EMBRACING TECHNOLOGY: INSIGHTS INTO PRE-SERVICE PRIMARY TEACHERS' VIEWS ON ICT IN ENGLISH EDUCATION

By:
Isnaini Eddy Saputro[1], Dewi Sartika[2], Melisa Novianty[3]

Universitas Pendidikan Muhammadiyah Sorong, Southwest Papua, Indonesia,[1],
Universitas Islam Ogan Komering Ilir Kayuagung, South Sumatra, Indonesia[2],
Universitas Palembang, South Sumatra, Indonesia[3]

isnaini@unimudasorong.ac.id[1], dewisartika@uniski.ac.id[2],
melisanovianty25@gmail.com[3]

Abstract: Information and Communication Technology (ICT) has become an essential component in modern education, particularly in language learning, due to its potential to enhance engagement, accessibility, and learner autonomy. This study investigates pre-service primary teachers' perceptions of ICT in English language learning, focusing on four dimensions: attractiveness, perceived effectiveness, relevance, and motivation. Using a quantitative survey approach, data were collected through a structured questionnaire distributed via Google Forms to 26 Universitas Pendidikan Muhammadiyah Sorong students. Responses were analyzed using descriptive statistics based on a Likert scale. The results indicate that students perceive ICT as a beneficial and engaging tool in their language learning journey. Regarding attractiveness, 79% of respondents agreed that ICT enhances their English learning practices, and 78% acknowledged its usefulness in creating digital learning resources. However, 63% still valued traditional printed materials alongside digital tools. Regarding perceived effectiveness, 88% strongly agreed that ICT helps them learn new things, while over 70% affirmed its positive impact on grammar, vocabulary, pronunciation, and overall language proficiency. Furthermore, 82% of participants reported enjoying using technology in their learning process, and 77% indicated using ICT to communicate with peers from other countries, demonstrating its global learning potential. Additionally, 80% strongly desired to learn more about integrating ICT into classroom instruction. These findings highlight the significance of ICT in enhancing students' motivation, engagement, and language skills. Therefore, integrating ICT effectively into English language instruction is crucial to support second-language acquisition in contemporary learning environments.

Keywords: digital learning, English language learning, information and communication technology, second-language acquisition, student perception

INTRODUCTION

Technology in teaching and learning is called Information, Communication, and Technology (ICT), which has significantly impacted the educational process. Traditional English learning differs from technology-assisted learning. According to Ahmadi (2018), technology plays a crucial role in learning both inside and outside the classroom, evolving rapidly as students develop their English skills and language components. Adeliani et al. (2021) found that students reported using 15 different applications for learning English, which aid in improving their language skills. Furthermore, various studies indicate that learners positively perceive ICT in English learning. Students utilize electronic devices to acquire a second language (L2) and can access resources to enhance their reading skills. Additionally, reading through technology helps expand their vocabulary by exposing them to new words in L2.

This underscores the transformation of the education system into a dynamic and technology-driven phenomenon characteristic of the 21st century. Integrating digital tools and platforms has redefined traditional teaching and learning processes, requiring students to actively engage with various digital media. These advancements facilitate seamless virtual interactions between teachers and students, transcending the limitations of physical classrooms and fostering more flexible, accessible, and interactive learning environments. Silviyanti et al.

(2015) stated that technology has modernized English language teaching, allowing teachers and students to explore online resources to enhance their knowledge. However, integrating ICT in smaller towns presents challenges and affects students' and teachers' activities. As a recent educational development, ICT has advantages and disadvantages, with some students embracing it as a new approach to learning English. According to Adeliani et al. (2021), traditional teaching methods have transitioned to modern ones, where technology aids both teachers and students in improving their English skills. The adoption of ICT-based teaching has become widespread, affecting education and the economy by making communication more accessible anytime and anywhere. Maldague et al. (2016) found that students feel more independent in exploring learning materials through ICT applications, which enhances their interest in learning a second language (L2). This, in turn, supports the development of students' fundamental English language skills, namely listening, speaking, reading, and writing, by providing interactive and engaging digital resources. Students can enhance their vocabulary acquisition and pronunciation accuracy through consistent exposure to authentic language input and practice opportunities. Using multimedia elements such as audio recordings, videos, and language apps allows for immersive experiences that simulate real-life communication,

strengthening receptive and productive language abilities.

Additionally, ICT encourages students to express their ideas, opinions, and thoughts, improving their English proficiency. Learning through technology significantly impacts cognitive aspects such as motivation, knowledge retention, and mastery of English. It also boosts students' confidence, enthusiasm, and engagement in the learning process (Altun & Ahmad, 2021).

Modern student learning systems rely on online education, including synchronous and asynchronous learning. According to Agopian (2022), synchronous online instruction involves real-time interactions through video conferencing platforms such as Zoom, Google Meet, and Microsoft Teams, as well as online chats, Facebook chat, webinars, and Skype. In contrast, asynchronous learning utilizes tools like emails, blogs, online content, Facebook posts, and television broadcasts. Goodwin (2012) highlights that asynchronous learning also includes ICT literacy skills such as email, the internet, online communication, file creation, and file management. ICT offers several advantages to students, including easy access to learning resources, the ability to demonstrate practical skills virtually, and the flexibility to learn at their own pace. It also allows students to create educational content, such as videos, web pages, presentations, and blogs, fostering critical thinking and creativity. Additionally, students can assess their progress by reflecting on their

learning process. The flexibility of online learning enables students to study anytime and anywhere, promoting lifelong learning (Shyamlee & Phill, 2012).

Students use these applications to access learning materials, and teachers provide or translate words for better understanding. Both students and teachers can integrate various digital media tools, including radio, television, CD-ROMs, computers, computer-assisted language learning (CALL), the internet, electronic dictionaries, email, blogs, audio cassettes, PowerPoint presentations, videos, DVDs, and VCDs. These diverse applications play a significant role in teaching-learning by enhancing students' motivation to acquire a second language (L2) (Rodinadze & Zarbazoia,

2012). Teachers often incorporate videos or movies as an innovative teaching approach to make L2 learning more engaging. Modern technology in education positively impacts students' academic performance by helping them develop foundational English skills, become proficient with technology, enhance critical thinking abilities, and improve literacy. Additionally, it fosters student engagement and equips them with essential 21st-century skills needed to achieve their learning goals (Masruddin, 2014; Nomass, 2013).

This study examines students' perceptions of ICT in English learning by focusing on four key dimensions: attractiveness, perceived effectiveness, relevance, and motivation. These dimensions are adapted from the framework

proposed by Ningsih et al. (2021), which offers a comprehensive lens to evaluate learners' interaction with technology in English as a Foreign Language (EFL). Each aspect was selected based on its alignment with established theories in educational psychology and instructional design.

Attractiveness relates to the affective domain of learning, reflecting how engaging and stimulating students find using ICT tools such as computers, mobile phones, and multimedia devices (Mayer, 2005). When students perceive learning materials as visually and interactively appealing, it increases their attention and interest, which are crucial for sustained learning.

Perceived effectiveness draws on cognitive theories of learning, particularly the idea that tools that enhance comprehension, retention, and task performance lead to better academic outcomes (Clark & Mayer, 2016). ICT supports the development of language components such as grammar and vocabulary by providing immediate feedback, varied input, and interactive practice.

Relevance is rooted in meaningful learning (Ausubel, 1968), emphasizing the importance of connecting new information to learners' prior knowledge and real-life contexts. ICT allows students to access content tailored to their needs and interests, supporting self-paced and autonomous learning.

Motivation, finally, is closely tied to self-determination theory (Deci & Ryan, 1985), which highlights the role of autonomy, competence, and relatedness in

fostering intrinsic motivation. ICT offers learners opportunities for choice, mastery, and communication, thus encouraging active participation and continuous engagement in language learning. By focusing on these four interrelated dimensions, the study aims to provide a deeper understanding of how ICT impacts language learning from both affective and cognitive perspectives.

Furthermore, students feel more empowered and progressive when using mobile phones to learn a second language (L2). ICT applications give them easy access to many lessons and references. Since no content limitations are related to their studies, students remain motivated to learn English.

Utilizing ICT helps enhance their critical thinking, language proficiency, and creativity. Therefore, this research asks, "What are pre-service primary teachers' perceptions toward ICT in English learning?

METHODOLOGY

This study employed a quantitative descriptive research design to investigate pre-service primary teachers' perceptions of Information and Communication Technology (ICT) in English language learning. This design was chosen to obtain measurable data on learners' perceptions based on their responses to structured questionnaire items. The study focused on four main dimensions: attractiveness, perceived effectiveness, relevance, and

motivation, following the framework developed by Ningsih et al. (2021).

The participants were 26 pre-service primary teachers enrolled in the English language education course as part of their undergraduate studies in the primary teacher education program at *Universitas Pendidikan Muhammadiyah Sorong.* Although their major is a primary teacher education program, these students were concurrently undertaking English education coursework as part of their pedagogical training, qualifying them as pre-service teachers.

Participants were selected using a purposive sampling technique, targeting individuals with experience using ICT for English learning during their academic coursework. The rationale for this selection was to ensure that participants had sufficient exposure to ICT-based learning tools, making them suitable to provide informed perceptions on the topic.

Data were collected using a closed-ended questionnaire distributed through Google Forms. The questionnaire included 16 statements aligned with the four identified aspects and was rated using a five-point Likert scale, ranging from "Strongly Disagree" (1) to "Strongly Agree" (5). The responses were analyzed descriptively by calculating percentage scores to determine the level of agreement with each item. This allowed for a comprehensive overview of participants' perceptions of ICT use in English learning in the context of post-pandemic digital education.

The questionnaire used in this study was adapted from Ningsih et al. (2021), which focused on students' perceptions of ICT in English as a Foreign Language (EFL) learning. The instrument assessed four key aspects: attractiveness, perceived effectiveness, relevance, and perceived motivation. Each aspect consisted of four indicator statements, comprising 16 items. The questionnaire was distributed through the Google platform. The questionnaire link was shared with students through online chat and WhatsApp, allowing them to respond by selecting statements that reflected their perceptions of ICT in English learning.

RESULTS AND DISCUSSION

This section discusses the findings based on students' perceptions of ICT in English learning: attractiveness, perceived effectiveness, relevance, and motivation.

1. Attractive Aspects

Table 1
Attractiveness Aspects

No	Statement	Scale					Score	Interpretation
		SA (5)	A (4)	N (3)	DA (2)	SDA (1)		
1	ICT can significantly enhance my English language learning process.	7=35	15=60	0=0	4=8	0=0	103	103/130*100 =79% (Agree)
2	I make digital learning materials using ICT, such as blogs, mind maps, and web pages.	4=20	19=76	0=0	3=6	0=0	102	102/130*100=78% (Agree)
3	I believe using ICT enables me to control my language learning process more.	1=5	20=80	0=0	5=10	0=0	95	95/130*100=73% (Agree)
4	I believe using ICT to obtain information is superior to using printed materials or textbooks.	1=5	14=56	0=0	10=20	1=1	82	82/130*100=63 (Agree)

The results indicate that students generally find ICT appealing for learning English. The highest agreement level (79%) was for "ICT can significantly enhance my English language learning process," reflecting students' belief that technology enhances their English learning experience. Additionally, 78% of students agreed, "I make digital learning materials using ICT, such as blogs, mind maps, and web pages." 73% believed that ICT enables me to control my language learning process more. However, a lower agreement (63%) was recorded for the preference of ICT over printed materials, suggesting that while students find digital resources beneficial, some still value traditional learning materials. It interpreted that students generally find ICT tools engaging and supportive of independent learning. The high agreement on ICT's ability to enhance learning and support digital content creation reflects growing comfort and familiarity with technology. However, the lower score regarding preference over printed materials suggests that while students embrace digital tools, they still value the tangible aspects of traditional learning. This aligns with Mayer's (2005) theory of multimedia learning, which emphasizes that combining visual and textual formats can improve learning outcomes. The findings also echo Silviyanti and Yusuf's (2015) work, which found that while students enjoy using ICT, hybrid models that blend digital and print materials remain beneficial.

2. Perceived Effectiveness Aspects

Table 2
Perceived Effectiveness Aspects

No	Statement	Scale					Score	Interpretation
		SA (5)	A (4)	N (3)	DA (2)	SDA (1)		
1	I understand that ICT supports my learning by helping me discover new concepts.	14=70	11=44	0=0	0=0	1=1	115	115/130*100 =88% (Strongly agree)
2	Incorporating technology into teaching English language components, such as grammar, vocabulary, and pronunciation, can enhance effectiveness	0=0	19=76	0=0	5=10	1=1	87	87/130*100=70% (Agree)
3	Using technology to teach English language skills such as listening, speaking, reading, and writing can make learning more efficient.	0=0	17=68	0=0	7=14	1=1	83	83/130*100=64% (Agree)

The second aspect is perceived as an effectiveness aspect. Students overwhelmingly recognize ICT's effectiveness in English learning, with 88% strongly agreeing that "ICT supports my learning by helping me discover new concepts." This indicates that students perceive technology as a valuable tool for acquiring new knowledge. For specific English language

components, 70% of students agreed that ICT effectively teaches grammar, vocabulary, and pronunciation. In comparison, 64% agreed that it is effective for teaching English language skills such as listening, speaking, reading, and writing. These findings suggest that while students recognize ICT's role in enhancing learning, its effectiveness may vary depending on the skill being taught. The results showed a strong perception of ICT's effectiveness, particularly in supporting cognitive development and knowledge acquisition. Interactive digital resources and language applications help students grasp complex English language structures. However, the slight drop in agreement for specific skills suggests variability in how ICT supports different areas of language development. These findings support Clark and Mayer's (2016) view that educational technology improves comprehension when appropriately applied and aligns with studies by Maldague et al. (2016), highlighting ICT's potential to promote autonomy and mastery across multiple language domains.

3. **Relevance Aspects**

Table 3
Relevance Aspects

No	Statement	Scale					Score	Interpretation
		SA (5)	A (4)	N (3)	DA (2)	SDA (1)		
1	I enjoy using Information and Communication	5=25	20=80	0=0	0=0	1=1	106	106/130*1 =82% (Strongly

	Technology							agree)
2	I use ICT to interact with international peers about topics that interest me.	2=10	21=84	0=0	3=6	0=0	100	100/130*100=77% (Agree)
3	I also use ICT to discuss educational issues with international peers	2=10	21=84	0=0	3=6	0=0	100	100/130*100=77% (Agree)
4	I feel highly confident when working with technology in the classroom	3=15	15=60	0=0	7=14	1=1	90	90/130*100=69% (Agree)

The third aspect is the relevance aspect. All of them are referred to as students who agree with those aspects. Students generally perceive ICT as relevant to their English learning experience. 82% strongly agreed that they enjoy using ICT in learning, highlighting a positive attitude toward technology integration in education.

Furthermore, 77% agreed that they use ICT to communicate with international peers for personal interests and educational discussions. Additionally, 69% agreed that they feel confident using technology in the classroom. These findings suggest that ICT facilitates communication.

Moreover, it boosts students' confidence in utilizing digital tools for learning. It shows that students perceive ICT as highly relevant to their current and future learning needs. Their enjoyment of ICT and confidence in its use illustrate how digital tools contribute to positive attitudes and self-efficacy. Communication with international peers also suggests that students are

experiencing the globalizing impact of ICT in education. These insights echo Ausubel's (1968) theory of meaningful learning, where students retain information better when perceived as relevant to their personal and professional contexts. Furthermore, the findings suggest that ICT reduces classroom anxiety, promotes learner-centered environments, and enhances student participation—key indicators of 21st-century education readiness (Altun & Ahmad, 2021; Nomass, 2013).

4. Perceived Motivation Aspects

Table 4
Perceived Motivation Aspects

No	Statement	Scale					Score	Interpretation
		SA (5)	A (4)	N (3)	DA (2)	SDA (1)		
1	I want to learn more about using ICT in class	4=20	16=64	0=0	6=12	0=0	100	100/130*100 =80% (Strongly agree)
2	Second-language classrooms should incorporate a variety of technological tools.	0=0	20=80	0=0	6=12	0=0	92	92/130*100=71% (Agree)
3	Language instructors should integrate technology into their teaching.	0=0	19=76	0=0	6=12	1=1	89	89/130*100= 68% (Agree)
4	Students are likely to learn more effectively when technology is used in the classroom.	1=5	15=60	0=0	10=20	1=1		90/130*100= 69% (Agree)

The fourth factor is motivation as perceived. There are four perceived motivational items in it. The four components of perceived motivation fall into the "agree" category. ICT is also regarded as a significant motivator in English learning. 80% of students strongly expressed their desire to learn more about using ICT in the classroom, showing a keen interest in enhancing their digital learning skills.

Additionally, 71% agreed that second-language classrooms should include a variety of technologies, while 68% supported the idea that language teachers should integrate ICT into their teaching methods. Furthermore, 69% believed that students learn more effectively when technology is used in the classroom, highlighting the positive impact of digital tools on learning. The fourth factor is motivation as perceived. There are four perceived motivational items in it. The four components of perceived motivation fall into the "agree" category. ICT is also regarded as a significant motivator in English learning. 80% of students strongly expressed their desire to learn more about using ICT in the classroom, showing a keen interest in enhancing their digital learning skills.

The finding shows 71% agreed that second-language classrooms should include a variety of technologies, while 68% supported the idea that language teachers should integrate ICT into their teaching methods. Furthermore, 69% believed that students learn more effectively when technology is used in the classroom, highlighting the positive impact of digital tools on

learning. The results interpreted that these results confirm that ICT is a motivating force in language learning. Students desire to deepen their digital competencies and support technology integration in classroom instruction. Their recognition of ICT as a learning enhancer aligns with Deci and Ryan's (1985) self-determination theory, which identifies autonomy and competence as drivers of intrinsic motivation. As students experience increased control over their learning environment, their motivation to engage with educational content grows. The findings are consistent with Masruddin (2014), who reported that students' exposure to various digital tools, such as laptops, online dictionaries, and CALL programs, enhances enthusiasm,

creativity, and academic engagement in English education.

CONCLUSION

The study findings indicate that students positively perceive ICT in English learning, recognizing its attractiveness, effectiveness, relevance, and motivational influence. While students acknowledge ICT's potential to enhance their learning experience, the extent of its effectiveness varies depending on the specific aspect being evaluated. The overall results suggest that students positively perceive ICT in English learning. They recognize its attractiveness, effectiveness, relevance, and motivational impact. Although ICT is generally viewed as advantageous, students may still favor a balance between digital and

traditional learning approaches. The study emphasizes the importance of incorporating ICT into English language education to boost student engagement, motivation, and academic results. Future research could explore the challenges and limitations of adopting ICT and developing strategies to maximize its effectiveness in various educational environments.

REFERENCES

Adeliani, C., Harahap, A., Sofyan, D., Kurniawan, I., & Lubis, A. A. (2021). The access to and use of ICT in learning English: A case of university students. *SALTeL Journal (Southeast Asia Language Teaching and Learning)*, *4*(2), 37-48. https://doi.org/10.35307/saltel.v4i2.79

Agopian, T. (2022). Online instruction during the COVID-19 pandemic: Creating a 21st-century community of learners through social constructivism. *The clearing house: A Journal of Educational Strategies, Issues and Ideas*, *95*(2), 85-89.

https://doi.org/10.1080/00098655.2021.2014774

Ahmadi, D. M. R. (2018). The use of technology in English language learning: A literature review. *International Journal of Research in English Education*, *3*(2), 115-125. https://doi.org/10.29252/ijree.3.2.115

Altun, M., & Ahmad, K.H. (2021). The use of technology in English language teaching: a literature review. *International Journal of Social Sciences & Educational Studies, 8*(1), 226-232. https://doi.org/10.23918/ijsses.v8i1p226

Ausubel, D. P. (1968). *Educational psychology: A cognitive view*. Holt, Rinehart and Winston.

Clark, R. C., & Mayer, R. E. (2016). How do people learn from e-courses? *e-Learning and the Science of Instruction*, 29-46.

Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality*, *19*(2), 109-134.

Goodwin, K. (2012). Use of tablet technology in the classroom. *NSW Department of Education and Communities*, 6-93.

Maldague, X., Kuimova, M., Burleigh, D., & Skvortsova, S. (2016). Information and communication technologies in engineering education. *In MATEC Web of Conferences* (Vol. 79, p. 01044). EDP Sciences. https://doi.org/10.1051/matecc onf/20167901044

Masruddin, M. (2014). The importance of using technology in English teaching and learning. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature, 2*(2). https://doi.org/10.24256/ideas. v2i2.36

Mayer, R. E. (2005). Cognitive theory of multimedia learning. *The Cambridge handbook of multimedia learning*, *41*(1), 31-48.

Ningsih, A. W., Sihombing, P. S. R., & Silalahi, D. E. (2021). Students' perception towards the use of ICT in EFL learning at eleventh grade SMA Negeri 1 Dolok Batu Nanggar. *Education and Human Development Journal, 6*(3), 24-36. https://doi.org/10.33086/ehdj.v 6i3.2477

Nomass, B. B. (2013). The impact of using technology in teaching English as a second language. *English Language and Literature Studies, 3*(1), 111.

Rodinadze, S., & Zarbazoia, K. (2012). The advantages of information technology in teaching the English language. *Frontiers of Language and Teaching, 3*(5), 271-275.

Shyamlee, S. D., & Phil, M. (2012, June). Use of technology in English language teaching and learning: An analysis. In *International Conference on Language, Media and Culture* (Vol. 33, No. 1, pp. 150-156).

Silviyanti, T. M., & Yusuf, Y. Q. (2015). EFL teachers' perceptions on using ICT in their teaching: To use or to reject?. *Teaching English with Technology, 15*(4), 29-43.