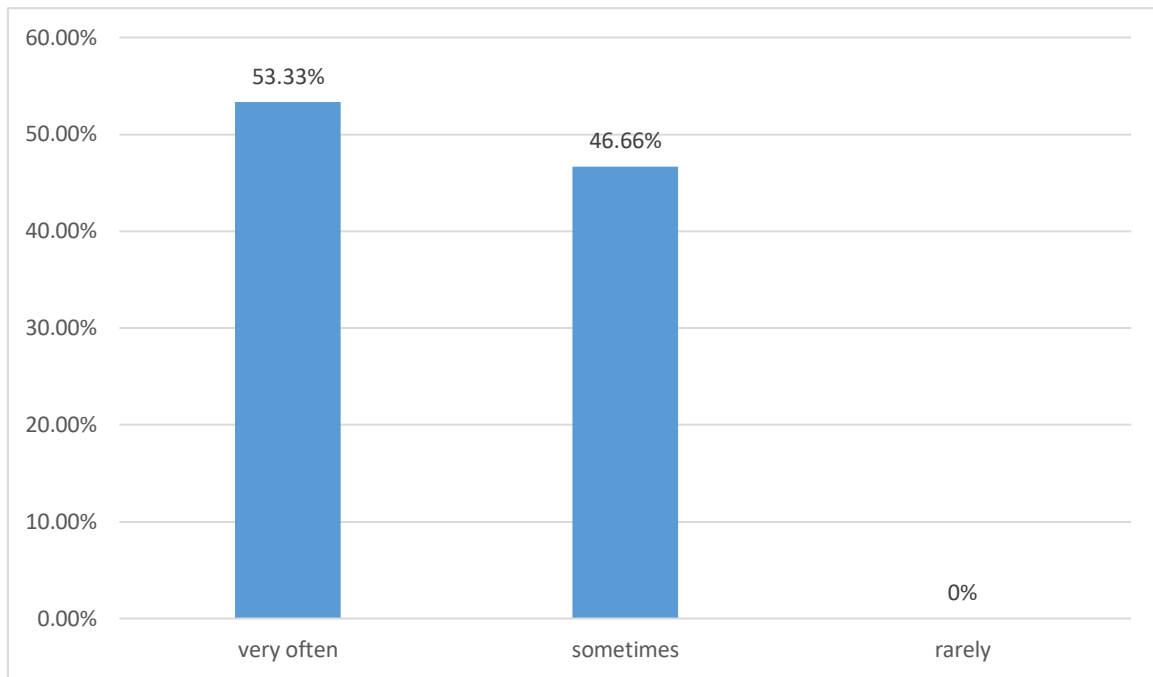


Figure 8: Students' frequency of using technology to learn.

5- What technologies do you regularly use to support your learning?

options	participants	percentages
a	20	66.66 %
b	29	96.66 %
c	2	6.66 %
d	1	1 %
total	30	100 %

Table 5: Technologies students regularly use to support their learning.

The results obtained from question five show that the vast majority of students 96.66 % regularly use smartphones to cover their learning. Moreover, the table reveals that considerable percentage of students 66.66 % make use of laptops to learn. While small percentage of students 6.66 % use radios. They listed them as following:

1st smartphones

2nd laptops

3rd radio

4th books and magazines

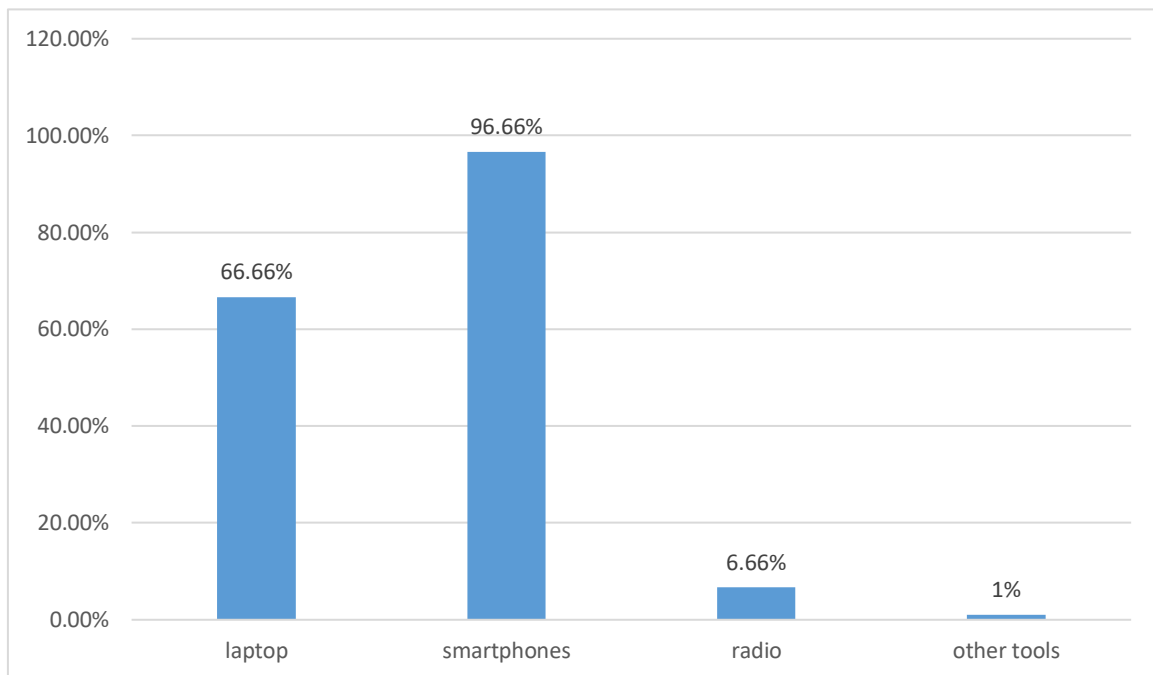


Figure 9: Technologies students regularly use to support their learning.

6- Which skill(s) did technology helped you develop?

options	participants	percentages
a	20	66.66 %
b	9	30 %
c	5	16.66 %
d	19	63.33 %
total	30	100 %

Table 6: Skills that technology helped them develop.

The above table represents skills that students developed through the support of technology. Students were able to give more than one answer. 66.66 % of participants chose speaking as the number one skill that has advanced through technology. 63.33 % of them has developed their listening skill. While 30 % of the participants enhanced

their writing skill. And 16.66 % of the students improved their reading skill.

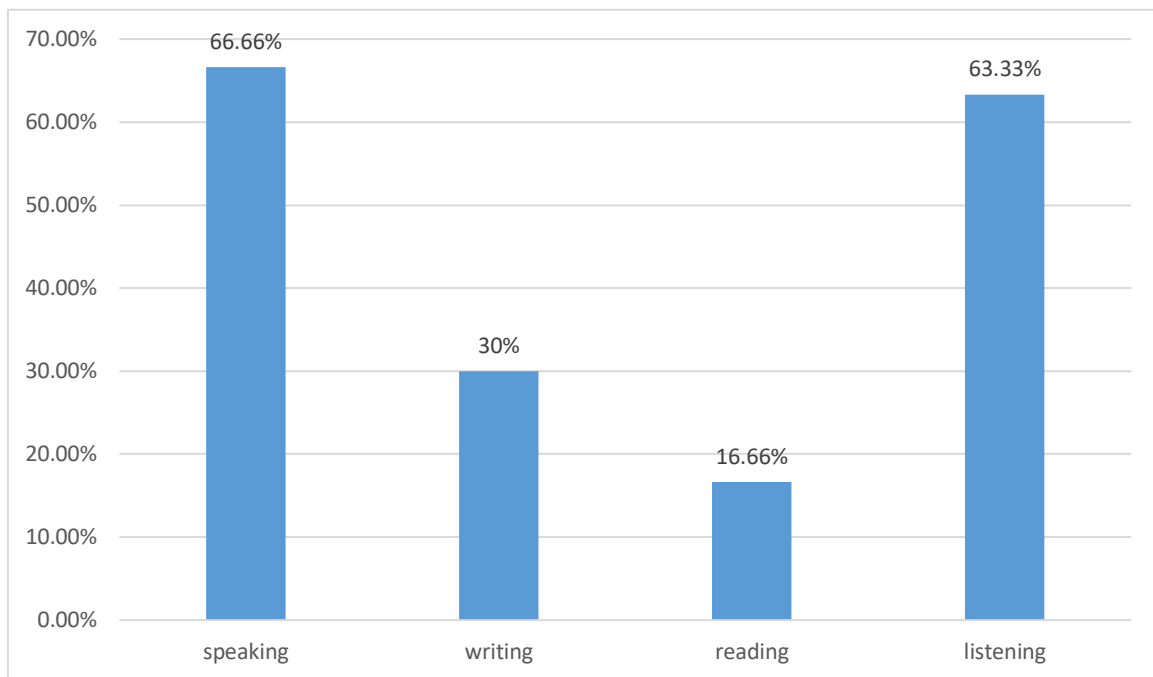


Figure 10: Skills that technology helped them develop.

7- Can you mention some Applications, Websites or YouTube channels that increased your learning of English language?

Students use various online resources. Several YouTube channels such as English with Vanessa, English with Lucy, and zamerican English. Additionally, they mentioned some language learning applications like Duolingo and Hellotalk. Moreover, students mentioned Wikipedia and coursehero as the main websites to learn. Some students did not mention anything.

Section three: The positive effect of technology in learning.

8- Did technology positively affected your learning experience?

options	participants	percentages
a	30	100 %
b	0	0 %
total	30	100 %

Table 7: Technology's positive impact on students

The table above shows that all students 100 % agreed that technology positively affected their learning experience. While none of them disagreed.

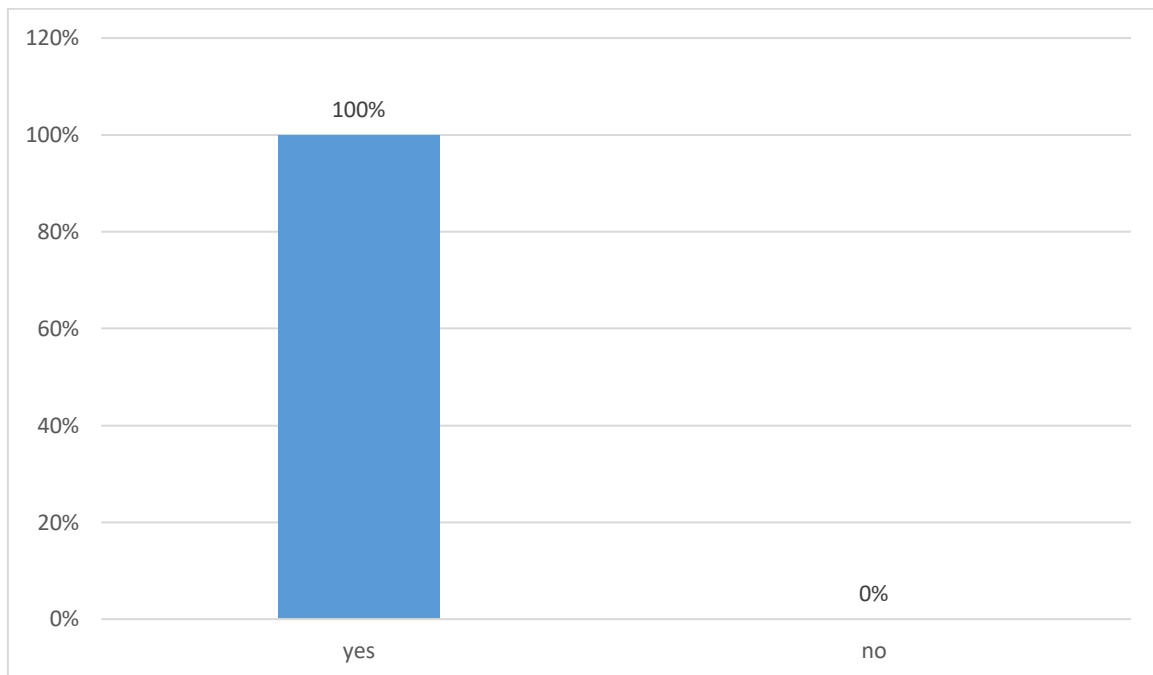


Figure 11: Technology's positive impact on students.

9- To what extent technology helped you learn by yourself?

The most common answers that students mentioned were:

It develops the four skills.

It helps to understand lessons better.

To improve pronunciation.

10- Which of these technology advantages that increased your learning?

options	participants	percentages
a	10	33.33 %
b	2	6.66 %
c	23	76.66 %
total	30	100 %

Table 8: advantages of technology that increased students' learning

As the table represents that the majority of students 76.66 % believe that easy access to authentic material is one the most common advantage of the use of technology in learning. While 33.33 % of them think that it promotes independent learning, and 6.66 % chose flexible scheduling.

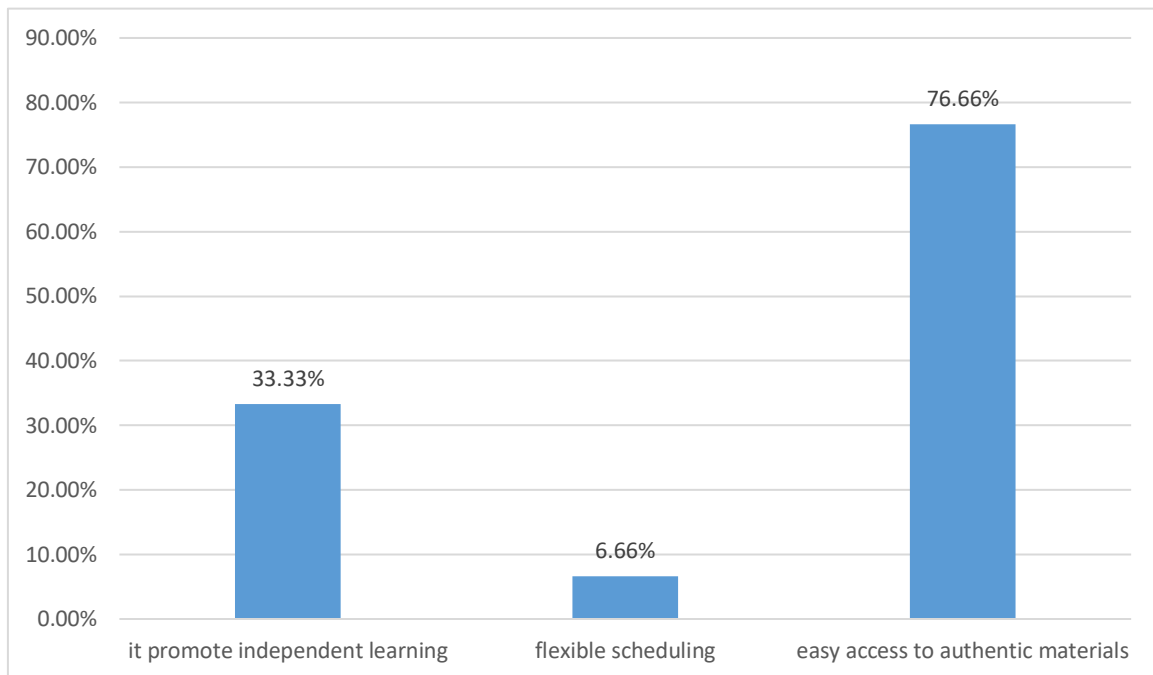


Figure 12: advantages of technology that increased students' learning.

11- How has technology changed the learning experience in the 21st century?

options	participants	percentages
a	11	36.66 %
b	7	23.33 %
c	4	13.33 %
d	15	50 %
total	30	100 %

Table 9: The shift of learning that occurred from technology in the 21st century.

The results shows that half of the students 50 % believe that all of the mentioned ideas are equally crucial. 36.66 % of students think that technology made learning faster and

easier. 23.33 % selected the second option, which claims that technology has made it possible to reach students in distant areas. However, 13.33 % of them claimed that it has allowed students to self-direct their learning.

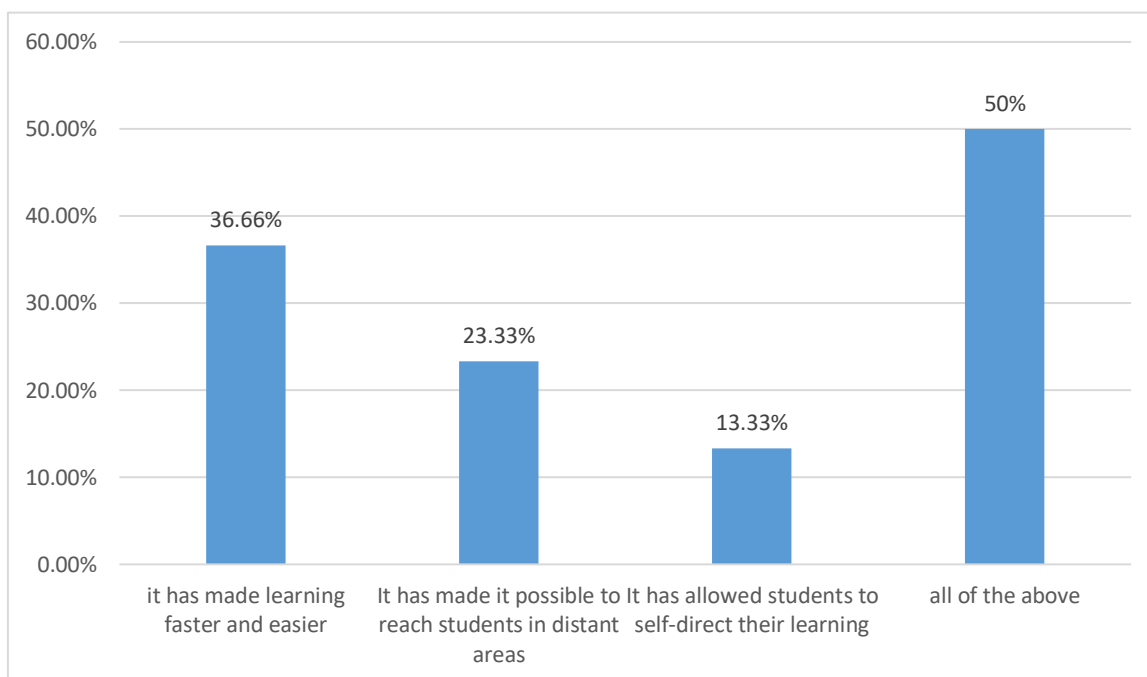


Figure 13: The shift of learning that occurred from technology in the 21st century.

Section four: the relationship between technology and learner autonomy

12- Do you have any idea about the term “learner autonomy”?

options	participants	percentages
a	9	30 %
b	21	70 %
total	30	100 %

Table 10: students’ opinion about the term learner autonomy.

The majority of students 70 % have no idea what the term learner autonomy means.

However, 30 % of them claimed that they know this term.

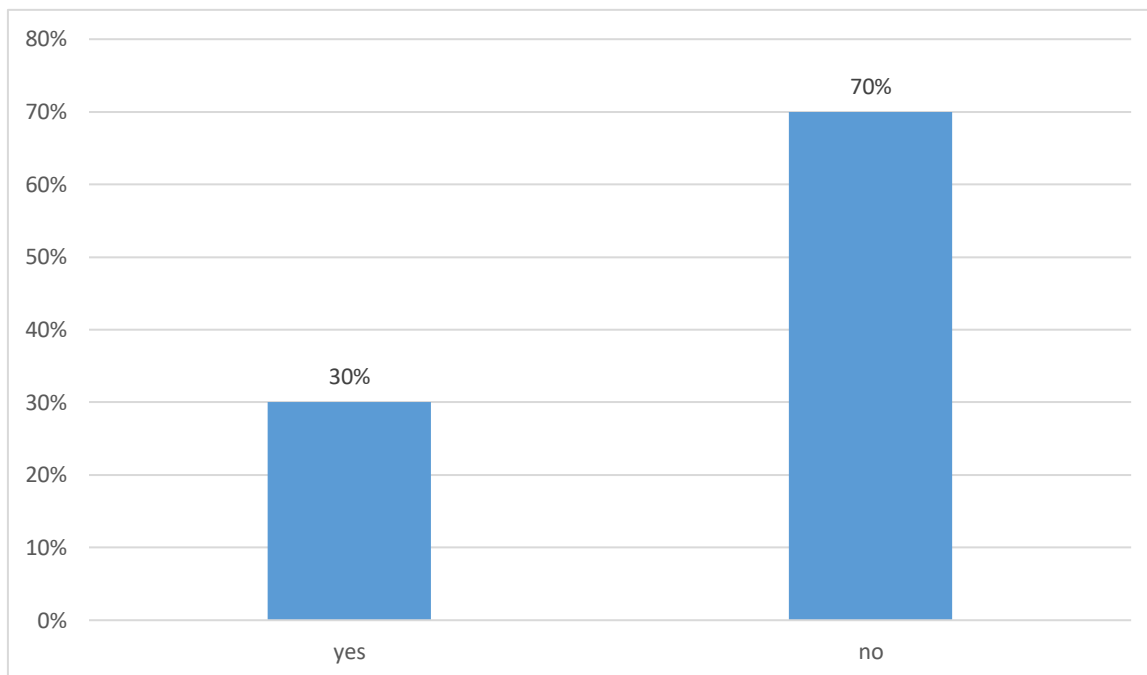


Figure 14: students' opinion about the term learner autonomy.

13- If yes, how would you define “learner autonomy”?

Participants provided many definitions and the most common responses were “Learn by yourself”, and “independent in learning without the need of someone else”, and “the ability to be self-aware of your learning and strategies”.

14- Is technology a useful tool for autonomous learning of foreign languages?

options	participants	percentages
a	27	90 %
b	2	6.66 %
total	29	96.66 %

Table 11: students' opinion on the usefulness of digital technology in autonomous learning of foreign languages.

The results indicates that the vast majority of participants 90 % claimed that technology is a useful tool for autonomous learning. However, 6.66 % of them think the opposite.

One student did not answer this question.

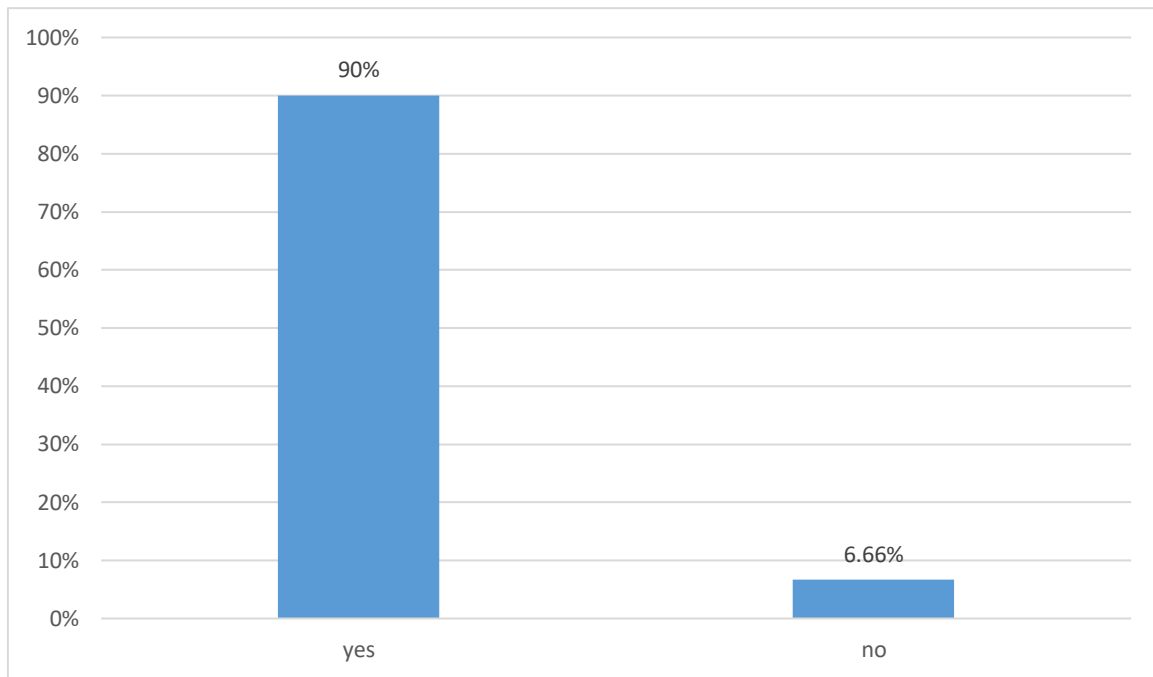


Figure 15: students' opinion on the usefulness of digital technology in autonomous learning of foreign languages.

15- Do you consider yourself autonomous in learning?

options	participants	percentages
a	19	63.33 %
b	9	30 %
total	28	93.33 %

Table 12: Students' opinion whether they are autonomous in learning or not.

The results shows that 63.33 % of participants depend on themselves in their learning process. While 30 % of them do not direct their learning. Two students did not answer this question.

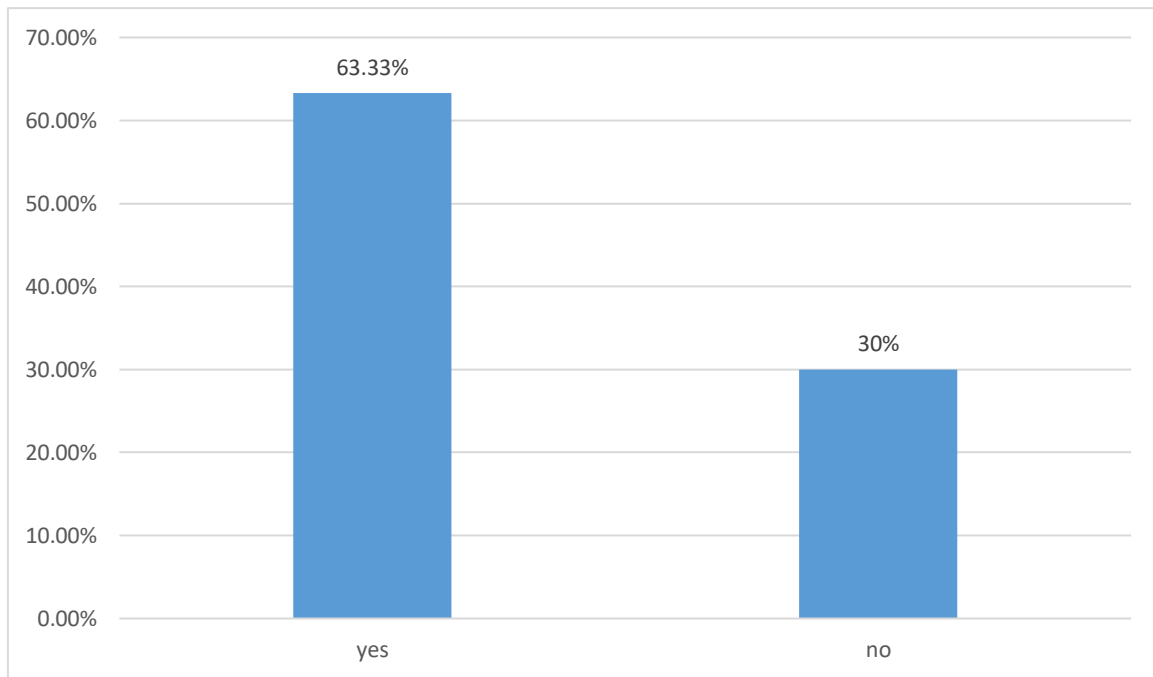


Figure 16: Students' opinion whether they are autonomous in learning or not.

16 Do you think that technology motivate learners to be autonomous?

options	Participants	percentages
a	28	93.33 %
b	1	3.33 %
total	29	96.66 %

Table 13: Students opinion whether technology motivates them to be autonomous.

As the table reveals that 93 % of students claimed that technology encourage learners to be autonomous in their learning process. However only one student believed that technology does not motivate them. One student did not answer this question.

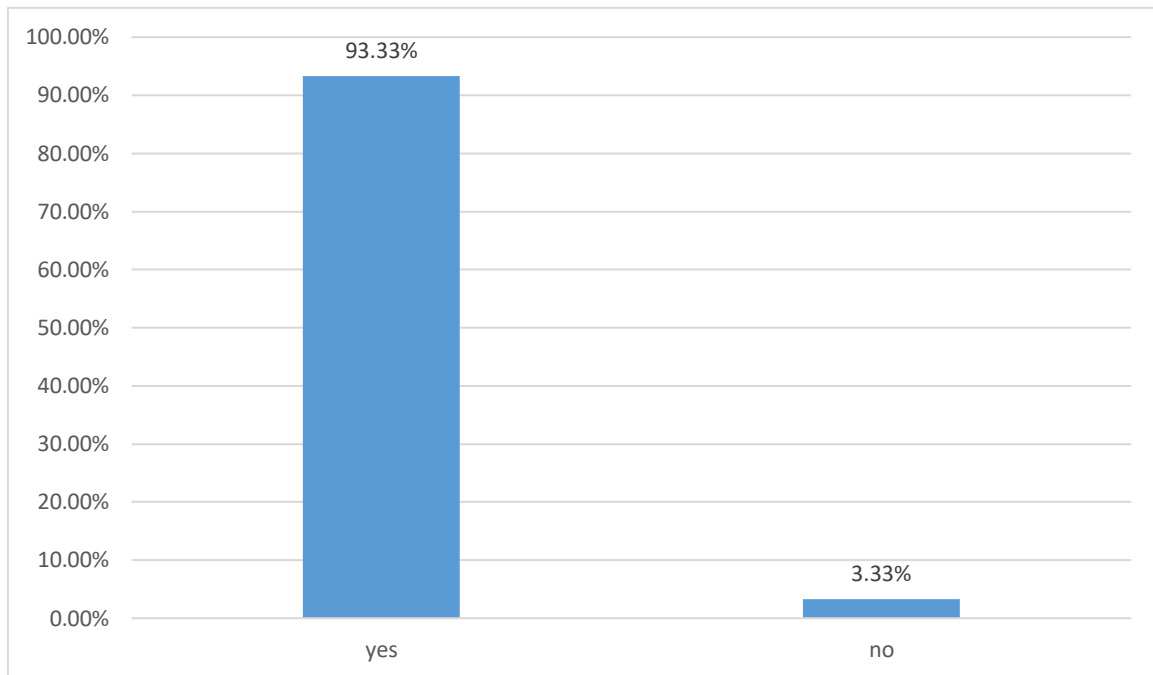


Figure 17: Students opinion whether technology motivates them to be autonomous.

17- Have you achieved any development as a learner through the use of technology? Why or why not?

options	participants	percentages
a	30	100 %
b	0	0 %
total	30	100 %

Table 14: students' achievements through the use of technology.

All the participants 100 % agreed that the use of technology boosted their development and made them achieve higher levels. While none of them disagreed.

The common reasons were: “because it makes learning easier” and, “it makes me use English in different contexts” and “a lot of resources are accessible” and “self-reliability and self-learning” and, “focusing on many aspects at once”.

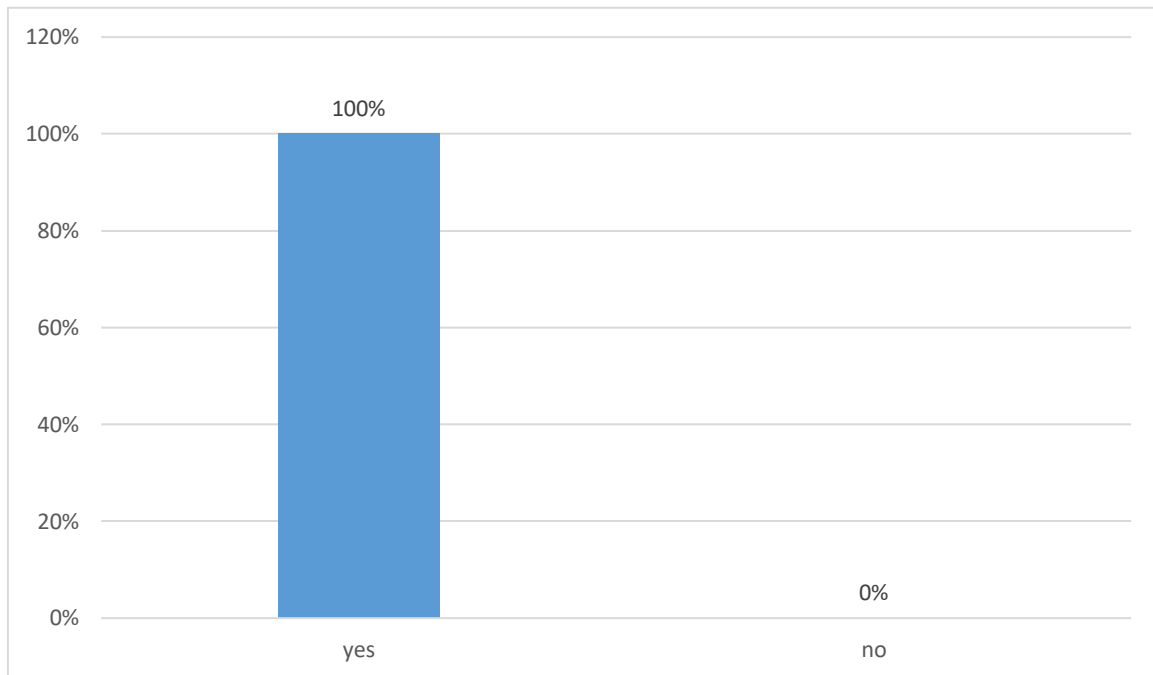


Figure 18: students' achievements through the use of technology.

18- Can EFL learners direct their learning without the need for a teacher?

options	participants	percentages
a	15	50 %
b	15	50 %
total	30	100 %

Table 15: The need of a teacher for EFL learners in the age of technology.

The table shows that half of the participants 50 % agreed that EFL learners could direct their learning without the need for a teacher. However the other half 50 % claimed that EFL learners need a teacher to control the whole process.

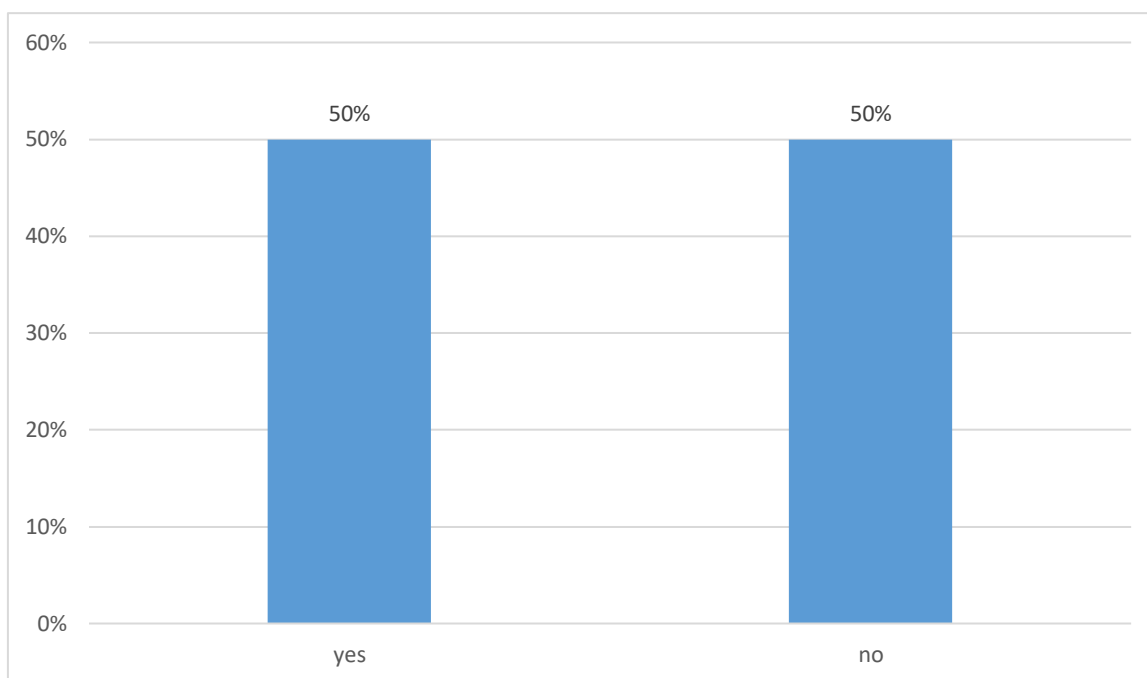


Figure 19: The need of a teacher for EFL learners in the age of technology.

19- Can you describe a situation where technology has helped you take control of you learning in a way that would not have been possible without it?

These are the most common and repeated answers :

- “In my coursera online courses, there were some lessons that I could not benefit from unless I use technology and getting access to this website helped me get the new knowledge I looked for”.

- “By talking to native people through educational websites on the internet and learning the language directly from them”.

- “When I want to present, I watch many YouTube videos to avoid stress and also how to perform”

-“I have used to search for a book that cannot find it in any library so I searched for it I e-libraries or in websites so I found it there”.

2.4.Discussion of the findings of the questionnaire results

In the first section there was only one question about their level in English language and most of them answered that they have a good level in English.

Based on the answers of second section 2 all students believe that digital technology is an powerful tool for learning. Their answers showed a considerable rate of students who use technology to learn and the frequency of their usage, which is more than half of the students. They also claimed that laptops and smartphones are the most used technologies they use to learn. Besides that, they mentioned some applications and websites that they rely on to improve their English language learning as examples to prove their answers concerning technology use in learning. Furthermore, most of the students picked speaking and listening skills as the most benefited skills from learning through technology, because they can listen to variety of videos and audios from of native speakers at any time of the day and communicate we them to improve their speaking skills through some applications that they mentioned. Moreover, it reinforce their pronunciation of English language.

According to section three, students claimed that technology positively affected their learning journey. It develops their four skills (speaking, writing, reading, listening) and it also encourage them to take more advantage of it by looking for more sources of information and easy access to authentic materials that provides them with better explanations that leads them to understand their lessons better. In addition, technology in the 21st century changed the way we used to learn. It has made it possible for students who live far from educational institutions to have fast access to lessons, and to reach reliable resources whether there were online or offline, and allowed them to direct their learning by managing their time according to their schedule, without the restrictions of the traditional classroom settings.

A lot of students were not aware and failed to define "learner autonomy" except few of them who were able to give some ideas and insights about it. But, after I gave them a clue about this term, they answered the rest of the questions positively. Most of the

students believe that technology has enabled them to control their learning of the English language, and they feel that they are autonomous in learning as it motivates them to control their learning, personalize learning experiences and set goals that suit them. Students claimed that through technology they achieved many developments without the need for a teacher who controls the whole process. Mostly, students got many benefits from technology in various situations, and the most common situation is when the teacher gives them a homework about a certain topic, and ask them to present it the next day on stage in the class. They look for the topic on the internet a day before, then they practice online, and once they go to class they perform well in the presentation.

In a nutshell, the learning process of English as a foreign language has flourished dramatically, because technology have paved the way for learners to direct their learning and make learning exciting and enjoyable.

2.5. Discussion of the hypotheses

Hypothesis one: we have hypothesized that Digital technology is very helpful for learners. According to the results obtained, it is clear that the vast majority of students find technology helpful in their learning process.

Hypothesis two: we hypothesized that yes, learners benefit from applying Technology in language learning. The results of the student's questionnaire shows that learners benefited in different ways from applying technology to learn foreign languages.

Hypothesis three: we hypothesized that yes, technology promotes learner autonomy and independent learning. Based on the results students believe that technology it a great tool for students to direct their learning independently.

Conclusion

The results of this chapter are the answers of master one EFL students at El

Taref Chedli Ben Djdid university. It contains the answers and the results of the questionnaire that digital technology is a useful tool for learning and it plays a great role in fostering learner autonomy. The findings of this research are compatible with the hypotheses and it proves that autonomous learning has improved by integrating technology in learning English as a foreign language.

Chapter three: Implications, recommendations and limitations

Introduction

In this chapter we will present some implications that will increase the awareness of the necessity of integrating technology in learning and the benefits for students, teachers and decision makers. In addition, recommendations in order to improve the learning experience for students. Besides that, we will show some limitations that was like hurdles during the process of making this research.

3.1.Implications

According to the findings of the study we can claim that it is crucial to raise awareness in the educational field on increasing learner autonomy through technology. The advantages of using technology and how it enhance self-learning are numerous. It can contribute to the field of learning English as a foreign language and it also improve learning outcomes for students.

Firstly, teachers should encourage students to use their laptops or other technological tools to look for information and find resources or materials, and they benefit from it according to their learning styles, for instance, visual learner would understand better when there is animation videos that describe the concept that he is learning. Teachers can also use data show projector to present an e-book because students could not find the physical book in libraries. This will help students to improve their independence in learning as it results less burden on teachers. Secondly, students should learn how to use these digital tools appropriately by accessing reliable resources and follow the instructions of the teachers towards the use of technology. Thirdly, decision makers like the ministers, university directors, and heads of departments should take into consideration the incorporation of digital technologies in the

curriculum by motivating students to integrate technology in their learning and improve their awareness towards it. Teachers and students should learn how to use technologies because it helps them improve the learning experiences.

3.2.Recommendation

In today's day and age the use of technology in learning English as a foreign language independently has increased dramatically. In order to improve learner autonomy amongst students, here are some recommendations:

- Integrating digital technologies in teaching and learning English as a foreign language is a necessity in modern education.
- The minister of higher education should provide laboratories with computers and create reliable websites for students and support them with e-books, educational videos and audio lessons so autonomous learners can find space to direct their learning.
- It is recommended that teachers present their lessons in online platforms at the beginning of the semester. This will allow students take a look at the lessons collect more information about it and eventually they will interact with the teacher during the class.
- Teachers should allow students to bring their laptops in class and use them as a powerful tool to learn.
- Applications like "Zoom" or "google meet" can be a great alternative for learning when there is a dangerous epidemic like "Covid19".
- The Use of certain online platform that allow students take a look at the updates of home works, presentations, course announcements or deadlines of assignments.

3.3.Limitations of the study

During the process of making this research we have faced some obstacles and challenges.

Firstly, due to the lack of necessary materials, it took a long time to collect information of the theoretical part, and it caused a delay in data collection.

Secondly, the short time played a significant role in limiting the amount of data collection. Thirdly, the number of master one students is 46 while those who participated were only 30 students, which leads to less generalizability of the research findings, and lack of statistical power.

Another factor that negatively influenced this research is that some students did not answer all the questions, they left some questions without answering it.

Conclusion

Digital technology enhance learner autonomy. It has a great impact in the learning experiences of individuals. The education system should take a step forward and integrate this powerful tool in teaching and learning to empower students with new tools. Students are in need of digital technologies to be included in their learning process, it helps them improve their critical thinking, manage their time to have a flexible scheduling and enhance their responsibility at a higher level. Eventually autonomy in learning will result less responsibility on the teacher and create active learners.

General conclusion

Learner autonomy has recently become crucial term that should be taken into consideration as it affects the foreign language learning process. Foreign language learning has been promoted in the last few decades by digital technology, which helped students to increase their learning independency.

This research investigates the power of technology as a tool used by learners. The shift from the traditional to modern way of learning, and the positive benefits of the latter attracted the attention of EFL learners. Learners are increasingly becoming aware of technology effects, and the technology use in language learning made them autonomous learners. Learning through technology use has wildly flourished which allowed students to access to unlimited materials in anywhere and anytime. It solved the learning problems that language learners used to face in classroom. Those problems made the process of learning limited to a certain method and fewer materials provided by the teacher.

A questionnaire was used as a research tool in this study in order to answer the research questions and to check the hypotheses validity. The participants of the questionnaire were master one EFL students of Chadli Ben Djdid Universty of El Tarf, and the results showed that learners develop their learning autonomy through technology. It helps them in their learning process and it benefits them in various ways.

The study highlighted some implications for integrating technology in education to motivate learners to improve their learning autonomy and we have suggested some recommendations for students, teachers and decision makers to integrate technology in education. Some challenges and limitations as the small number of participants, were

taken into consideration. Those limitations prevented the generalization of the results of this study.

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Appendices

Appendix A: students' questionnaire

Dear Students, Thank you for agreeing to participate in our questionnaire. We are conducting a study to gather information on the role of digital technology in promoting learner autonomy.

This questionnaire consists of questions and we would be grateful if you take few minutes to answer this questionnaire

Section one: Background information

1- What is your level in English language?

- Excellent - Good - Average - Bad

Section two: technology and learning

2- Do you consider digital technology an effective tool for learning?

-Yes -No

3- Do you use technology to learn (smartphones, laptops, internet, videos)?

-Yes -No

4- How many times do you use technology to learn English?

a- very often b-sometimes c-rarely

5- What technologies do you regularly use to support your learning?

a- Laptop b- Smartphone c- Radio d- other tools

List them

6- Which skill(s) did technology helped you develop?

a- speaking b- writing c- reading d- listening

7- Can you mention some Apps, Websites or YouTube channels that increased your learning of English language?

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Section three: the positive effect of technology in learning

8- Did technology positively affected your learning experience?

- Yes - No

9- To what extent technology helped you learn by yourself?

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10- Which of these technology advantages that increased your learning?

- It promote independent learning.
- Flexible scheduling.
- Easy access to authentic materials.

11- How has technology changed the learning experience in the 21st century?

- It has made learning faster and easier.
- It has made it possible to reach students in distant areas.
- It has allowed students to self-direct their learning.
- All of the above.

Section four: the relationship between technology and learner autonomy

12- Do you have any idea about the term “learner autonomy”/ or autonomy in language learning?

Yes No

13- If yes how would you define “learner autonomy”

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14- Is technology a useful tool for autonomous learning of foreign languages?

Yes No

15- Do you consider yourself autonomous in learning?

Yes No

16 Do you think that technology motivate learners to be autonomous?

Yes No

17- Have you achieved any development as a learner through the use of technology? Why or why not?

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18- Can EFL learners direct their learning without the need for a teacher?

Yes No

19- Can you describe a situation where technology has helped you take control of you learning in a way that would not have been possible without it?

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