## Impact of ICT on English Language Pronunciation and Speaking Skills through Cross-Cultural Communication: A Study of Theories and Strategies

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## Abstract

The integration of Information and Communication Technology (ICT) in language learning has fundamentally transformed the manner in which learners enhance their English pronunciation, public speaking abilities, and intercultural communication skills. This article examines a variety of ICT tools and methodologies, including speech recognition software, mobile learning applications, virtual reality (VR), augmented reality (AR), language exchange websites, and AI pronunciation tools, elucidating their influence on language acquisition as it relates to differing learning theories. This qualitative study is predicated on a comprehensive literature review. The findings indicate that ICT has significantly improved the learning experience through real-time feedback, personalized learning pathways, and immersive real-world practice. Nevertheless, challenges remain concerning the accuracy of speech recognition, the substantial costs associated with VR and AR technologies, and the necessity for culturally context-specific digital tools. The paper proposes recommendations for enhancing the utilization of ICT, ensuring an integrated approach to technology and traditional learning, improving technology accessibility from both urban and rural perspectives, and facilitating global education and cultural diversity through technology. It concludes with suggestions for future research, underlining the importance of long-term effectiveness, cultural variation, and the role of AI in language learning. These findings contribute to a deeper understanding of emerging trends in language education and highlight how the application of ICT tools can elevate learners' skills in speaking English and their proficiency in cross-cultural communication.

**Key Terms**: ICT, English Language Pronunciation, EFL, English as a Native Language, Speaking Skills, Cross-Cultural Communication, Cross-Cultural Competency

## Introduction

English has become a global language due to its wide usage and the language of science, technology, and higher education (Crystal, 2003). Technology can play a significant and backup role in teaching and learning. The technological and the pedagogical advancement adopted by the teachers and learners can serve the role of advanced information, practical knowledge and effective communication. Marsh (2009) views that the changes of teaching and learning approaches from traditional to computer-assisted can provide the effective

results compared to past. Human development standards and educational aspects have changed in the 21$^{st}$ century as compared to the past. The emergence of technology in daily life has diverted the keen life aspects of digitalization by inputting ease into it. The field of education has been revolutionized by the revolution of information and communication technology (ICT) in life.

English language has become the means of international communication in the field of education, business and as the contact language of the international scholars due to wide range usage in different fields such as natural sciences, social sciences, medicine and the applied sciences (Keith et al., 1992). Trice (2007) viewed that there had been new trends in international education after initiatives in English for specific purpose (ESP) courses. Hence, international-level experiences are needed for teachers and students to avail themselves of the opportunities and benefits in more fruitful ways. Trice further illustrates that previous researches describe that the students have to see different cultural issues at the international level due to the diversity of the home culture. These issues may have a significant impact on their studies. The new learning environment, language difficulties, accommodation issues and cultural diversity significantly affect the students' education at the international level.

All students have to face different cultural challenges in the new culture. Wu. Garza and Guzaman (2015), in their study, mentions that, being the international student, new learning environment requires the adjustment of the learners and the adjustment process is not so easy to adopt. Many of the researches conducted in this regard describe that the students have to pose the positive approach to overcome difficulties generally.

**Objectives**

- To describe the significance of ICT for teaching and learning English language pronunciation and speaking skills in intercultural domains.
- To highlight the pronunciation and spoken and intercultural issues of students.
- To study the significance of ICT for effective learning of English language pronunciation and speaking skills.
- To manipulate the comparative impact of a practical ICT approach in minimising the pronunciation, speaking skills and cultural issues faced by students.

**Research Question**

1. What is the significance of ICT on learning and teaching English pronunciation and speaking skills?

2. What pronunciation, oral, and cultural issues Students face in cross-cultural communication?

3. How do teachers and students handle pronunciation and cultural gaps in English language classes?

4. To what extent can ICT be appropriate in effective cross-cultural communication?

5. How can the effective use of ICT in English language classrooms develop pronunciation, speaking skills, and cultural competency?

**Significance of the Study**

Much research has been conducted due to the increasing number of students in intercultural universities. However, little research has focused on proposing suggestions to address the language and cultural hurdles faced by students. The present study will address the impact of ICT on speaking problems and intercultural competency. Stakeholders, including teachers and international students, will be able to find possible solutions through the present study. This research will support a better understanding of the core issues related to pronunciation, English language learning and teaching, and the cultural gaps experienced by students enrolled in the same program. Additionally, the study will provide insights into the effects of the ICT approach to minimize challenges in pronunciation, English speaking, and intercultural communication. Most importantly, this unique study will contribute to further research by proposing a framework for stakeholders addressing the challenges of English language learning and teaching among students.

**Literature Review**

Al-Qahtani (2023) researched the engagement of Saudi students studying in Australia from the perspective of a gender-mixing environment. The research was conducted as a PhD study. The study results show that mixed studies are a new and unfamiliar phenomenon for students. There are enormous difficulties for Saudi students in Australia as they are not fully equipped with English language skills, and they describe their identity and culture in Arabic. This changes their personality in Australia. There are translation and cultural hybridity issues for Saudi students living in Australia.

Dutta (2014) studied the barriers to speaking English in Saudi universities. The study pointed out the English-speaking barriers among university students studying at Tibah University. For data collection, 10 classes were observed to determine if the students' English-speaking skills were lacking. The study results highlight the need to reform the ESL

teaching and learning courses, as speaking and listening skills are highly neglected. Insufficient emphasis is placed on verbal communication; instead, text reading is often emphasized in the classrooms. The students' motivation is low, as they must adhere to a rigid curriculum while exams are only taken in written form. The study also recommended that learning English be reformed by providing students with verbal communication opportunities. Azmi (2017), in his study on the benefits of ICT in EFL classrooms, illustrated that using ICT in EFL classes can trigger outcomes, motivate learners to use the English language, enhance autonomous learning, and improve students' performance. The use of ICT in classrooms can also reduce time and expenses. Menaka (2018) conducted a research study on effective cross-cultural communication. Menaka viewed modern technology and the internet as opening new marketplaces. There is a high need for cross-cultural communication to enhance individual personas and the national and global economy. Cross-cultural communication can provide better outcomes for businesses and education. The best tool for cross-cultural communication is the "English language." The English language plays the role of a bridge among the diverse natives of the world. The study further illustrated different ways of cross-cultural communication, such as slowing down speech, ensuring clarity and consistency, using simple language, showing courtesy and respect, avoiding slang, adopting formal communication methods, steering clear of hostile questions, asking for feedback, and summarizing viewpoints at the end.

**Research Gap**

Previous studies have highlighted the pronunciation, speaking, listening, and cultural competency issues faced by both national and international graduate students. Further research has addressed these challenges and suggests that including native speakers in the teaching and learning process could be beneficial in minimizing difficulties with pronunciation, speaking, and cross-cultural competency. Studies have also explored the impact of ICT on the English language teaching and learning process in cross-cultural communication. The current study aims to explore the implications of ICT-based research for enhancing pronunciation and speaking skills within the context of cross-cultural communication.

**Research Methodology**

The present study is a literature review-based research study, as Gay, Mills and Airasian (2012) says that literature review studies present the previous studies and their results are

interpreted as the authentic source. In qualitative research, the facts and figures are described in a descriptive rather than a numeric way. In contrast, in quantitative research, they are represented numerically. The present study is a qualitative study in which qualitative and quantitative tools will be used for data collection.

**Discussion**

**ICT Significance on Learning and Teaching English Pronunciation and Speaking Skills**

In recent times, the role of ICT (Information and Communication Technology) in language teaching has become essential and has significantly impacted students' speaking and pronunciation abilities. Using ICT Tools for Learning English, Kukulska-Hulme and Lee (2017) states that tools such as digital platforms, mobile apps, and online video/audio resources provide general and instant access to native speakers, as well as real and interactive content that supports learners in their desire to achieve correct pronunciation and improve their speaking effectiveness.

Numerous ICT-based tools center on pronunciation improvement via phonetic training and interface feedback. Tools such as Speech Recognition Software (Google Translate, English Pronunciation App, etc.) instantly assess pronunciation and help ensure it sounds like the target language. As Van den Berg (2020) points out, such tools provide an engaging environment where students can autonomously practice and are provided with instant remedial feedback.

Websites like Duolingo and Rosetta Stone use gamified processes to strengthen oral skills. A typical mixed instruction method integrated with online modules and in-class lessons allows for a variety of interactive drills concerning listening and repeating tasks, enhancing speaking and pronunciation skills (Stosic et al., 2024). Synchronous and asynchronous communication, such as video chats and forums, encourage learners to practice speaking in real time, which is essential for pronunciation and fluency (Baker, 2009).

The Communicative Language Teaching (CLT) model prioritises communication as the focus of learning. When genres of ICT tools are utilised in CLT, it helps by promoting active learning, authentic situations, and peer feedback, assisting both speaking and pronunciation (Richards, 2006).

**English Language Teaching Approaches and Pronunciation and Speaking Perspectives**

**The CLT Approach (Communicative Language Teaching)**

Thinking of language learning with Communicative Language Teaching (CLT),

communication is always emphasised as the goal. This approach seeks to prepare learners for communication in the real world, in which fluency and accuracy of language are both priorities (Alamri, 2018).

Technology acts as a means of enabling CLT as ICT has developed through the likes of Skype, Zoom, video calls, etc, which assists learners in speaking to someone in real time who will provide feedback on language acquisition during a conversation (Albakova, 2023). However, it can be very lonely, which is where technology comes into play: language exchange apps connect learners with native speakers who want to learn  language, which is excellent for simulating real-life communication experiences. This deep focus on communication not only develops students' pronunciation and fluency but also helps them become more capable of cross-cultural communication through exposure to dialects and styles of speech.

**The Input Hypothesis  (Krashen, 1992)**

Stephen Krashen's input hypothesis posits that most successful language acquisition happens when learners are presented with language input that is slightly more than their existing proficiency.

In the realm of ICT, things like podcasts, audiobooks, YouTube videos, and interactive language apps offer learners authentic language input on demand. This engages with native speakers, various accents, and real-world speech context, helping them rethink the information that they know. It helps them learn how to speak and pronounce better. This also bolsters the theory that learners need to hear language beyond their current level to push them into understanding and producing language beyond what they already know. Hence, ICT tools are a practical approach to be able to provide the ideal input "i+1" needed for the cognitive process of language learning.

**Teaching and Learning English as a Second Language**

Task-based language teaching (TBLT) is a pedagogical approach in which meaningful tasks are viewed as the central unit of language teaching (Ellis, 2017). Instead of learning grammar or vocabulary in isolation, students do tasks that involve using the language as part of a real-world task.

ICTs foster TBLT by providing interactive tasks that emulate real-world communicative scenarios (Tamayo, 2024). Language apps like Duolingo and Tandem provide structured tasks such as dialogues, role-plays, and debates where learners can practice

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speaking and pronunciation in practical situations. Students become active participants and will use their language proficiencies purposefully by engaging in these tasks. Role-playing phone conversations or giving presentations, for instance, allows students to practice pronunciation while gaining contextual and cultural understanding of how to speak under those circumstances. Other online collaboration tools, such as Google Docs, enable learners to work simultaneously on language-related tasks with others, thus improving their speaking and listening skills.

**Social Constructivism (Vygotsky, 1978)**

Lev Vygotsky formulated the idea that learning is a social process, which is the foundation of social constructivism (Newman & Latifi, 2021). This approach emphasizes that learners construct knowledge through social interaction, collaboration, and shared experiences.

ICT is aligned with in terms of collaborative learning. Online platforms such as Google Classroom, Edmodo, and Zoom enable learners to communicate with students and instructors at a distance, improving their speaking and pronunciation or articulation with dialogue and feedback. To make the most of digital spaces, students should collaborate synchronously to practice pronunciation, ask questions, and get feedback from peers. ICT tools lend themselves nicely to this interactive aspect, as interaction is a key feature of the theory (Ravenscroft et al 2009). Additionally, learners can engage with speakers from multiple cultural backgrounds through virtual exchange programs, which enhance their pronunciation and cultural awareness.

**The Interaction Hypothesis (Long, 1983)**

The Interaction Hypothesis (Long, 1980) suggests that interactive communication significantly facilitates language acquisition. It emphasises the role of negotiating meaning in communication.

In this regard, ICT tools such as chat rooms, video calling, and voice messages enable learners to interact with other language learners or native speakers in real time. Such interactions create just-in-time opportunities for negotiating meaning and for learners to have misunderstandings clarified and receive corrections on pronunciation and speaking errors. These kinds of exchanges can also give learners experience adjusting their speech for comprehensibility, an essential aspect of pronunciation. (Consider Skype, Tandem, or other similar tools for interactive communication where learners can practice speaking in real life and get constructive feedback from others or instructors.

**Community of Practice Theory (Wenger, 1998)**

Etienne Wenger's Community of Practice Theory suggests that people learn best in a community with a shared interest or purpose. This theory plays an important part in social interaction in learning.

Information and Communications Technology (ICT) enables virtual communities of practice that allow language learners to practice pronunciation, speaking, and intercultural communication (Quintana Pacheco, 2024). Forums, social media groups, and language exchange apps can provide students with spaces to connect with other language learners. For instance, as a learner on Tandem, you can connect with an English speaker so they can practice speaking with you, and this app focuses on creating a community where both parties can give feedback and learn more about pronunciation and culture from each other. Through constant usage, shared learning time and interaction with other learner and experts in the language, students work on how they study and focus on how they speak in the language.

**Constructivist Learning Theory (Piaget 1973)**

Constructivism states (as proposed by Jean Piaget) that learners build knowledge actively by interacting with and experiencing their environment. Education is viewed as an act of discovery (Piaget, 1973).

ICT is a resource for active learning that can foster close interaction of learners with language materials using active learning mediums. Apps with instant feedback to complete language tasks (Duolingo, Memrise) enable language practice seekers to solve language tasks of the real world with the help of instant feedback on speaking and pronunciation. These tools would allow learners to take risks with language, hear native speakers worldwide, and self-evaluate their pronunciation. This practical, interactive method is in sync with constructivist logic; students learn by using the language and discovering the patterns of language rather than learning rules by rote. The theory, which was first developed in the 1990s, describes the role of sense input in second language development.

ICT tools are well-suited for SLA, increasing the opportunities for input using audio and video resources, output using voice recording and speaking exercises, and interaction using communication platforms (e.g., Skype and Tandem). These tools enable learners to exercise language skills in lively, engaging ways, getting immediate feedback on their pronunciation and when speaking errors. Furthermore, SLA theories stress the value of authentic language use, which ICT supports by providing students access to real-world

language resources and to native speakers.

**Multimodal Learning  Theory (Kress & Van Leeuwen, 2001)**

According to the Multimodal Learning Theory, learners benefit from using different forms of representations, such as auditory, visual, textual, and more, to aid their learning process (Kress & Leeuwen, 2001).

ICT enables collaborative and interactive activities to be performed online by integrating different types of media in language classrooms, allowing for tele-collaborative and video conferencing platform-based learning, including discussions of focused periodicals, research articles, and cross-platform online communication for high-intensity motivation in both synchronous and asynchronous modes of educational methodology. People can expect any learning resources to be aware of these various aspects and to help and improve each of these with a combination of audio, visual, and textual elements, such as Rosetta Stone or BBC Learning English. A student listens to audio from a native speaker (audio), watches a video that demonstrates how to pronounce (visual), and reads the transcript (textual). By combining images, sounds, and text, this multimodal method helps to reinforce learning through different sensory channels, making it especially effective for learners who benefit from multiple means of receiving information to make sense of language constructs.

**Cultural Dimensions Theory (Hofstede, 1980)**

One key theory examining how culture impacts communication is Geert Hofstede's Cultural Dimensions Theory, which outlines several areas of cultural difference: individualism vs. collectivism, high vs. low context communication, uncertainty avoidance, and power distance (Hofstede, 1980).

Sites like Tandem and InterPals let students communicate with people from other backgrounds, which can teach them about cultural norms, accent variation and language varieties. This website allows students to interact with native speakers who can point out the nuances of the language, such as hand signals, common phrases, and politeness! As a result, students learn how to speak and pronounce certain words and the cultural side of where they want to go.

**Connectivism (Siemens, 2005)**

Connectivism, unlike traditional learning theories, focuses on the influence of technology and digital networks on how learning occurs (Siemens, 2005). Learning involves making and traversing many connections, with the learner being one small part of a huge web of

information, peers, and technologies.

In the context of ICT and language learning, as a learning theory, connectivism supports the argument that learning exists in networks of people, so it connects to online, collaborative and interactive communication as being at the heart of learning. In addition, students can participate in digital networks (social media, learning communities, forums, etc.) to practice speaking and pronunciation by sharing knowledge and feedback with peers, instructors, or native speakers. Platforms such as Tandem and HelloTalk enable learners to link up with individuals from foreign nations, which can also be advantageous for practising pronunciation and speaking skills and acquiring intercultural competence.

Connectivism also emphasises the need for ongoing learning through podcasts, blogs, and videos on the Internet. Continuous access to authentic content keeps learners exposed to the latest language styles, pronunciation, and accents in the real world, which is vital for mastering pronunciation and communication.

**Key Features in ICT**

- Online language communities
- Social media channels for interaction  between peers
- Real-time interactive communications  (e.g., Skype, Zoom)

**Blended Learning Theory ( Garrison  & Kanuka, 2004)**

It combines the merits of both learning environments to start engaging learners in a number of ways to access content and language practice (Garrison & Kanuka, 2004).

In terms of ICT in language learning, blended learning enables students to practice pronunciation and speaking skills in and outside the classroom. (Teachers can offer them online resources [e.g., pronunciation practice applications, video lessons or voice recognition software] that they can run at their pace.) Face-to-face learnings Sessions can be more collaborative discussing, providing real-time feedbacks and sharing of cultures. Blended learning promotes personalised language learning, allowing learners to select resources that are appropriate for their level and needs.

Blended learning platforms,  such as Google Classroom and Moodle, allow educators to implement a hybrid approach, where learners can gain access to materials, engage in discussions, and enjoy responses on their speaking and pronouncing and feedback beyond regular class interactions. Finally, independent practice features speech recognition software to aid in the memory recall of proper pronunciation. At the same time, classroom-based

learning provides cross-cultural dialogue situations for authentic communication practice.

## Key Features in ICT

- Hybrid learning models

- Learning management systems (LMS)  for online courses

- Digital  tools to practice independently

## Constructivism (Piaget, 1973)

This means that learners are viewed as active agents in the process of constructing knowledge instead of passive receptacles. The theory suggests that people retain knowledge much more effectively if they have had to solve problems, discover new information, and apply knowledge in real-world contexts.

In constructivism,  learners are expected to actively participate in language, pronunciation, and speaking activities instead of rote memorisation. ICT facilitates this engagement through interactive tools. Students can engage with language by completing tasks that require speech production and pronunciation practice in context through the use of language learning apps (e.g., Duolingo, Memrise). These tools foster active learning, as students can practice real-life scenarios, such as ordering food in English or having a simple conversation.

Also, online platforms allow them to learn from different content (videos, recordings, ways of speaking native), integrating it into their own learning. By interacting with language in these interactive, tech-mediated environments, learners actively engage in constructing knowledge through negotiated meaning-making in conversation.

## Key Features in ICT

- Interactive apps and games

- Real tasks and  simulations in the real world

- Contextualized learning through  authentic materials

## Bandura (1963) Social  Learning Theory

Albert Bandura proposed the Social Learning Theory, highlighting the importance of social interaction and modelling. This theory suggests that people acquire knowledge through observing others, modelling their behaviours, and hearing feedback from peers and mentors. He proposed the concept of observational learning, where individuals can learn through observing the behavior of others, especially in a social or collaborative setting.

ICT enables observational learning, where learners observe figures available in videos and

audio resources, observing grammar and pronunciation from native speakers of English (Cameron, 2001). These provide models for students to listen to and copy correct pronunciation and speaking. Platforms like YouTube, podcasts, and TED Talks are abundant with authentic language material that learners can consume and mimic regarding pronunciation, intonation and cultural references.

Digital tools help enhance social learning even further, as learners can collaborate and provide feedback. For example, on online language exchange platforms like Tandem or HelloTalk, learners connect with native speakers and get feedback that helps them solidify their speaking and pronunciation skills.

**Key Features in ICT**

- Real content  (videos, podcasts)
- Peer interaction and feedback
- Collaborative learning environments (e.g., Skype,  Zoom)

**Cognitivism (Miller, 1956)**

Cognitivism is a learning theory that emphasizes the role of mental processes in the learning experience, such as attention, memory, and problem-solving. It highlights the internal processing of information so that learners actively participate in processing and organising information to make sense (Miller, 1956; 1962).

The Cognitivism Theory states that learners will learn and retain information much better if new information is meaningful and connected to something already known. As some of the most frequently used examples of ICT and language learning, interactive digital tools (e.g., speech recognition software and pronunciation apps) provide opportunities for learners to process language input systematically. They give immediate feedback so that students can self-correct and reinforce appropriate pronunciation and speech patterns.

Multimodal learning (text, audio, and visuals) also reinforces cognitive linkages between different types of language input (Cheetham, et al.,  2019). For instance, a learner might view a video on YouTube about how to pronounce something, then go ahead and say it using a service such as ELSA Speak, leveraging that video content to make sure they have mastered both that sound and the speaking itself.

**Key Features in ICT**

- Speech recognition tools
- Learning  through different media (ex. YouTube, TED Talks)

- Immediate feedback systems

**Behaviourism (Skinner, 1957)**

Behaviourism is a theory centered on the idea that learning should be observed through changes in behavior and that reinforcement plays a crucial role in the educational process. The behaviourist theory of learning proposed by Skinner suggests that learning is an association between a stimulus and a response, where reinforcement is used to strengthen the relationship.

Referring to some methods and tools in ICT applied to language learning that allows repetitive practice (as language learning software, flash cards) for the correct pronunciation and speaking, could be a way to reinforce the correct pronunciation in a physical activity. Indeed, speech recognition is a behavioural reinforcement learning opportunity when a student pronounces a word correctly and receives feedback to drive that positive behavior. This adoption of gamification in language apps (e.g., the points system introduced in Duolingo) encourages learners to remain engaged in practicing and creating their spoken fluency through the reward system.

The theory works especially well when students must work on a particular language behavior, such as correct pronunciation or fluency. ICT tools can provide instant feedback for good pronunciation, which can serve as an incentive to motivate learners to keep on practicing.

**Key Features in ICT**

- Repeat, rote-learning tools
- The basis for the project is language learning applications that turn language learning into a game.
- Rewarding Speech and the Feedback Loop

**Constructivist Learning Theory (Vygotsky, 1978)**

Vygotskian Constructivist Learning Theory He introduced the Zone of Proximal Development (ZPD), which argued that learners could achieve more considerable success when unmarried with guidance or collaboration (Hausfather, 1996).

ICT in language learning supports Vygotsky's approach, which emphasizes collaborative learning. For example, online discussions and peer feedback through digital platforms like Google Classroom and engaging tasks that allow students to practice speaking and pronunciation while receiving feedback and guidance from instructors and peers. Zoom

and other technologies offer synchronous opportunities for learners to engage in real-time conversations and for teachers to offer  scaffolded support.

Such programs expose students to different cultures and help them practice speaking and pronunciation when engaging in virtual exchanges and discussions in real-world settings.

**Key Features in ICT**

- Tools  (e.g. Google Docs, Moodle) for Collaborative Learning
- Asynchronous communication  tools (e.g., Zoom, Skype)
- Provisioning in Alternate Ways:  Scaffolding through feedback and peer interaction

**Personalized Learning  Theory (Tomlinson, 2001)**

Personalized Learning  Theory It fosters personalized  learning experiences that consider the unique strengths and challenges of each learner.

ICT formalised personalised learning tools enable a personalised language learning experience in which the student can learn at their own pace, mode and preference. Applications such as Duolingo and Babbel specialise in adaptive learning paths tailored to users' proficiency levels, focusing on pronunciation, speaking and cultural understanding depending on their requirements. Students can create personal learning goals and monitor their progress, as well  as adapt the difficulty of tasks according to their skills.

With personalized learning, teachers can also provide differentiated instruction, using ICT tools to assign tasks specific to students, such as extra pronunciation practice for those struggling with certain sounds.

**Key Features in ICT**

- Adaptive learning apps
- Tailored  learning journeys
- Progress tracking tools

**Situated Learning  Theory (Lave & Wenger, 1991)**

The role of situated Learning Theory is that learning is most effective when it happens in contexts relevant to the learner. It contends that knowledge is best learned when it is placed in the context of the learner's world.

ICT, which creates a situated learning for students. Students, for example, can take part in virtual language exchanges, work with native speakers, and collaborate on projects that simulate real-life communication. Tandem or Speaky enables one to practice speaking and pronunciation with individuals from different cultural backgrounds , an integral

part of creating an immersive,  authentic learning environment. Here, language and cultural competency grows alongside the language learner tackling real-directed communicative tasks.

**Key Features in ICT**

- Interacting online with native  speakers
- Procedures for real-world communication tasks (e.g., ordering food, asking for directions)
- Language practice in a living  context

**Flow Theory  (Csikszentmihalyi, 2000)**

Flow Theory describes the optimal state of engagement and motivation that occurs at the highest state of immersion in an  activity. According to it, once a task is at a level challenging the learner, yet does not overwhelm them, they will have a feeling of "flow", which  causes deep concentration and intrinsic motivation.

Flow can be achievable in learning a language via ICT as long as tools and apps come with tasks and abilities that can bring an appropriate degree of challenge. For instance, the app Duolingo (or Rosetta Stone, which is much older) is designed in a way that gradually increases the difficulty level, providing a  flow state that allows practice of pronunciation, speaking to someone, or sharing cultural concepts. In this manner, as tasks become more complex, learners remain engaged and invested, and steadily continue with their language learning  processes.

**Key Features in ICT**

- Sequence of task difficulty (e.g.,  Duolingo, Memrise)
- Game-like  elements in language apps
- The delivery of immediate feedback  and rewards for engagement

**Conclusion**

The development of suitable ICT tools for pronunciation improvement, speaking development, and cross-cultural communication has profoundly affected the accessibility and availability of language training. Speech recognition software, mobile learning apps, VR/AR technologies, and language exchange platforms are revolutionising how learners practice their language skills, offering real-time feedback, immersive environments, and exposure to native speakers. However, along with their incredible benefits, the tools also have challenges regarding their correctness, usability, and contextual awareness.

However, envisioning the future of ICT in language learning is an excellent benefit now, as advanced technologies are well-developed to offer personalised learning tools that can make interactive sessions possible. The world is getting on board with the potential of honest communication with an authentic environment. Nevertheless, learners must rely on various such tools to stimulate their speaking and pronunciation skills since no specific method or technology solves all language learning problems. It can be concluded that all of the information related to ICT tools and methods for improving English pronunciation, speaking skills, and cross-culture communication. However, the role of advanced technologies has reshaped and redefined the nature of language learning. These technologies have been particularly effective for pronunciation and fluency issues, allowing students to practice in a range of interactive settings while working at their own pace. However, there are still issues, such as inaccurate feedback, lack of boundaries in AI, and the need for contextual culture as they happen. Despite the significant improvement these tools have made to language learning over the years, a mixture of traditional learning strategies and those of ICT will prove the most beneficial.

**Findings**

- There is efficacy of Speech Recognition Tools in helping learners correct their pronunciation accuracy using speech recognition applications like ELSA Speak, Google Assistant, etc. Such tools provide real-time feedback and correction of individual sounds, allowing students to practice with immediate feedback on their speaking skills as they work.

- The learners could practice pronunciation at their own pace, which was especially helpful for non-native accents and particular sound errors. On the other hand, some learners of English with strong regional accents were not recognised accurately.

- Mobile Learning Apps make accessing language learning more achievable and engaging. For instance, mobile apps such as Duolingo and Babbel get learners to practice not just speaking but pronunciation. Such apps use gamification features that encourage learners to focus and practice more often.

- The applications should have adaptive learning features that allow users to adapt to the areas that they need help with. However, these apps are limited as they usually lack cultural context and are not well-suited to practicing culture in communication.

- Virtual reality (VR) and augmented reality (AR) have offered immersive spaces where

learners can develop language skills in authentic, real-world contexts. MondlyVR and ImmerseMe allow learners to simulate interactions in locations such as restaurants or airports, which is massively helpful for practicing speaking and pronunciation.

- The mechanisms of these tools promote cross-cultural exchange, whereby students interact with virtual avatars representing various cultural groups. Yet, the cost of VR equipment and its limited availability continue to hinder its widespread adoption.

- With the strong focus on social applications and practice, platforms like Tandem and HelloTalk emerged as true gold mines for anyone eager to practice speaking with native speakers in real time. When learners practice speaking with these tools, they have conversations, get feedback, and can correct mistakes in context, helping them develop their fluency and pronunciation.

- The main takeaway was that while these platforms have opened up many opportunities for cross-cultural communication, the quality of the interaction often depends on the other person's availability and willingness to give quality feedback.

- Speechling and ELSA Speak are the most advanced in providing personalised and immediate feedback on pronouncing a word. These tools use artificial intelligence to monitor the learner's progress and recommend exercises based on how well the learner does within the course context, leading to a highly individualised and practical learning experience.

- AI tools help learners practice pronunciation independently, they cannot replace the emotional intelligence and contextual knowledge gained from talking with a real person.

**Recommendations**

- Although ICT equipment is a highly effective method of vocabulary acquisition, educators should complement them with traditional, human-to-human teaching and learning approaches; shuttling between real-time human interaction and digital availability builds pronunciation and cultural context.

- For speech recognition software to work in practice, developers should improve it significantly, especially regarding non-native speakers and regional accents. This will allow for more consistent feedback and broader applicability of these tools across various populations of learners.

- VR/AR technology is expensive as these may include mobile-based AR or low-cost VR

headsets that offer realistic environments for learners to practice speaking and pronunciation breaking the bank on purchasing a high-end headset.

- Mobile learning applications should include cultural context so that learners can have a broader perspective of their studies. This would enable the learners to not only work on their pronunciation but also develop the cultural sensitivity needed to communicate across cultures effectively.

**Gap for Future Research**

Although there has been substantial development of information communication technology (ICT)-based language learning tools, there are still some gaps that need to be explored further. Although language exchange platforms have made it considerably easier for a class of learners to practice with native speakers, little research has been conducted on their ability to teach the nuanced cultural arts of communication. Moreover, future research should examine how ICT tools may further mediate linguistic and cultural fluency. While mobile learning applications and artificial intelligence-based tools have been proven to be effective in learning language as you practice, further investigation must be done on the long-term efficiency of these applications in enhancing speaking skills and working on pronunciation. Longitudinal studies could shed light on how well these tools support retention and fluency over time. VR and AR bring a whole new world of opportunities to enhance learning, but further studies are needed on making them available for students in more significant numbers and with limited funds. This would give all learners access to immersive learning regardless of socio-economic status. With the emergence of AI-assisted tools and applications, a growing need exists to evaluate their impact on cultural competence and fluency. Research could interrogate how AI-based tools, in conjunction with human interaction, can better induce a productive embrace of language and culture in all its messiness.

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