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## **Reflective Study on the Shift of Teachers' Perception Towards ICT Integration in English Teaching**

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**Abstract:** This reflective study investigated the transformation of English language teachers' perceptions of Information and Communication Technology (ICT) integration into English teaching throughout the COVID-19 pandemic. Two groups of English instructors from junior and senior high schools in Jepara Regency and Semarang City participated in this study. Data collecting methods included surveys and interviews. The findings indicated a considerable shift in teachers' views towards ICT integration, from a stage of limited integration before the pandemic, where its use was not widespread, to becoming an essential tool during the pandemic, relied upon as the main mode of instruction. Following the pandemic, there was a reevaluation of its significance and priority, leading to a reassessment of its role in education and teaching methodologies. After the pandemic, ICT integration has become essential for both online and hybrid learning and has gained widespread recognition for its

importance in education. During the COVID-19 outbreak, online learning became the main way of teaching. After the pandemic, some teachers went back to in-person classes, but the use of technology remained important. This shows that teachers still need good training to use technology well. The findings indicated that many forms of technology for teaching are hard for both Indonesian students and teachers. Hence, it indicated the vital role of continuous training and support for educators to adjust and adapt their ICT integration into teaching English. By providing ongoing learning opportunities and assistance, teachers can better adapt to the changing educational environment which makes schools better for both students and teachers.

**Keywords:** Reflective study, teachers' perception, ICT in teaching, English teaching.

## Introduction

The COVID-19 pandemic has led to significant transformations in educational practices across the globe, especially in the field of English language teaching. As educational institutions adapted to the challenges posed by the pandemic, the integration of Information and Communication Technology (ICT) emerged as a crucial component for ensuring continuity in teaching and learning processes. Before the pandemic, educators were gradually embracing ICT tools in their teaching methodologies, albeit with varying degrees of emphasis. However, the abrupt change to remote and online learning during the pandemic necessitated a rapid acceleration of ICT integration in educational settings. It is necessary to analyse how teachers' perceptions change over time to understand their standpoint on ICT integration in English teaching because it responds to unprecedented circumstances. English language teachers worldwide found themselves navigating the transition from traditional classroom methods to virtual teaching environments, relying heavily on ICT platforms and digital tools to facilitate remote learning (Rohqim & Nurhana, 2022). While this shift presented new opportunities for innovative pedagogical approaches, it also brought forth numerous challenges, including technological inadequacy, unfamiliarity with learning platforms, and limited access to appropriate materials (Chinengundu et al., 2022) and since educators faced challenges in keeping students engaged and motivated during the shift to online instruction.

The benefit of doing this study was to capture teachers' perceptions and practices, it sought to explore the nuanced shifts in teachers' attitudes towards ICT integration before, during, and after the pandemic, and this study aimed to shed light on the factors influencing their adaptation and resilience in response to the changing educational paradigms.

By delving into teachers' experiences, challenges, and expectations regarding ICT utilisation, this research study aims to enlighten policymakers in education fields, and institutions who develop school curricula and train teachers to encourage and motivate teachers to integrate ICT into English language teaching practices. Thus, the exploration of the changing landscape of ICT integration in English language education can provide valuable insights into the evolution of the education sector. By addressing the gaps in understanding regarding teachers' perceptions and practices related to ICT integration, this research strove to facilitate informed decision-making and strategic planning in fostering effective and sustainable approaches to English language teaching in the digital age.

Existing studies have addressed issues of teaching during the post-pandemic period, although, in some cases, they are potentially overlooking recent changes and challenges that emerged during this unique time. The term "reflective study" (Benito, 2022) implies a focus on teachers' introspection and self-assessment to reflect on and adapt their practices in response to the post-pandemic landscape. Research on ICT integration in teaching has been around for a while (Johnson et al., 2022; Yazici & Atay,

2023); some areas have not been investigated leaving a gap in understanding the nuanced shifts in teachers' perceptions, the one related to the post-pandemic context.

To address the research gap and gain insight into teachers' perspectives on incorporating ICT into their teaching practices, the following two questions were suggested: 1) How has the pandemic influenced the perception of English teachers towards integrating ICT in English teaching? 2) How do their changes of perspective affect their teaching? These two questions are expected to provide the answers to the factors affecting the perception of the teachers regarding the ICT integration in their teaching and to explore the effect of those changes towards their English teaching.

## **Literature Review**

ICT integration is defined as the integration of digital technologies, internet, networking, and digital media into academic settings (Hafifah & Sulistyo, 2020; Owen et al., 2020). The integration of technology in the classroom can be sparked by a variety of factors such as immediate needs, concerns for health and safety, or a desire to enhance the learning experience. Previous studies have explored how teachers incorporate ICT (information and communication technology) into their teaching practices (Amirova et al., 2023) and how they perceive the changes (Capurso, 2023) have been examined, including those unique to English language instruction (Ahmed et al., 2021). The professional development programs during the pandemic (Lo & To, 2023; Zafar et al., 2022) support the teachers' ability to adjust to the new normal and are among the fields investigated throughout the pandemic. It is critical to cover that the pandemic has influenced teachers' perceptions of pedagogy and day-to-day practices. The shift in teaching mode affects teachers' perceptions regarding the ICT integration in teaching (Altermatt et al., 2021) is of paramount importance. This study sought to discover if the pandemic effects will remain in society or if it will revert to pre-pandemic teaching instructions or habits (Daud et al., 2019). It unveils teachers' adaptability and resilience in response to a drastic and dramatic shift in teaching paradigms. Besides, the findings can inform policymakers, teaching practitioners, curriculum developers, and principals of teacher training programs to increase teachers' qualities and motivation towards integrating ICT in teaching (Hafifah & Sulistyo, 2020).

Utilising ICT tools in language education involves various methods and techniques to enhance lesson preparation, address mistakes, and provide feedback during the learning journey (Hakim, 2021). The severe situation called for new approaches to language learning by integrating digital technologies into the teaching and learning process in public or private schools (Qaddumi et al., 2023). These perspectives can help teachers incorporate ICT tools into their teaching methods and their impact on English learning outcomes (Nur'Aini et al., 2022).

Theories on English learning and teaching have been presented and considered, leading to many changes to the teaching methods following the ICT development and the learners' needs. The coverage of changes may occur in learning materials whereby written or printed learning materials are no longer considered as the media that dynamically present information. With the pandemic, digital communication has become essential, online education is already established, and traditional learning has transitioned to e-learning via digital means (Guzzo et al., 2022; Ho & Tai, 2021; Lilian et al., 2021). Online learning becomes a common practice from now on. It accesses the learning experiences through technology, whether entirely online or blended learning, by using online teaching platforms for remote teaching (Carrasco-Hernández et al., 2023; Huang et al., 2023; Madahana et al., 2022). In the past, online learning was an option that could be afforded by those who needed it. However, times have changed and the subset of distance education has grown to be more flexible in time and space and learners can choose online one over school-based education (Briggs et al., 2023; MacNeill et al., 2023; Ogolodom et al., 2023).

The integration of ICT into English teaching can cultivate a lively and immersive learning atmosphere. It can assist both teachers and learners in organising enjoyable learning tasks, promoting self-directed learning, encouraging learners to utilise various learning tools, and involving learners in honing their language abilities for navigating the digital era (Lai & Hwang, 2014). To integrate ICT tools into the classroom, teachers and learners need more preparation and access to supporting equipment. Teachers should get involved in training and professional development, development of digital literacy skills, more access to computer hardware and software applications, fast and strong internet connectivity, comprehensive curriculum integration, constructive collaboration, and digital content creation (Khatoony & Nezhadmehr, 2020). Besides, learners also have proportional access to computers or smartphones for online learning, internet accessibility, digital literacy skills, engaging content, online safety, support channels, digital learning platforms, and online libraries. Teachers and learners recently transformed into consumers of virtual information because they require new digital literacy skills that can aid in English teaching and acquisition and enable every individual an active learner (Kühl et al., 2011). Digital literacy is a person's competence to navigate, comprehend, and use it to communicate with others digitally. These skills encompass a range of abilities and knowledge that are essential in today's technologically driven society (Lembani et al., 2020).

Regarding the changes in teachers' perception of replicating the learning activities, Gibbs (1988) noticeably developed a model of the reflective cycle that presents and explores a comprehensive structure for learning from certain experiences. The model offers a useful framework by using reflective questions to genuinely examine past experiences, actively identify areas for improvement, and swiftly improve the practices. The Gibbs (1998) reflective cycle proposes six main cycles namely description, feelings, evaluation, analysis, conclusion, and action plan.

**Figure 1**

*Gibbs' Reflective Style*



*Source:* Gibbs (1988).

The application of this cycle was considered appropriate to direct and guide the participants to reflect on what they had experienced, what they thought and felt, what they learned from their experiences, how they dealt with the experiences or situations they faced at that time, additional

knowledge they gained during that period, and the subsequent steps they took in response to their ICT learning experience. From this cycle, the participants' views on the application and usefulness of ICT in English language learning were obtained before, during, and after the pandemic.

## **Materials and Methods**

To address the issue presented above, a reflective study was employed in this paper (Hasegawa & Nonis, 2018) to consider the shift in English language teachers' perceptions regarding ICT integration in English language teaching. The reflective study was designed in order to help teachers self-reflect on their experiences. This research used the qualitative method (Berg & Lune, 2012) to elicit the teachers' narrative and to gain an in-depth understanding of the teachers' reflective journey.

### ***Sample and Participants***

The population of this study was English teachers in junior and senior high schools in Jepara Regency and Semarang City Central Java Indonesia. Questionnaires were distributed to choose the participants through WhatsApp group messages, emails, and social media channels. The criteria for the purposive sampling (Lu & Zhang, 2023) were determined to meet these requirements: male and female English teachers; had teaching experiences >10 years, had used ICT throughout the pandemic; and were willing to participate in the interview. This questionnaire filtered out the 52 respondents into two teacher cohorts consisting of 17 teachers from Jepara Regency and eight teachers from Semarang City. The reasons behind the choices of the two cities were they potentially provided different learning contexts, thus they offered different teaching experiences. It led to a diverse data set and more comprehensive participant narratives. The participants gave their informed consent to participate in this study and their identity is protected by ensuring that the names in this article are all pseudonyms.

### ***Instruments and Procedures***

The data collection spanned two months, from August to September 2023, employing questionnaires (Sopromadze & Moorosi, 2017) and interviews (Adhabi & Anozie, 2017; Rahayu et al., 2022). The questionnaires, consisting of 20 items shared online, served as versatile tools to gather information on teachers' experiences with ICT. The questionnaire also helped collecting the data about their expectations for future ICT integration. The researchers conducted semi-structured interviews with teachers in both face-to-face and virtual settings, providing an opportunity for a flexible and conversational approach to delve into the teachers' unique experiences and stories. This method allowed for capturing firsthand insights and perspectives from the participants. The authors prepared a set of key questions but retained the flexibility to ask follow-up questions, enabling a comprehensive understanding of the teachers' experiences with ICT.

### ***Data Analysis***

Two data sources, questionnaires and interviews, were utilised for the thematic analysis (Glisczinski, 2018). Questionnaire results were categorised into four sections: teachers' experiences with ICT before, during, and after the pandemic, and expectations for future ICT integration. Interviews offered richer narratives, analysed chronologically through a comprehensive narrative analysis to highlight critical points in response to research questions.

## Results

### *The Changes in Perceptions*

As illustrated in Table 1, four categories of opinion from Strongly Agree, Agree, Disagree, and Strongly Disagree were set to define the level of agreement expressed by the participants about the statements in the column “Description of Respondents’ Perceptions”. Three timelines were established to track changes in perception prior to, during, and post-pandemic. Only data that has a significant impact (more than 30% of responses and are highlighted in the table) are described and presented to answer the first research question about the way the pandemic influenced the perception of English teachers towards integrating ICT in English teaching.

To change the questionnaire to inquire about the advantages of incorporating technology in English language instruction; data shows that before the pandemic they thought that ICT integration was not necessary, but during the pandemic, the number increased sharply where the participants strongly agreed that it was an absolute necessity (80%). Other respondents agreed (56%) that before the pandemic, ICT integration was necessary, and after the pandemic, 60% indicated neutrality about the need for ICT integration. The percentage difference indicated that teachers had different outlooks on the same matter within different time-space.

**Table 1**  
*ICT Integration in English Language Learning Throughout the Pandemic*

| No | Description of Respondents' Perceptions                                                               | N (%)          |     |          |         |     |          |         |     |          |          |     |          |                   |     |          |
|----|-------------------------------------------------------------------------------------------------------|----------------|-----|----------|---------|-----|----------|---------|-----|----------|----------|-----|----------|-------------------|-----|----------|
|    |                                                                                                       | Strongly Agree |     |          | Agree   |     |          | Neutral |     |          | Disagree |     |          | Strongly disagree |     |          |
|    |                                                                                                       | Pr<br>e        | Dur | Pos<br>t | Pr<br>e | Dur | pos<br>t | Pr<br>e | Dur | Pos<br>t | Pr<br>e  | Dur | Pos<br>t | Pr<br>e           | Dur | Pos<br>t |
| 1  | ICT is an absolute necessity in English language learning                                             | 8              | 80  | 8        | 12      | 20  | 12       | 56      | 0   | 60       | 20       | 0   | 20       | 4                 | 0   | 0        |
| 2  | Have integrated ICT in English language learning                                                      | 18             | 80  | 28       | 52      | 20  | 48       | 30      | 0   | 24       | 0        | 0   | 0        | 0                 | 0   | 0        |
| 3  | Very proficient in ICT in English language learning                                                   | 48             | 32  | 48       | 20      | 16  | 20       | 24      | 20  | 24       | 8        | 32  | 8        | 0                 | 0   | 0        |
| 4  | Use more than 1 Platform for English language learning                                                | 20             | 72  | 20       | 36      | 12  | 40       | 32      | 8   | 40       | 12       | 8   | 0        | 0                 | 0   | 0        |
| 5  | Have used Zoom Meeting or Google Meet Platform in English language learning                           | 0              | 92  | 0        | 8       | 4   | 12       | 80      | 4   | 60       | 12       | 0   | 24       | 0                 | 0   | 4        |
| 6  | Have known various learning media applications (Kahoot, Google Form, Duolingo, Babbel, Rosetta Stone) | 20             | 92  | 48       | 40      | 4   | 20       | 20      | 4   | 24       | 20       | 0   | 8        | 0                 | 0   | 0        |
| 7  | ICT is beneficial and more effective in English Language Learning                                     | 60             | 92  | 40       | 12      | 4   | 40       | 28      | 4   | 20       | 0        | 0   | 0        | 0                 | 0   | 0        |
| 8  | ICT makes English Language Learning more interesting for Students                                     | 60             | 80  | 80       | 20      | 20  | 20       | 20      | 0   | 0        | 0        | 0   | 0        | 0                 | 0   | 0        |
| 9  | Continue to improve ICT skills for English language learning                                          | 40             | 80  | 68       | 20      | 12  | 12       | 40      | 8   | 20       | 0        | 0   | 0        | 0                 | 0   | 0        |
| 10 | Follow the development of ICT independently                                                           | 20             | 92  | 76       | 40      | 4   | 24       | 40      | 4   | 0        | 0        | 0   | 0        | 0                 | 0   | 0        |

*Note.* Pre= before the pandemic, Dur= during the pandemic, Post= after the pandemic

The pandemic was a major influence in the change of the perception. The lack of ICT integration before the pandemic was caused by the absence of urgency and emergency. This was supported by the statement from the participants in their interview, as cited below:

*...before the pandemic, we have used the IT for teaching, mainly just PowerPoint. We were in our comfort zone and preferred the classroom interaction. We used our laptops just to check emails or to browse the internet. So, ICT integration was limited to certain needs only.*  
– Erina, the teacher in Semarang.

The participants were familiar with ITC in teaching, but they did not use it for daily activities. Even they emphasised their preference for offline meetings in the classroom, where they could directly communicate with the students. The participants did not have the urge or pressure to use ICT for teaching because their situation before the pandemic was comfortable, thus making them unchallenged and remaining static in terms of knowledge and skills in integrating ICT. They downloaded teaching materials according to the designed topics as defined in the curriculum and syllabus and delivered them in the classroom. ICT was incorporated into their teaching, although it was not the primary tool used. They utilised basic IT resources for tasks beyond instruction. While they did incorporate it to some extent, the emphasis remained on face-to-face interactions between students and teachers in offline teaching, with the internet serving as a supplementary tool in the background.

A significant finding related to whether the participants have integrated ICT in English language learning indicated that before the pandemic, 52% agreed about their reliance, during the pandemic 80% of them strongly agreed; and after the pandemic, 48% agreed to the fact that they relied on ICT for teaching. This fact showed that it was proven during the pandemic. Teachers became technologically advanced in such a short time even though the learning contexts were limited, and teachers expressed their concern for the issue, as well as relief feeling because they still could do their job amidst the limitations.

*ICT-based learning platforms have been really helpful during the pandemic because we were not allowed to conduct face-to-face learning. With the platform features, I could deliver my teaching materials or assignments for the English lessons.* – Bambang, teacher in Jepara

After the outbreak, schools reverted to offline sessions, and individuals began to engage directly. Despite the hurdles, some instructors found ICT-based learning platforms useful in performing their jobs, with schools playing an important role in providing a Learning Management System and enabling online engagement. The narrative above signified the importance of online platforms as the bridge between them and their students. They used more than one platform (72%) even before the pandemic, such as Zoom, Google Meet, or other online platforms at a high percentage (92%). They also reported that they have used various learning media applications (92%).

When asked about their views on the effectiveness of integrating ICT in English Language Learning, a significant majority (92%) of participants expressed that they believe it to be advantageous, particularly in navigating the difficulties of teaching amidst the pandemic.

*I used a Learning Management System by adjusting it to the materials I had to deliver on the day. Usually, I ask my students to observe a video related to the topic on YouTube. After that, I followed up by opening a discussion on WhatsApp or Microsoft Teams. Sometimes I left a voice note, too. For assessment, I used Google Forms or sometimes Quizziz.* – Artie, Semarang.

From the statement, it is shown that teachers become increasingly skilful and flexible in using ICT in their teaching, meeting the demands of their students and adjusting what they need to do during the

process. Teachers needed to be flexible because not every student had the same situation related to their ability to provide internet for their learning, thus, teachers sometimes reverted to a cheaper tool, such as WhatsApp to keep the interaction alive. The statement supported the data in Table 1, where teachers strongly agreed that ICT integration made learning English more interesting. The increasing percentage before and after (60% to 80%) showed that students preferred this type of learning, as it allowed them more affordances to manage their learning more independently.

Participants indicated that they would continue improving their skills in integrating ICT after the pandemic (68%) because now they had the choice to do so. Before the pandemic, they did not have this much agency over their choices because there was no need for it and during the pandemic, they were forced by the situation to use it. The freedom to choose which platform to use for teaching signified that teachers have more ability to exercise their agency in practising their teaching.

Finally, on the quest to exercise the independence by actively learning the progress of ICT integration, 92% of participants strongly agreed that they would do so during the pandemic, although the number decreased to 76% after the pandemic. This number is still significant, indicating that teachers have found new confidence in using ICT for teaching and new motivation to learn more about ICT and how they can benefit from it. Participants stated that ICT made the learning interactive, but offline teaching resurfaced, thus, they viewed ICT as effective for English language learning and committed to its continued use.

*Of course, using ICT remains relevant nowadays. It allows teachers to have more effective and diverse teaching, and students can conduct discussions more freely without having to listen to the teachers first because they can read the materials that they received before the lesson. The students enjoyed the numerous sources of learning materials and they had more freedom to learn. Tiko – teacher in Jepara.*

Teachers recognised the diverse learning styles of students and anticipated using digital platforms in a blend of traditional and online classrooms to enhance digital literacy and assess students. Teachers found the learning platforms efficient, engaging, and relevant for blended learning and post-pandemic activities.

### ***Changes of Perspective and Effect on Teaching***

This part elaborated the response to the second research question on whether their changes of perspective regarding ICT integration also affected their teaching. For this question, this study found answers from the interviews with the participants. Taking into account the teachers' experiences in integrating ICT into teaching, some changes happened inevitably.

*I did a self-reflection and realised that I have to keep up with the changes. As a teacher, I have to be better prepared to teach my students. It's okay if they don't know a form of technology yet, I will learn it for them and then teach it to them after I have good mastery. Budi – Semarang.*

Realising the importance of dynamic thinking and staying current with changes to ensure the effectiveness of teaching. This participant believed that teachers could not be less advanced than the students because they were the ones who should have more knowledge and skills than their students. Self-awareness about their skills and willingness to improve them become a strong factor in teachers' development. Not all teachers have the same thinking, and it was necessary to highlight the reasoning behind the lack thereof. Some participants have challenges in providing themselves with sophisticated tools to stay connected, install new software for teaching, or to develop appropriate online teaching material because they do not have the skills and lack teaching resources. Age played a role in the challenge as well. Older teachers may struggle to adapt to new teaching methods and often prefer traditional offline classes with minimal technology integration.

*I recommend teachers in this digital age use online platforms or interesting learning applications that can challenge learners to keep up with the development of technology. Teachers should seek information on how to use ICT to support teaching to foster students' desire for learning. Fuad – Jepara.*

The participants recommended the continued use of digital platforms in order to keep students updated with technological advances and as an alternative when in-person classes are not possible. This approach encourages students to become more independent learners and fosters creativity and innovation. Online learning has advantages such as ease of access, convenience, time-saving, and lack of travel. Teachers had to be creative in managing classrooms and ensure students were willing to engage in learning activities. The challenges during the pandemic encouraged teachers to stretch themselves and master ICT skills, resulting in improved knowledge and skills transfer.

## **Discussion**

This research investigated the teachers' perspectives on online teaching during the pandemic and how it affected their overall teaching experiences. Teachers encountered a range of challenges in the online learning environment, with the most significant being related to their home learning environment, while technological literacy was less of an issue. Additionally, the pandemic intensified these challenges, particularly concerning the quality of learning, financial concerns, and mobility.

Teachers indicated that the online learning process was successful due to obstacles and difficulties faced by both students and teachers. For example, in one class, some students lacked communication tools and teachers were unable to assess their performance. The lack of performance assessment in students' affective and psychomotor aspects due to the lack of direct interaction shows that to achieve language fluency direct interaction is necessary, as argued in Ngo and Eichelberger (2019). Students at home rely on their parents or other family members for assistance in writing and completing assignments, which unfortunately promotes independence. Furthermore, students struggled to comprehend teacher-provided content, both at home and in the classroom. The findings of this study highlighted the transformative impact of the COVID-19 pandemic on the integration of Information and Communication Technology (ICT) in language teaching practices. Before the pandemic, ICT integration in classrooms was relatively limited, with online platforms serving primarily as supplementary resources. However, the sudden closure of schools during the pandemic forced educators to rapidly adapt to online teaching, leading to a significant shift in priorities and practices. The impactful aspect of COVID-19 towards learning has been discussed by Xiangling et al. (2020), who considered that virtual classrooms were the lifeline for education. Some teachers went back to in-person teaching when schools reopened after the pandemic, but the lessons learned during the crisis led to a reconsideration of the use of technology in Indonesian education settings. This situation is in line with the work of Ngo and Eichelberger (2019) who assert the enduring value of ICT.

Considering the aspect of Gibbs (1998) reflective cycle, the description of the phenomenon throughout the pandemic has elaborated on the causes of teacher's changed perspective on ICT integration. Teachers recognised their need to adapt to changes and to further maintain the knowledge and skills they gained during the abrupt change. This awareness is critical to acknowledge that there was an urgent need to adapt. Failure to adapt would result in ineffective teaching as teachers would lack the necessary skills to effectively educate students both during and after the pandemic. Their feelings were mainly dominated by anxiety, uncertainty, and indecisiveness; because at the start of the pandemic, they did not get enough information about how to deal with the changes. The emotions that the participants felt were similar to the study by Jones and Kessler (2020). It challenged the teachers as they had to deal with the complexity of navigating their duties as teachers as well as managing their emotions, which oftentimes were unaddressed and not acknowledged.

The way teachers assessed their experiences on the ICT integration mainly influenced their pedagogical approach and how to navigate the challenges. Previously, they could rely on pre-prepared, memorised teaching materials for classroom activities. However, the pandemic demanded the transformation of those materials into digital format suitable for their Learning Management System. The process of transforming those teaching materials contributed to subsequent burnout among teachers, leading to a situation where teaching duties became burdensome.

Recognising that burnout was a hindrance in teaching, the schools were suggested to provide refresher training for the teachers. There are two advantages of training; to advance the teachers' skills and to get some breaks from their day-to-day duties. Spending extended periods of time in front of a screen has led to fewer opportunities for teachers to socialise and take breaks from their work due to job demands. Providing necessary training outside of the school context offered a new environment and encouraged teachers to have a new perspective on their duties. Improved skills in handling ICT integration benefit the teachers because they can train their colleagues. Furthermore, teachers met new people with whom they could discuss new teaching technology, share the latest developments in teaching, and engage in productive academic activities inside and outside the classrooms. The transition to ICT-centric instruction poses challenges for both educators and students. Utilising ICT can improve teaching methods and tailor learning experiences, but proper training and support are crucial for successful integration. Schools must prioritise continuous professional development for teachers to ensure they have the necessary skills to effectively use digital tools in their classrooms. The importance of giving more training is also found in the work of Proedrou et al. (2023).

The financial concern that arose because of the ICT integration came from the fact that both teachers and students needed to provide their internet out of their pocket, especially during the pandemic when everything was sudden. However, as schools, teachers, and students adjusted to the changes, they became more prepared for the cost that they had to spend to provide internet. After the pandemic, they have adjusted to being online and considered the expenses of providing internet as their daily spending. Parents allocated some pocket money for their children to purchase mobile data, schools allocated resources to install Wi-Fi at the office and schools to be used by students and teachers, and even they provided the hardware they needed to ensure the smooth process of learning. This adjustment also happened in other countries like in Spain (Carrasco-Hernández et al., 2023) and China (Xu & Tao, 2023).

There was a growing trend where both teachers and students opted to use mobile or smartphones to facilitate learning and access resources anytime and anywhere. This circumstance potentially causes them to prefer choosing motion learning materials. These materials generally comprise a wide range of learning resources to learn various aspects of language such as interactive textbooks, online courses, computer animation, videos, interactive simulations, robotics, and many more (Arthur-Nyarko et al., 2020; Rocha Silva et al., 2023). Teachers who previously carried out teaching activities through face-to-face meetings have to switch their teaching methods and activities to virtual teaching which is completely covered by ICT integration as a proper solution to conventional teaching methods as described in Gunawan and Amaludin (2021). The popular learning applications to use in teaching are WhatsApp, Google Classroom, Zoom meetings, etc. These tools have been indispensable for most teachers during the pandemic, because of the practicality and stability of the online platform. Those tools played different roles, for example, WhatsApp groups are mainly for quick communication between teachers and students, and Google Classroom is a platform where teachers can upload learning materials and students to upload their assignments or homework. Depending on the intensity of the lesson, online platforms have provided a useful bridge to connect teachers and students when it was impossible to see face to face.

Throughout the pandemic, the changes in perception also affected the way teachers and students acted in the classroom. Before the pandemic, the integration of ICT tools in language classrooms was a gradual process. While online platforms existed, they were primarily seen as supplementary resources rather than integral components of teaching. There was a disparity in prioritisation among educators, with some acknowledging the potential of ICT while others remained sceptical. Consequently, the widespread adoption of ICT was not universal, and traditional face-to-face interactions remained predominant, albeit with occasional digital enhancements. The pandemic forced schools to close, pushing teachers into the world of digital learning and requiring them to quickly adapt to online teaching platforms. This sudden shift forced educators to adapt their pedagogies and engage students remotely through various digital mediums. This was a pivotal change for teachers and learners worldwide as they experienced extreme situations. Direct meetings were limited and access to communication was also scarce. The situation was grave and yet, teachers were required to adapt quickly and systematically to ensure that the education process was still running. Virtual classrooms emerged as the backbone of education, with real-time video conferencing, asynchronous assignments, and digital assessments becoming standard practices. The prioritisation of online teaching using ICT was no longer optional—it became essential for the continuity of education.

Overall, this study underscored the importance of continuous adaptation and innovation in education, particularly in integrating ICT into language teaching practices. By embracing technology and investing in teacher training and support, educators can ensure that the lessons learned during the pandemic pave the way for a more resilient and technology-integrated approach to teaching and learning in the future.

The study on English language teachers' perceptions of ICT integration into teaching practices during the COVID-19 pandemic had several limitations. The sample size, which was limited to two groups of English instructors from junior and senior high schools in Jepara Regency and Semarang City, could limit the generalizability of the findings. The geographical location of the study may not represent the situation in other regions or countries, as the integration of ICT in teaching practices can greatly vary. The methodological limitations, such as the use of surveys and interviews, could lead to skewed results if participants had misunderstandings or were not comfortable sharing their true thoughts and experiences. Not all teacher participants had continuous training post-pandemic, thus their perceptions could differ and affect their experiences. This showed that the training should be available in schools to even out their skills and experiences in using technology. Nevertheless, many features of ICT for teaching are hard for both students and teachers without proper training and instructions as indicated in the sample expressed by Fuad, a teacher from Jepara above. This study encouraged continuous training and support for educators as they incorporate technology into teaching English. Teachers can improve their ability to incorporate ICT into their teaching by receiving continued support and training in the ever-evolving educational landscape. Despite these limitations, the study provides valuable insights into the transformation of English language teachers' perceptions. Future research with larger and more diverse samples and a variety of data collection methods would be beneficial.

## **Conclusions and Implications**

The COVID-19 pandemic caused significant changes in terms of teachers' competency in English teaching by adopting Information and Communication Technology for virtual teaching. Teachers progressively moved and pivoted from the teaching methods of conventional classrooms into virtual teaching environments. The study found that teachers experienced a positive shift in their attitudes and beliefs towards ICT, from reluctance to proactive integration. The research found that teachers' perspectives were changed in six main ways: embracing blended learning, redefining their roles and duties, improving student involvement and teamwork, and increasing digital literacy. The study

concluded that teachers became architects of dynamic, technology-infused learning environments that resonated with the needs and aspirations of the digital generation. The study also highlighted the challenges and benefits of adopting ICT platforms for English teaching during the pandemic. In essence, the transformations in teachers' perceptions unfold as a narrative of resilience, adaptability, and a forward-looking embrace of contemporary pedagogical advancements. This evolutionary trajectory positions educators not merely as conveyors of information but as architects of dynamic, technology-infused learning environments that resonate with the needs and aspirations of the digital generation. In summary, teachers faced both challenges and benefits in adopting ICT platforms for English teaching during the pandemic. Despite constraints, efforts were made to adapt to virtual education, highlighting the evolving landscape of teaching in the digital era.

The pandemic has undeniably brought about profound and unprecedented changes to the education system, challenging its resilience in ways never experienced before. However, paradoxically, this crisis also holds the potential to strengthen the system and enhance its ability to withstand future challenges. Specifically, it offers a unique opportunity for improving teachers' competency and advancing technological integration in education, thus equipping the system with greater resilience and adaptability in the future.

### ***Suggestions for Future Research***

Some limitations in this study must be noted and addressed in future investigations. One disadvantage of this study was that it focused solely on teachers' perceptions. Future research may broaden the sample in order to include all other stakeholders involved in the teaching-learning process. Researchers may go further by focusing on teachers' points of view and knowledge to ensure comprehension of the topic and how diverse elements can contribute to teaching activities. It is expected that upcoming studies related to the topic of this article will uncover greater knowledge that can improve students' online learning experiences. In the case of students, their age, gender, and degree program may be considered in connection to the unique issues and tactics they face.

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None.

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