



Technology: A Way to Evolve or a Problem to Resolve?

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Abstract

Today, technology has overruled the world and the digital revolution has changed every aspect of daily life including education. Researchers from different schools have become so worried about the kind of effects technology may generate; especially on the educational development of students. The purpose of this paper is to discuss the negative effects of technology on the current generation. As a start, this paper provides a general background about the previous and current studies/opinions of different researchers on the effects of technology on education. Secondly, it sheds light on the way technology has shaped critical thinking and affected communication skills. Finally, the paper discusses the negative effects of technology on the writing abilities of learners along with a concrete example from the department of English language at Batna 2 University, Algeria.

Article info

Received

March 06 ;2025

Accepted

May 01 ;2025

Keyword:

- ✓ Critical thinking;
- ✓ Communication skills;
- ✓ Technology;
- ✓ Negative effects :
- ✓ Writing abilities.

1. Introduction

Technology continues to be an integral part of people's daily activities. It's true that it has brought many positive things to enhance the living process, its negative aspects are far to be ignored. In the field of education, the negative effects of technology have surpassed the positive ones, and teachers are complaining about the decline in students' achievement. With the introduction of many searching engines and artificial intelligence students have become dependent on these new technologies leading teachers to be confused about their real level of intelligence and state of learning development. So nowadays, being a good student depends on the way you can easily find answers on the internet and using artificial intelligence rather than finding answers on their own. Academically poor students have become excellent ones thanks to the multiple helping tools they have on their smart devices, and the idea of making less effort to gain better results is widely adopted by students. Educational institutes provided students with much digital tools on the purpose of aiding students to enhance their level of achievement; however, ground results have showed the complete and opposite already based speculations.

The issue to be discussed in our Arabian region is that, the effects of technology on EFL learners tend to be more detrimental than that on the native speakers. EFL learners are facing more difficulties nowadays as compared to native ones, due to the fact that when English is not the mother tongue, it will be an easy prone to the negative effects of technology. Moreover, when EFL learners aren't acquiring the basics of English language, it will be difficult for them to learn English the way it is supposed to be.

Literature Review

The digital revolution has dramatically changed society in general and education in particular. The number of people using technology and artificial intelligence is growing on a rapid rate. Among the critical effects of technology in the past decade is the widespread reproduction of communication technologies (UNICEF, 2011). Modern technologies have changed the world and hence changing the daily lives of learners. Dehmler (2009) noted that young people nowadays are growing up in an interrelated digital world, and learners are recently having an unlimited access to technology making use of it in different ways. Adolescents in this digital age are being raised in a world where Internet, smart phones, smart TVs and video games are an integral part of their daily lives; Livazovic (2011) asserted that "children are immersed in a world abounding with information". Since technology and artificial intelligence are currently described as the most influential factor on both society and education, there has been humble research on their possible long term effects. Taking into consideration that technology is something students cannot live without; this paper tries to highlight some of the important parts that technology affected. The development of technology and the introduction of many innovative tools have gained much popularity within the world of students and younger adults. Technology has simply grown to be deeply incorporated with the fields of education, work and social matters. Social media, online video games and other different websites are now treated by the youth as an essential part of their culture. These technological inventions have penetrated their lives, altering the way they learn, socialize and self-develop, and that is why policy makers, researchers and teachers should take into consideration the

study of these disturbing changes. David Crystal, a renewed linguist and a famous author of different books that tackle the issue of the effects of different computer-mediated communications on English academic writing stated in multiple occasions that these technologies have no harm on students' abilities and that the new language created by digital generation should just be embraced as a new language on its own. On the one hand; Crystal's studies were made and addressed to native speakers, so it's kind of logical that these technologies cannot easily damage someone's native language. On the other hand, educators and researchers in the Arabian region should not feel safe with these results, because for learners where English is their foreign language, technology can easily damage their English skills since they do not acquire the basics of this language and that in some regions like Algeria English is actually used and studied only in the English department.

2. Effects of technology on critical thinking

Nowadays, internet has become one of the main sources of information in our daily lives. Internet usually provides people with the essential information they need, an opportunity to dig deeper in issues to gain further information and basically to expand the already existed knowledge. Since technology tools have become an essential and critical in today's lifestyle, a major concern has been raised about their possible effects on people's thinking abilities in general and that of students in particular. The digital generation have become so dependent on these tools to the point of becoming unable to critically think, to analyze topics, to solve problems, to tackle issues and to argument. So technology as a whole is becoming deeply associated with our daily lives, and critical thinking has been negatively shaped and

the way students interpret and process information has been completely altered as compared to previous times. All in all, technology being integrated in different domains of life especially that of education has reduced students desire to think, understand, analyze and store information.

It is true that technology has tremendously enhanced our lives since it provides people with different outlets to facilitate their lives, to improve one's own productivity and interests, and ultimately one's own potential to explore and innovate. However; in academic settings it's daring to say it damaged more than it repaired, and one of the major consequences of technology on today's digital learners, is the decrease in their originality and thinking capacities. Today, artificial intelligence is becoming the main rival of teachers; students have unlimited access to its different sources and hence becoming more reliable on it. Students are now facing difficulties when trying to analyze a topic or to find solutions to a particular problem. Nicholas Carr, a famous evaluator of the internet and its possible effects, argues that constant search for others' opinions and ideas on the different internet sources is 'jeopardizing higher order thinking' claiming that "we are evolving from cultivators of personal knowledge into hunters and gathers in the electronic forest, dazzled by the Net's treasures, we are blind to the damage we may be doing to our intercultural lives and even our culture" (Carr, 2010, p.1).

The same author explains that technology tools and internet gave rise to a 'systematic trend of fact finding and reporting'. Students in particular became so used of sharing what other people think rather than trying to develop their own and unique ideas, and this has negatively affected the institution of education in

general. Another researcher, Ingram Neil, an internet critic noted that “we have become more insular, unadventurous, and less curious because of technology”. Certainly, this aptitude of shallow thinking and its advance via traditional technology use cannot be beneficial to cognitive thinking. With the constant use of internet, different studies indicate the development of methodical implications like ‘short term attention spans’ and ‘scattered thinking’. When students are studying through internet, their brains are usually pressured to take in huge amounts of information at once; at the same time those sidebar advertisements flash, alluring pictures provided by different web pages and other issues contribute to distractions while looking for information. So, with the regular exposure to these kind of distractions and the huge amount of information absorption causes a huge and considerable reduction of attention spans which prompts other important cognitive problems.

“When we’re constantly distracted and interrupted, as we tend to be online, our brains are unable to forge the strong and inclusive neural contacts that give depth and distinctiveness to our thinking. We are becoming mere signal, processing units, quickly shepherding disjointed bits of information into and then out of short term memory”

(Carr, 2010, p.1).

The same author added that the complex nature of the internet is likely to reduce students’ ability to concentrate and which consequently resulted in the development of dispersed thinking.

The continual exposure and use of technology tools can alter the way students interpret and process information in general. Since the human brain is of an adaptable nature that makes it capable of

forming new and unlimited, complex and neural operations to restructure itself in a manner that allows it to effectively process and store information. Empirical studies showed that continuous exposure to different technology tools and internet lead brains to be restricted with these different neural processes due to constant exposure.

Steve Ciarcia (2012), a famous writer for the Computer Application magazine, argued that technology has made society ‘less smart’, and he noted:

“These days, when any tough subject comes up in conversation, it’s only about 5 seconds before some guy whips out his smart phone and Googles it. It certainly does not give an inferiority complex, but short of installing a cell phone jammer, it’s hard to know how much knowledge these people have or simply how good they have become at finding someone who does”.

(p.3)

That is to say, that nowadays in this digital era, people both in school and work use internet when trying to find an answer rather than thinking and analyzing on their own. So, thinking abilities are diminishing and what we claim we know is actually what the internet knows. Moreover, the constant rely on these technologies made students unable to retain and comprehend information. Despite the fact that internet possesses more information than the regular human being, using it each time and for different inquiries can inhibit the ability to critically think and by making brains unprepared to accomplish higher order thinking.

A decrease in the use of internet will lead to a decrease to develop short attention spans along with many other negative issues; Olsen maintains the necessity to keeping and developing one’s critical thinking and originality in different fields

of life. Technology made our lives go faster, but faster may not always be successful, because critical thinking could be sacrificed in the speedy process, so people and students in particular should consider developing and protecting their cognitive thinking as it is one of the greatest possessions of a human being.

3. Does technology harm communication skills?

Well, it is widely agreed that the constant use of technology could have some detrimental effects on the human brain. Since technology is integrated into every aspect of life, critical consequences have become a subject of debate among many researchers. The youth of nowadays have been given the name of 'digital natives' because they have been raised alongside technology and because of their natural habits of depending on it. Eventually, this natural rely on technology have affected their critical thinking, their proper manners of socialization and hence their communication skills. Many researchers have proved that constant use of technology can affect many parts of the brain by hindering the development of these parts. Usually, the brain parts that can be impacted by technology are related to people's communication, social and oral skills. These digital natives who grew up depending on technology are much suffering when it comes to communicating outside their digital world as compared to previous generations.

4.1 Processing/ Dealing with information:

Scientists argued that too much technology can shrink the brain and that makes it unable to process information in general. This fact should be disturbing for those digital natives who are addicted to a world of multi digital processes and sensory communications. Students of nowadays are constantly using

technological tools while performing other tasks at the same time; this act led their brains to suffer from short attention spans along with other serious, negative issues. Social networks and technology provided students with a digital world of unlimited functions that made them unable to process information due to the fact of being constantly distracted by their smart devices.

4.2 Communication

One of the main benefits of technology nowadays is that it facilitated the process of communication no matter the geographical obstacles that separated individuals. Communication through technology gadgets has replaced the real world of communication by providing a digital one that is easy and tempting. However, the exaggerated use of communication through the digital world can negatively affect face to face communications. Students of this digital world are facing many difficulties to communicate and to speak properly and they are desperately lacking much social cues. The digital world required none of these factors to communicate, and students using different technologies to communicate needed neither proper grammar nor social cues nor body language to convey their messages. Consequently, they became unable to use basic communication skills in the real world.

4.3 So how to socialize?

Technology and social networks have perfectly separated the real world from the digital one and that can easily be deciphered through the visible change in students' emotional, social and cultural development. Many students nowadays use the digital world to escape from the real one and that has tremendously damaged their social skills. Social networks have tempted and attracted the

youth nowadays by creating an illusion and a perfect image of the real world. Educators, teachers and even parents have become so much concerned about the scary phenomenon that Youngers are now completely detached from the real world, and that their ability to socialize and communicate has been decreased. Technology alienates social and communication abilities that are now an essential part of the human development, so constantly using these technologies in an abusive manner will certainly lead to a complete separation from the real world.

4. Effects of technology on students' writing skills

With the introduction of the digital tools like ChatGPT, Deepseek and Grok3 students have become so addicted to them and which led to a decline in their learning abilities especially the writing ones. The new digital tools that were initially invented to help students develop their skills actually decreased them due to the heavy and constant rely on them. The increased rely on these digital tools and applications made students unable to become critical thinkers, good communicators and skillful writers. Kathleen A. Bronowicki (2014) stated that a survey conducted in 2012 by Common Sense Media said that some forms of technology and the media negatively affected students' writing. Additionally, only forty four per cent of the teachers surveyed described their students' writing as excellent or good. The same report indicated that nowadays students have become thinkers in 'short bites', unwilling to thrive and to work hard for a specific goal (Electronic Education Report, p.5, cited by Kathleen A. Bronowicki, 2014). Since technology turned life to be working on a rapid paced manner, students are now considering no usefulness in working on a particular task without using technology. With the continuous inventions of new

digital applications, there is an adopted notion among today's' generation that with the use of technology, learning should be fun. Students are acquiring different technological applications that made them believe that learning is always a funny process. It has been stated that "one of the most pervasive outcomes of technology is that students acquire the belief that learning to write should not be a struggle and that good teaching will make learning easier and more enjoyable" (Olsen and Clough, p.9). Well, for teachers there's no shame to have fun while learning; however, students need to know that not all learning is a funny act. For an effective learning to take place, students need to struggle once and a while, after all what's the point of effective learning if it is always easy and funny. Learners have to be challenged, "Struggle to make sense of new experiences, think about thinking, and make new connections" (Olsen and Clough, p.9). For students to become effective learners, they need to start believing that not any form of learning should be of a technological nature. Writing on the one hand should not be considered as an easy task, rather it should be considered as a challenging act that requires critical thinking and a specific amount of knowledge. Having much determination and maintaining effort to fulfill a goal is a crucial act especially for college students that are expected to complete particular assignments with the use and aid of technology. Since Microsoft Word and PowerPoint provide a spell check for students, they now believe that there is no need to learn spelling, punctuation and grammar as long as it is provided by technology (Purcell, Buchanan, and Friedrich). Technology is so developed and it continues to be something that exerts students' conceptual understanding to the point of making them totally unmotivated, and that is why

teachers need to understand their students' 'behind the language thinking' (Kathleen A. Bronowicki, 2014) and make effort to provide more helping and beneficial assignments to help students grasp some of the basic norms of academic writing skills. In a study mentioned in "The Impact of Digital Tools on students Writing and How Writing is Taught in Schools" article stated that "the use of word processing programs and spell-check is wonderful, but students rely on it so much that even when it changes their thoughts and words and it does not even make sense anymore because they've put in words that they've substituted words for misspelled words that don't even make sense, it hinders their ability" (Purcell, Buchanam, and Friedrich, p.36). Many teachers from different levels and from different institutions are concerned about the effect of technology on their students' writing skills. Teachers claim that digital students have become incapable of expressing complete thoughts and can no longer think beyond the digital world, Rothman (2014) added that "technology is hiding students' misunderstandings and interfering with their learning; as a result, students are not able to critically think and analyze evidence, synthesize information, write evidence, and recognize appropriate grammatical and structural errors" (Rothman, p.10, cited by Kathleen A. Bronowicki, 2014). However, computer programs are not the only factor that is impacting students' writing skills; texting is of a great impact too. Texting has become so popular among the youth of nowadays, being one of the essential modes of communications for people of all ages. For example, Dansieh reported that "by the end of 2007, seventy four per cent of all cell phone users worldwide were active users of text messaging (p.224). So, with the growing use of texting among students in particular, it has been proven that this mode of communication could "heighten the

tendency among students to adopt non-standard uses and contracted forms of English words in their class work" (Dansieh, p.222). Texting has become an addiction to many students, however; "the abbreviations, run-on sentences, alphanumeric combinations, and misspellings utilized in text lingo are often transferred to formal written tasks in the classroom" (Kathleen A. Bronowicki, 2014). In addition, a lot of students don't know how to write correct punctuation, and they constantly start their sentences without capital letters. It's true that these skills are taught in the classroom, however; the digital communication tends to predominate the students' ability to communicate. Texting led students to give less importance to "editing, revising and being diligent when writing (Purcell, Buchanan, and Friedrich, p.32). Words are now shortened even in formal works; Dansieh provided examples of these words that are shortened through the use of symbols that are somehow similar to specific word syllables and this habit results in the formation of new words that don't even exist in the dictionary.

Examples of these shortened words are (Dansieh, p.224):

'4 U' which stands for 'for you'

'B4' which stands for 'before'

'LOL' which stands for 'laughing out loud'

'Shud' which stands for 'should'

'Gr8' which stands for 'great'

These new shortenings led students to be lazier than ever, and hence taking less effort in academic writings. In short, the more students get used to these styles of writings the more their academic style will suffer. so the main concern lies in the fact that digital students believe that effective

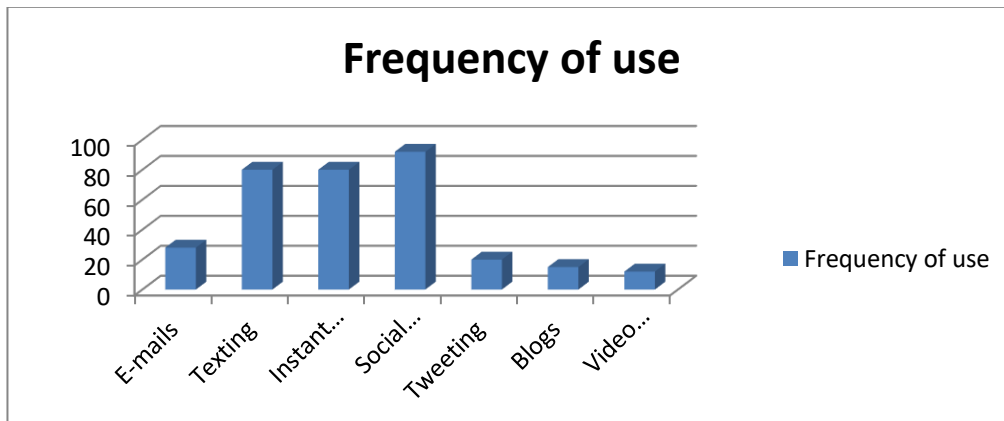
writing is all about speed but not about the quality; as a result, this wrongly belief hinders students from delving deeply into writing essentials, expressing critical thoughts and putting and effort on revising, editing their writings to create more useful pieces.

Concerning the department of English language at Batna 2 University, teachers have been complaining about the poor writing skills of students, and we have even noticed ourselves this when consulting the official administration records of students' grades on written expression. According to the teachers of the department of English language at Batna 2 University, Algeria, a number of Netspeak language features were found in the examination written work, and they believe that the frequent use of technology has some impact on the academic writing of the students which could in turn be attributed to the high frequency of technology usage.

5. The case of EFL Learners of the department of English at Batna 2 University

A pilot study was conducted at Batna 2 University; it was completed in four weeks and participants consisted of a 100 students from the department of English language. We gave participants papers consisted of two questions to be handled later on as samples of written works. The questionnaire contained one question about which of the computer-mediated communication forms (a list of all the computer-mediated communication forms was provided) they frequently use in order to study them in details along with their effects on students' academic writing later on in the research. The results (figure 1) showed that the majority of students frequently use instant messaging, E-mails and Social networks as a way of communicating with others.

Fig.1. the frequency of using different Computer-mediated communication forms



In addition, the researcher collected written samples provided by the 100 students that were questioned earlier; they were asked to write a message to their friends, and then they were asked to write a formal letter to their teacher complaining about something. We analyzed the written samples, and we found that the participants used Netspeak while messaging their friends and those

Netspeak features also appeared on the formal letter that they wrote to their teacher.

As a full time teacher at Batna 2 University, and throughout our teaching experience in different private schools of languages, one of the most concerning things that we have witnessed is the decline in the students' abilities to write

formally using complete sentences and complete words. Using Netlingo on formal assignments is making teachers,

6. CONCLUSION

Technology has affected every domain of our lives and it is hard to get it back the way it was. In the field of education, what students should do is that knowing how to use technology tools in an effective, beneficial way that will enhance and develop their lives. Moderation is a key solution, and students should be advised not to use internet and artificial intelligence unless it is really needed. Teachers should advise their students that whenever they try to solve a problem or to find an answer, they should firstly use their own thinking and their original ideas and then it is ok to add others'. Technology should just be considered as a helping tool but not as an essential one, and internet should just support students' ideas and work but not primarily used as a key answer and as the last and only haven. The fast process of using internet sources as the only way of finding answers will certainly destroy originality and critical thinking.

Well, like all pedagogical and instructive techniques technology has to be used with moderation in a careful and a responsible way. In reality, we have witnessed many irresponsible and abusive uses of technology that should be taken into consideration in order to control the negative effects of technology on our EFL learners. Some digital technologies can truly transform students' lives and affect them in different manners, so it is time to teach those students and to advise them how to properly use them. Technology should just be considered as a way to help but not to replace basic cognitive skills. Technology often leads students to be lazier and less curious due to the easy and rapid access to digital sources of information. Students are no longer

concerned and students believe that using technology to communicate and sharing information is the only method to do that.

engaged in critical and thought-provoking debates, depending only on other information alternatives to do the thinking for them. Technology paved the way for students to easily find information and then just copy-paste it.

There are two certain things: technology has its pros and cons; and technology cannot be avoided. To be engaged in different matters in this digital era, one has to be technologically literate. As teachers, we need to admit that we are teaching a generation, that artificial intelligence, Facebook, Instagram, gaming and texting is their core culture. In order to compete with this culture, we need to be engaged within, and then control it from the inside out. Teachers should show their students how to research for information, and then how to analyze it and further to investigate and finally to enjoy these processes in order to develop their own learning abilities.

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