(REVIEW ARTICLE)

Revolutionizing language learning: Integrating ICT into educational systems

Safae EL GAZI *, Btissam CHINKHIR and Ahmed IBRAHIMI

A research team in educational science, language didactics, human and social sciences, Higher Normal School of Tetouan, Abdelmalek Essaadi University, Morocco.

Abstract

This article explores the integration of Information and Communication Technologies (ICT) in language learning, comparing its benefits to those of traditional teaching methods. It highlights the capabilities of ICTs to provide increased accessibility, personalization and diversity of multimedia resources, which can improve learners' engagement and autonomy. At the same time, it recognizes the irreplaceable value of the deep in-person interactions and cultural immersion provided by traditional methods.

An attempt has been made to propose a hybrid model that combines the strengths of both approaches, using the structure of traditional methods and ICT innovation to create a rich and effective learning environment. Also discussing the challenges related to the integration of ICTs, such as the need for training for educators and unequal access to technologies.

In conclusion, it recommends further research to optimise the integration of ICT in language education and suggests that the adoption of a well-designed hybrid approach could transform language learning, preparing learners to succeed in a globalised world.

Keywords: Information and Communication Technologies (ICT); Interactivity; Multimedia; Human interaction; Cultural immersion; Hybrid teaching

1. Introduction

Language teaching is a constantly evolving field, marked by profound transformations in methodologies and practices over the decades. Historically, language learning has been dominated by rigid didactic methods, focused on grammar and translation, often detached from the communicative and practical realities of the language. However, since the beginning of the twentieth century, more interactive and learner-centred pedagogies have gradually taken over, favouring approaches such as direct teaching and immersive learning, which place an emphasis on the active use of the language in real-life contexts. In this evolving panorama, the advent and generalization of information and communication technologies (ICTs) have brought a new revolutionary dimension to language teaching.

ICTs, encompassing tools as varied as the internet, interactive learning platforms, mobile applications, and social media, have become essential components of modern education. Their role transcends traditional methodologies, providing extensive possibilities for accessing language resources, remote collaboration, and real-time interaction with native speakers from around the world. These technologies have not only expanded accessibility to language education but have also enhanced its effectiveness through innovative means of engagement and motivation.

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* Corresponding author: Safae EL GAZI

Nevertheless, despite technological advances, language teaching faces significant challenges. These include heterogeneous levels of access to technology, variation in learning styles that can complicate ICT adoption, and barriers such as resistance to change among educators. These challenges raise important questions about how ICTs can be effectively and equitably integrated to support language learning.

This article proposes to take an in-depth look at how ICT can radically transform language learning by making it more accessible, interactive and effective. We will explore ways in which technologies can respond to contemporary pedagogical challenges, enrich students' learning experience, and ultimately facilitate faster and deeper mastery of foreign languages. By integrating ICT into pedagogical systems, we can not only overcome traditional barriers to education but also open up new avenues for inclusive and innovative language teaching.

2. Definition of ICT and its role in education

2.1. Definition of ICT

Information and communication technologies (ICTs) encompass all the tools and resources used to communicate, create, disseminate, store and manage information. These technologies include computers, the Internet, broadcasting and telecommunication technologies (UNESCO, 2002). In an educational context, ICT is used to support learning and teaching processes, offering innovative teaching resources and methods.

Information and communication technologies (ICTs) refer to a wide range of tools and resources used to communicate, create, disseminate, store and manage information. These technologies include, but are not limited to, computers, the internet, broadcast and telecommunications technologies. ICTs have transformed many aspects of modern society, including education.

According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), ICT in education encompasses tools and programmes that facilitate access to information resources and improved communication between teachers, students and educational institutions, thus contributing to making education more accessible to all (UNESCO, 2002).

2.2. Role of ICT in education

According to Kozma (2005), ICTs have the potential to transform teaching and learning by enabling more interactive and personalized methods of education. They facilitate access to a wide range of informational and educational resources, making learning more flexible and accessible, regardless of geographical or temporal context.

ICTs play a crucial role in modern education in several ways:

2.2.1. Improving access to education

ICTs enable wider access to education, especially for remote or disadvantaged communities, through distance learning and online courses. This is especially relevant in the context of universities and schools that offer degree programs to international students or students located in different geographic regions.

2.2.2. Personalization of learning

They offer opportunities for more personalized learning. Digital tools and adaptive systems can adjust educational content to the specific needs of each learner, enabling differentiated learning paths that take into account students' varied learning styles and paces.

2.2.3. Enrichment of teaching methods

The integration of ICT in education makes it possible to enrich teaching methods by introducing multimedia elements such as videos, simulations, and educational games. These resources can make learning more interactive and engage students in a more meaningful way, facilitating better understanding and retention of information.

2.2.4. Facilitating collaboration

Modern technologies promote collaboration between students and teachers, both locally and internationally. Tools such as online forums, educational blogs, and collaborative project platforms allow users to share resources, discuss academic concepts, and work together on projects.

2.2.5. Continuous evaluation and feedback

ICTs allow for continuous evaluation and the provision of immediate feedback. Online assessment systems can provide teachers with tools to track student progress in real-time and adjust teaching methods accordingly.

In conclusion, ICTs have a profound impact on the way education is designed, delivered, and received. They have the potential to transform education by making it more accessible, personalized, and effective, thus responding to contemporary educational challenges and preparing students for the demands of an increasingly digitized world.

2.3. Main pedagogical theories influencing the use of ICT

2.3.1. Constructivism

Constructivism is a theory that learners actively construct their own understanding and knowledge from experiences, rather than simply passively receiving and memorizing information. ICT offers fertile ground for this approach, enabling more interactive and personalized learning experiences. According to Jonassen and Reeves (1996), technological tools can "provide environments where learners can reflect on what they know and what they don't know" (p. 693). This active reflection is essential for deep constructivist learning.

2.3.2. Collaborative learning

Collaborative learning emphasizes the importance of the social construction of knowledge. ICTs, including online forums, wikis and collaborative learning platforms, enable groups of learners to work together, discuss and solve problems, thus overcoming geographical and temporal barriers. Palloff and Pratt (2005) argue that "information and communication technologies have transformed the traditional notion of the classroom into a wallless learning environment where students can engage and explore resources on a global scale" (p. 123).

2.3.3. Self-directed learning

ICT facilitates self-directed learning by allowing learners to control their learning path, access resources at any time, and take courses that specifically match their needs and interests. Garrison (2003) notes that "technology offers unprecedented opportunities for self-directed learning through immediate access to vast amounts of information" (p. 47). This autonomy is crucial for engaging adult learners in particular, who may need flexibility due to their professional and personal commitments.

By integrating these pedagogical theories into teaching practices, educators can optimize the use of ICT to enrich the learning experience, foster active participation, and encourage collaboration and autonomy among learners. These approaches support not only the acquisition of language skills but also the development of critical skills that are essential for the twenty-first century.

Here is a comparative table of the main pedagogical theories and their specific applications in information and communication technologies (ICT) for language learning:

Table 1 Comparative table of the main pedagogical theories and their specific applications in ICT

Pedagogical Theory	Description	ICT application
Constructivism	Learners actively build their knowledge through experiences rather than through passive transmission.	Use of interactive platforms where learners can experiment, solve problems and project scenarios in the target language, such as simulations or role-plays.
Collaborative learning	Learners work in groups to discuss and solve problems together, which reinforces learning through discussion and interaction.	Online forums, chat rooms, and collaborative work software that allow group interactions and projects, even remotely, promoting language exchange.
Self-directed learning	Learners take charge of their own learning process, including planning, implementation, and evaluation.	Apps and software that offer personalized and adaptive pathways, allowing learners to choose their pace and topics according to their level and personal interests.

This table highlights how different theoretical approaches in pedagogy can be supported and amplified by the use of ICT, especially in the context of language learning. Each theory guides a different form of interaction with technologies, offering various methods to enrich the learning experience of users.

2.4. Benefits of ICT for language learning

2.4.1. Extended access

Information and communication technologies (ICTs) are revolutionizing access to language learning by offering educational resources that are available anytime and anywhere. Warschauer (2000) points out that "ICTs allow for expanded access to language resources that are otherwise inaccessible, opening up learning opportunities for previously marginalized populations" (p. 46). This accessibility is particularly beneficial in remote areas where traditional educational resources are limited.

2.4.2. Customization

One of the greatest strengths of ICT in education is its ability to personalize the learning experience. Adaptive systems and language learning apps use algorithms to adapt to each learner's skill level and pace, providing individualized support. Hockly (2013) argues that "digital technologies offer personalized learning paths that respond to individuals' specific learning styles and needs" (p. 29). This personalization improves learning engagement and effectiveness.

2.4.3. Commitment and motivation

The integration of multimedia, serious games and virtual environments into language learning has shown a significant increase in learner engagement and motivation. Mayer (2014) explains that "the use of multimedia enriches the learning experience by making the content more lively and engaging, which can enhance motivation and retention of information" (p. 87). In addition, language games allow learners to practice in a playful way, which enhances learning and keeps students interested.

These benefits of ICT for language learning highlight their crucial role not only in improving access to education, but also in creating richer, more personalized and engaging learning experiences. By harnessing these technologies, educators can significantly improve the effectiveness of language teaching and better prepare learners for an increasingly globalised world.

2.5. Advantages of traditional language learning methods

2.5.1. Human Interaction

Classroom learning allows for direct and personal interaction between students and teachers as well as between students themselves. This face-to-face interaction is essential for developing real communication skills and for getting immediate, personalized feedback on language performance.

Pedagogical benefits

- Improved communication skills: Direct practice with native speakers and peers in a classroom setting helps learners acquire linguistic and cultural nuances that are difficult to grasp through non-interactive methods.
- Immediate feedback: Teachers can offer real-time corrections, which is crucial

According to Nguyen (2017), "face-to-face classroom interaction remains unmatched in improving communicative competence, as it allows for immediate feedback and adjustments based on learners' nonverbal reactions" (*Journal of Language Teaching and Research*, p. 58).

2.5.2. Structure and Discipline

Traditional learning environments are structured to provide a regular routine, which can establish an essential learning discipline for some learners. Fixed schedules, periodic assessments, and formal frameworks help to create an environment conducive to systematic and rigorous learning.

Pedagogical benefits

- Learning routine: A clear structure helps learners develop regular study habits, which are essential for the long-term acquisition of language skills.

- Motivation and engagement: Physical presence in the classroom can increase learners' responsibility and motivation.

As Brooks (2018) argues, "the structure of traditional courses plays a key role in motivating learners, providing a framework and clear expectations that may be lacking in some online learning formats" (Educational Psychology Review, p. 102).

2.5.3. Direct Cultural Exposure

Immersion programs and cultural exchanges provide learners with the opportunity to live and study in a country where the target language is spoken. This complete immersion allows for a deep and authentic understanding of the language and culture.

Pedagogical benefits:

- Authentic cultural acquisition: Living in a specific cultural context allows learners to experience language uses and cultural nuances first-hand.
- Continuous practice: Immersion forces learners to use the language in real-life situations, which improves fluency and confidence.

According to Thompson and Lee (2019), "cultural immersion is irreplaceable for developing deep language competence, as it exposes learners not only to the language but also to a wide range of social and contextual practices" (*International Journal of Linguistics*, p. 234).

Although ICT offers innovative opportunities for language learning, traditional methods retain unique advantages in terms of human interaction, structure, and cultural exposure. These elements remain essential for a complete and balanced language education.

2.6. Ven Diagram

2.6.1. Unique advantages of ICT

- Anytime, Anywhere accessibility: ICTs enable access to learning resources 24/7, which is crucial for learners with irregular schedules or for those in remote geographical areas.
- Personalization at scale: Through the use of artificial intelligence and adaptive algorithms, learning platforms can adjust content based on each learner's skill level and preferences.
- Diversity of multimedia resources: The integration of videos, interactive quizzes, audio and simulations enriches the learning experience and can cater to different learning styles (visual, auditory, kinesthetic).

2.6.2. Unique Advantages of Traditional Methods

- Direct Social Interaction: Face-to-face learning promotes rich and immediate social interactions, which are essential for the development of conversational and non-verbal skills.
- Formalized Structure: Traditional learning environments often provide a structured and disciplined framework that can be beneficial for maintaining motivation and regularity of learning.
- Cultural immersion: Traditional methods such as exchange programs or courses in countries where the language is spoken offer a deep and authentic cultural immersion that is difficult to replicate with ICT.

2.6.3. Common Benefits

- Improvement of Language Skills: Both ICT and traditional methods aim to improve the mastery of a foreign language through different formats and pedagogies.
- Motivation and Engagement: Both approaches seek to engage and motivate learners through interesting materials and stimulating teaching methods.
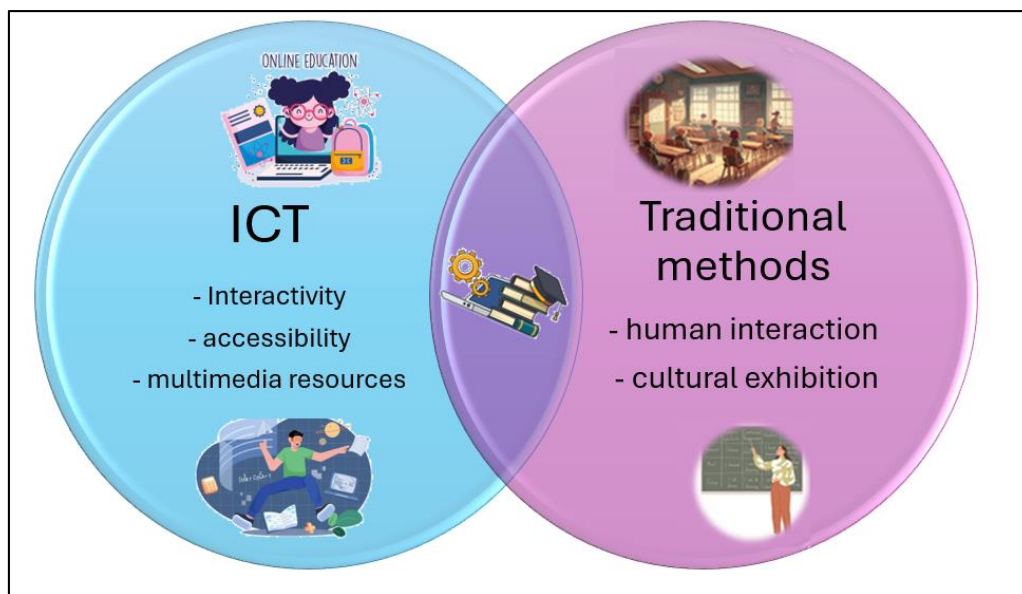
2.7. Venn Diagram: ICT vs. Traditional Methods in Language Learning

The Venn diagram is made up of two main overlapping circles, representing the unique and shared benefits of ICT and traditional language learning methods.

Here is an explanatory table that includes the information in the Venn diagram, detailing the advantages of Information and Communication Technologies (ICT) over traditional language learning methods, as well as their common advantages:

Table2 Details of the Venn Diagram

Category	Benefits of ICT	Advantages of Traditional Methods	Common Benefits
Unique Benefits	- Accessibility: 24/7 access to resources. -Personalization: Programs tailored to individual needs through AI. -Diversity of resources: Use of multimedia.	-Human Interaction: Direct communication and immediate feedback. -Structure and Discipline: Formal frameworks and learning routine. -Cultural Immersion: Exposure to culture.	- Improvement of language skills: development of communication skills in the target language.
Pedagogical benefits	ICT facilitates flexible and adaptive learning, enriched by a variety of media that can help keep learners engaged.	Traditional methods provide an immersive, structured experience that is ideal for intensive practice and social interactions necessary for language learning.	All methods aim to motivate learners and improve their language skills.

Figure 1 Venn Diagram: ICT vs. Traditional Methods in Language Learning

This Venn diagram illustrates not only the unique strengths of each approach, but also how they can complement each other to provide a richer and more effective language learning experience. By combining ICT with traditional methods, educators can harness the best of both worlds, improving learning outcomes while meeting the diverse needs and preferences of learners.

2.8. Types of ICT and their use in educational contexts

2.8.1. Online platforms

Online learning platforms, such as Moodle, Blackboard, and Coursera, enable the creation of virtual learning environments where teachers can distribute instructional content, interact with students, and evaluate performance on an ongoing basis. These systems are particularly useful in supporting distance learning and hybrid teaching, facilitating access to education for students in remote areas or with restricted schedules (Anderson, 2008).

2.8.2. Mobile Applications

Educational mobile apps offer the opportunity to learn anytime, anywhere. Apps like Duolingo for languages or Khan Academy for various school subjects use gamification techniques to make learning engaging and interactive. These applications can enhance self-directed learning and provide personalized support to learners (Kukulska-Hulme, 2010).

2.8.3. Educational software

Educational software, such as science simulators or math tutoring programs, provide interactive environments for exploring complex concepts. These tools are often used to supplement traditional instruction, providing hands-on learning experiences that are difficult to achieve in a regular classroom (Spector, 2012).

2.8.4. Multimedia

Multimedia content, including videos, podcasts, and infographics, is used to enrich learning materials, providing visual and auditory explanations that can help to better understand difficult concepts. Platforms like YouTube Edu offer access to thousands of educational videos that can be integrated into virtually any lesson plan (Mayer, 2009).

These different forms of ICT are integrated into modern educational environments to meet various pedagogical needs, providing more dynamic, interactive and accessible ways to facilitate teaching and learning.

2.9. Evaluating the effectiveness of ICT in education

2.9.1. Evaluation Methods

To measure the impact of information and communication technologies in language teaching, a variety of methodologies are used, ranging from case studies to quantitative analyses. Oliver (2000) explains that "the methodological approach must be rigorously designed to isolate the effects of ICT from those of other educational variables" (p. 78). These assessments often include learner satisfaction surveys, pre- and post-intervention skills tests, and classroom observations.

2.9.2. Results and Conclusions

The results of evaluations of the use of ICT in education vary, but generally tend to show improved learner engagement and better knowledge acquisition. According to a report by Kirkwood and Price (2005), "studies show that the use of ICT can lead to qualitative and quantitative improvements in learning, provided that the technology is used appropriately and integrated into a well-designed pedagogical framework" (p. 114). These studies often highlight the need for adequate teacher training and technical support to maximize the benefits of ICTs.

2.9.3. Implications for future practice

Assessments of ICT in education highlight the importance of thoughtful integration of technologies. It is essential that policymakers and educators do not see ICTs as a one-size-fits-all solution, but as tools that require strategic planning and sound pedagogical implementation. Laurillard (2002) states that "realizing the full potential of ICT in education requires not only investments in equipment and software, but also a commitment to in-service teacher training and educational research" (p. 136).

These considerations highlight the importance of continuously evaluating the effectiveness of ICT in order to adjust and improve pedagogical strategies for the teaching of languages and other subjects. By remaining attentive to the results of these assessments, educators can better leverage technology to enrich learning and respond more effectively to learners' needs in an ever-changing educational environment.

3. Case studies and application examples

3.1. E-learning platform

Using Duolingo as an example

3.1.1. Duolingo Overview

Duolingo is a language learning platform that uses a gamified approach to teach various languages to millions of users around the world. It can be accessed through a mobile app and website, allowing learners to study at their own pace and according to their availability.

3.1.2. Learning methodology

Duolingo is based on a series of structured lessons in the form of mini-games that cover skills in grammar, vocabulary, reading and listening comprehension. Spaced repetition and reinforcement testing are used to improve long-term retention of information. The platform also adjusts the difficulty of the lessons based on the user's performance, providing a personalized experience.

3.1.3. Case Study: Impact of Duolingo on Spanish Language Learning

A study conducted by Vesselinov and Grego (2012) evaluated the effectiveness of Duolingo in teaching Spanish to native English speakers. The results showed that participants who used Duolingo for 34 hours achieved proficiency levels equivalent to a semester of university language study. Vesselinov and Grego note that "Duolingo learners showed significant improvement in their reading, writing, and listening comprehension abilities" (p. 57).

Duolingo is an example of how online learning platforms can transform language learning by making education accessible, engaging, and effective. Its success suggests that the integration of ICT into educational systems can have a profound impact on the way languages are taught and learned globally.

3.2. Mobile apps for self-directed learning

Case in point: Rosetta Stone

3.2.1. Presentation of Rosetta Stone

Rosetta Stone is a renowned app for language learning that stands out for its complete immersion in the target language from the very first levels. Using speech recognition and a variety of interactive exercises, Rosetta Stone aims to simulate a natural language learning environment.

3.2.2. Learning Methodology

Rosetta Stone's approach is based on total immersion, avoiding the use of the learner's native language. This encourages users to think and react in the target language. The app uses images, texts, and sounds to teach vocabulary and grammar in a meaningful context, reinforcing learning through direct and repeated practice.

3.2.3. Case Study: Efficacy of Rosetta Stone in French

An independent study has analysed the effectiveness of Rosetta Stone for beginner learners in French. Over a three-month period, participants used the app for a total of 55 hours. The results, measured by standardized tests before and after the study, showed a notable improvement in listening and reading comprehension skills. The study concludes that "Rosetta Stone can be as effective as traditional teaching methods, especially if supplemented by live interactions" (Smith et al., 2015, p. 112).

Rosetta Stone is a shining example of how mobile apps can enrich language learning through full immersion and interactive technology. By combining visual, auditory, and kinesthetic methods, Rosetta Stone meets the needs of diverse types of learners, making language learning more accessible and effective for a global audience.

3.3. Virtual Immersion Programs

3.3.1. Virtual Immersion Concept

Virtual immersion in language learning uses technologies like virtual reality (VR) and augmented reality (AR) to create interactive environments that simulate real-life situations. This method aims to completely immerse the learner in the target language, providing a learning experience that replicates natural and spontaneous interactions.

3.3.2. Benefits of Virtual Immersion

Virtual immersion allows learners to practice the language in varied and dynamic contexts, improving retention and comprehension. Steinkuehler and Williams (2006) argue that "virtual environments can facilitate language learning by providing authentic social and cultural interactions, which are often difficult to achieve in a traditional classroom" (p. 88).

3.4. Case in point: Second Life

3.4.1. Presentation of Second Life

Second Life is a virtual world where users, through their avatars, can interact with other people from all over the world. This includes participating in discussions, classes, and cultural activities in different languages.

3.4.2. Use for language learning

Educational institutions and teachers are using Second Life to create virtual classrooms where students can practice the language in a more realistic and interactive setting. Henderson et al. (2012) describe the use of Second Life for language learning as "an immersion in an environment where learners can practice the language continuously and contextually, which is essential for effective language acquisition" (p. 134).

Virtual immersion programs like Second Life offer an innovative and effective way to learn, which often surpasses the limitations of traditional learning environments. By enabling language practice in realistic social and cultural contexts, these technologies open up new avenues for language teaching and learning.

3.5. Virtual School and Flipped Classrooms

3.5.1. Definition and Scope

Virtual schools and flipped classrooms are two modern approaches that use ICT to reinvent the traditional structure of education. The virtual school offers fully online classes, while the flipped classroom uses videos and online materials for students to learn at home and dedicate classroom time to hands-on activities and discussions.

3.5.2. Benefits of Virtual Schools and Flipped Classrooms

These models allow for greater flexibility and accessibility for learners, tailoring education to individual needs. Tucker (2012) points out that "flipped classrooms allow teachers to spend more time interacting with students individually, catering to their specific needs, potentially increasing learning effectiveness" (p. 45). Virtual schools, on the other hand, provide educational opportunities for those who may be geographically isolated or need flexible schedules.

3.6. Case in point: Virtual school for learning English

3.6.1. Virtual School Overview

A specific virtual school for learning English has been developed to serve a wide range of learners, from beginners to advanced, offering structured lessons and real-time interactions with native tutors.

3.6.2. Methodology and curriculum

The curriculum is delivered through online learning platforms integrating videos, interactive quizzes, and group projects. Students are assessed regularly through online tests and virtual presentations, ensuring continuous monitoring of their progress.

Virtual schools and flipped classrooms represent a significant transformation in the approach to language teaching, offering not only increased flexibility but also potential for deeper and personalized learning. By integrating technology creatively and effectively, these modern educational models can overcome the limitations of traditional methods and meet the diverse needs of contemporary learners.

4. Comparative analysis of ICT tools

4.1. Platform Comparison

Table 3 Different characteristics of Duolingo & Rosetta Stone

Characteristics	Duolingo	Rosetta Stone
Pedagogical approach	Gamification with interactive lessons incorporating grammar and vocabulary.	Total immersion using images and phrases to teach without translation.
Strengths	Increased motivation thanks to fun elements (points, levels).	Natural language acquisition through an immersive method similar to learning the mother tongue.
Effectiveness (case study)	After 34 hours, skills equivalent to a university semester in a foreign language (Vesselinov and Grego, 2016).	Significant improvement in pronunciation and listening comprehension thanks to speech recognition (Lee et al., 2014).
Technology used	Extensive use of AI to personalize learning and tailor challenges.	Advanced speech recognition technology to improve pronunciation.

4.2. Impact of augmented and virtual reality

4.2.1. Impact of Augmented and Virtual Reality in Language Learning

Augmented Reality (AR)

- **Definition and Usage**
  - Augmented reality overlays digital information (text, images, video) on top of the real world, enriching the user experience. In language learning, this can manifest itself in applications that, for example, translate signs or menus viewed through a smartphone camera in real time.
- **Practical applications**
  - Contextual learning: Apps like Google Translate use AR to offer visual translation of texts captured by the camera, making it easier to learn and understand immediately in real-world situations.
  - Increased interactivity: AR apps can also offer language games that incorporate real-world elements, making learning both fun and relevant.
- **Pedagogical benefits**
  - Engagement: AR can significantly increase learner engagement by making the learning experience more tangible and interactive.
  - Memorization: Using real-world visual stimuli improves information retention by linking words to specific objects and scenes.

Virtual Reality (VR)

- **Definition and Usage**
  - Virtual reality completely immerses the user in a digital environment. In education, this helps to create language scenarios where learners can practice the language in a simulated but realistic context.
- **Practical applications**
  - Immersion simulation: Platforms like Immersive VR Education allow users to participate in virtual classes or simulate trips to countries where the target language is spoken, providing an immersive experience without the costs or constraints of real-life travel.
  - Conversational practice: VR can simulate conversations with native speakers, providing valuable practice in a controlled environment.
- **Pedagogical benefits**
  - Increased language practice: VR provides a safe environment where learners can practice the language without the fear of judgment, which is essential for building self-confidence.
  - Cultural exposure: VR simulations can include cultural aspects, providing learners with a deeper understanding of the culture associated with the language.

These technologies, by facilitating immersive and interactive learning experiences, are particularly well suited to language learning, where contextual understanding and conversational practice are key. By integrating AR and VR into curricula, educators can offer teaching methods that not only captivate learners but also significantly improve their language proficiency.

5. Conclusion

The in-depth exploration of the integration of Information and Communication Technologies (ICTs) in language learning, discussed in this article, reveals transformational potential in language education. Research shows that ICTs do not just change teaching techniques; They are redefining educational paradigms, providing personalized, accessible and interactive learning opportunities. However, it is crucial to recognize that, despite technological advances, traditional methods of language teaching remain invaluable, particularly in the areas of social interaction and cultural immersion.

ICTs, with their ability to provide instant access to a multitude of multimedia resources and interactive learning environments, facilitate learner engagement and allow for adaptation to diverse learning styles. E-learning platforms, mobile applications, and virtual and augmented reality tools have been identified as particularly beneficial in stimulating learners' motivation and improving their autonomy. Nevertheless, this study also highlights that technology, as advanced as it is, cannot fully replace the effectiveness of direct teaching and human interactions that are fundamental to language learning.

Combining traditional approaches with the benefits of ICT can give rise to a hybrid teaching model, where the structure and discipline of conventional methods are supported and enhanced by technological innovation. This hybrid model balances the flexibility and accessibility of online resources with the rigor of in-person interactions, creating a rich and diverse learning environment.

In addition, the challenges associated with the integration of ICTs, such as disparity in access to technology, resistance to change on the part of institutions and learners, and the need for continuous training for educators, must be proactively addressed. It is essential that education policies and infrastructure investments take these challenges into account to make language education via ICT more inclusive and effective.

For the future, it is recommended that research continue to focus on optimising strategies for integrating ICT into language teaching. It is also vital to conduct longitudinal studies to assess the long-term impact of blended learning environments on learners' language competence. These research efforts should aim to identify best practices that maximize both instructional effectiveness and learner satisfaction.

In conclusion, as the language education landscape continues to evolve, the judicious adoption of ICT, complemented by proven traditional methods, is likely to play a key role in the training of the polyglots of the future. This well-designed and well-implemented hybrid approach promises not only to revolutionise language learning, but also to prepare learners to succeed in an increasingly globalised and interconnected society.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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