The Need for Professional Development Program in Creating Digital Storybooks among In-Service Early Childhood Education (ECE) Teachers

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ABSTRACT

This study intends to identify the need for a professional development (PD) program among in-service early childhood education (ECE) teachers in creating digital storybooks. This study employs an explanatory sequential design, also known as a mixed-methods research design. In the first phase, the survey questionnaires were sent to 118 in-service ECE teachers who teach preschoolers. In the second phase, a semi-structured interview was conducted with teachers to understand their response in the first phase and whether PD is needed for them. The findings showed that teachers are aware of digital storybooks, with 68.7% preferring to use digital storybooks to teach stories, 69.5% to teach literacy and 60.2% to teach science and mathematics. Qualitatively, these preferences were understood when teachers revealed during the interview that the digital storybooks tend to engage preschoolers in the lesson, encouraging self-learning and increasing parental involvement. It was observed that 89 (75.4%) of the teachers have not used any web-based tool to create digital storybooks. This led to the next finding, which demonstrated that 94.1% of ECE teachers revealed that they need PD to create digital storybooks. Teachers believed that PD would increase their confidence to learn new skills, foster digital skills, and improve teaching & learning strategies. This study implies that a training program for creating digital storybooks is essential to enhance the level of PD, and it should be implemented without hindrances.

Keywords: Need Analysis; Professional development; Digital Tools; Digital Storybooks; Preschoolers

INTRODUCTION

ADDIE's model has five phases: analysis, design, development, implementation, and evaluation (Zulkifli et al., 2022). In this study, the focus is on the first analysis phase. The analysis phase is one of the most important phases that typically determines whether a program, research, or training is needed. The primary objective of this study is to determine the need for professional development among in-service teachers in creating digital storybooks.

Professional development is defined as a process of improving knowledge, skills, classroom effectiveness, and increasing the learners' learning performance (Shahrean Irani Abdul Rashid et al.,2025). Teachers, especially ECE teachers, need to upgrade their level of efficiency and mastery consistently in this fast-moving century, ensuring substantial educational goals for the learners (Dewi et al., 2024).

The current transformation of the 21st century learning in the education field has tremendously observed with learners picking technological devices to read and write, for instance, the usage of digital books (Bayley, 2022). Digital storytelling through digital storybooks consists of digital elements like video, audio, text, and pictures (Robin, 2008). Digital storytelling is a powerful platform used by every individual from young to adults, and it easily integrates technology in every aspect of life, particularly education, leaving them motivated, active learners, and collaborative in nature (Ulutas et al., 2022).

A problem noted is the demand from society to keep up with educational development globally, as the teachers currently face the learners with 21st-century skills (Alzahrani & Nor, 2022). Consequently, the educational materials to support these skills should be developed by the teachers. According to Alzahrani & Nor (2022), it is also the teacher's responsibility to foster the 21st-century skills, among them is the information and communication technology (ICT) skill. This clearly gives a hint to the researcher to identify the need for a professional development program, particularly in preparing materials (teaching aids) appropriate to the needs of the learners. In this study, the researcher begins with the understanding of the need for a professional development program in creating digital storybooks.

The research questions are divided into two phases, QUANT and QUAL, based on the research design.

1. What is the proportion of in-service early childhood education teachers who prefer to use digital storybooks in their classrooms as a medium to teach stories, literacy, and science & mathematics?
2. What is the level of knowledge and skills of the in-service early childhood education teachers in creating digital storybooks?
3. Why do in-service early childhood education teachers prefer using digital storybooks to teach stories, literacy, and science & mathematics?
4. How do the in-service early childhood teachers perceive their competence in relation to creating the digital storybooks knowledge and skills?

LITERATURE REVIEW

Digital Storybooks

Catalano & Catalano (2022), in their study with 160 kindergarten teachers, reported that digital stories are often transformed into digital storybooks, which can display numerous subjects and assist learners with visual and hearing disabilities. Digital storybooks captivate children in the teaching and learning process, foster their creativity, enhance digital competencies, promote vocabulary development, and reinforce inquisitiveness (Catalano & Catalano, 2022). All these benefits are something that the ECE teachers should look at to ensure they use the opportunity to implement digital storybooks in their classrooms. Contrarily, as much as teachers are conscious of the benefits of digital storytelling, they pointed out that they will be spending prolonged periods of time planning and developing learning materials for learners (Cao, 2024). This factor might influence teachers not to learn and utilise digital storybooks, as preschool teachers are most of the time occupied, and this could be time-consuming.

Recent research conducted in Indonesia by Fajrie et al. (2025) reported that 40 young children aged 4 to 6 years old with their parents had experience in using digital storybooks. It was noticed that digital storybooks, when combined with traditional teaching methods, improve performance, motivation and learning behaviour of children (Fajrie et al., 2025). Additionally, Fajrie et al. (2025) reported that parental involvement consolidated the comprehension of the lessons learned by children through the digital storybooks. This indicates that parents can discuss and conduct simple experiments at home to strengthen their children's understanding of the science subject.

O'Byrne et al. (2018) clearly stated that to ensure the 21st century literacy is well developed, digital practices should start at the early childhood stage. Digital storybooks enhance literacy skills, and the study by O'Byrne et al. (2018) exposed how they made young children aged 4, 5 and 6 years old develop their own stories first before digitalising them. On the other hand, educators are unsettled with the thought of having to use digital tools and elements, such as images and graphics, in delivering lessons, indicating a lack of confidence level (Nor Nadia Raslee, 2021). A professional development program in digital skills for teachers in early childhood education can help to build and increase the knowledge of using digital tools by exploring and playing with the children (O'Byrne et al., 2018).

Professional Development

According to Chen (2025), in his study with 56 teachers in a College in China, it was found that teachers have crucial professional development needs in areas such as technology integration, content delivery, and

pedagogical strategies. It was recommended that schools should carry out professional development workshops, training and coaching. Evidently, the need for professional development among teachers is noticed, and the implementation should be prioritised. Similarly, it was reported that teachers highlighted their concern about having limited proficiency in choosing appropriate digital story items and implementing technology (Cao, 2024).

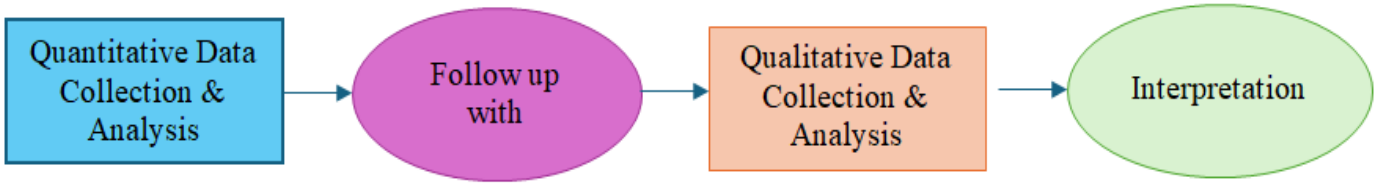
Based on the study by Shahrean Irani Abdul Rashid et al. (2025), it was revealed through interviews that the ECE teachers in Klang Valley have the impression that professional development enhanced their pedagogical skills and approaches. Teaching and learning are undoubtedly vital components for every teacher to acquire, according to the children's needs and learning styles. Teachers participated in training, usually furnished with knowledge of the latest teaching approaches, methods of teaching and connecting with their learners exceptionally (Nkomo & Abdi, 2023).

A study conducted by Ulutas et al. (2022) with 30 preschool teachers who attended mathematical digital stories training for 7 days revealed that teachers grasped the connections between mathematics and digital storybooks, gained self-confidence, improved creative thinking skills and enhanced digital skills. Likewise, teachers engaged in a training program stay updated with the latest pedagogical hype supporting inclusive learning approaches (Jean G. Empasis, & Alcopra, 2025).

METHODOLOGY

This study applied both quantitative and qualitative research designs. It employed an exploratory research design (Figure 1). It emphasised the importance of the quantitative phase and continued with the qualitative phase (Creswell & Creswell, 2018).

Figure 1: Explanatory Sequential Design (adapted from Sharma et al., 2023)



The study population comprises ECE teachers from kindergartens under one of the giant ECE organisations, having centres in Klang Valley, Selangor, Penang, Seremban, and Johor. The purposive sampling method was employed to select in-service ECE preschool teachers to participate in this research. The inclusion criteria included in-service preschool teachers who are teaching 5 and 6-year-old children with at least one year of teaching experience in early childhood education. A total of 118 in-service ECE teachers voluntarily took part in this study.

The quantitative data were collected using 5 Likert-scale survey questionnaires (strongly agree, agree; neutral; disagree; strongly disagree). The 5 Likert-scale was used as it is an appropriate scale to collect data and enables respondents to disclose their level of choice, opinion, understanding and differences (Koo & Yang, 2025). The questionnaires were validated by three experts from early childhood education, language and digital technology expertise. All three experts agreed with no comments for Section A (Demography), Section B (Perception of using digital storybooks) and Section C (Knowledge of using and creating digital storybooks/digital tools). The reliability test with 10 items and the Cronbach Alpha value of (α = .869) is shown in Table 3.1. The value of α is described as reliable and with good internal consistency, as it is more than $\alpha > 0.8$ and within an acceptable value of $\alpha > 0.7$ (Taber, 2017). Table 3.2 displays good internal consistency, with Cronbach's Alpha for each item among 118 ECE teachers.

The SPSS (Statistical Package for the Social Sciences) was used to analyse quantitative data. After a descriptive analysis of the quantitative data from the survey questionnaire was obtained, semi-structured interviews were developed and eight teachers (T1, T2, T3, T4, T5, T6, T7and T8) were called for an interview session to obtain qualitative data about their preference of teaching stories, literacy, science, and mathematics

using digital storybooks, and intention of attending the training program for creating digital storybooks (Toyon, 2021). Thematic analysis based on Braun and Clarke's approach (Braun & Clarke, 2006) was used in this research to analyse the collected qualitative data. Ultimately, the quantitative and qualitative results were integrated and reported.

Table 1: Reliability Statistics of Cronbach's Alpha for 10 items

Reliability Statistics	
Cronbach's Alpha	N of Items
.869	10

Table 2: Cronbach's Alpha for each item with 118 ECE teachers

Reliability Statistics	
Cronbach's Alpha	N of Items
Use Digital Storybook in the classroom	.862
Use Digital Storybook to teach stories	.863
Use Digital Storybook to teach science & mathematics	.868
Use Digital Storybook to teach literacy	.863
Know how to embed audio & video into digital storybooks	.859
Know how to add text to digital storybooks	.852
Know how to add images to digital storybooks	.853
Know how to add backgrounds to digital storybooks	.850
Know how to use digital tools to create digital storybooks	.866
I will attend the training for creating digital storybooks	.873

FINDINGS

The results are discussed in relation to the study's research questions. The results for Research Question 1 are discussed below.

What is the proportion of the in-service ECE teachers who prefer to use digital storybooks in their classrooms as a medium to teach stories, literacy, and science & mathematics?

Table 3 reports the ECE teachers who prefer using digital storybooks in the classroom to teach stories, literacy, science and mathematics. The data in Table 3 shows that the majority of teachers selected "agree" for each item. This indicates that teachers have awareness of digital technology and would want to utilise it.

Table 3: Number of ECE Teachers who prefer to teach using digital storybooks

Preferences for using Digital Storybooks	**SD**	**D**	**N**	**A**	**SA**	**Total**
Use in the classroom	0	5	32	63	18	118
Teach stories	0	4	28	69	17	118
Teach Literacy	0	4	32	66	15	118
Teach Science & Mathematics	0	7	40	56	15	118

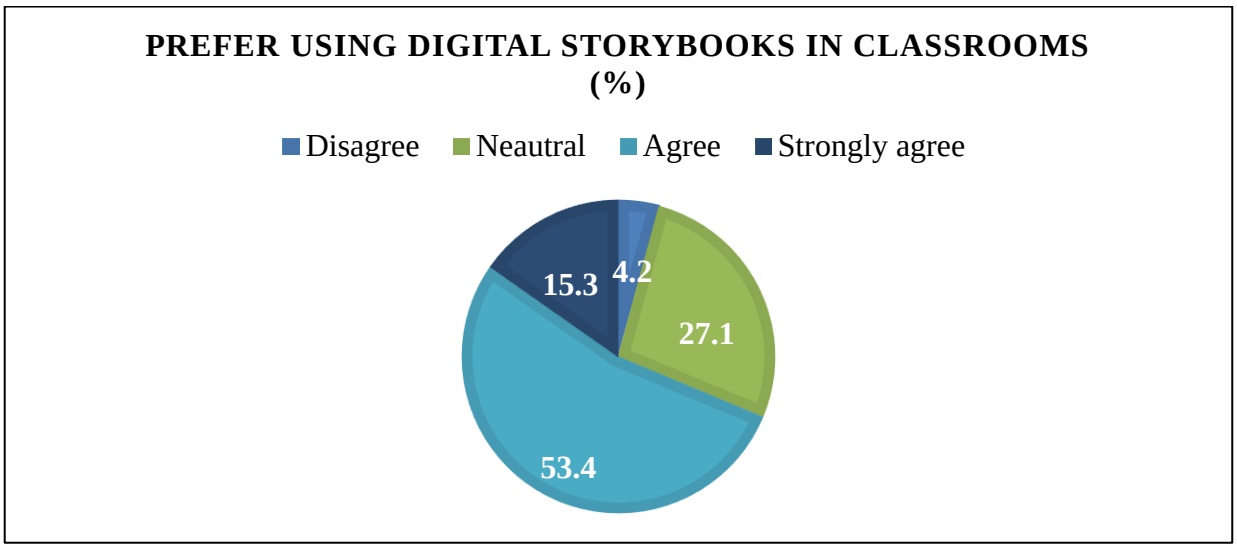
SD: Strongly disagree, D: Disagree, N: Neutral, A: Agree, SA: Strongly disagree

Using Digital Storybooks in Classrooms

Diagram 1 presents the ECE teachers' preferences for using digital storybooks in the classroom for the teaching and learning process. Table 1 reports the numerical distribution of the responses, while Diagram 1 visually depicts the same data to emphasise the overall trends. The majority of teachers hold positive beliefs about digital storybooks, with 15.3% (n=18) strongly agreeing and 53.4% (n=63) agreeing that they prefer using digital storybooks in the classroom. Contrarily, a small proportion of teachers, 27.1% (n=32) and 4.2%

(n=5), were neutral and disagreed, respectively. Diagram 1 quantitatively highlights a strong inclination among the ECE teachers to integrate digital technologies in their teaching and learning process.

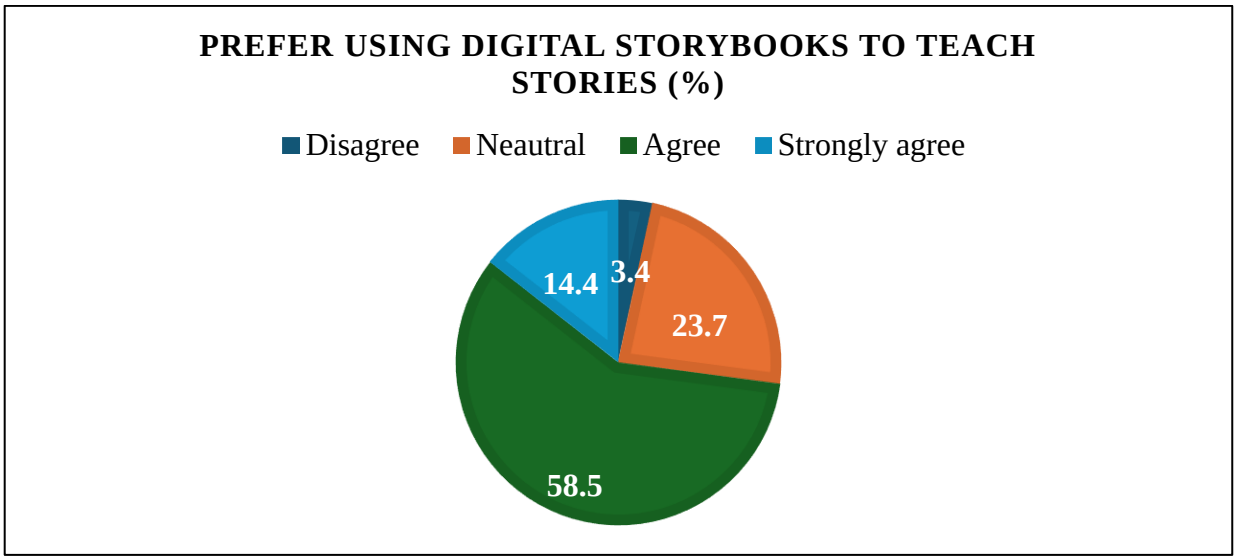
Diagram 1: Percentages of Teachers Who Prefer Using Storybooks in the Classrooms



Using Digital Storybooks to Teach Stories

Diagram 2 illustrates the ECE teachers' preferences in using digital storybooks to teach stories to preschoolers. Table 1 reports the frequency distribution of responses, while Diagram 2 represents the same findings graphically to facilitate interpretation. The findings indicate that most of the teachers expressed confidence towards using digital storybooks to teach stories, with 58.5% (n=69) strongly agreeing and 14.4% (n=17) agreeing. In contrast, a small number of the teachers, 23.7% (n=28) choose neutral, indicating uncertainty, and 3.4% (n=4) disagreed. In summary, the most outstanding categories in the pie chart "agree" and "strongly agree" strengthen the numerical findings, implying a robust consent of digital storybooks among the ECE teachers.

Diagram 2: Percentages of Teachers Who Prefer Using Storybooks to Teach Stories

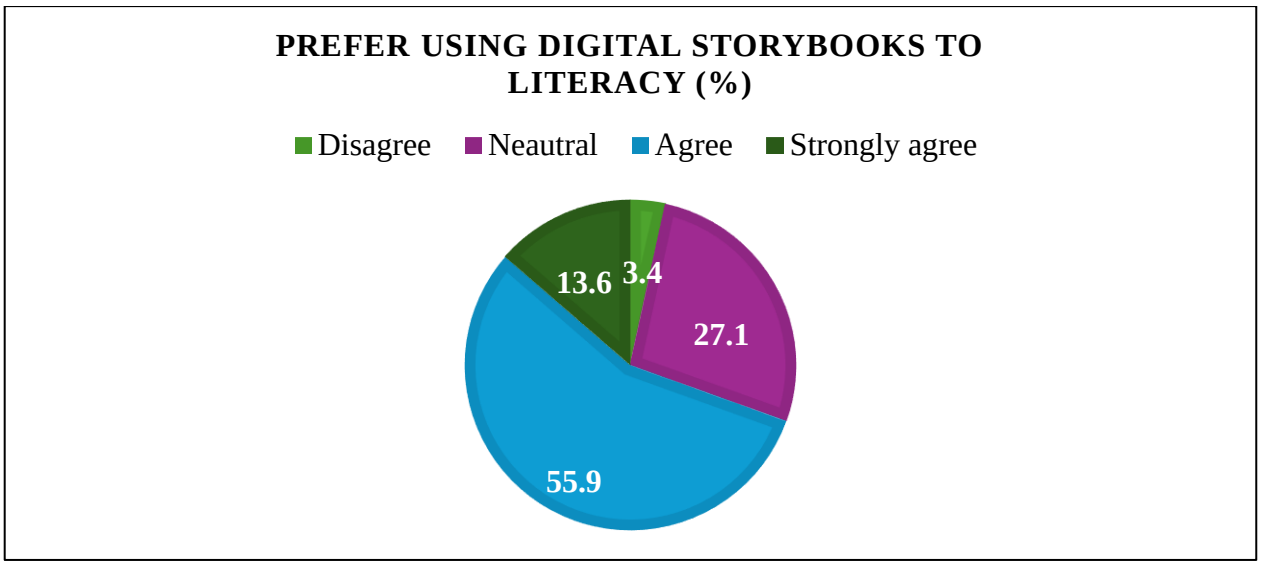


Using Digital Storybooks to Teach Literacy

Diagram 3 displays the ECE teachers' preferences in using digital storybooks to teach literacy to their learners. Table 1 presents the numerical distribution of responses, while Diagram 3 visually depicts the same data to emphasise the overall trends. The data in both illustrations indicate that the majority of ECE teachers view digital storybooks positively, to teach literacy, with 13.6% (n=15) strongly agreeing and 55.9% (n=66)

agreeing. On the other hand, a small proportion of teachers expressed neutral, 27.1% (n=32) or disagree 3.4% (n=4). Ultimately, the prominent categories "agree" and "strongly agree" in Diagram 3 reinforce the numerical findings, suggesting an approval of utilising digital storybooks among the ECE teachers focusing on listening, speaking, reading, and writing.

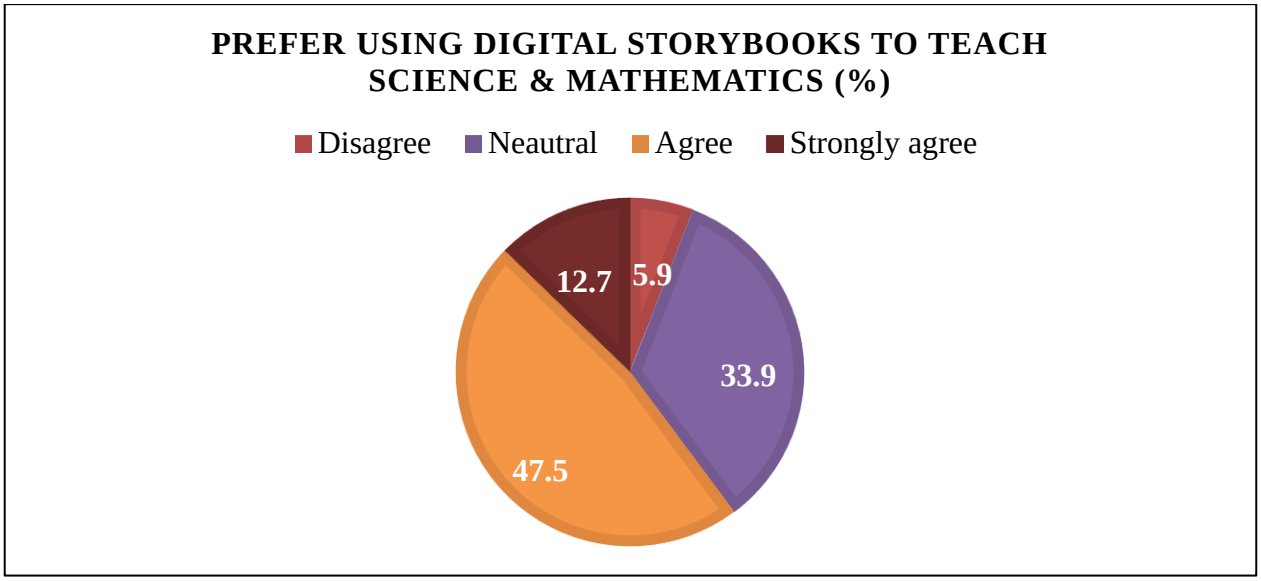
Diagram 3: Percentages of Teachers Who Prefer Using Storybooks to Teach Literacy



Using Digital Storybooks to Teach Science & Mathematics

Diagram 4 demonstrates the ECE teachers' perceptions of using digital storybooks as a form of technology integration to teach science and mathematics to preschoolers. Table 1 reports the distribution of responses in terms of frequency, while Diagram 4 provides a visual representation of the same data to simplify the understanding of the entire directions. The findings in Table 4 and Diagram 4 present that most of the ECE teachers portrayed an optimistic attitude, adopting digital storybooks confidently, to teach science and mathematics, with 12.7% (n=15) strongly agreeing and 47.5% (n=56) agreeing. On the flip side, a below average number of teachers reported neutral, 33.9% (n=40) or a very small number who disagreed, 5.9% (n=7). Subsequently, the spectacular categories "agree" and "strongly agree" in Diagram 4 enhanced the statistical findings, proposing an acceptance of applying digital storybooks among ECE teachers to teach numbers and science facts to young children.

Diagram 4: Percentages of Teachers Who Prefer Using Storybooks to Teach Science & Mathematics



Results for Research Question 2 are discussed below.

What is the level of knowledge and skills of the in-service early childhood education teachers in creating digital storybooks?

Table 4 displays the frequency of teachers' opinions on agreements and disagreements, indicating the degree of knowledge and skills essential to create digital storybooks for in-service ECE teachers, mainly embedding audio & video, adding text, adding images, adding backgrounds and using digital tools.

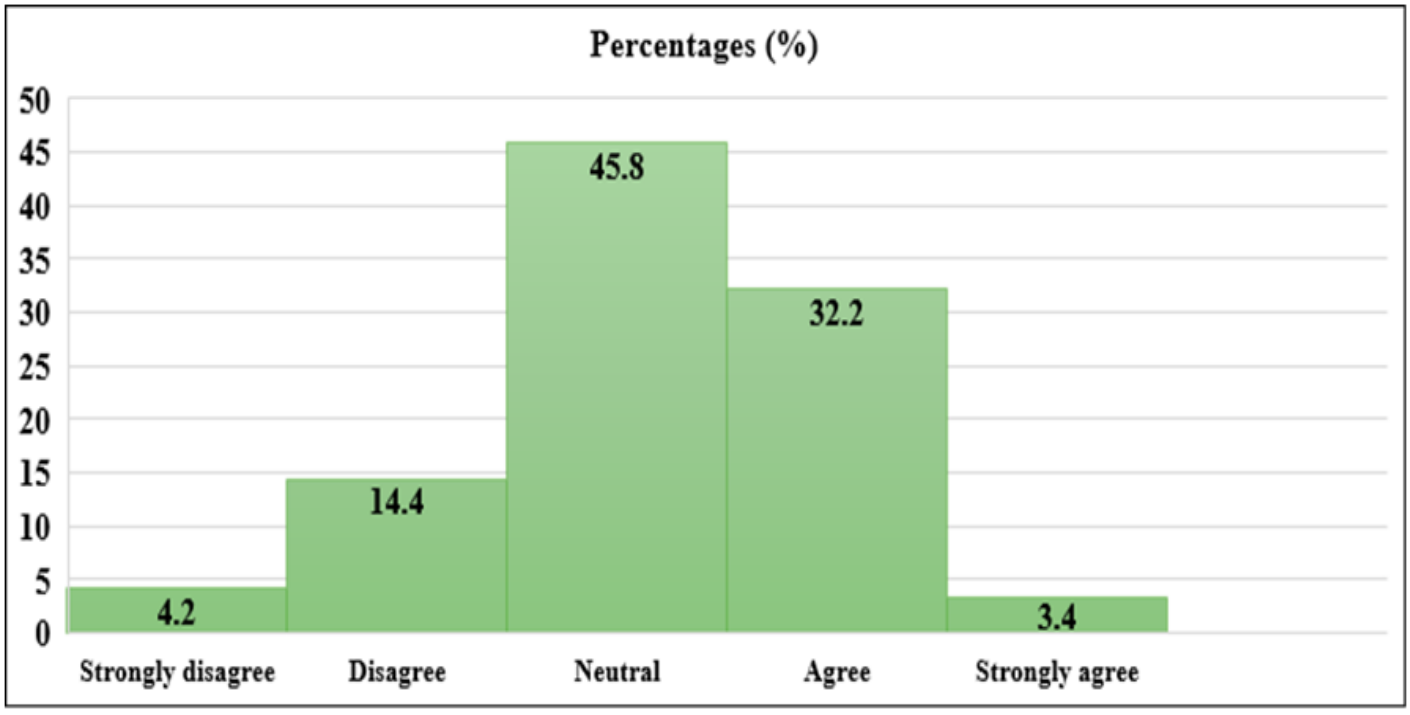
Table 4: Frequency of Teachers' knowledge & Skills in Creating Digital storybooks

Knowledge and skills	SD	D	N	A	SA	Total
Embedding audio & video	5	17	54	38	4	118
Adding text	6	19	49	38	6	118
Adding images	6	19	51	36	6	118
Adding background	6	21	51	35	5	118
Using Digital Tools	12	24	53	25	4	118

SD: Strongly disagree, D: Disagree, N: Neutral, A: Agree, SA: Strongly disagree

Table 4 and Figure 1 exhibit the ECE teachers' perspective regarding the inclusion of audio and video into digital storybooks. The findings show that the largest proportion of the teachers expressed a neutral position (n=54, 45.85). This was followed by the teachers who selected the option "agree" (n=38, 32.2%). Contrarily, a smaller percentage of the teachers recorded disagreement (n=17, 14.4%) or strong disagreement (n=5, 4.2%), while an exceptionally 3.4% (n=4) expressed strong agreement. In general, the responses from the teachers suggest a domination of neutral perceptions toward the inclusion of audio and video into digital storybooks. While this is not a sign of weakness, it shows that the teachers may be uncertain about how to effectively include the elements of audio and video into digital storybooks.

Figure 1: Percentages (%) of Knowledge in Embedding Audio and Video into Digital Storybooks



As presented in Table 4 and Figure 2, nearly half of the ECE teachers (n=49, 41.5%) exhibited neutral perceptions toward the inclusion of text in digital storybooks. This was followed by agreement (n=38, 32.2%), whereas disagreement (n=19, 16.1%) and strong disagreement (n=6, 5.1%) were less frequently reported. The strong agreement was recorded for the smallest proportion of the teachers' responses (n=6, 5.1%). Collectively, the data demonstrates neutrality among the teachers, suggesting high uncertainty about adding text in the digital storybooks.

Figure 2: Percentages (%) of Knowledge in Adding Text in Digital Storybooks

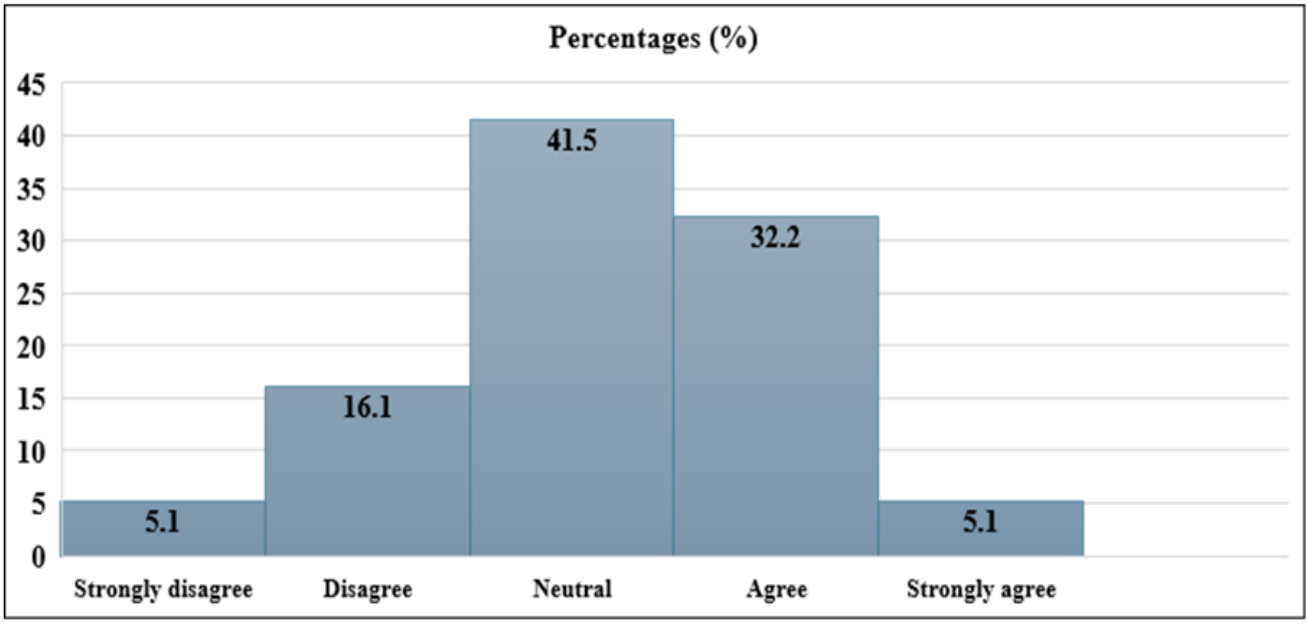


Table 4 and Figure 3 summarise the ECE teachers' perceptions of the insertion of images into digital storybooks. The results show that the highest proportion of the ECE teachers reported a neutral stand (n=51, 43.2%), followed by those teachers who indicated agreement (n=36, 30.5%). In contrast, a small percentage of the teachers revealed disagreement (n=19, 16.1%) or strong disagreement (n=6, 5.1%). It displays that the strong agreement accounted for the smallest proportion of the teachers (n=6, 5.1%). As a whole, the data displays that neutrality was the most prevalent perception among the teachers on the inclusion of images into digital storybooks.

Figure 3: Percentage (%) of Knowledge in Adding Images into Digital Storybooks

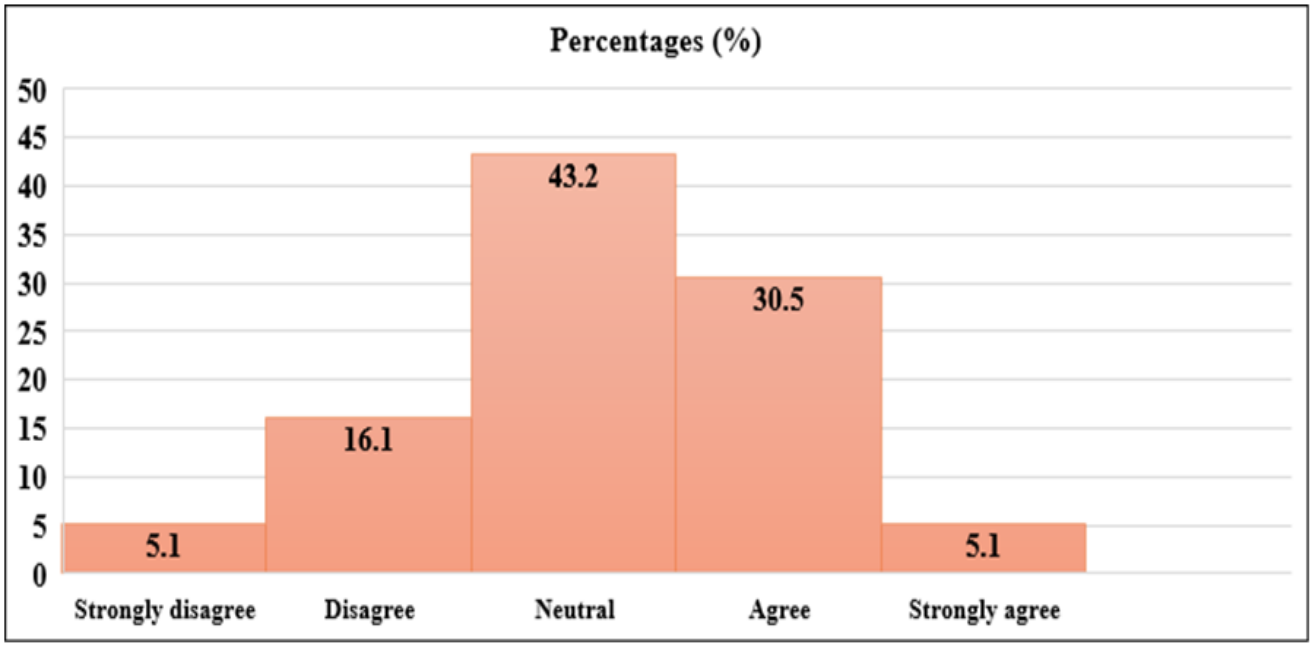


Table 4 and Figure 4 present the ECE teachers' understanding of incorporating background in the digital storybooks. The findings demonstrate that the predominant percentage of the teachers selected a neutral point of view (n=51, 43.2%). This was accompanied by the teachers' (n=35, 29.7%) indication of agreement. On the other hand, a small number of teachers demonstrated disagreement (n=21, 17.8%) or strong disagreement (n=6, 5.1%). The strong agreement among the teachers was recorded as the smallest percentage (n=5, 4.2%). Overall, it is reported that the teachers' response pattern shows neutral as the most prevalent perception regarding the inclusion of background in digital storybooks.

Figure 4: Percentage (%) of Knowledge in Adding Background in Digital Storybooks

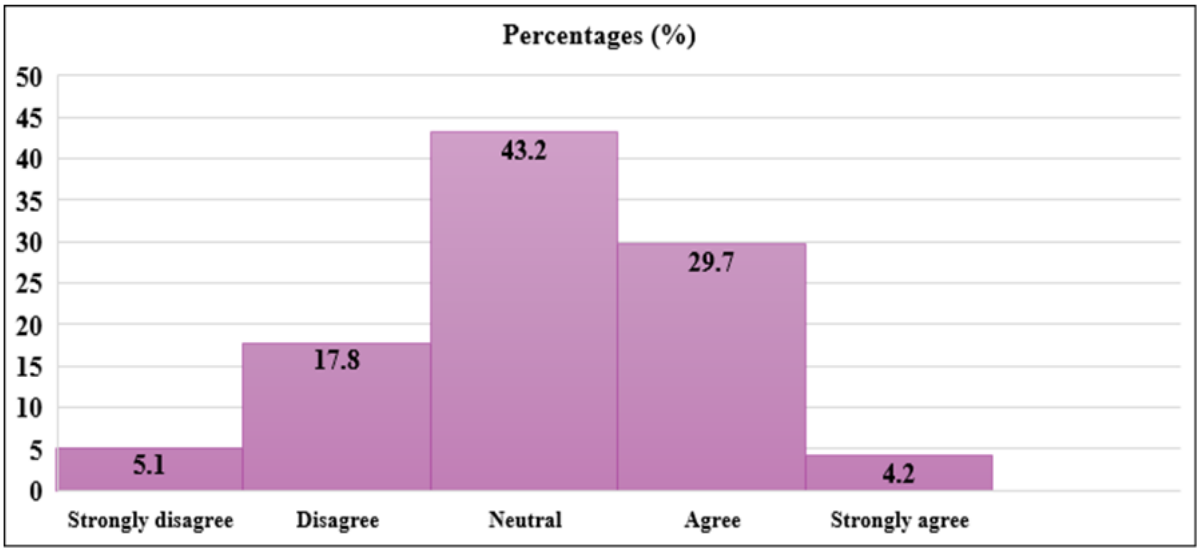


Table 9 proves that the usage of a web-based tool to create digital storybooks is at a low level. Among 118 teachers, a total of 53 of them with 44.9% were uncertain of using any web-based tool to create digital storybooks. This finding is further noted with disagreements (n = 24), 20.3 % disagree, and (n = 12), 10.2% strongly disagree on having any skills in using web-based tools to develop digital storybooks.

Figure 5: Percentage (%) of Using Web-based Tool to Create Digital Storybook

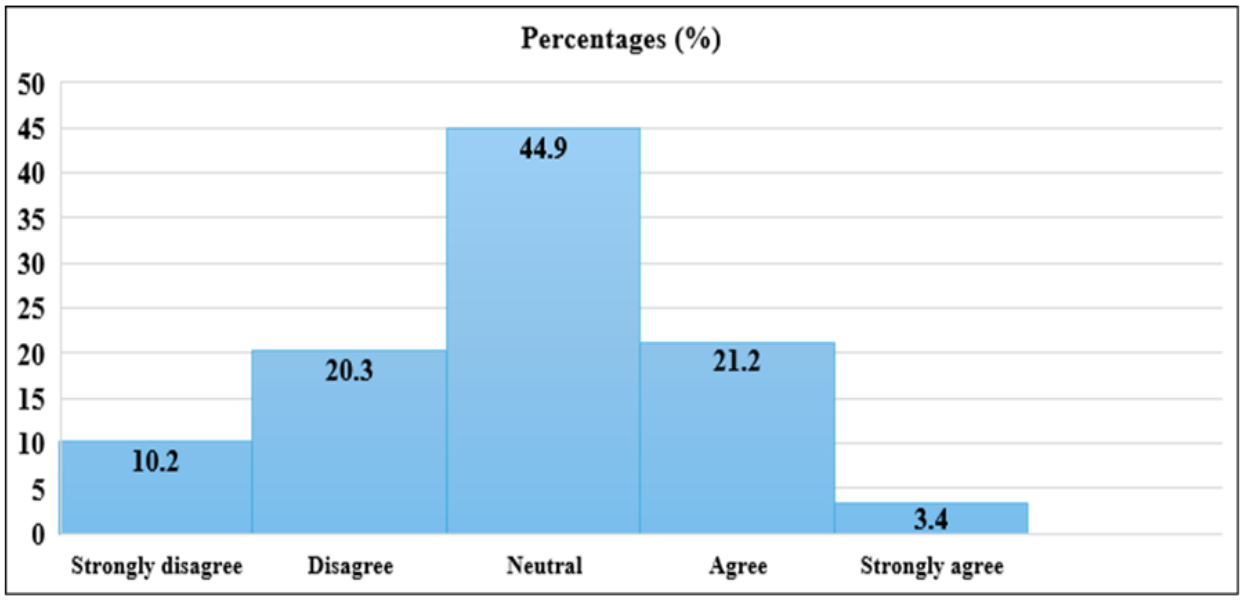
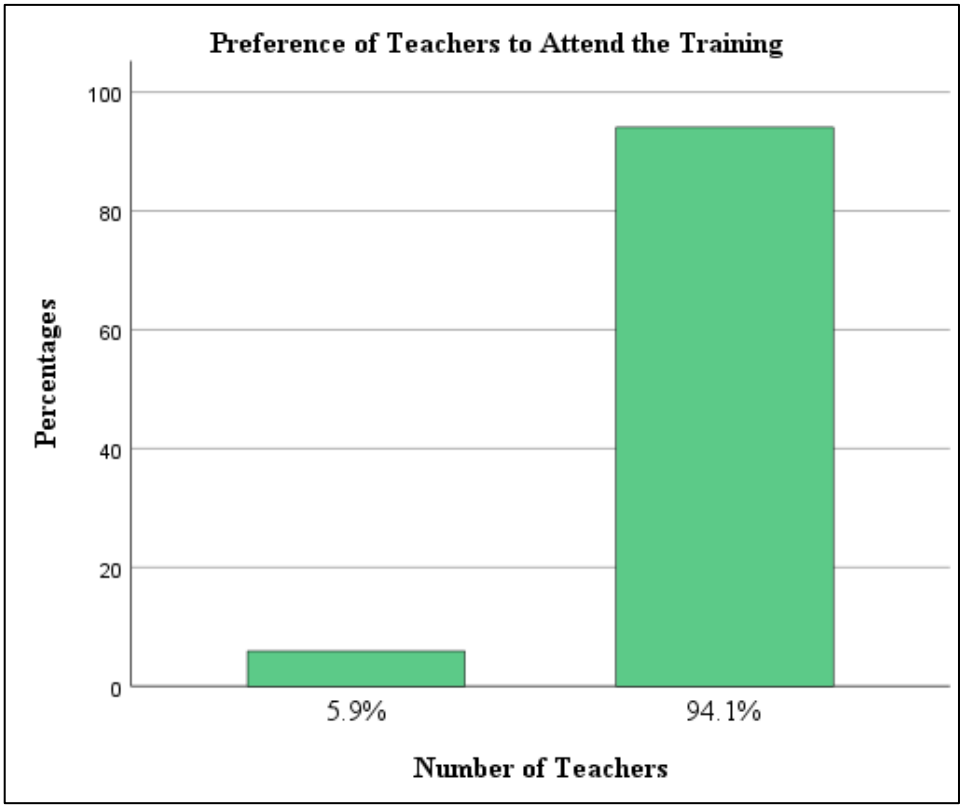


Table 5 and Diagram 5 strengthen the findings that ECE teachers need professional development to create digital storybooks. A total of 111 of 118 teachers, 94.1%, stated their preference in attending training to enhance their skills in creating digital storybooks. In contrast, only (n = 7, 5.9%) did not show any interest in attending training. The mean value of 0.94 reflects a positive response to participating in the professional development session or training.

Table 5: Preferences to Attend Training to Create Digital Storybooks

	Frequency	**Percentages (%)**	**Mean**
No	7	5.9	
Yes	111	94.1	
Mean			0.94
Total	118	100.0	

Diagram 5: Percentages of Teachers Who Prefer to Attend the Training to Create a Digital Storybook

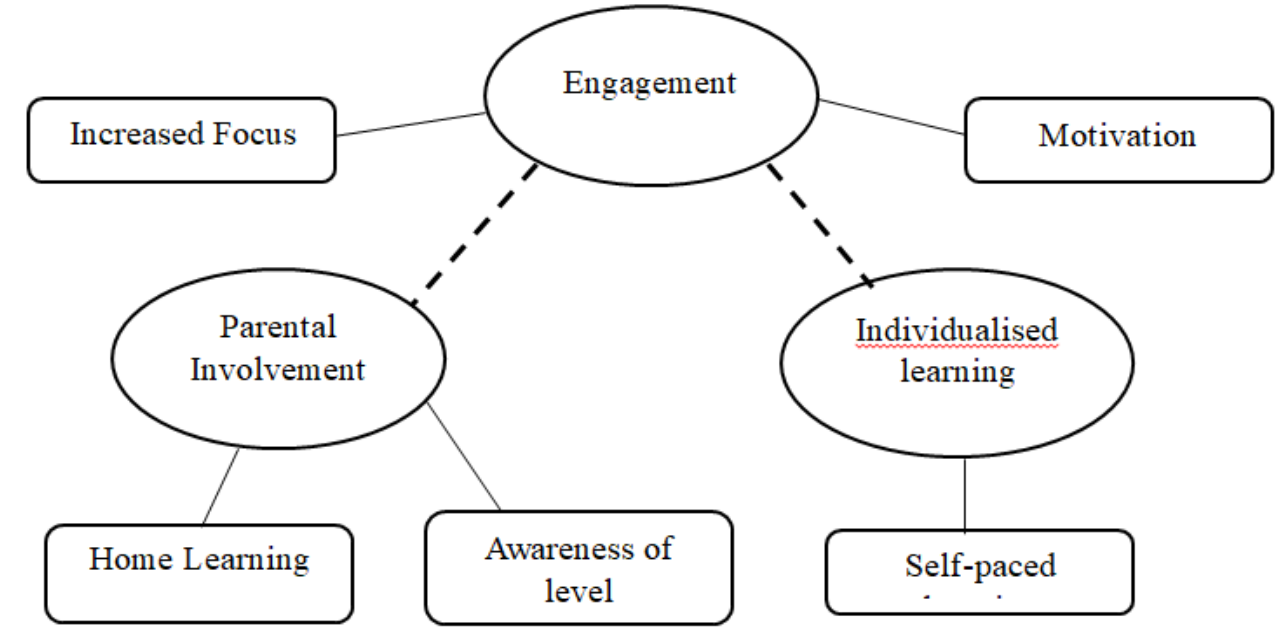


The results for research question 3 are discussed below.

Why do in-service early childhood education teachers prefer using digital storybooks to teach stories, literacy and science & mathematics?

Three themes emerged from the interview with the in-service ECE teachers. Figure 6 displays the themes: engagement, parental involvement and individualised learning.

Figure 6: Thematic Map Demonstrating Three Themes of Preference using Digital Storybooks in Teaching Stories, Literacy and Science & Mathematics



Below is some derived information from the interview with teachers. T1 below means teacher 1 and so on.

Engagement

According to Mark (2000), engagement is defined as a subconscious practice that demands the learners' involvement and focus on learning. A study by Fakhri et al. (2023) reported that the motivation for learning and the learners' engagement level was at a high level. This finding was supported by Diastama and Dewi (2021), who stated that there is a connection between learners' engagement and motivation for learning.

The interview with the teachers supported the theme and sub-themes on how digital storybooks can lead to the engagement of young children.

"Children will pay attention when digital storybooks are used because young people like technology" (T4)

"I think they will be more focused! I mean, the children" (T3)

Parental involvement

Parental involvement is when parents support and provide a home environment for their children to learn. Teachers need to involve parents in the children's education journey as it will enhance the achievement of children and increase home learning, which will build trust between the teachers and parents (Đurišić & Bunijevac, 2017). Involvement of parents has the potential to give parents better awareness and understanding of their children's level and knowledge.

The interview with teachers shared how parents can help at home and raise awareness. Some quoted phrases are below:

"Parents can read stories to them at home, and they will know the level of their own children" (T3)

"The teacher can share the digital books easily with parents, like via WhatsApp or email, parents can guide children on numeracy, reading and doing experiments" (T6)

Individualised learning

Individualised learning is an approach which encourages self-paced learning among young children, especially in the digital world, which currently introduces e-learning and technologies (Karpenko et al., 2019). It will indeed make the educator's role easier if the learners are self-learners.

"Children can repeat the pages on their own". (T2)

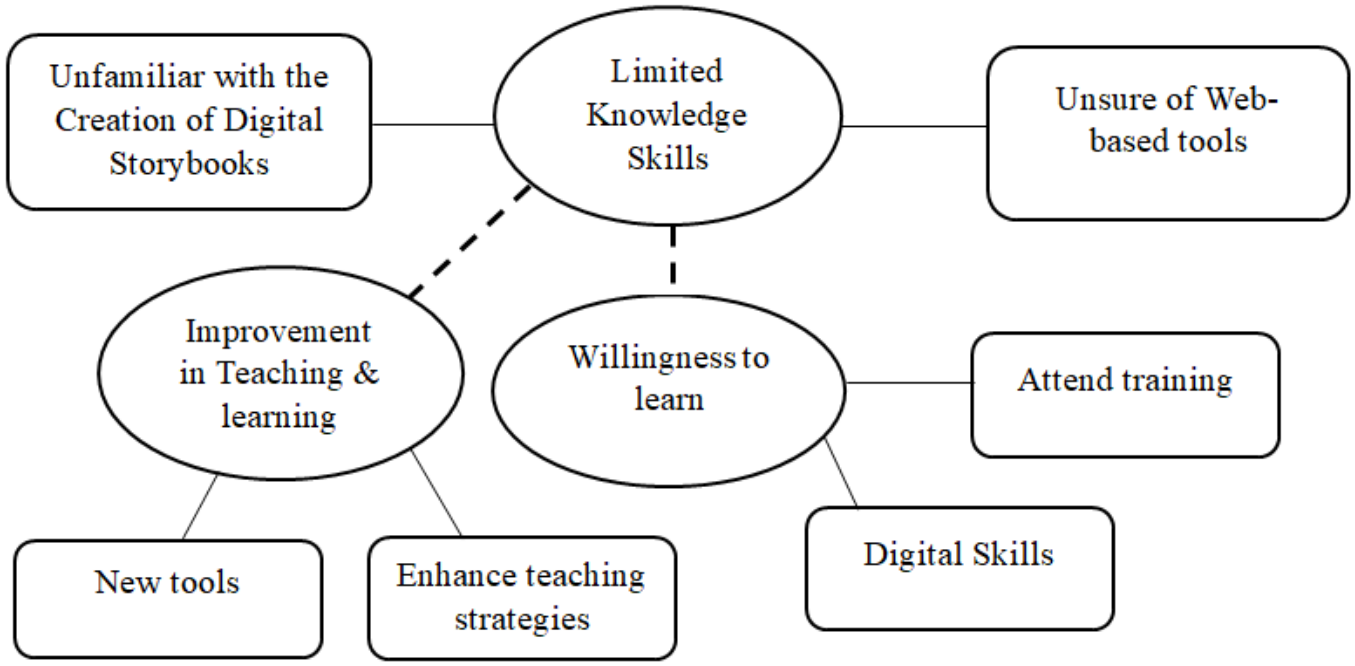
"I can see, they can explore themselves, the book ya" (T1)

The results for research question 4 are discussed below.

How do the in-service early childhood teachers perceive their competence in relation to creating the digital storybooks knowledge and skills?

Figure 7 displays three themes: limited knowledge and skills, improvement in teaching & leaning and willingness to learn. These themes emerged from the semi-structured interview with the ECE teachers.

Figure 7: Thematic Map Demonstrating Three Themes of Perceived Competencies in Creating Digital Storybooks: Knowledge and Skills



Limited Knowledge and Skills

The minimal knowledge and skills that the teachers have about creating digital storybooks and web-based tools indicate that teachers are not exposed to this knowledge and need to feel comfortable using the digital tool (P. Gernail Singh et al., 2025). The interview with teachers indicated some of the following information:

“Oh yes! I want to be confident to use digital tools, it will help me in my teaching process with the children” (T2)

“I really do not know about such a thing, digital book, storybooks, hahha, oh my!” (T3)

“There are tools in website, why wasn’t I aware of it?” (T6)

Improvement in Teaching & Learning

Teaching & Learning are important components for teachers. It ensures that the children focus on a teacher's lesson if the strategies used are appropriate and interesting (Ghavifekr & Rosdy, 2015). Below are some supported phrases of the interviewed teachers:

“I like to work with colleagues, do things together and learn together, especially to prepare my class lesson” (T4)

“I would love to learn about new technology tools” (T6)

“I think learning digital tools will help me to gain knowledge on the new skill, especially in technology” (T7)

“Learning new web skills or tools will surely enhance my teaching approaches” (T8)

Willingness to Learn

Teachers' readiness to learn new things, especially digital technology, is very encouraging. In fact, teachers are willing to learn new digital skills and attend the training (P. Gernail Singh et al., 2025)

“I look forward to training as it makes me feel refreshed. (T1)

"Training will surely help to get new ideas and know more about ICT" (T5)

"I think training is important, I like to learn things, and I feel all teachers should" (T7)

"Honestly, training will make us more certain about the digital book, especially" (T8)

INTERPRETATION OF RESULTS

The quantitative findings for research question 1 are well supported by the continuous qualitative research question 1. The teachers reported the rationale of using digital storybooks in subjects like literacy, science and mathematics, such as fostering parents' involvement in the lessons, engaging children, leading them to be focused, motivated and increasing self-paced learning. The explanations were well supported by previous studies, indicating that the teachers are aware that they are in a modern digital age.

Results in research question 2 prove that the teachers, being aware of the digitalisation around them, ascertain the need to attend a professional development program. Further, elaborated through the qualitative outcomes, teachers declared that professional development shall increase their digital skills, collaboration among teachers, get inspired and improve their teaching and learning methods.

DISCUSSION

It was quantitatively indicated from the first research question that ECE teachers would like to utilise digital storybooks to teach stories. Notably, the teachers are aware that digital books are available, and storytelling will surely be an advantage through digital storybooks. This is supported by a study by Catalano & Catalano (2022), which states that digital storytelling consists of multimedia elements such as recordings, video, music, text and images, leading to strong emotions besides being an innovative teaching and learning approach. Furthermore, teachers' preference to use digital storybooks for literacy, science and numeracy is upheld by a previous study, which revealed that digital storybooks strengthen multiple literacies such as media literacy, information literacy, and visual literacy (O'Byrne et al., 2018). Contrarily, teachers do have their worries and troubles of learning and developing digital storybooks, as it requires additional time to produce them (Cao, 2024).

The first research question is qualitatively supported and discussed in the third research question. Teachers' interviews indicated that using digital storybooks to teach stories, literacy, science, and mathematics will lead to engagement of children in a subject, leading them to be more focused and motivated. These findings are in line with Fajrie et al. (2025), who reported that digital storybooks have the potential to engage young children by fostering active learning and promoting behavioural and cognitive development. Concurrently, this development could lead to individualised learning, encouraging learning in a self-paced manner with self-exploration (O'Byrne et al. 2018). Furthermore, teachers reported that digital storybooks promote parental involvement, align with the study by Fajrie et al. (2025), who proclaimed that parents could do revision at home, besides hands-on activities with their children.

Results of the second research question revealed that there is a need for a professional development program in digital technology. In line with this, Chen (2025) revealed that professional development among teachers is essential to improve technology integration, content delivery, and pedagogical approaches. Besides, the data exposed that many teachers were uncertain about creating digital storybooks; a high percentage of teachers would like to discover the methods of adding audio, video, text, images, and background into digital storybooks. Likewise, teachers should equip themselves with 21st century skills, particularly related to ICT (Alzahrani & Nor, 2022). In contrast, teachers raised their concerns about whether digital literacy skills will improve or hinder their proficiency as educators (Nor Nadia Raslee, 2021). Teachers have doubts if digital will slow their normal routine.

The above discussion is supported qualitatively through the teachers' opinions that the professional development program can be beneficial for them as they will learn new skills, enabling them to achieve the milestones of being competent digitally, adding value to their teaching & learning approaches. Teachers can adapt and develop technological skills effectively (Musa et al., 2024). Similarly, the professional development

program designed according to the needs of teachers can enhance the outcomes, such as equipping the ICT skills and promoting digital literacy among the teachers (Jean G. Empasis, & Alcopra, 2025).

Implications

The results of this study depicted that the ECE teachers have the intention of using digital storybooks in their teaching and learning in various subjects. Teachers make the most of the technology growth in their teaching and learning practices (Musa et al., 2024). It was noted that the ECE teachers had a great influence on their teaching approaches through professional development (Shahrean Irani Abdul Rashid et al.,2025). The teachers in this study believed a professional development program could improve their pedagogical skills by bestowing confidence in technology, namely, applying web-based tools to create digital storybooks for preschoolers (Nkomo & Abdi, 2023).

RECOMMENDATIONS AND CONCLUSIONS

Future research should consider conducting a workshop or training for ECE in-service and pre-service teachers to enhance their digital literacy. Moreover, a professional development program can be arranged for teachers to create digital storybooks for preschoolers via web-based tools, for instance, Canva, Book Creator and Gemini. It is concluded that there is a need for a professional development program since teachers are enlightened with the importance of digital storybooks for preschoolers and the significance of digitalisation.

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Ethical Consideration

Ethical approval was obtained for research involving human subjects.

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