PERSPECTIVES AND EXPERIENCES OF INDONESIAN PRE-SERVICE ENGLISH TEACHERS IN DEVELOPING DIGITAL LEARNING RESOURCES

Lala Bumela Sudimantara

English Language Teacher Education (ELTE) Department, Faculty of Education & Teacher Training,
IAIN Syekh Nurjati Cirebon
Email: lalabumela@syekhnurjati.ac.id

Abstract: The adoption of the 2022 Emancipated Curriculum in Indonesia has prompted a need for pre-service English teachers to acquire new skill sets. These skill sets entail the integration of technology and pedagogy, aligning with UNESCO's transformative pedagogy approach to learning, which emphasizes a new paradigm of learning with a focus on essential elements of language learning. This qualitative study aims to investigate the perspectives and experiences of pre-service English teachers in Indonesia in developing digital learning resources for English learners that resonate well with the nature of the Emancipated Curriculum. A phenomenological research approach was adopted, and data were collected through a questionnaire and semi-structured interviews with 16 pre-service English teachers who had completed their final research project on the development of digital learning resources that promote a holistic English language learning. The data was analysed using both corpus analysis and thematic analysis techniques. The findings of the study highlight significant barriers faced by pre-service English teachers in Indonesia regarding the development and utilization of digital resources. These challenges include limited technology access, resistance from schools towards digital learning adoption, and students' insufficient English proficiency levels. However, despite these constraints, the pre-service teachers generally express satisfaction and confidence in creating digital learning resources that align with the Emancipated Curriculum. They also recognize the value of digital technology in enhancing the teaching and learning process. In conclusion, the paper underscores the importance of equipping pre-service English teachers in Indonesia with the necessary skills and knowledge to effectively navigate the digital age and function as competent curriculum engineers. This implies the need for targeted interventions and professional development programs to address the identified obstacles and empower teachers to leverage digital resources successfully in their instructional practices. This study suggests that by integrating digital pedagogy and providing access to digital resources, preservice English teachers can become competent curriculum engineers who can deliver quality English language instruction in the 21st century. Ultimately, this will enhance the quality of English language instruction in Indonesia and ensure that preservice teachers are well-prepared to navigate the digital age and provide quality education to their students.

Keywords: *The emancipated curriculum, transformative pedagogy, new paradigm of learning, digital learning resources, pre-service English teachers.*

INTRODUCTION

Ensuring that teachers possess the necessary skills is not only the foremost component in any program intended to enhance English standards, but also the most difficult to accomplish, with education systems worldwide struggling to deliver effective teacher professional development programs that result in tangible improvements in students' learning (Galaczi, Nye, Poulter, & Allen, 2018). A key indicator of this can be traced in the annual result of English Proficiency Index (EPI) held by English First (EF). Shockingly, Indonesia's English proficiency index (EPI) plummeted by 64 points in terms its ranks during the 11-year period from 2011 to 2021 (Helyanti, Sudimantara, & Ikawati, 2022). This trend also happens in the ASEAN region, except for Singapore. To achieve some degree of equalization among different countries, innovative educational solutions are crucial, as it is evident that continuing with the current educational systems alone won't bring about the substantial improvements needed (Lian & Sussex, 2018).

In response to the declining English proficiency index and the broader learning crisis (the declining trend in literacy, science and numeracy), the Indonesian government has introduced a new curriculum known as the

"Emancipated Curriculum" (Kemdikbudristek, 2022). This curriculum aims to foster a new paradigm of learning is not a linear model but rather a continuous cycle. The new paradigm of learning encompasses mapping competency standards, independent learning, and minimal competency assessment, which ensures greater flexibility for teachers to design learning and assessment plans that align with the characteristics and needs of learners (Kemdikbudristek, 2022). This policy emphasizes the role of teachers as curriculum designers and engineers at the school level, with a specific emphasis on promoting learning flexibility. Achieving this objective necessitates the incorporation of digital technology into the learning process. In other words, the new curriculum basically requires teachers to shift from a traditional learning that is teacher-centered into a digital learning that promotes learner-centeredness. UNESCO states that transforming education requires systems that differ from the ones in place today, and it aims to support teaching and learning methods that have a transformative impact on learners. More importantly, transformative education empowers individuals by fostering connections between people and the world, introducing them to new opportunities, and enhancing their abilities to critically analyse, engage in dialogue, create knowledge, and take action (UNESCO, 2021a).

Emancipated Curriculum (Kurikulum Merdeka) enacted by the Indonesian government in 2021 is basically the extension of transformative curricula enacted by UNICEF (UNICEF , 2022). In 2022, UNICEF introduced the RAPID Learning Recovery Framework as a means to accelerate the learning crisis caused by the COVID-19 pandemic. The framework reads: reach every child and retain them at school; assess learning levels; prioritize teaching the fundamentals (or the essentials); increase catch-up learning and progress beyond what was lost; and develop psychosocial health and wellbeing so every child is ready to learn.

The Rapid Learning framework, in essence, resonates with the notion of transformative pedagogy introduced by UNESCO (UNESCO, 2021a & UNESCO, 2021b). In these documents, it is stated that transformative education is encapsulated in Sustainable Development Goals Target .7, along with targets 4.a and 4.1 where education must empower students to engage in cooperative living, exhibit adaptability, engage in critical thinking, demonstrate respect for diversity, take care of the environment, and actively participate in finding solutions at both local and global levels as the world is facing the prevailing social, health, economic, and environmental challenges. In line with this, Thomas (2009) mentioned that to operationalize education associated with sustainability, teaching approaches must focus on elements relating to the processes of learning, rather than the accumulation of knowledge—to develop graduates with capabilities to improvise, adapt, innovate, and be creative. Skills such as interdisciplinary thinking, problem solving, team working, and holistic thinking are often stated.

As part of their teacher training, aspiring teachers are anticipated to acquire the necessary competencies and preparedness to employ technology effectively in their future teaching roles (Valtonen et al., 2022). Morover, the increasing interest in foreign language learning and the integration of technology in learning highlight the need for computer and electronic literacy among teachers and learners alike. A proficient teacher or learner is someone who can effectively utilize various technologies as educational tools in their learning journeys (Tafazoli et al., 2017).

In present-day discussions about the fundamental skills and knowledge for learners in the Knowledge Society, the concept of digital competence has become notably significant. Various approaches and definitions have been applied to this concept, including Digital Literacy, Digital Competence, eLiteracy, e-Skills, eCompetence, Computer Literacy, and Media Literacy. These variations have been observed in policy documents, academic literature, and educational practices pertaining to teaching, learning, and (Gallardo-Echenique et al., 2015). Digital Competence involves a diverse set of essential knowledge, skills, attitudes, and attributes needed for utilizing ICT and digital media. It encompasses abilities, strategies, values, and awareness required for tasks such as problem-solving, communication, information management, collaboration, content creation and sharing, and knowledge building. Digital Competence entails carrying out these activities effectively, efficiently, appropriately, critically, creatively, autonomously, flexibly, ethically, and reflectively across various domains like work, leisure, participation, learning, socializing, consumption, and empowerment(Ferrari, 2012). In other words, this entails acquiring the skills to both consume and generate media messages,

utilizing digital technology to create and express oneself, and understanding appropriate conduct within the digital realm (Fraga-Varela, 2022).

However, numerous higher education institutions have not fully recognized the significance of digital literacy as a fundamental skill, equivalent to reading, writing, and mathematics. In many universities and schools, digital literacy is either overlooked or presumed to be sufficiently present without undergoing assessment, remediation, and enhancement (Coffin Murray & Pérez, 2014). Despite the potential for advancing digital education, there are still significant challenges in ensuring inclusivity, particularly for disabled students, economically disadvantaged students, and those in underdeveloped and remote areas. The adoption of distance learning as a result of the pandemic is anticipated to have a detrimental effect on academic progress, as successful implementation requires the acquisition of new skills and improved internet access for both teachers and students (UNICEF, 2021).

Nevertheless, the digital revolution has not yet fully transformed education, with limited impact on schools and classroom learning outcomes. This necessitates the development of a new pedagogy to effectively integrate and maximize the potential of technology in education and professional teaching capacity must be established must be built for the new pedagogies to be successful (Fullan & Langworthy, 2014). Consequently, there is an urgent need for a new type of professional development aimed at equipping English teachers in Indonesia with up-to-date and evidence-based training in digital competence.

The literature review section investigates and evaluates the roles of the preservice English teachers as curriculum engineers in integrating the new paradigm of learning (new pedagogy) and technology. The first study by Tafazoli (2021) highlights the importance of incorporating appropriate CALL professional development (CALL PD) courses to support language teachers in adapting their teaching practices during the COVID-19 pandemic. The existing literature on CALL PD has paid limited attention to teachers' expectations, necessitating further investigation. Thus, this paper presents a small qualitative case study involving 12 pre- and in-service English language teachers who participated in a CALL unit at an Iranian university. The study emphasizes the significance of providing adequate training for online education. It asserts that regardless of the extent of professional development accompanying online learning, decisions regarding teachers' professional development must involve proper discussion and consideration of their preferences and concerns. Failing to do so can hinder the attainment of desired outcomes from the implemented tool.

The second study by Silviyanti & Yusuf (2022)indicated that out of a total of 42 teachers examined, 31 teacher users exhibited a strong inclination towards utilizing ICT in English Language Teaching (ELT) due to its perceived significance in enhancing learning experiences by making them pleasurable, stimulating, and actual, among other positive outcomes. Conversely, the remaining 11 teacher non-users acknowledged the increasing importance of information technology but lacked the motivation to incorporate it into their teaching practices. Their lack of motivation stemmed from insufficient training and support, both financial and non-financial, provided by their respective institutions. Hence, it is crucial for these barriers to be prioritized and addressed by educational institutions, as ICT offers boundless resources for ELT, and teachers need to be equipped to tackle the current challenges in education and technology. However, there is no mention as to how to best integrate pedagogy and technology to support a better English language learning experience.

The third study by Silvhiany et al (2021) shows that the shift to online teaching has heightened the utilization of digital tools and online resources in education, necessitating the incorporation of digital technology and digital literacy skills in classrooms. However, many teachers lack the necessary proficiency to fulfil this requirement. To address this issue, a community research project was conducted, providing digital literacy training to 85 English teachers in middle and high schools in South Sumatra Province. Through computer-generated training and teacher learning groups, the participants exhibited enhanced digital literacy abilities and intentions to incorporate digital tools in their teaching practices. This emphasizes the significance of professional development in digital literacy, offering practical training and fostering joint learning in encouraging teacher communities.

The fourth study by Jonathans & Metboki (2021) shows that the rise of online learning platforms has brought innovation and accessibility to education, but the utilization of digital teaching methods is still relatively new. The study explores the underlying e-learning pedagogy that informs

EFL methodology, seeking to gain insights into digital teaching practices. Analysis of research conducted in Indonesia reveals that alliance is the prevailing culture in digital learning, supported by the "Freedom to Learn" program. However, the paper does not address how the new paradigm of learning is integrated with technology.

The fifth study by Wahyuningsih (2021) shows that English teachers resorted to various media platforms during the pandemic, including Whatsapp, Zoom, Youtube, Google Classroom, and video resources. Surprisingly, WhatsApp appeared as the most popular medium among teachers for its flexibility. However, teachers faced several difficulties throughout the pandemic, such as the poor Internet connectivity among students, inadequate training among teachers and students for E-learning, challenges in meeting students' needs, insufficient training and support, and a dearth of technical proficiency. This study implies the importance of identifying more effective teaching resources for English teachers, the necessity for schools to provide training and sustenance for E-learning implementation, and the need to assist students in actively participating in English classes amidst the COVID-19 outbreak. In essence, teachers lack a systematic conceptual framework to effectively adopt the new pedagogy required for enhancing student learning through technology.

The sixth study conducted by Helyanti et al (2022) demonstrates the potential of integrating the new paradigm of learning and technology via the training of pre-service English teachers in engaging in innovative research activities. Helyanti's development of a digital learning resource, incorporating principles from neuroscience and technologically enhanced language learning, highlights the integration of the "Reading for Emotions" tool with the concept of story science. This integration offers students a more exploratory approach to learning, thereby enhancing their learning experience. Her study goes hand in hand with the principles of learner agency addressed by Bumela (2021) in the new design of learning of English using multisensorial technological tools such as Verbotonal Approach, Reading for Emotions and Aesthetics (Bumela, 2020) where rhythm, intonation, emotion, movement and aesthetics are the key components of learning that activate the right hemisphere of the brain that also serves as the gateway of learning language (McGilchrist, 2009). In line with this, Anderson & Dron (2011) employ a dance metaphor to illustrate the relationship between technology and pedagogy, where technology regulates the rhythm and crafts the melody, while pedagogy determines the dance movement. Similarly, in the entangled model, pedagogy assumes the role of the dance itself (Fawns, 2022). In other words, in this case an English language teacher serves as the choreographer must blend pedagogy and technology in a harmony in enhancing the language learning experience of the students. To this end, this study seeks to address these two research questions: (1) What are the key obstacles encountered by preservice English teachers in Indonesia when creating their digital learning resources in response to digital the Emancipated Curriculum digital transformation? (2) How did they view the importance of professional development in supporting them as a curriculum engineer in the digital age?

METHOD

The study adopted a qualitative research design, specifically a phenomenological approach, to investigate the perspectives and experiences of pre-service English teachers in developing digital learning resources for English learners. Phenomenology is a research methodology that aims to describe the essence of a particular experience or phenomenon as it is experienced by individuals (Groenewald, 2004) .

By employing a phenomenological approach, the researcher aimed to gain a deep understanding of the pre-service English teachers' subjective viewpoints, insights, and lived experiences related to the development and utilization of digital learning resources. This approach allowed for an exploration of the unique challenges, successes, and perceptions of the participants, providing valuable insights into their experiences within the context of their educational and technological environment.

Phenomenology's emphasis on capturing individual perspectives and experiences enabled the researchers to uncover rich and nuanced data that shed light on the complexities and nuances of the pre-service English teachers' journey in incorporating digital resources into their teaching practices. It allowed for a comprehensive exploration of the phenomenon under investigation and provided a foundation for developing targeted recommendations and interventions to enhance the teachers' digital competencies and effectiveness in the field.

The study involved 16 preservice English teachers of a state Islamic university in Indonesia

who have completed their final research projects (*skripsi*) on the development of digital learning resources that embrace a new paradigm of learning as demanded by the Emancipated Curriculum. These preservice English teachers have undergone an intensive research training when working on these research projects under the supervision of a senior lecturer at the Department who recently finished his doctoral study in an Australian university.

In this study, the researchers employed two primary data collection techniques: a questionnaire and semi-structured interviews conducted online. A questionnaire is a commonly used research tool that enables the researchers to gather data from a number of participants in a relatively rapid time. It is a pre-designed set of questions that can be administered either in-person or remotely, and participants can respond to them at their own pace. On the other hand, semi-structured interviews are more flexible and allow the researchers to delve deeper into specific topics and gain a more comprehensive understanding of the participants' experiences and perspectives. Conducting the interviews online provides convenience for both the researcher and the participant, eliminating geographical barriers and saving time and resources. Overall, the combination of a questionnaire and semi-structured interviews conducted online offers a balanced approach to data collection, enabling the researchers to gather both quantitative and qualitative data, thus enriching the study's findings and conclusions.

The questionnaire utilized a Likert Scale to measure the participants' attitudes, opinions, and experiences regarding the topic of interest. Likert Scale is a commonly used method in survey research that involves a series of statements or questions with a set of response options that range from "strongly agree" to "strongly disagree." The Likert Scale enables researchers to gather quantitative data that can be analyzed using statistical techniques to identify patterns and trends in the data. The following are the questions included in the questionnaire that utilized the Likert Scale.

These questions were addressed to record the personal spectrum of experience of each participant. (1) I feel confident in my ability to design and implement digital curriculum in the classroom. (2) I have access to the technology and resources I need to design effective digital curriculum. (3) I have received sufficient training and preparation to navigate the digital age effectively as a teacher. (4) The curriculum standards in my program align well with the demands of the digital age. (5) I have opportunities to collaborate and learn from my peers regarding digital curriculum design. (6) I feel supported by my university (the ELTE department) in my efforts to design effective digital curriculum. (7) The challenges of designing effective digital curriculum are significant and require ongoing attention and support. (8) I am motivated to continue learning and growing as a curriculum engineer in the digital age.

These questions were designed to elicit information about the participants' experiences, perspectives, and challenges as they navigate the digital age and work as curriculum engineers. The responses provided valuable insights into the ways in which preservice English teachers in Indonesia are adapting to the changing educational landscape and the support they need to successfully integrate technology in their teaching practices.

The semi-structured interviews conducted in this study aimed to investigate the experiences, perspectives, and challenges faced by preservice English teachers in Indonesia as they navigate the digital age and work as curriculum engineers.

To achieve this objective, the researchers developed a set of research questions to guide the interviews: (1) How do you feel about your ability to design and implement digital curriculum in the classroom? (2) What do you see as the biggest challenges in designing and implementing digital curriculum in the classroom? (3) Can you describe any opportunities or benefits that the digital age presents for language education in Indonesia? (4) How do you think you can best navigate the demands of the digital age in your curriculum design? (5) What kind of support do you think you need in order to be an effective curriculum engineer in the digital age? (6) How can universities and schools best provide this support to you? (7) How important is professional development in supporting you as a curriculum engineer in the digital age? (8) In your opinion, what kinds of professional development opportunities are most effective for preservice English teachers?

The interview questions were open-ended and allowed the participants to express themselves freely, without being constrained by pre-determined response options.

In this study, the researcher employed two distinct analytical techniques to analyse the data

collected from the questionnaire and semi-structured interviews.

For the questionnaire data, the researchers used descriptive statistics, which is a quantitative analysis method that summarizes the main characteristics of a dataset. Descriptive statistics allowed the researchers to organize and present the data in a meaningful and easy-to-understand format, providing valuable insights into the participants' views and experiences.

In contrast, the semi-structured interviews were analyzed using a combination of corpus analysis and thematic analysis. Corpus analysis involves the use of specialized software, such as Voyant Tools, to analyze large bodies of text and identify patterns and trends. Thematic analysis, on the other hand, involves a more detailed and in-depth examination of the data, with the aim of identifying underlying themes and meanings.

Using these techniques, the researchers were able to identify the challenges and opportunities faced by preservice English teachers in Indonesia as they navigate the digital age and work as curriculum engineers. The researchers read and re-read the transcripts to identify recurring themes, which were then organized into a framework. The data were then coded accordingly, allowing the researchers to identify specific examples and quotes that supported each theme.

Overall, the combination of descriptive statistics, corpus analysis, and thematic analysis provided the researchers with a comprehensive and nuanced understanding of the participants' experiences, allowing them to draw meaningful conclusions and make informed recommendations for future research and practice.

RESULTS AND DISCUSSION

This section presents the main findings of a study that investigated the perceptions and experiences of 16 preservice English teachers in designing digital curricula that comply with the transformative learning framework enacted by UNESCO, using both questionnaire and interview methods. The results of the questionnaire showed that while the participants felt satisfied with the overall process of developing their own digital learning resources, there was a mixed perception of support from the university in providing access, knowledge, and skills for designing digital curricula. The interview data revealed several key themes, including the integration of new concepts of learning and technology, the potential advantages of digital curricula, and the importance of teachers' role as curriculum engineers. These findings highlight the need for universities to provide more comprehensive support to preservice teachers in developing digital curricula that align with the transformative learning framework. In the table below, I present the digital learning resources that were created by the research participants as part of their final research project, also known as the "skripsi" writing project. These resources were designed to support and enhance learning in the English language classroom, and showcase the creativity and innovation of the participants in utilizing digital technologies for educational purposes.

Table 1. *The types of digital learning resources created by the participants*

Participants	Digital Learning Resources	Research Sites
1	CEFR-informed Digital Learning Resources for Teaching Expository Texts	High schools
2	CEFR-informed Digital Learning Resources for Creative Teaching of English Using Local Folklores in Majalengka, West Java, Indonesia	Middle Schools
3	Digital Multisensory Resources for Learning English Using Story	Middle Schools
4	CEFR-informed Digital Learning Resources for Creative Teaching of English Using Local Folklores in Cirebon, West Java, Indonesia	Middle Schools
5	a CEFR- informed Digital Hypertext Poetry	High Schools
6	A CEFR-informed Audiobook using Local Folklore in Kuningan, Wet Java, Indonesia	High Schools
7	a CEFR- Based Digitally Illustrated Storybook	Middle Schools
8	a CEFR- informed Digital Hypertext Poetry	Middle Schools
9	a CEFR- Based Story writing learning platform	Middle Schools
10	An online formative assessment for promoting interactive learning	High Schools
11	A CEFR-informed Digital Multilingual Microfiction	High Schools
12	Digital Storytelling Resources for Critical Listening	Middle Schools
13	a CEFR-informed digital	Middle

	multisensorial reading activities	Schools
14	CEFR-Informed Animation for Teaching Speaking of English	Middle Schools
15	An Integrated Diagnostic Test english proficiency	High Schools
16	A critical investigation of Curriculum Planning and Implementation of Kurikulum Merdeka	Middle Schools

Table 1 presents the digital learning resources created by 15 of the research participants. However, one participant (number 16) did not create a digital learning resource. Instead, her study focused on the planning and implementation of Kurikulum Merdeka (Emancipated Curriculum), providing valuable insights on how English teachers in schools transitioned from traditional to digital curricula in

alignment with the Emancipated Curriculum. Her findings are essential in shaping our understanding of teacher efficacy and agency regarding the adoption of transformative curricula in Indonesian schools.

Questionnaire results: The general perceptions of the preservice english teachers on their research experiences

This section presents the results of a questionnaire aimed at investigating the general perceptions of preservice English teachers on their research experiences. By exploring their attitudes and beliefs towards research, we can gain insight into the effectiveness of research experiences in preparing preservice teachers for their future roles as educators.
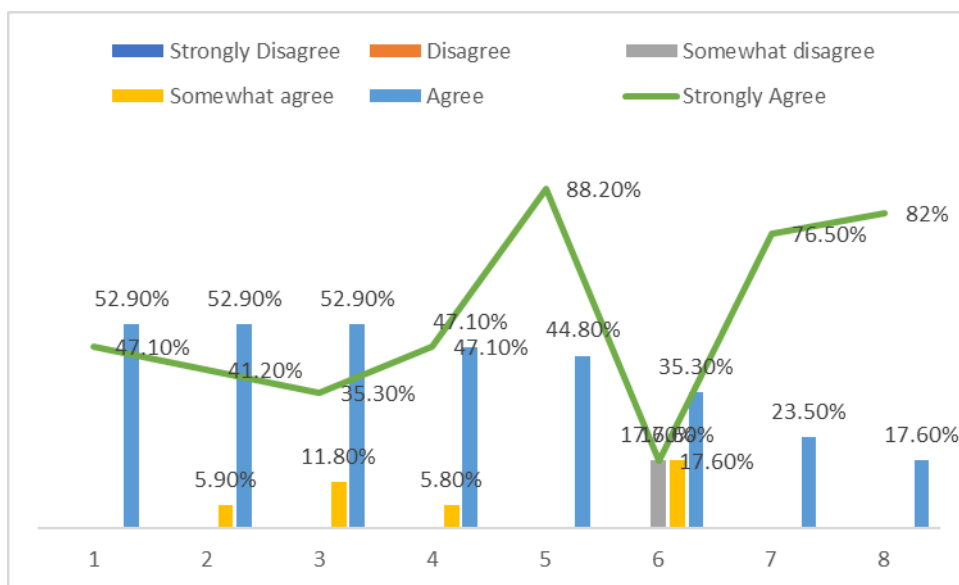

Figure 1. *The distribution of responses of the respondents*

Bar 1 presents a response from a group of respondents who were asked to rate their level of confidence in their ability to design and implement digital curriculum in the classroom. Based on the response data, it appears that most of the participants, specifically 52%, agreed with the statement, while 47% strongly agreed. This suggests that most of the respondents have a positive perception of their skills in designing and implementing digital curriculum in the classroom.

Bar 2 presents a response from a group of respondents who were asked to rate their level of access to the technology and resources needed to design effective digital curriculum. Based on the response data, it appears that the majority of the participants, specifically 52.9%, agreed with the statement, while 41.2% strongly agreed. This

suggests that most of the respondents have some level of access to the technology and resources needed to design effective digital curriculum, although there may be some who do not have sufficient access. Further investigation may be needed to determine the specific nature of the technology and resources required for designing effective digital curriculum and how access to them may vary across different groups of participants.

Bar 3 presents a response from a group of respondents who were asked to rate their level of training and preparation to navigate the digital age effectively as a teacher. Based on the response data, it appears that most of the participants, specifically 52.9%, agreed with the statement, while 35.3% strongly agreed and 11.8%

somewhat agreed. This suggests that most of the respondents have received some level of training and preparation to navigate the digital age effectively as a teacher. However, it is worth noting that there is still a sizeable minority who may not feel adequately prepared to navigate the digital age, and further investigation may be needed to determine the specific areas where additional training and preparation may be needed.

Bar 4 presents a response from a group of respondents who were asked to rate their perception of how well the curriculum standards in their program align with the demands of the digital age. Based on the response data, it appears that the majority of the participants, specifically 47.1%, strongly agreed with the statement, while an equal percentage of 47.1% agreed with the statement. Only 5.8% somewhat agreed with the statement. This suggests that most of the respondents perceive that their curriculum standards align well with the demands of the digital age, indicating a positive outlook on the alignment between their program's curriculum standards and the digital age demands.

Bar 5 presents a response from a group of respondents who were asked to rate their level of opportunities to collaborate and learn from their peers regarding digital curriculum design. Based on the response data, it appears that the majority of the participants, specifically 88.2%, strongly agreed with the statement, while 11.8% agreed with the statement. This indicates that most of the respondents perceive that they have ample opportunities to collaborate and learn from their peers regarding digital curriculum design. This is a positive sign that the participants feel supported in their professional development and have access to resources that can help them improve their digital curriculum design skills.

Bar 6 presents a response from a group of respondents who were asked to rate their level of support from their university (the ELTE department) in their efforts to design effective digital curriculum. Based on the response data, it appears that there is a mixed perception among the participants. Specifically, 17.6% strongly agreed with the statement, while 35.3% agreed with the statement. Furthermore, 17.6% somewhat agreed, and 17.6% somewhat disagreed with the statement. This suggests that while some participants feel supported by the university in their efforts to design effective digital curriculum, there are others who feel less supported or only somewhat supported. Further investigation may

be needed to determine the specific areas where the participants feel supported or unsupported and identify ways to address any gaps in support from the university.

Bar 7 presents a response from a group of respondents who were asked to rate the importance of professional development in supporting them as a curriculum engineer in the digital age. Based on the response data, it appears that the vast majority of participants, specifically 76.5%, strongly agreed with the statement, while 23.5% agreed with the statement. This indicates that most of the respondents perceive professional development as an essential factor in supporting them as a curriculum engineer in the digital age. This underscores the importance of ongoing professional development opportunities for teachers, especially in the rapidly evolving landscape of technology integration in education.

Bar 8 presents a response from a group of respondents who were asked to rate their motivation to continue learning and growing as a curriculum engineer in the digital age. Based on the response data, it appears that the majority of the participants, specifically 82%, strongly agreed with the statement, while 17.6% agreed with the statement. This indicates that most of the respondents feel highly motivated to continue learning and growing as curriculum engineers in the digital age. This is a positive sign as it demonstrates that the participants are invested in their professional development and willing to adapt to new technologies and pedagogies in order to provide effective instruction for their students.

Overall, the response data from the survey conducted on the perceptions of the participants towards designing and implementing digital curriculum in the classroom revealed that most of the respondents have a positive perception of their skills in digital curriculum design. They also reported having some level of access to technology and resources needed to design effective digital curriculum, and most of them have received some level of training and preparation to navigate the digital age effectively as a teacher. Additionally, the majority of the participants perceive that their curriculum standards align well with the demands of the digital age, and they feel supported by their peers and motivated to continue learning and growing as curriculum engineers in the digital age. However, there is a mixed perception of support from the university, and further investigation may be needed to address any gaps in support and

determine the specific areas where additional training and preparation may be needed. The survey results highlight the importance of ongoing professional development opportunities for teachers in the rapidly evolving landscape of technology integration in education.

Interview results: Examining the collective imagination of the preservice english on the importance of digital learning

This section presents the results of interviews aimed at examining the collective imagination of preservice English teachers on the significance of digital learning. By exploring their perceptions and beliefs regarding digital learning, we can gain insight into the effectiveness of current approaches in preparing future English teachers to utilize technology in the classroom. The following table presents the corpus of the interview with the participants.

Table 3. *The distribution of corpus analysis of the interviews with the respondents*

Qs	Total Words	Unique Word Forms	Vocabulary Density	Readability Index	Average Word Per Sentence	Most Frequent Words
1	770	271	0.352	11.971	25.7	digital (26); learning (16); curriculum (15); students (12); feel (11)
2	967	315	0.326	14.030	28.4	digital (22); students (21); learning (21); challenge (15); biggest (13)
3	947	336	0.355	14.591	29.6	learning (31); digital (26); students (21); language (20); era (10)
4	657	258	0.393	14.615	28.6	learning (25); digital (19); technology (13); students (12); curriculum (12)
5	715	266	0.372	14.448	28.6	support (24); digital (13); learning (12); students (8); curriculum (8)
6	517	231	0.447	14.573	27.2	support (16); learning (12); universities (8); schools (7); providing (6)
7	565	214	0.379	15.234	29.7	curriculum (20); important (15); digital (13); professional (12); development (12)
8	577	248	0.430	17.195	30.4	teachers (20); development (12); learning (11); professional (9); teaching (8)

Column 1 shows that the corpus (a collection of written or spoken texts) has a total of 770 words. The document has 271 unique words forms, which means that some words are repeated more than once. The vocabulary density is calculated by dividing the number of unique words in the document by the total number of words. In this case, the vocabulary density is 0.352, which means that the document has a relatively low level of lexical diversity. The readability index is a measure of how easy or difficult it is to read the text. The higher the index, the more difficult the text is to read. In this case, the readability index is 11.971, which suggests that the text is fairly easy to read. The average words per sentence is calculated by dividing the total number of words by the number of sentences in the document. In this case, the average number of words per sentence is 25.7, which indicates that the sentences are relatively long. Finally, the most frequent words in the corpus are listed, along with their frequency. In this case, "digital" appears 26 times, followed by "learning" (16 times), "curriculum" (15 times), "students" (12 times), and "feel" (11 times). These words are likely to be important topics or themes in the document.
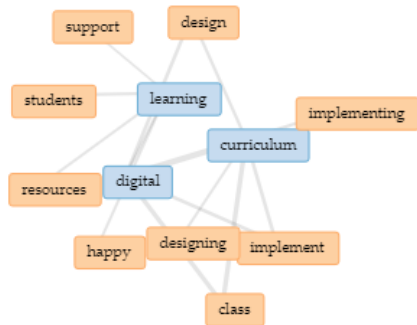
Figure 2. *Most frequent words in corpus 1.*

The theme that emerges from this corpus is the positive and enthusiastic attitude towards designing and implementing a digital curriculum in the classroom. The author expresses feelings of happiness, excitement, and confidence in their ability to create innovative learning resources using technology. They recognize the importance of keeping up with developments in the digital era and the need for varied materials and references for teaching English. However, there are also challenges that the author faces, such as the limited accessibility and technological capabilities of some students and teachers, the risk of a digital divide, and the lack of social interaction in online learning. The author acknowledges the importance of ongoing socialization and direction for successful implementation of the digital curriculum in the classroom. The respondents' focus is on the potential advantages of digital curricula, such as wider accessibility, flexibility in learning, and easier monitoring and grading. They also emphasize the need to define the concept, flow, and goals of the digital curriculum, and to provide more understanding to other teachers who may not be familiar with it. Overall, the thematic analysis reveals a positive attitude towards digital learning, a willingness to learn and develop new skills, and a desire to improve oneself in order to better support students' learning. The following is a key comment found in corpus 1.

> "I feel very happy because I can hone my skills and continue to innovate in designing and implementing digital curricula. I feel grateful because my ability can support learning materials in class to be more creative through interesting things such as stories and illustrations."

In this quote, the participant expresses a sense of happiness and gratitude in their role as a designer and implementer of digital curricula. The participant's happiness seems to stem from the opportunity to continually develop their skills in this area, which suggests a passion for their work.

They also express gratitude for the ability to support learning materials in class, which indicates a sense of purpose and a desire to make a positive impact on students. This sense of self-efficacy is a key predictor of teachers' professional and personal success (Shu, 2022; Oh, 2011)

Furthermore, the participant emphasizes the importance of creativity in their work, suggesting that they prioritize engaging and stimulating learning experiences for students. This is demonstrated through their reference to "interesting things such as stories and illustrations" which can enhance the learning experience and help students better understand and retain information. The participants in this study embraced the concept of story science that captures centrality of story for the development of human in general (Fletcher, 2021), and the concept of Reading for Emotions (A.B Lian, 2017) that views any texts as a story where it used as a problem-solving strategy. By adopting these new concepts, the participants have laid the foundation for pedagogy and technology integration.

Column 2 shows that the text being analyzed has a vocabulary density of 0.326, which indicates that it has a relatively low level of lexical diversity, with many repeated words. The readability index is 14.030, which suggests that the text is fairly easy to read, likely suitable for a general audience. The average number of words per sentence is 28.4, which indicates that the sentences are relatively long. This could make the text more challenging to read for those with lower levels of literacy or those who prefer shorter, more concise sentences. Overall, the text appears to be moderately easy to read, with some complex sentences and potentially repetitive vocabulary. The intended audience and purpose of the text would likely influence the ideal readability level and vocabulary density.

Figure 3. *Most frequent words in corpus 2.*

Based on the responses provided, a latent thematic analysis of the biggest challenges in designing and implementing a digital curriculum can be summarized as follows: (1) Lack of support from schools and teachers: A significant challenge is the lack of support from schools and teachers in integrating technology into the classroom. This includes a lack of adequate facilities, limited access to technology, and the need for specialized teacher training to effectively design and execute a digital curriculum. (2) Resistance to change and traditional learning methods: Many students and teachers are still accustomed to traditional learning methods, making it challenging to implement a non-traditional approach to education. Some teachers may resist digital learning due to its perceived complexity or lack of familiarity. (3) Inadequate access to technology: Many students do not have access to the necessary technology, including computers and smartphones, to participate fully in digital learning. Limited internet access and network constraints also pose a challenge in some areas. (4) Perceptions and attitudes towards digital learning: Students may not always have a positive perception of digital learning, and it may take time for them to get used to studying through digital means. (5) Facilities and classroom conditions: The lack of adequate facilities and classroom conditions, such as limited access to digital resources, can impede the implementation of a digital curriculum and hinder students' learning process.

Overall, these challenges highlight the need for investment in digital resources, specialized teacher training, and changes to policies and attitudes towards digital learning to successfully design and implement a digital curriculum that benefits all students. The following is a key quote from corpus 2.

> "The biggest challenge was that the teachers still wanted to implement textbook learning and did not want to implement digital learning, which according to these teachers was something complicated to do. In addition, facilities such as computers and the internet provided by schools are only used during exams, not for learning activities, and also schools prohibit students from bringing smartphones to school, which is quite an obstacle because not all schools allow students to bring smartphones. These policies should be reconsidered, given the development of technology that is increasingly advanced and so is the development of education that should go

hand in hand with technological developments. At least by utilizing school facilities for learning activities, if students are prohibited from bringing smartphones to school."

In this quote, the participant highlights several challenges that she faced in their efforts to implement digital learning in schools. The first challenge that she mentions is resistance from teachers who prefer to stick with traditional textbook learning instead of incorporating digital learning. This suggests a reluctance to embrace new technology and methods, which can be a barrier to progress in education. The participant also notes that schools may not be adequately equipped with the necessary technology, such as computers and internet access, to support digital learning. Additionally, schools may prohibit students from bringing smartphones to school, which can be a further obstacle to implementing digital learning. The participant argues that these policies should be reconsidered in light of the increasing advancements in technology and the need for education to keep up with these developments. They suggest that at the very least, school facilities should be utilized for learning activities, even if students are not allowed to bring smartphones. This finding resonates with the study by (Khasanah et al, 2021) where challenges of implementing digital learning is influenced both by the mindset of the teachers and students, as well as the low technological infrastructures at school.

Column 3 shows that the text being analyzed has a vocabulary density of 0.355, which suggests that it has a relatively low level of lexical diversity, with many repeated words. The readability index is 14.591, which suggests that the text is moderately easy to read, likely suitable for a general audience. The average number of words per sentence is 29.6, which indicates that the sentences are relatively long. This could make the text more challenging to read for those with lower levels of literacy or those who prefer shorter, more concise sentences. Overall, the text appears to be moderately easy to read, with some complex sentences and potentially repetitive vocabulary. The intended audience and purpose of the text would likely influence the ideal readability level and vocabulary density.
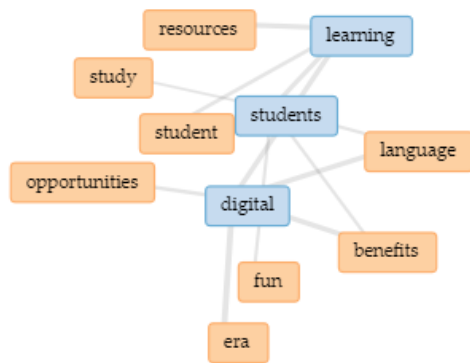
Figure 4. *Most frequent words in corpus 3*.

Overall, the latent thematic analysis of the digital era and language education in Indonesia reveals several opportunities and benefits, including: (1) Access to free applications, websites, and other digital resources for language learning. (2) Communication and connection with language speakers and educators around the world through software and video conferencing. (3) Flexibility and accessibility in learning, allowing students to study anywhere and anytime. (4) Improvement of language skills and proficiency, as well as motivation and curiosity for learning. (5) Use of digital resources in creative and original work, improving literacy and making learning more interesting and fun. (6) Access to information and support for teachers, allowing for a shift towards non-traditional and student-centered learning. (7) Increased use of digital tools such as gamification, virtual reality, and interactive whiteboards for more engaging and effective language learning. (8) Collaboration and language exchange programs with native speakers and other students around the world. (9) Improved accessibility for persons with disabilities, enabling them to learn on an equal footing with their peers. (10) More innovative and creative learning resources that can be personalized according to students' abilities and interests.

These opportunities and benefits show that the digital era can greatly improve and advance language education in Indonesia, leading to positive changes in learning outcomes and overall development. However, it is important to ensure that digital resources and facilities are available and accessible to all students, regardless of their economic background. The following is a key quote in corpus 3.

> "This digital era has many benefits such as flexible digital use, digital is also easy to access and has many versions that can be used free of charge. This positive thing can be an opportunity for teachers, curriculum engineers

and students to adapt to using digital so that the learning process can be carried out more effectively so as to produce positive changes."

In this quote, the participant highlights the benefits of the digital era, such as the flexibility of digital tools and the ease of access to various free versions of digital resources. The participant sees these advantages as opportunities for teachers, curriculum engineers, and students to adapt to using digital tools in the learning process, leading to positive changes. The participant's emphasis on the flexibility of digital tools suggests that digital resources can be customized to fit the specific needs of teachers and students. This can help make the learning process more effective by tailoring the experience to the individual's learning style and pace. The participant also points out that digital resources are easily accessible and often available free of charge. This can help to level the playing field for students who may not have access to expensive textbooks or other learning materials.

Column 4 shows that the text being analysed has a vocabulary density of 0.393, which suggests that it has a moderate level of lexical diversity, with a relatively high proportion of unique words. The readability index is 14.615, which suggests that the text is moderately easy to read, likely suitable for a general audience. The average number of words per sentence is 28.6, which indicates that the sentences are relatively long. This could make the text more challenging to read for those with lower levels of literacy or those who prefer shorter, more concise sentences. Overall, the text appears to be moderately easy to read, with some complex sentences and a relatively varied vocabulary. The intended audience and purpose of the text would likely influence the ideal readability level and vocabulary density.
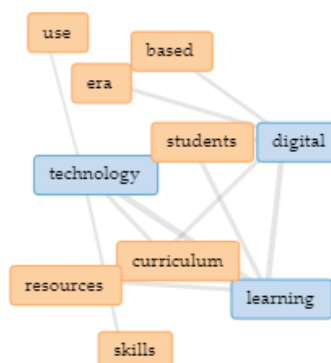

Figure 5. *Most frequent words in corpus 4*

Based on the provided text, the latent thematic analysis for the challenges before designing the curriculum can be summarized as follows: (1) Importance of Digitalization: In the current digital era, it is essential to incorporate digital literacy and technology skills into the curriculum. Teachers and educators need to stay updated on the latest technological advancements and integrate them into their teaching strategies to prepare students for the workforce of the future. (2) Need for New Paradigms: To navigate the tensions of the digital age, new paradigms are required to reinforce transformative pedagogy. Digitalization should be used as an effort to build student agency that can encourage student learning motivation, build curiosity, and reduce the impact of misuse of technology. (3) Emphasis on Thinking Skills: Critical thinking, problem solving, creativity, originality, and strategizing are some of the essential thinking skills that should be emphasized in the curriculum design for the digital age. (4) Integration of Technology: The curriculum should incorporate technology as an effective learning aid and enhance students' digital skills. Teachers must also be trained in the use of technology and the development of learning materials that are appropriate for the digital era. (5) Student Awareness: Students should be made aware of the importance of digitalization and how it can benefit their future. It may take time for students to adapt to the digital curriculum, and thus, it is important to involve them in the use of digital in learning activities and assessment. (6) Holistic Learning: The digital curriculum should support holistic learning by paying more attention to what the students need and providing them with different experiences in the learning process. (7) Self-Development: As educators, it is essential to upgrade knowledge and skills in technology to maximize learning by taking advantage of technological advances in curriculum design.

Overall, the latent thematic analysis suggests that designing a curriculum for the digital age requires a focus on digital literacy, technology skills, thinking skills, integration of technology, student awareness, holistic learning, and self-development. This is a key comment in corpus 4.

> "I think the best way to navigate the tensions of the digital age is to develop new paradigms to reinforce transformative pedagogy. Digitalization is used as an effort to build student agency that can encourage student learning motivation and build

curiosity, as well as reduce the impact of misuse of technology so that digital dementia does not occur."

In this quote, the participant suggests that the best way to navigate the tensions of the digital age is to develop new paradigms that reinforce transformative pedagogy. The participant believes that digitalization can be used to build student agency, motivate student learning, and foster curiosity while reducing the negative impact of technology misuse. The participant emphasizes the importance of transformative pedagogy, which suggests a teaching approach that challenges the traditional lecture-based instruction and instead prioritizes active learning, critical thinking, and problem-solving skills. The participant sees the potential of digital tools to support this approach by providing students with the opportunity to take control of their learning and become active participants in the learning process.

The participant also highlights the risk of digital dementia, which refers to the negative impact of excessive technology use on cognitive function. By emphasizing the importance of responsible digital use, the participant suggests that transformative pedagogy can help to mitigate this risk and ensure that technology is used in a way that supports learning rather than hinders it.

Overall, the quote reflects a forward-thinking approach to the challenges of the digital age, emphasizing the potential of digital tools to enhance the learning experience while also highlighting the need for responsible use and the importance of a pedagogical approach that prioritizes transformative learning.

Column 5 shows that the text being analysed has a vocabulary density of 0.372, which suggests that it has a moderate level of lexical diversity, with a relatively high proportion of unique words. The readability index is 14.448, which suggests that the text is moderately easy to read, likely suitable for a general audience. The average number of words per sentence is 28.6, which indicates that the sentences are relatively long. This could make the text more challenging to read for those with lower levels of literacy or those who prefer shorter, more concise sentences. Overall, the text appears to be moderately easy to read, with some complex sentences and a relatively varied vocabulary.

Figure 6. *Most frequent words in corpus 5*

Based on the various responses provided, it seems that support is a crucial factor for effective curriculum engineering in the digital age. This support can come in various forms, such as access to the latest information, collaboration and feedback from educators, access to resources and tools, skills development, access to technology, and support from educational institutions and the government. Furthermore, it appears that support for digital learning resources development is also necessary, such as access to free tools and resources, facilities to support digital learning, and counseling or training for teachers to master the necessary skills. Overall, the need for support in the form of access, collaboration, and training is essential to develop effective digital curricula and to transform the education system in the digital age.

> For me, the support I really need to become an effective curriculum engineer in today's digital era is support from universities, schools, and from the government itself. Support from universities, for example by providing learning that trains us to master technology for learning so that we already have the skills to do digital learning in class. Support from schools such as facilities to support digital learning and fully support learning through technology in the classroom. Finally, support from the government, such as counseling or training for teachers to master the knowledge and skills needed for more advanced digital learning.

In this quote, the participant emphasizes the importance of support from universities, schools, and the government to become an effective curriculum engineer in today's digital era. The participant suggests that universities can provide training to curriculum engineers on how to master technology for learning, which will equip them with the necessary skills to implement digital learning in the classroom.

The participant also suggests that schools should provide facilities to support digital learning and fully support learning through technology in the classroom. This suggests that the participant believes that schools should prioritize the implementation of digital learning as a way to enhance the learning experience for students.

Finally, the participant highlights the importance of government support, such as counseling or training for teachers to master the knowledge and skills needed for more advanced digital learning. This suggests that the participant believes that the government has a role to play in promoting the adoption of digital learning in education.

Column 6 shows that the text being analyzed has a vocabulary density of 0.447, which suggests that it has a high level of lexical diversity, with a relatively low proportion of repeated words. The readability index is 14.573, which suggests that the text is moderately easy to read, likely suitable for a general audience. The average number of words per sentence is 27.2, which indicates that the sentences are relatively long. This could make the text more challenging to read for those with lower levels of literacy or those who prefer shorter, more concise sentences. Overall, the text appears to be moderately easy to read, with a relatively varied vocabulary and some complex sentences.
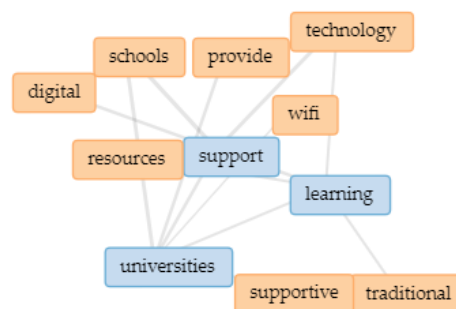

Figure 7. *Most frequent words in corpus 6*

The theme that emerges from the corpus is the idea that universities and schools can provide support to students in various ways. One way is by offering academic guidance, tutoring, counseling, career services, and disability accommodations. Another way is by establishing support networks and peer mentoring programs that can help students feel connected and supported within the community. Additionally, creating a culture of care and support that prioritizes the well-being and success of all students can go a long way in providing effective support. There is also a suggestion that

universities and schools need to embrace transformative pedagogy and switch from traditional teaching and learning methods to non-traditional ones. This change is seen as necessary to facilitate the development of students' creativity and help them become more successful.

Access to technology is another crucial aspect of support that universities and schools can provide. This support includes facilities to support digital learning, providing technology training, and access to essential tools such as computers and wifi. Despite the availability of resources, some students feel that universities and schools are not supportive enough. This lack of support is attributed to institutions' adherence to strict rules that prevent them from accepting new things and ideas.

Column 7 shows that the text being analyzed has a vocabulary density of 0.379, which suggests that it has a moderate level of lexical diversity, with a relatively high proportion of unique words. The readability index is 15.234, which suggests that the text is moderately easy to read, likely suitable for a general audience. The average number of words per sentence is 29.7, which indicates that the sentences are relatively long. This could make the text more challenging to read for those with lower levels of literacy or those who prefer shorter, more concise sentences. Overall, the text appears to be moderately easy to read, with some complex sentences and a relatively varied vocabulary. The intended audience and purpose of the text would likely influence the ideal readability level and vocabulary density.

Figure 8. *Most frequent words in corpus 7*

In general the subthemes that emerge from the corpus are as follow: (1) Keeping up-to-date with technological advances and best practices. (2) Enhancing creativity, qualification, and critical thinking skills. (3) Fostering a sense of professionalism and responsibility. (4) Achieving maximum results and effectiveness in designing curriculum. (5) Providing support for implementation of digital curricula and teaching tools. (6) Continuous learning and improvement through collaboration with peers and industry leaders. (7) Readiness and knowledge of the importance and changes in curriculum. (8) Supporting students' learning and innovation in the classroom.

In summary, the subthemes that emerge from the corpus suggest that effective curriculum design and teaching requires a multifaceted approach. Educators must not only keep up-to-date with technological advances and best practices, but also foster creativity, qualification, and critical thinking skills in themselves and their students. Additionally, they must maintain a sense of professionalism and responsibility while striving for maximum results and effectiveness in curriculum design. Providing support for the implementation of digital curricula and teaching tools, continuous learning and improvement through collaboration with peers and industry leaders, readiness and knowledge of the importance and changes in curriculum, and supporting students' learning and innovation in the classroom are all essential aspects of effective curriculum design and teaching. A key quote from corpus 7 is presented below.

> "Professional development is very important for curriculum engineers in the digital age. They need to keep up-to-date with the latest trends and best practices because technology and teaching methods are changing quickly. Professional development can help curriculum engineers learn how to design good digital learning, use technology tools, and make interesting digital content. Also, professional development can help them stay in touch with other people in their field and learn from them."

This quote emphasizes the significance of ongoing professional development for curriculum engineers in the digital age. They need to keep pace with the latest trends and best practices in technology and teaching methods. Professional development can help them learn new skills in designing digital learning, using technology tools, and creating engaging digital content. Additionally, it enables them to stay connected with peers for collaboration and continuous improvement

Column 8 that the text being analyzed has a vocabulary density of 0.430, which suggests that it has a high level of lexical diversity, with a relatively low proportion of repeated words. The readability index is 17.195, which suggests that the text is relatively difficult to read, likely suitable for a more advanced audience. The

average number of words per sentence is 30.4, which indicates that the sentences are relatively long. This could make the text more challenging to read for those with lower levels of literacy or those who prefer shorter, more concise sentences. Overall, the text appears to be relatively difficult to read, with a relatively varied vocabulary and some complex sentences.

Figure 9. *Most frequent words in corpus 8*

In general the corpus shows that effective professional development for prospective English teachers should focus on developing multimodal learning resources and improving classroom practice. This includes hands-on and collaborative learning opportunities like practicums, mentorship programs, and online courses. Personal development should also be encouraged to explore new innovations and learning opportunities. Technology integration and innovative, non-traditional learning methods, such as creating teaching aids, participating in curriculum development activities, and setting the concept of learning, should also be a priority.

Moreover, creating a supportive learning environment where teachers can mutually support each other to create better education is crucial for effective professional development for prospective English teachers. The importance of teacher quality should also be emphasized to improve the learning process in schools and lead to better student success. Professional development should be structured with an element of accountability, ensuring that teachers are motivated to change and improve their practices. By incorporating these elements into professional development programs, prospective English teachers will be better equipped to provide effective and engaging instruction to their students. The following is key quote from corpus 8.

"I think the most effective forms of professional development is focus on improving what teachers do in classrooms. It also has an element of accountability involved, so teachers are motivated to change and improve. The more professional development teachers get, the more likely students are to succeed."

This passage emphasizes the importance of professional development for teachers in improving student success. The participant suggests that the most effective form of professional development is one that focuses on improving what teachers do in classrooms and has an element of accountability involved, which motivates teachers to change and improve. The participant believes that the more professional development teachers receive, the more likely students are to succeed. The passage suggests that the quality of teaching is critical to student achievement and that professional development is a vital tool for teachers to improve their classroom practices, leading to better student outcomes. Overall, the passage highlights the significant impact of professional development on teacher effectiveness and student success.

The findings of this study have the potential to enhance the quality of English language instruction in Indonesia in several ways. Firstly, by understanding the perspectives and experiences of pre-service English teachers in developing digital learning resources, we gain insights into the challenges they face. This understanding can inform the design of targeted interventions and training programs to address these challenges effectively.

Secondly, the findings shed light on the benefits and opportunities that arise from implementing a digital curriculum. Better accessibility to resources, personalized learning experiences, and increased collaboration with language speakers and educators globally can greatly enhance the English language instruction in terms of diversity, authenticity, and engagement.

Additionally, the study highlights the need for investment in digital resources, specialized teacher training, and changes in policies and attitudes towards digital learning. These recommendations can contribute to building a supportive ecosystem for implementing a digital curriculum in English language instruction, ensuring that teachers are equipped with the necessary skills and resources to utilize digital tools effectively.

Furthermore, the emphasis on critical thinking, problem-solving, creativity, and other essential thinking skills, as well as supporting holistic

learning and student agency, aligns with the broader goals of education. Integrating these skills and approaches into the digital curriculum can foster a more comprehensive and student-centered English language instruction, empowering students to thrive in the digital era and the future workforce.

In conclusion, the findings of this study offer valuable insights and recommendations to enhance English language instruction in Indonesia by leveraging the potential of digital technologies. By addressing the challenges, embracing the benefits, and investing in necessary resources and training, English language instruction can be transformed to meet the needs of students in the digital age, ultimately preparing them for success in the globalized world.

CONCLUSION

In conclusion, the professional development of prospective English teachers is crucial for creating effective and engaging learning experiences for students. The focus of professional development should be on developing multimodal learning resources, hands-on and collaborative learning opportunities, improving classroom practices, personal development, technology integration, innovative and non-traditional learning methods, creating a supportive learning environment, and improving teacher quality. These elements will help teachers develop their pedagogical knowledge, adapt to new technologies, and create better education environments that support student success.

Furthermore, it is important for professional development opportunities to be ongoing and relevant to the changing needs of teachers and students. This includes training and certification programs that encourage the integration of technology in teaching, support for non-traditional learning methods, and collaboration with peers. By focusing on improving the quality of teachers, we can improve the learning process in schools and ultimately lead to better student success. Therefore, ongoing professional development is crucial for prospective English teachers to develop their skills and knowledge and create meaningful learning experiences for their students.

Potential areas for further research in professional development for prospective English teachers include the effectiveness of specific multimodal and multisensorial learning resources on student learning outcomes, the most effective models of hands-on and collaborative learning,

the role of accountability, and the effectiveness of innovative and non-traditional learning methods. Further research in these areas could ultimately lead to better educational outcomes for students by improving the quality of teacher education and professional development.

However, it is essential to acknowledge the limitations of this study, as it demonstrates academic integrity and a comprehensive understanding of the research process. Although this study provides valuable insights into the professional development of prospective English teachers and the importance of creating effective and engaging learning experiences, it is important to recognize that the findings are context-specific and may not be universally applicable. The sample size, specific research setting, and duration of the study are some of the limitations that should be acknowledged.

Moreover, this study opens up avenues for future research in the field of professional development for prospective English teachers. For instance, investigating the effectiveness of specific multimodal and multisensorial learning resources on student learning outcomes can contribute to the development of evidence-based practices.

Furthermore, examining the effectiveness of innovative and non-traditional learning methods within the professional development context can provide valuable insights for teacher education programs. By addressing these limitations and conducting further research, we can continue to improve the quality of teacher education and professional development, ultimately leading to better educational outcomes for students.

REFERENCES

Anderson, T., & Dron, J. (2011). Three generations of distance education pedagogy. *International Review of Research in Open and Distance Learning, 12*(3), 80–97. https://doi.org/10.19173/irrodl.v12i3.890.

Bumela, L. (2021). Learners' agency in focus: Introducing the 21st century academic writing pedagogy in Indonesia. *The Journal of English Language Teaching in Foreign Language Context, 6*(2), 155-167.

Bumela, L. (2020). Designing 21st century language learning scenario in Indonesia: A perspective from computer-assisted language learning. IJAS: *Indonesian Journal of Arabic Studies, 2*(1). https://doi.org/10.24235/ijas.v2i1.6106.

European Commission, E. (n.d.). Digital competence in practice: An analysis of frameworks. https://doi.org/10.2791/82116.

Fawns, T. (2022). An entangled pedagogy: Looking beyond the pedagogy—technology dichotomy. *Postdigital Science and Education*, 4(3), 711–728. https://doi.org/10.1007/s42438-022-00302-7

Fletcher, A. (2021). *Wonderworks: The 25 most powerful inventions in the history of literature*. Simon & Schuster E-book.

Fraga-Varela, F. (n.d.). *Digital competence in primary education and the limits of 1:1 Computing La compétence numérique à l'école primaire et les limites de l'informatique 1:1*.

Fullan, M., Langworthy, M., Barber, M., & MaRS Discovery District. (n.d.). *A rich seam : How new pedagogies find deep learning*.

Galaczi, E., Nye, A., Poulter, M., & Allen, H. (2018). *Teacher professional development*.

Gallardo-Echenique, E. E., Minelli De Oliveira, J., Marqués-Molias, L., & Esteve-Mon, F. (2015). Digital competence in the knowledge society. *MERLOT Journal of Online Learning and Teaching, 11*(1).

Groenewald, T. (2004). A phenomenological research design illustrated. *International Journal of Qualitative Methods, 3*(1). Article 4.

Helyanti, N. D., Bumela, L., Ikawati, L. (2022). Kurikulum Merdeka reimagined: Adopting story science for English literacy learning in Indonesian middle school. *ELT Echo : The Journal of English Language Teaching in Foreign Language Context*, 7(2). https://doi.org/10.24235/eltecho.v7i2.12081

Jonathans, P. M., & Metboki, Y. (2021). *Reflecting on EFL Digital Learning in Indonesia: Seeking for E-Learning Pedagogy*.

Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi. (2021). *Pembelajaran Paradigma Baru*. https://repositori.kemdikbud.go.id/24963/1/PPB_2021.pdf.

Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi. (2022). *Dimensi, elemen, dan subelemen profil pelajar pancasila pada kurikulum merdeka*. https://kurikulum.kemdikbud.go.id/wp-content/uploads/2022/07/V.2-Dimensi-elemen-subelemen-Profil-Pelajar-Pancasila-pada-Kurikulum-Merdeka.pdf.

Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi. (2022). *Capaian pembelajaran pada pendidikan anak usia dini, jenjang pendidikan dasar, dan jenjang pendidikan menengah pada kurikulum merdeka*. https://kurikulum.kemdikbud.go.id/wp-content/unduhan/CP_2022.pdf

Khasanah., Rahanra, N., & Susanty, L. (2021). Challenges of e-learning development and implementation in remote Indonesia: educational development analysis. *International Research Journal of Management, IT and Social Sciences, 8*(5), 497-505. https://doi.org/10.21744/irjmis.v8n5.1934.

Lian, A.B. (2017). Reading for emotion with ICT tools. In Chen, W. et al. (Eds.) (2017). *Proceedings of the 25th International Conference on Computers in Education.* (Internationally refereed proceedings). Asia-Pacific Society for Computers in Education.

Lian, A.-P., & Sussex, R. D. (2018). Toward a critical epistemology for learning languages and cultures in 21st century Asia. In A. Curtis and R. Sussex (Eds), *Intercultural communication in Asia: Education, language and values*.

McGilchrist, I. (2009). *The master and his emissary: The divided brain and the making of the western world.* Yale University Press.

Murray, M. C., & Pérez, J. (2014). Unraveling the digital literacy paradox: How higher education fails at the fourth literacy. *Issues in Informing Science and Information Technology, 11,* 85-100.

Oh, S. (2011). Preservice teachers' sense of efficacy and its sources. *Psychology*, 02(03), 235–240. https://doi.org/10.4236/psych.2011.23037.

Panksepp, J. (1998). *Affective neuroscience: The foundations of human and animal emotions*. Oxford University Press, Inc.

Shu, K. (2022). Teachers' commitment and self-efficacy as predictors of work engagement and well-being. *Frontiers in Psychology*, 13. https://doi.org/10.3389/fpsyg.2022.850204

Silvhiany, S., Mirizon, S., & Vianty, M. (2021). Digital literacy training for teachers of English to support 21st century learning. In *Prosiding SENABATRA Ke-1* (Vol. 1).

Silviyanti, T. M., & Yusuf, Y. Q. (2022.). EFL teachers' perceptions on using ICT in their teaching: To use or to reject? *Teaching English with Technology*, 15(4).

Sudimantara, L.B. (2021). *Transformative learning and student agency in academic writing in undergraduate English Language Teacher Education degree programs in Indonesia* [PhD Thesis, Charles Darwin University]. Darwin University.

Tafazoli, D. (2021.). CALL teachers' professional development amid the covid-19 outbreak: A qualitative study teaching persian with technology view project innovation in language learning and teaching: The case of the middle east and north Africa view project.

Tafazoli, D., Parra, M. E. G., & Abril, C. A. H. (2017). Computer literacy: Sine qua non for digital age of language learning & teaching. *Theory and Practice in Language Studies*, 7(9), 716. https://doi.org/10.17507/tpls.0709.02.

Thomas, I. (2009). Critical thinking, transformative learning, sustainable education, and problem-based learning in universities. *Journal of*

Transformative Education, *7*(3), 245–264. https://doi.org/10.1177/1541344610385753

UNESCO. (2021a). *Reimagining our futures together: a new social contract for education* (Report from the International Commission on the Futures of Education). Paris: UNESCO. https://unesdoc.unesco.org/ark:/48223/pf00003 79707/PDF/379707eng.pdf.multi.

UNESCO. (2021b). When schools shut: gendered impacts of COVID-19 school closures, p. 47. Paris. UNESCO.

UNICEF. (2021). *Final report: Situational analysis on digital learning in Indonesia*.

UNICEF. (2021). Where are we on education recovery?

Valtonen, T., Eriksson, M., Kärkkäinen, S., Tahvanainen, V., Turunen, A., Vartiainen, H., Kukkonen, J., & Sointu, E. (2022). Emerging imbalance in the development of TPACK - A challenge for teacher training. *Education and Information Technologies*. https://doi.org/10.1007/s10639-022-11426-5.

Wahyuningsih, S. (2021). Teaching English through e-learning during the covid-19 outbreak: english teachers' perspectives at Indonesian junior high schools men and women differences in using language: A case study of Students at STAIN.

Lala Bumela Sudimantara

Perspectives and experiences of Indonesian pre-service English teachers in developing digital learning resources