

The Role of Digital Technology in Enhancing the Students' Learning Autonomy

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Abstract

This work investigates the role of digital technology in language learning which can be a valuable tool in enhancing learning. The aim of this research is to discover how digital technologies can allow learners direct their learning process. It seeks to explore the role of digital technology in creating autonomous language learners. The study is based on questionnaire designed for EFL students in attempt to provide answers to the research questions. The questionnaire was given to 30 master one EFL students at Chadli Ben Djedid University, El Tarf during the academic year 2024/2025. The obtained results show that integrating technology in language learning enhances learner's autonomy in various aspects of the language, as well as it has positive impacts on the whole learning process which enhance students' mastery of the language. These findings recommend to pay more attention to the integration of technology in language learning such as computers, and online platforms. A special focus on teachers' training on technology use and the technical support from the administration.

Keywords

Learner autonomy, Digital technology, EFL students, Online platforms

1. Introduction

Over the past ten years, as science and technology have advanced, the English language has become essential for sustaining global communication as well as scientific and technological advancements. English has established itself as a practical language that addresses individuals' challenges and fulfils their needs for education and communication, so that make it the language of the world.

This movement is associated with another trend of incorporating digital technology into language learning; computers, smartphone applications, and e-learning platforms are now integrated instruments for teaching and learning languages, particularly English.

[1] assert that technology have evolved into a dynamic domain with substantial effects on the educational system, particularly in second and foreign language acquisition, which employs many instruments. According to [2] computer technologies have been recognized also as important tools for enhancing teaching and learning processes. (Park 2022 as cited in [3]). He adds that the main goal behind the use of various types of technology is to improve and develop language learning[3]. Likewise, [4] claims that the way languages are taught and learnt has changed dramatically due to the integration of technology to education. These technologies give students access to a variety of dynamic and interesting resources, personalised learning experiences, and chances for real-world language practice[4].

Consequently, [5] states that platforms for online language learning have become effective instruments in language instruction. Learners may access interactive lessons and activities through websites and online programs like Rosetta Stone, Babbel, and Duolingo...etc

Moreover, a wide range of features, such as vocabulary flashcards, pronunciation guides, grammar exercises, and access to audio and video content, are available in mobile language learning applications [4]. Technologies affected foreign language learning process and the learners' proficiency.

2. Definition of Technology

According to [6] the word technology originated from the Greek word "Technologia". It is divided into "techn" which means "art" and "logy" which means "the writings on" or "the accumulated knowledge about." It refers to the skills and techniques utilized in different crafts. Throughout history the word technology was mentioned in Harvard University (1816) as course on "application of the Sciences to the Useful Arts" .

The Encyclopaedia Americana (1832), defines technology as principles, processes, and nomenclatures (as cited in [7]). These previous definitions agreed that technology is technique (s) used to process or accomplish something.

Based on [8] definition "Technology is any modification of the natural world done to fulfil human needs or desires" . In other words, technology has a broad meaning as it covers all human beings achievements and changes in the natural world. [9] also defines technology as "a manner of accomplishing a task especially using technical processes, methods, or knowledge" which means applying useful systems and techniques to achieve something.

All in all, though the different definitions provided to technology, they all agreed that technology can be considered as tools, techniques to improve human life and meet his needs.

3. Technology Assisted the Learning Process

The internet has significantly altered the world. It has transformed our daily communication, the manner in which we purchase products, and, most importantly, it has become a potent educational instrument. In order to access on-line platforms that provide a vast array of courses, learners need internet access. To get the most recent information, educators and students worldwide utilise the internet to access a variety of sources [10]. In addition to the Internet, digital devices increase the learning process. Students may utilise tablets to complete their assignments tests, as well as access more files, they can download and save a huge amount of information, including articles, videos, images, and e-books [11]. Furthermore, People may now live more comfortable and enjoyable lives thanks to the internet. Given the low cost of the internet and the fact that most materials are accessible for free, imply that even if there are no teachers in your area, learners may still study English as a foreign language using digital tools [12]. Therefore, EFL learners will no longer be confronted with the issue of scheduling, as they will have access to the internet at any hour of the day. They may have adaptable scheduling to modify their learning hours.

According to Oxford Learner's Dictionaries, e-learning is "a system of learning that uses electronic media, typically over the internet". Clark & Mayer (2016) defines E-learning as "instructions delivered through digital devices to support learning" (cited in [13]). In other words, both definitions ensure that e-learning involves using innovative technologies to enhance the learning experience, rather than just delivering knowledge.

On-line course platforms offer a more effective approach for students to study. They take the shape of websites with courses and students from all around the world. This trend has increased during the COVID-19 due to public restrictions that led to close the educational institutions. Platforms like Coursera, Udemy, and LinkedIn Learning offer specialized courses in various fields, allowing learners to acquire language skills relevant to their professions. These platforms often include interactive elements such as quizzes and discussion forums, enhancing engagement [14].

It is reported that Coursera's learning platform has attracted a significant number of online learners. It denotes the quantity of learners utilising the internet for educational purposes, indicating the number of learners per million from 2016 to 2021 [15]. The results show that the overall number of registered learners increased from 21 million in 2016 to 92 million in 2021. This survey highlights that learners are increasingly interested in acquiring knowledge through on-line courses. A separate survey from the On-line Education Trends Report [16] indicated the reasons that made students opted for on-line learning from 2016 to 2019. The results of the study are summarized in figure 1

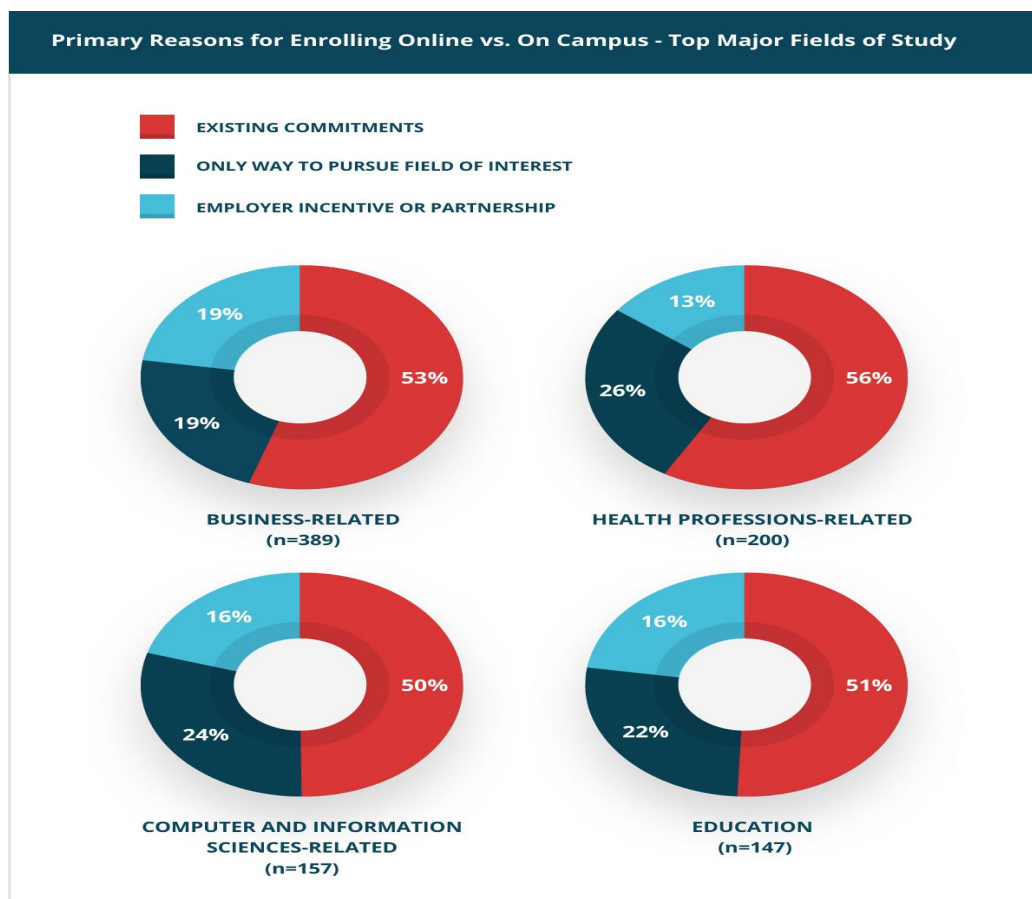


Figure 1. Reasons for choosing on-line learning (<https://res.cloudinary.com/2020>)

The figure 1 explains why students selected on-line learning over campus-based programs. Flexible schedule allows students to balance their studies with other responsibilities, such as job and family. Therefore, a high percentages over yeas went to existing commitments (work and family). Whereas, reasons such as the fact that on-line learning was the only way to pursue my field of interest, as well as employment incentives or partnerships, rank second and third, respectively.

4. The Role of Technology in Foreign Language Learning

According to [17], most students are unable to relocate to a nation that speaks their preferred language. Technology allows learners to benefit from immersion experiences. Remote learners can interact with proficient speakers of the languages they are studying through social networks and next-generation communications (voice/video calls), providing them with real-world language practice that is not achievable in conventional classroom settings. He [17] adds that digital technologies enable learners to engage with peers from other nations in on-line groups and select any instructor at any time of day. Furthermore, digital technologies offer several resources and tools for real-time learning. Students may access simplified dictionaries, make flashcards, and explore the internet, find conversation partners, and on-line tutors to learn the language they need.

5. Technology and Learner's Autonomy

Learner autonomy has gained popularity during the past few decades. Therefore, scholars have debated the definition of this notion throughout history, but have not reached a consensus. However, learner autonomy is defined in a variety of ways.

learner autonomy was defined as “taking charge of one’s own learning”. In other words, the student takes responsibility for his educational journey [18]. He/she manages his/her time and selects the resources, content, and subject on his/her own. Additionally, the student chooses which techniques and tactics to employ during the learning process. Moreover, autonomy is the ability to be detached, think critically, make decisions, and act on your own initiative [19]. It is also a capability, autonomy entails the learner's ability to determine their own needs, objectives, and methods for tracking their progress in learning without the teacher's assistance. Additionally, learner autonomy is focussing on the students rather than the instructor . This entails including students in choices about learning goals, methods, and techniques as well as reflecting on and assessing their own learning [20].

Studies have shown that e-learning platforms enhance student autonomy by providing flexible access to learning materials and enabling learners to set their own pace. In particular, platforms that integrate interactive tools and real-time feedback promote student engagement and self-regulation [21]. Furthermore, the role of online communities and collaborative digital tools in fostering learner autonomy has been emphasized [22]. By participating in discussions, collaborative projects, and peer evaluations, students develop critical thinking skills and a sense of ownership over their learning. In addition to the use of mobile devices and apps for learning has increased students' ability to learn independently. Mobile learning provides opportunities for on-the-go learning, allowing students to access resources anytime and anywhere, making learning more accessible and flexible [23]. Moreover, Research has shown that gamified learning platforms improve motivation and autonomy by offering interactive, goal-oriented experiences. These platforms encourage self-driven learning through challenges, rewards, and real-time progress tracking [24]. Finally, social media platforms, such as blogs, forums, and discussion boards, provide learners with spaces for sharing knowledge, engaging in peer learning, and reflecting on their learning journey. These platforms empower students to take ownership of their learning by creating and sharing content [25].

6. Research Problem

While, EFL learners sought to achieve better level in learning foreign languages, EFL teachers tried to adapt new methods and techniques to help learners achieve their purposes. EFL learners struggle to speak, write, and communicate. They find difficulty to collect data and present them. They feel blocked when they want express themselves because of the lack of vocabulary and French-like pronunciation. Learners also rely on their teachers to provide them with information, correct their mistakes and pronunciation, and give them feedback. All these difficulties make them to restricted in their learning. However, the emergence of technology and its introduction into the educational system changes foreign language learning situations and introduce new approaches and strategies to enhance EFL learning. Therefore, the study aims to investigate technology effects on EFL learning and on learners' autonomy.

7. Research Questions

- What are the effects of technology on English language learning?
- How can technology create autonomous learners who are able to learn the English language Independently?

8. Research Hypotheses

- Technology has positively affected learners' language learning.
- Technology promotes learner' s autonomy and independent learning.

9. 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.

Participants: The questionnaire was conducted in the department of English language at Chedli Benjdid University, El Taref, during the academic year 2024/2025. It targeted thirty (30) master one LMD students. In order to investigate their awareness and perceptions regarding the use of digital technologies in their learning process in order to increase their learning autonomy.

10. Description of the Questionnaire

The questionnaire consists of 19 questions. The types of questions are mixed between open-ended questions where the students are required to choose either “Yes or No” as answers, or multiple-choice questions where the students are asked to pick one of the questions or more than one of the suggested answers. Close-ended questions where the students provide their opinions and support them 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 autonomy when learning. The questions are divided into four sections as the following: 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 promotes learners’ autonomy.

10.1 Analysis of the Students’ Questionnaire Results

Based on the students’ answers it is noticed that the majority of Master 1 students have a good level in English language (73.33 %). While, (23.33 %) of them have average level. Furthermore, a whole agreement among the students (100 %) that digital technology is an effective tool for learning foreign languages. As far as the use of technology in learning language is concerned, (100%) of students reply that they use digital technology to learn the English language. Moreover, the majority of the participants (53.33%) always use technology when learning the language; whereas, (46.66%) of them sometimes use it. A vast majority of students (96.66 %) regularly use smartphone apps to cover their learning. Additionally, a considerable percentage of students (66.66 %) learn the language through different E-learning platforms.

Concerning the skills that students developed through the support of digital Technology, (66.66 %) of participants refer to 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. As well as, (16.66 %) of the students improved their reading skill.

Students use various on-line platforms and applications to develop their language. Several You Tube channels such as English with Vanessa, English with Lucy, and Z American English. Additionally, they mentioned some language learning applications like Duolingo and Hellotalk. Moreover, students mentioned Wikipedia and coursehero as the main websites to learn. Consequently, all students (100 %) agreed that technology positively affected their learning experience. They further explain that digital technology developed their four skills, helped them understand lessons better and improved their pronunciation.

As the advantages of technology are concerned, the majority of students (76.66 %) believe that access to authentic materials is one the most common advantages of integrating technology in learning. While (33.33 %) of them think that it promotes independent learning, and (6.66 %) mentioned flexible scheduling. Concerning the relationship between technology and learner autonomy, Participants provided many definitions to autonomous learning such as “Learn by yourself”, “independent in learning without the need of someone else” and “the ability to be self-aware of your learning and strategies”. Therefore, the vast majority of participants (90 %) claimed that technology is a useful tool to enhance autonomous learning. As well as, (63.33 %) of participants considered themselves as autonomous learners. (93 %) of students claimed that technology is very motivating and encourage learners to be autonomous learners. As a result, All the participants (100 %) agreed that the use of technology boosted their development and made them achieve higher levels.

Concerning the situations where technology is very helpful, students provided the following answers: “In my coursera on-line 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”, another student said :“to talk to native people through educational websites on the internet and learning the language directly from them”. students also said: “When I want to present, I watch many YouTube videos to avoid stress and also know how to perform”, as well as, “I have used to search for a book that I cannot find it in any library so I searched for it in e-libraries or in websites so I found it there”.

10.2 Discussion of the Questionnaire Results

In the first section which consists of one question about the participants' level in English language, they considered themselves as good language learners. The results of the second section reveal that all students believe that digital technology is a powerful tool for learning. Their answers showed a considerable rate of students who use technology to learn and how frequently they use it, which is more than half of the students. The e-learning platforms and smartphones applications are the most used technologies to learn. Besides that, they mentioned some applications, channels and websites that they rely on to improve their English language learning. Furthermore, most of the students picked speaking and listening skills as the most improved skills due to digital technology integration in learning, because they can listen to variety of videos of native speakers at any time of the day and communicate with them to improve their speaking skills through some applications that they mentioned. Moreover, it reinforces their pronunciation of English language.

According to section three, students claimed that technology positively affected their learning process. It develops their four skills (speaking, writing, reading, listening) and it also encourages them to take more advantages such as looking for more sources of information, easy access to authentic materials that provides them with better explanations which provides them with better understanding of the lessons. 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 on-line resources, and allowed them to direct their learning by managing their time according to their schedule, without the restrictions of the traditional classroom settings. These findings confirm the studies that tackled the effects of technology on language learning such as Nielson (2019). The findings also validated the 1st research hypothesis that states '*Technology has positively affected learners' language learning*'

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. 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 objectives for themselves. Students claimed that through technology they developed their language skills without the need for a teacher. In various situations, students learn how to present a topic, find authentic materials, books, etc through technology. Therefore, they monitor their learning and they became autonomous learners. As a result, the 2nd research hypothesis which states '*Technology promotes learner's autonomy and independent learning*' is validated.

The positive effect of digital technology, namely the learning platforms, on learner autonomy is confirmed by the results of the student questionnaire in this study. These findings also match the findings of earlier research. For instance, e-learning platforms facilitate self-directed learning; they give students flexible access to resources and allowing them control their learning pace [21]. This is highlighted by the study participants, many of whom said that using digital tools made it possible for them to study whenever and wherever it was most convenient for them. The questionnaire responses also support [22] assertion that peer interaction and online collaboration foster autonomy, with students emphasizing the role of group chats and discussion meetings for improving their critical thinking and teamwork abilities. This trend is further supported by the widespread use of mobile applications, as [23] points out that mobile learning enhances autonomy. The quick access to learning resources is a feature that the majority of students commonly agreed upon as increasing their learning flexibility. Furthermore, student answers emphasised increasing involvement and autonomy when using interactive platforms, this lines up with the motivational benefits of gamified platforms as outlined by [24]. Finally, students' comments about using discussion groups to express ideas and learn from peers align with research by [25] that found social media platforms foster learner autonomy through knowledge sharing and reflection. These similarities confirm that, in the modern setting, digital technologies are vital for encouraging learning autonomy among EFL students.

11. Conclusion

Digital technology assisted English language presents a promising avenue for enhancing learner's autonomy. It has a great impact on the individuals' learning experiences. By leveraging various technological tools, educators can create engaging and effective learning experiences. Therefore, the educational system should take a step forward and integrate this powerful tools in teaching and learning to empower students with new learning techniques. 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. Therefore, the use of technology in learning English as a foreign language independently has increased dramatically, and in order to improve learner autonomy amongst students, the study findings provide some recommendations. First, integrating digital technologies in teaching and learning English as a foreign language is a necessity in modern education. Second, 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. Then, teachers should 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 lesson. Lastly, applications like "Zoom" or "google meet" can be a great alternative for in-class learning when there is a dangerous epidemic like "Covid19".

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