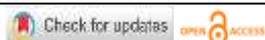


Technology Integrated Pedagogy and Learning

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ABSTRACT

Objective: This study investigates the integration of digital technologies in pedagogy and learning, with a focus on English language instruction and general academic contexts in non-English-speaking regions, particularly Uzbekistan. **Method:** Employing a qualitative descriptive approach, data were collected through interviews and observations involving both students and teachers to examine perceptions and experiences related to digital tools such as mobile applications, AI-assisted platforms, and digital libraries. **Results:** The analysis reveals that digital integration fosters learner autonomy, enhances access to information, and supports personalized learning. Students report improved efficiency and language development, while teachers recognize both the supportive potential and challenges of AI in instructional settings. However, issues such as over-reliance on technology, risks of academic dishonesty, and reduced interpersonal interactions are also identified. **Novelty:** Distinct from prior studies, this research offers a dual-perspective analysis – juxtaposing institutional pedagogical strategies with student lived experiences – and identifies specific digital applications that facilitate language acquisition and academic time management. The study emphasizes the importance of structured digital integration, informed digital literacy, and a balanced approach to innovation and academic integrity in higher education.

INTRODUCTION

The digital library is a great solution for student research and it is comfortable than an offline library. According to WIKIPEDIA, a digital library is an online database of digital objects, including text, images, documents, and books [1]. The history of digital libraries is unclear, but several people are connected to the emergence of the concept. In 1895, Paul Outlet and Henri La Fontaine tried to gather all the information to bring about world peace [2]. The visions of the digital library were largely realised a century later during the great expansion of the Internet.

On this note, it is essential to go through the most applicable advantages and disadvantages of involving device learning in a student's education. On the positive side, the students can use it from any comfortable place, which saves a huge time, especially during the hardest summer and winter session periods. Another benefit, they can find necessary information, which does not make you ask to go through requested applications and fill out forms or being left on the waiting list. In comparison to traditional libraries, it is harder to find obvious information in a short time [3]. A digital library facilitates easy sharing and collaboration. About the disadvantages, the drawback is relying on technology, which might lead to serious health problems, such as common visual issues.

Also, most essential books could be costly, which is not always affordable for students who mostly rely on pocket money. One of the distasteful drawbacks, according to Dildora Kasimova (a leading ESL teacher at UMFT University) is the students' allure to plagiarism that makes it easy to copy and paste. Social distance and lack of collaborative work are also mentioned as a serious problem, which brings psychological fatigue and limited communication.

RESEARCH METHOD

This study adopted a qualitative and experiential research approach to examine the integration of technology into modern pedagogy and language learning [4]. The methodological framework was based on real-world classroom experiences, teacher observations, and student reflections collected at the University of Management and Future Technologies (UMFT). Data were drawn from structured interviews, digital tool usage logs, and responses to app-based language learning platforms. Students were observed using a variety of educational applications, such as Duolingo, ChatGPT, TED, and Ibrat Academy, while instructors documented the practical benefits and limitations of each tool in enhancing language comprehension, vocabulary acquisition, writing skills, and speaking fluency. Additionally, comparative analysis of app functionality was conducted through tables summarizing student-reported benefits, usage frequency, and accessibility features [5]. The study also involved reviewing literature from scholarly sources on digital libraries, artificial intelligence (AI), and mobile learning environments to validate findings and align them with global trends in educational technology. Perspectives from both teachers and students were integrated to provide a holistic view of how digital tools affect engagement, learning autonomy, and collaborative communication. Teachers' testimonies, especially on the ethical and psychological dimensions of AI use in education, contributed to understanding technology's dual role as both facilitator and potential barrier. The methodology emphasizes a multi-source, experience-driven model that triangulates classroom interaction, digital tool evaluation, and expert reflection, making the results relevant for future improvements in technology-enhanced pedagogy and language instruction [6].

RESULT AND DISCUSSION

Digital library from the student's point of view

Digital library- an online library which has a variety of books, where students are required to get distinct data different from the curriculum. However, the students support the idea that online appliances provide enough opportunities as well as save precious time, and improve their health [7]. In a traditional library, students have to spend their time searching the sources and trying to find proper information. Moreover, these books are too heavy to carry from and to, especially for those who commute long distances. In the past, everyone used books to get information thus, they had to carry a

bunch of books, which resulted in backache and even scoliosis. Nowadays, students do not encounter similar problems similar with the past.

Applications in hand

Before moving to app-assisted education, let us outline the meaning and invention of the word. App-software package whichever allows to perform tasks on the device. Regarding the Indeed and Invention land, short form is an app but full form "application," is a type of software that can be installed and run on an electronic device. An app most frequently refers to a mobile application or a piece of software that is installed and used on a computer. Most apps have a specific and narrow function which was envisioned in 1983 by Steve Jobs [8].

Concerning to, the apps include excessive advantages and disadvantages such as

1. Delivering a seamless,
2. Personalized user experience,
3. Boosting customer engagement
4. Convenience
5. Offline accessibility.

Students detailly point out other benefits, IT allows users to

1. Interact with friends,
2. Read news,
3. Watch videos,
4. Play games,
5. Transfer financial needs at a distance.

The use of mobile apps is also excessively impacting society; therefore, the usage of traditional newspapers and magazines is declining dramatically. People are scrolling mobile phones instead of reading news, which emphasises conventional news publishers' revenue [9]. Table 1 was organized from UMFT students' answers.

Table 1 presents a categorized list of mobile applications most commonly used by students at UMFT (likely a university or academic institution) to support language learning.

Table 1. The list of apps for language learners

App	Benefits	Usage
1. Liters	Countless books and easy to download	It starts with safety of understanding <ol style="list-style-type: none"> 1. Deep privacy 2. Security practices 3. Mat based on your cabinet such as age or region.
2. My book	Collections of books	Different types of books for every taste. <ol style="list-style-type: none"> 1. Offline mood 2. Only bestsellers 3. New releases 4. Dark avenues.
3. Podcast guru	Enhancing comprehension	Available to find favorite podcast and listen it whenever they find passion for it.

App	Benefits	Usage
4. IELTS practise	Tests for assessing students' knowledge	Includes all information about certificate
5. Tick-tick	For managing time	To priority matrix. 1. Reminder 2. Methods of learning 3. Habit tracker.
6. Ibrat Academy	Full course video	Indicates lesson and daily quiz
7. Focus to-do-detailed	Manage work time	Using time appropriately for study, work and social interactions
8. Wisdom	Translating new words	Find synonyms. 1. Antonyms 2. Grammar structure
9. Chatgpt	Can reply for questions	Will be able to assess students speaking and writing with band script 1. Organize topic-based vocabulary, idioms, phrases
10. YouTube	Easy to learn from special videos	Full source of information. 1. Podcast 2. Video lessons 3. Movies
11. Google	Access for news	Provides full theoretical information
12. Ted.com	Source for listening	Available source for enhancing listening.
13. Reddit	Translate	Can translate new words and structures
14. Duolingo	Can provide certificate	Quiz and free lessons
15. BBC learning	Bunch of audios	Easy to install and listen for different topic
16. Netflix	Movies for watching	Students can switch language which they need and improve their comprehension
17. Hello Talk	Can enhance speaking skills	Daily communication with AI
18. Zoom	Online communication	For debating in a group
19. Telegram	Various materials from channels	Can organize video call

The role of technology in language learning.

The usage of technology increased dramatically therefore it can be one of the reasons to the process of life change. In spite this, the substitute influenced on education and opportunity to learn languages [10].

Language- requires the correct usage of communication with correct structure and grammar which can be complex and challenging for students but in order to reach the highest peak of the level, students should have great time management for organizing their time properly.

The most importantly, foreign learners must learn from reliable source to encounter those types of questions in the exam. For students to achieve their goals, they must organize enough time, effort and reliable source. Although, the application of computer technologies in learning language supplies opportunities such as student-centered environment, course administrators and teachers will be able to represent their lesson more comprehensible with different styles.

One of the methods is learning from a website where students can find grammar structures, new words and exercises. However, mobile apps may help students to obtain materials for learning a foreign language, which allows them to access watching videos or listen to podcasts for improving comprehension and listening. Apart from that, AI (artificial intelligence) will be able to give a hand in enhancing writing and speaking skills [11].

Game-based learning is speeding up dramatically and is able to make the learning process to fun. Through technology, students can communicate with native speakers on platforms or in virtual classes. (Abdul Gafur Marzuki).

Technology from the teacher's perspective.

The digital era is getting to its utmost in this realm of a busy schedule for everyone, and teachers are not an exception who feel dispatch to make use of the latest tools. Computer involvement in various activities is not an innovative approach; many articles from the 19th century can prove that scholars started their research on computer effects on education. To take an example: Thomas D. Yawkey outlines that the creation of computers eased human endurance with a large amount of data, as well as elaborating reasoning skills for fostering analytical thinking. Suddenly, there is an AI, which is in the form of software, interacting with people and generating reliable and stress-free content [12]. However, it poses anxiety whether it is about to substitute instructors or is it evolving to be a good companion in the huge, overloaded teacher work? I assume it is an assistance tool to have instructors get into lessons not only faster but in a more structured way.

"We use AI to supercharge our human superpower."

Tim Hesse, VP of AI & Analytics at EF Edtech

However, arriving at this determination was a multifaceted endeavor. It is not difficult to envision my pedagogical classes from a decade ago, when artificial intelligence was an unknown phenomenon to me. In the years that followed, I experienced trepidation when utilizing artificial intelligence, as if I were engaging in an illicit activity and should have been held responsible for the theft of an idea rather than for its creation [13]. I experienced a sense of guilt for leveraging a solution that effectively addressed my issue with minimal effort, when I ought to have conceptualized the solution independently. Due to the limitations imposed by my sense of remorse, I was

unable to utilize the full range of possibilities offered by the GPT chat interface. Dr. Elini Xilakis, in her blog on corrected.ai, talks about that fear as follows:

“Artificial intelligence (AI) stands apart from other digital technologies due to its profound potential to reshape societies, economies, and educational landscapes. This alone has made many of us hesitant, even fearful, to integrate it into our teaching. Unlike traditional ICTs, AI introduces distinct ethical and social concerns. Its unique capacity to mimic human behaviors influences human agency and requires specialized competencies beyond conventional digital literacy.” She emphasizes that AI-assisted learning tools have shown up to a 20% improvement in student engagement and retention.

Gradual experience and teacher support groups helped me to realize that AI advise me to select easily and clearly from many theories and methodologies that could be applicable and suitable to develop a lesson with various goals [14]. The feeling of confidence when I joined a Facebook group of teachers who were helping each other to use artificial intelligence properly in their activities. I was intrigued by their ideas. I realized the importance of webinars that offer different training on how to use AI. Woo and Choi and advice learners and teachers to obtain basic skills on Ai technology. By doing this, instructors will be aware of what, when and how to use Ai- assisted tools and guide their students with an appropriate utilization. Having joined this group, I learned a lot of ways to call for AI into a teacher work that I would like to share in this article later in my notes but before there is a vital note that mutual compromise between students and instructors on how AI tools should assist them in their studies should be drown in rules and round table talks constantly, as AI has an ability to hook student mind dependency only on it.

Literature review and comparing conclusions to student responses about AI

According to Rusmiyanto, artificial intelligence stimulates human intelligence as an advanced tool to enhance language learning, particularly, it creates possibilities for personalized, interactive, and adaptive learning, taking into account learners' needs and preferences [15]. The idea was also supported by Oke O.A. He outlines that AI-powered tools offer personalized learning experiences, tailor-made to individual student needs, adjusting to their pace and learning style, thereby fostering a more engaging and effective educational environment. When developing learner autonomy, the vital role of a teacher is to lead a student towards an individual approach to grasp a topic. Comprehending technology terms and terminology is important to increase work productivity and the whole process of daily tasks and accomplishments. I personally see a huge responsibility to involve students in this specific vocabulary, which is generally called academic by foreign language teachers who are behind the ESP (English for Specific Purposes), instructing non-linguistic students to accomplish understanding both content and functioning in a context. The role of artificial intelligence in language teaching is truly unique and invaluable. Questions about content meaning are a piece of cake to solve when you ask the right question to online brains. My learners, like so many students around the world, were also impacted by AI. At first, it seemed like a negative approach because they were using it to get their assignments done for them. The great thing about

AL-assisted work is that it can be easily spotted. All you have to do is keep your eyes open for unnatural phrasing, repetitive passages and phrases, overly complicated language, and vocabulary choices that are hardly ever used during ESP lessons. I always try to recheck my students' assignments in person, verbally, and ask highly ordered thinking questions relying on their work. I'm thrilled to share that when they provide structural and comprehensible answers, their work is accepted with the condition of being redone in a more humanised version. It's important to note that there are very intelligent students who use artificial intelligence really to gain knowledge and not to facilitate their tasks, which will be discussed as an example in the following passage.

A first-year student, Aminova M. from the Philology and language program and a third-year Abdurashidova Gulasal from IT science program at UMFT clarify that AL-supported tools help them dive into deep learning and self-correction with strict feedback, which is done by AL. "Artificial Intelligence often helps me in my studies; it can replace an interlocutor for speaking practice, serve as a second teacher, and evaluate my assignments. For example, to prepare for the IELTS writing, I faced challenges such as Lexical Resources, Grammatical Range, and accuracy. To work through my mistakes in detail, I sent these essays for AI checking. Initially, it thoroughly assessed my essays against the IELTS writing requirements and provided alternatives for improving my work." Gulasal divides her help from AI-assisted tools into several purposes "I often use Chatgpt to improve my English skills. Speaking practice helps me the most - I write a text in English, and it corrects mistakes and gives recommendations. Grammar explanation - if I don't understand a rule, the AI tool explains it in simple terms and gives examples. Vocabulary expansion - I ask for synonyms or explain the differences between similar words. Homework help - if I'm stuck on a task, Chatgpt helps me understand it. Sometimes, it's confusing if something is explained too complicatedly or doesn't use the most natural language. But overall, it's an excellent tool for self-study."

AI is a great assistant to provide several ways to choose the most effective one to activate the progress of language learning. Moreover, this personalisation extends to providing customized feedback, identifying areas where students struggle, and offering targeted support, which is particularly beneficial in language acquisition, where individual attention is crucial as Sasikala and Ravichandran claim.

The advent of AI in education facilitates student-centred learning through exploratory methods, collaborative projects, automated assessment systems, and gamified mobile applications designed to hone foreign language skills.

Final thoughts

Being able to be flexible to work today is not only accounted on special skills related to an occupation, but also a great knowledge of computerised systems should persist to speed and maintain the wide range of functions connected to complete a whole system. Thus, a picture of a modern specialist can currently be drawn as not in a circular shape, but an imaginary square to represent the necessity of a techy mind in all spheres. However, it never comes easily; the techy geeks are hardly ever born to be represented

as prodigies, a great deal of education, inner drive, and effort are needed to get professionals to see their work as cyber.

Technology from the student's perspective

According to results from University of Nayarit, almost entire students mentioned that they spend nearly seven to eight hours with their mobile phone and laptop for educational and non-educational research like looking up some profitable information for lessons or checking their profiles, chatting with friend and learning new language then it pointed out that students would prefer to read what others published in their profile and comment to them. Besides, they said that technology plays an important role in their personal life for texting and listening to music. Furthermore, the most used technology was seen on mobile phones, which collected the highest percentage than others.

To sum up, when it comes to me, as a student, my life is surrounded by technology, so I can use it consciously or unconsciously habitually. Usually, it simply starts with early morning because my alarm on my mobile phone wakes me up, then I watch shots on social media applications while having breakfast. Next, I use my mobile phone to check when the bus to arrive university. We are so lucky to be students in this day and age! We're surrounded by technology, and it's been such a game-changer for us. Our whole lives have become practically dependent on it, and that's something to celebrate! But we should not be limited by its advantages. Let's use it intelligently and make the most of it! Our teachers may not be as tech-savvy as the students, but they're dedicated to helping each other learn. This mutual support leads to incredible progress in the classroom. It is my understanding that a teacher has explained a new topic with a presentation that is comprehensible, interactive, and humorous. I believe that this is an accomplishment that is rarely seen in AL. Subsequently, I have found the technology to be a valuable asset in my personal and professional life, particularly in facilitating learning. However, it is important to acknowledge the irreplaceable role of educators in our society.

CONCLUSION

Fundamental Finding : This study concludes that the integration of digital technologies – such as AI tools, mobile applications, and online platforms – substantially enhances language learning and academic engagement by promoting flexibility, autonomy, and learner-centered instruction. **Implication :** The findings underscore the importance of developing structured digital literacy programs and institutional strategies that align technological innovation with pedagogical goals, ensuring ethical use and fostering both teacher and student competence in digital environments. **Limitation :** However, the study is contextually limited to a non-English-speaking higher education setting in Uzbekistan, which may constrain the generalizability of results to broader or more diverse educational contexts. **Future Research :** Further studies are recommended to explore longitudinal impacts of technology-integrated pedagogy across various disciplines and cultural contexts, including experimental designs that evaluate specific

digital tools' effectiveness in enhancing critical thinking, collaborative learning, and academic integrity.

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