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Pre-/in-service teachers' creativities: behind the creation of multimodal digital storybooks

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Abstract

The creation of digital storybooks partly represents teachers' creativity. This study aimed at exploring the pre-/in-service teachers' creativity in writing multimodal digital storybooks. The data sources of this study were 8 books written collaboratively by 6 teachers and 13 pre-service teachers after involving in a-six-months mentoring program. The data were collected through documentation, then analyzed using content analysis convention of Krippendorff (2013). The study revealed that aspects of creativity were found in the pre-/in-service teachers' multimodal digital storybooks. The creativity was presented through integrating reflection sheet, portfolio assessment, using authentic materials, online worksheet, and online quizzes besides the accommodation of new ideas, the use of graphs/diagrams, tables, images, and videos, besides text, the verbal and visual attractiveness, the use of motivational and inspirational sentences. This study suggests that writing multimodal digital storybooks may influence teachers' pedagogical and content knowledge as well as teachers' identity.

Keywords: *Creativity; multimodal digital storybooks; writing; EFL learning*

INTRODUCTION

Creativity becomes one issue in 21st-century learning, besides critical thinking, problem solving, innovation, communication, and collaboration (Asowayan et al., 2017). Creativity of students may be represented through their creative participation, which is related to competencies, involvement, and class activities (Nikkola et al., 2024). Due to its importance, official assessment and certification is required to label the development of creativity and the other 3Cs –Collaboration, Communication, Critical Thinking (Tarwiyah et al., 2024; Thornhill-Miller et al., 2023).

In line with the industrial revolution, 21st-century learning also considers the contribution of technology to educational field, there is an education platform called Education 4.0. This platform focuses on learning management, which helps students improve their skills through implementing new technology resulting from the society change (Turnbull et al., 2020). The

21st century learning guides and shapes students to face the industrial revolution era through STEM-based (Science, Technology, Engineering and Mathematics) and HOTS-based learning (High Order Thinking Skills) (Harun, 2020). Familiarity with new technology within teachers and students becomes the demand of educational practices.

An exploration carried out by Çelik and Tümen (2021) through interviewing 201 EFL teachers discovered that the teachers were aware of the importance of technology to help them explore their creativity and to enhance students' creativity in a way that it helped transfer their creativity. Creating multimodal digital storybooks becomes an alternative way to embrace the integration of 21st century-learning. There are some aspects of creativity shown through digital storybooks, which will also be a potential means of bringing creativity to the book creators and book users. The creators may remix videos and other visuals and narrations (Jiang et al., 2020), incorporate multimodal projects, i.e., video game poeties, fan fictions, digital stories, podcasts, online literary publications, installations, images and sounds, and multisensory approaches used to produce creative writing (Wright & Howe, 2023). Incorporating multimodal projects in multimodal digital storybooks make all types of presentation possible.

Besides showing the creativity of the writers, digital storybooks can be used as an effective tool to express students' identity, idea, and make meaning for language learning and teachers' creativity to support students' learning (Kristiawan et al., 2022; O'Byrne et al., 2018). They explain concepts more concretely through the support of concrete examples and illustrations. Digital stories allow the integration of words, either spoken or written and other modes, such as images, gestures, and videos (Kress, 2010). The multimodal use makes the explanation fresh to read and comprehend.

The creation and the use of multimodal digital storybooks in EFL learning of pre-, primary and secondary schools have become the focus of study in the recent years (Aijuan Cun, 2022; Bruner & Hutchison, 2023; Ng et al., 2022; Bali et al., 2023; Irawati, 2018; Kim et al., 2021; Nicholas & Paatsch, 2024; Oakley, 2020; Savva et al., 2022). When multimodal digital storybooks are used in teaching learning process, they may facilitate students' learning because of their interesting appearance and more concrete examples and illustrations through pictures, videos, sounds, artistic captions, etc. This digital creation may also influence teachers' technological, pedagogical and content knowledge (Oakley, 2020), teaching and identities (Jiang et al., 2020), language and literacies outcomes (Savva et al., 2022), information encoding (Bali et al., 2023), and cognitive processes (Liu et al., 2024). The presentation of learning materials becomes easier and the readers' understanding is facilitated through multimodal digital storybooks.

Although studies focused on the creation and the use of multimodal digital storybooks in EFL context are many but studies on the composition and the accommodation of multimodal digital storybooks in higher education are still rarely carried out. This research is purposed to complete the void and to enrich the studies on the composition of multimodal digital storybooks by

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highlighting pre-/in-service teachers' creativity in writing multimodal digital storybooks.

METHOD**Research context**

This research was carried out with six teachers and thirteen pre-service teachers of the English Language Education Department of a state university in Indonesia. The participants involved voluntarily in a mentoring program on writing multimodal digital storybooks. They had been prepared with 90% ready book drafts but had no experience writing multimodal digital storybooks. Two teachers who had experienced joining a mentoring program on writing multimodal digital storybooks initiated the discussion on the matter. Informal talks with nineteen participants leading to specifying the goals of the individuals were done. Then a sequence of meetings was conducted based on the pre-determined and agreed schedules. Nevertheless, each participant might choose to join the scheduled meeting or to self-learn the available materials and have consultation if needed. The mentorship ended up with 8 multimodal digital storybooks representing the writers' creativity in many ways.

Research Design

Regarding the nature of the data this study is a qualitative descriptive study as it examined the data in a natural state. Qualitative descriptive uses a naturalistic perspective (Sandelowski, 2000). The data were collected through using document study. The researchers studied 8 multimodal digital storybooks to assess and to describe the participants' creativity in writing multimodal digital storybooks. Verification was done through interview.

Data sources

The data sources of this study were 8 multimodal digital storybooks that were collaboratively written and produced by six teachers and thirteen pre-service teachers. The books were written by using Book Creator app. Data in qualitative study may be taken from interview, observation, document, textual analysis, and picture analysis (Creswell, 2015).

Data analysis

To describe the participants' creativity viewed from 5 criteria, the data of this study were analyzed by using content analysis convention (Krippendorff, 2018). Content analysis is purposed to classify, evaluate, and study communicative documents to reach objective and systematical description (Lac, 2016) and it becomes the primary data analysis strategy in qualitative descriptive study (Neergaard et al., 2009).

The creativity in writing multimodal digital storybooks was measured based on five criteria, i.e. (1) the accommodation of new ideas, (2) the use of graphs/diagrams, tables, images, and videos besides text, (3) the verbal attractiveness of each page, (4) the visual attractiveness of each page, (5) the use of motivational sentences and inspirational sentences (Nulis, 2016). Each

available criterion was scored twenty to gain the total score of 100. Another assessment framework containing 3 components, i.e. story content and language, the use of multimedia elements, presentation/final product was used by Joana, Stephanie, & Samuel (2021).

RESULTS AND DISCUSSION

Results

The Pre-/in-service teachers' Creativity Score

The creativity of teachers and pre-service teachers in writing multimodal digital storybooks is viewed from the following criteria: the accommodation of new ideas, the use of graphs/diagrams, tables, images, and videos besides text, the verbal attractiveness of each page, the visual attractiveness of each page, the use of motivational and inspirational sentences. The scoring results are provided in the table below.

Table 1. Creativity Score

Teacher/Pre-Service Teacher	Creativity Score
LW & NS	80.3
VM, DA	100
KVA	100
MHN	80.3
HN	80.3
AIH	60.7
MH, YM, GC	80.3
Mean	80.3

AIH's score shows the lowest creativity due to the missing of new ideas and motivational sentences. Other components of creativity, such as the use of graphs/diagrams, tables, images, and videos besides text, the verbal attractiveness of each page, the visual attractiveness of each page, the use of motivational sentences are found in the digital storybooks. The summarized description of creativity in AIH' work is as follows:

Table 2. The Summarized Description of the Characteristics of Book with Lowest Creativity Score

Description	Score
The writing of the book does not provide new ideas but the way the writer delivers his idea by minimizing the use of sentences and maximizing illustration without lessening its digest can capture readers' attention	0
There are sufficient pictures, voices, and videos provided in the book. They support the clarity of information presented in the book.	20
The combination of pictures, videos, makes each page of the book more attractive and easy to remember visually. But in some parts, the combination of colour is poor.	10,7
The examples of poetry provided in audio version make the readers easy to remember the contents verbally.	20
There are some sentences and quotes that can inspire	10

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the readers, although motivational sentences are not found.

Total Score	60.7
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The highest score is owned by WM, DA and KVA. All the indicators of creativity in writing multimodal digital storybooks are found in the books. Below is the sample of qualitative representation of the highest score attained by DA.

Table 3. The Summarized Description of the Characteristics of Book with Highest Creativity Score

Description	Score
A new idea is found in the book. It provides reflection in order to drive users to be aware of what have and have not been learnt.	20
Each page contains images/videos/text/tables/ appropriate application for exercise. Since the page is attractive, the message is easy to remember.	20
The images/videos/text/tables/appropriate application are put in such a way to support the presentation of the contents	20
The command is given in simple and short sentences so that it is easy to understand and to remember. All reading texts are supported by audio and/or link as additional sources.	20
The reading text about education, <i>Education System Creates A False Perception of Learning</i> (pp. 14-15), <i>Weekly Time Table</i> (pp. 20-21), and the quote "He who has help has hope and He who has hope has everything" (p. 72) are quite interesting and motivational.	20
Total Score	100

Basically, both books with lowest and highest creativity scores appear to be interesting to read, due to the use of multi modes in their presentation of knowledge. Almost all indicators of creativity are found in each book, which confirm the creativity of the writers.

The Description of Pre-/in-service teachers' Creativity

Below are some considerable points dealing with the qualitative representation of pre-/in-service teachers' creativity. In order to be transparent, the representation is supplemented with related figures taken out from the books written by the pre-/in-service teachers.

1. The accommodation of new ideas

Global Englishes becomes an example of new ideas raised in multimodal digital storybook writing. The use of English in some territories may results in variation of accent, grammar, and lexis. Global Englishes becomes one of the chapters of a multimodal book entitled *Voice and Accent* as seen in the following figures (Syafa'ah & Widyaningrum, 2021).

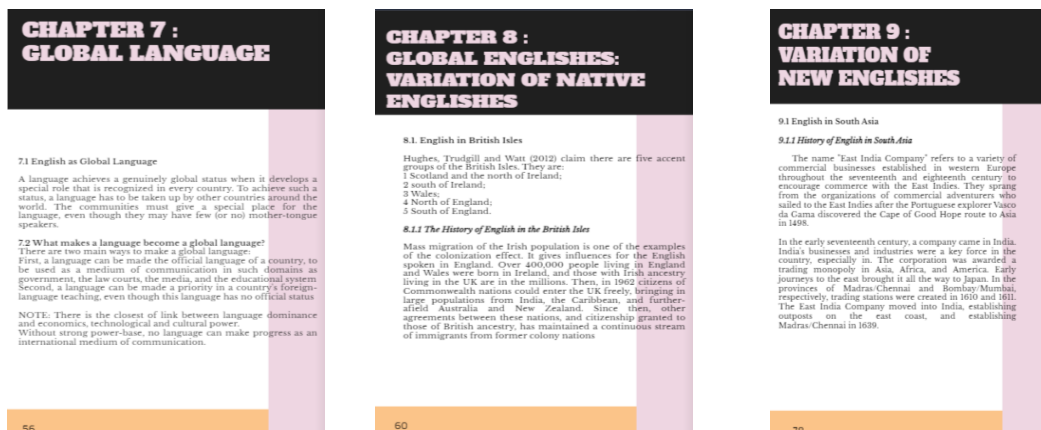


Figure 1. The Accommodation of New Idea 1

Global Englishes does not put accuracy as the priority in English language production. English now has many varieties. People may speak English in their speech community's norms.

Another new idea found is the use of reflection aimed at driving readers to be aware of what have and have not been learnt (Nafis et al., 2022). The figure below provides sample reflection sheets.

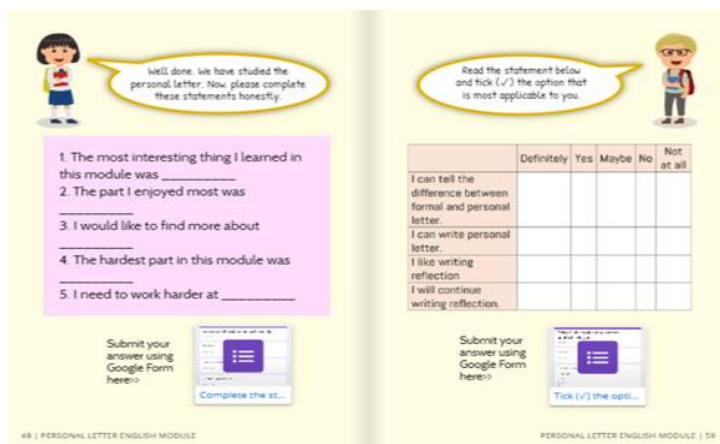


Figure 2. The Accommodation of New Idea 2

The reflection found in the book is considered new since not many writers invite readers to make reflection after their activities with their books. Through the reflection readers are guided to identify things they have and have not learnt, things they find interesting or vice versa, and things they still need to learn.

One book raises an issue of transformation in Education as the impact of the pandemic (Nazilah & Dewi, 2022). Figure 3 below is the sample of pages that explain transformation in Education.

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Figure 3. The Accommodation of New Idea 3

Transformation in Education happens as the result of digital transformation, which has been rapidly spreading since the pandemic era. Online learning has made the change in the way teachers teach, students learn, and family treat their children dealing with home and school education. Plus and minus effects of the pandemic on home and school education are elaborated in the book.

Another book is equipped with a new idea that is very relevant to the current era. It is the implementation of portfolio assessment in Micro Teaching class (Tarwiyah et al., 2021) as illustrated in Figure 4.

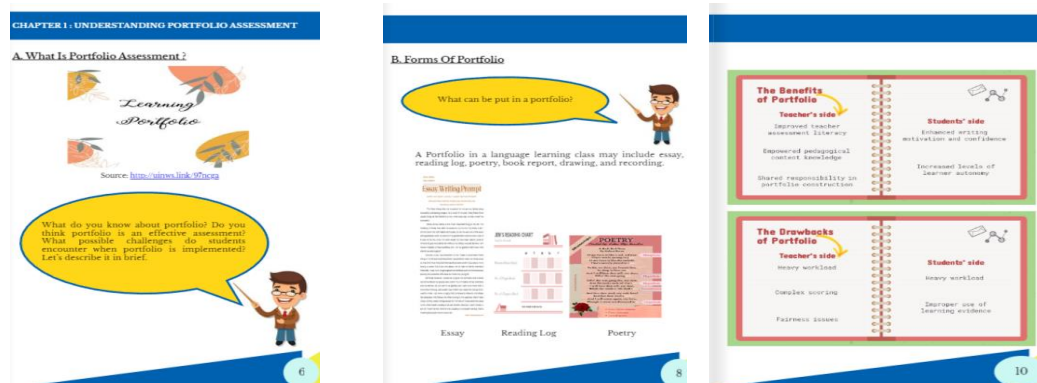


Figure 4. The Accommodation of New Idea 4

Portfolios functions as a medium of review, reflection and improvement of students' works-in-progress. Portfolio assessment gives space to students to collect their learning documents completely until they come to a conclusion which ones are proposed for assessment.

2. The use of graphs/diagrams, tables, images, and videos, besides text

In multimodal writing, Ideas may be presented through graphs, tables, images, or videos. Images are much used to help student learning. An

example of that kind of presentation might be found in visualizing the stages of project-based learning (Tarwiyah et al., 2024). It is aimed at stimulating readers to recall and refresh their minds about the stages. The illustration is also aimed at reducing eye pain and boredom, and sustaining readers' attention. The creativity in that kind was also proven through the use of authentic materials. The materials are sorted from students' assignments of Voice and Accent class. Students explain about English voice sounds. (Syafa'ah & Widyaningrum, 2021). This authentic material may motivate students to get better understanding of English phonological rules as well as practice the rules. Authentic materials are more natural. It provides language materials in real life context.

Below are some examples of images and videos used in multimodal digital storybooks.

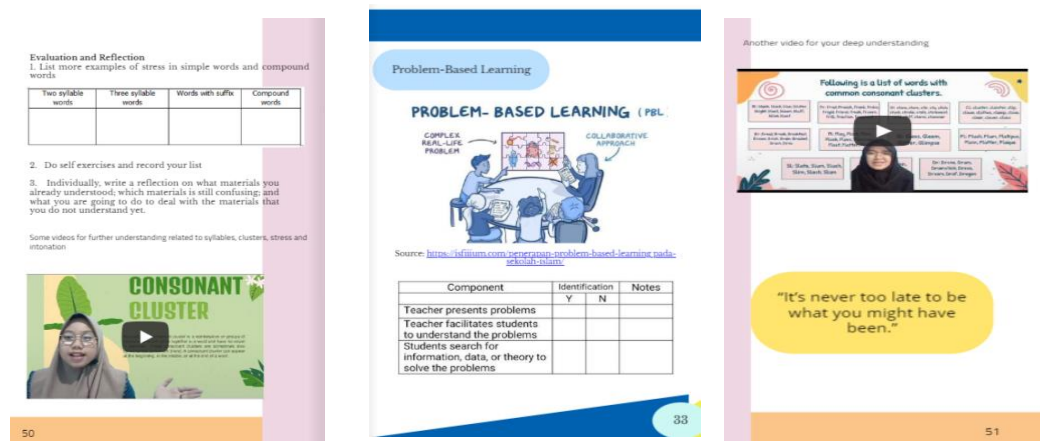


Figure 5. The Use of Video, Table and Images

Using online worksheet becomes another proof of teachers' creativity as it is more efficient than using traditional worksheet. Online worksheet must be arranged based on the characteristics of digital storybooks and the interest of students as the millennial generation. An example of online worksheet is found on the pages of Personal Letter and Voice and Accent (Nafis et al., 2022; Syafa'ah & Widyaningrum, 2021).

Additionally, page 19 of *You're Your Sadness* is linked to YouTube showing one of Anis Moigani's performances and page 20 is supported by audio modeling the rhythm used in one of his poetry readings. All the supporting sources made the book flexible for self-learning, provides multi sources of learning in a compact package.

3. The verbal attractiveness

Verbal attractiveness as one of communicative aspects that appears in a book is in line with the needs of readers. When information is conveyed through easily comprehended sentences, readers will feel at ease and thus get understanding and enjoyment from reading the book.

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The commands in the multimodal digital storybooks were given in simple and short sentences, which supports the clarity of the contents. Some examples of the commands are listed in the table below.

Table 4. Commands with Simple and Short Sentences

Commands
“When we learn about pronunciation, we need to understand phonetics and phonology. Phonetics refers to the study of linguistic speech sound; how they are produced (articulatory), how they are perceived (auditory),” (Syafa’ah & Widyaningrum, 2021)
“Rahmi compliments Sinta because of her beautiful skirt. Sinta compliments Rahmi because of her excellent book.” (Santosa et al., 2020)
Salutations depend on how well you know the person you are writing to.” (Nafis et al., 2022, p. 35)
“Sadness can often lead people to engage in coping mechanism such as avoiding other people, self medicating,” (Mc Hugh & McBride, 2020)
“Read the differences between travel, journey, trip, voyage, and tour, then discuss with your friends on how to implement those words in sentences (Thomas, 2020)
“Explaining skills suggest teachers to convey information in the context of everyday life” (Tarwiyah et al., 2024, p. 25)

4. The Visual Attractiveness

Visually, the multimodal books are organized with different colors and fonts, to make them attractive. Good combination of colors and fonts may sustain readers' attention as they do not feel bored easily when reading the books. It may also facilitate readers to remember the contents easily. Below are three samples of pages composed with good combination of colors and fonts (Nazilah & Dewi, 2022).

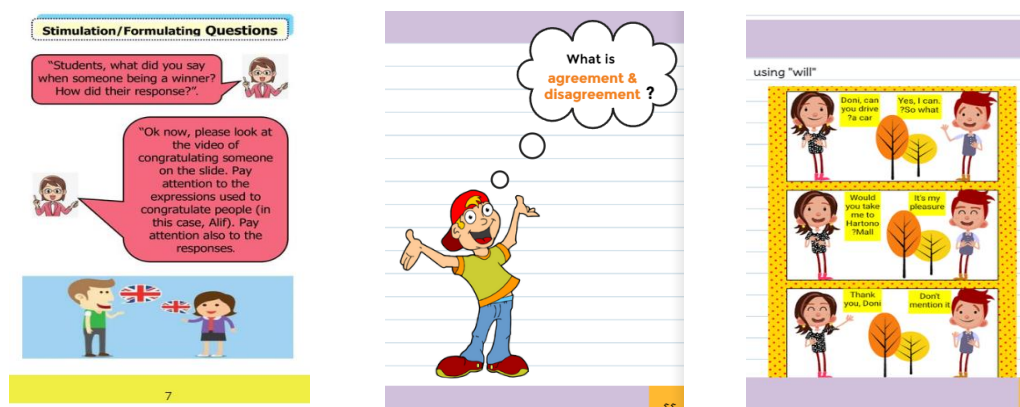


Figure 6. Visual Attractiveness

5. The use of motivational and inspirational sentences

Some motivational sentences also enhance the attractiveness of the multimodal books. On page viii of *Voice and Accent* it is written “You don’t

have to be great to start, but you have to start to be great". On page 31 it is found "It's never too late to be what you might have been" (Syafa'ah & Widyaningrum, 2021). The sentences make readers not underestimate themselves and motivated to learn something from the book. The contents and the quote in *Extensive Reading and Writing* are also motivational and inspirational (Mardiyana et al., 2021). A quote from John F. Kennedy "A poorly educated child is a lost child" on page 14-15 and the other quotes "He who has help has hope" and "He who has hope has everything" on page 72 are quite motivational. The inspirational sentence is written on page 6, "The biggest risk is not taking any risk" (Mark Zuckerbery) and on page 21, "The only thing stands between you and your dream is the will to try and the belief that it is possible" (Joel Brown).

Discussion

Multimodal writing is different from traditional writing in their ways of presenting information. The term "multimodal" in multimodal digital storybooks requires the combination and the integration of different semiotic and modes (Kress, 2010). Multimodal writing maximizes the use of varying technologies by modifying texts, colors, pictures, videos, and sounds (Jijiangang et al., 2020; Kress, 2010). It can enhance meta-semiotic awareness and professional skills by analyzing both linguistics and visual modes during the creation of digital stories for EFL teaching (Navila et al., 2023). Due to incorporating multimodal projects to produce creative writing, multimodal writing uses multisensory approaches (Wright & Howe, 2023). Traditional writing emphasizes on word and sentence constructions to transfer information and knowledge. The eight multimodal digital storybooks written by the pre-/in-service teachers represents the characteristics mentioned by those experts.

Writing digital stories may be used as creative assessment in higher education (Neely et al., 2023). The feedback practices associated with digital multimodal composing, providing insights into the creative challenges and opportunities, critical, creative and technical domains for EFL Teachers (Navila et al., 2023b)

Nevertheless, in some cases teachers and pre-service teachers still have difficulties in constructing multimodal digital storybooks for complicated designs especially when music, sounds, voice-overs, animations, digital images, and so on enter the textual spaces (Campbell & Cox, 2018; Stephens & Ballast, 2011). Today teachers should understand and practice creating, producing, and displaying materials by utilizing new technology (Edwards-Groves, 2011). Writing learning materials in the style of multimodal digital storybook is a good choice to facilitate students' learning. Moreover, when writing an EFL book. But writing a reference book in that style is another challenge for writer, as there are many meta-languages must be presented. In addition, writers tend to ignore multisensory approaches when the readers of the books are adult. The readers are believed in the phase of abstract thinking so that a specified concept does not need to be concreted through examples or illustrations.

Creating and presenting new ideas or recombining existing new ideas is a part of creativity (Gallagher, 1985). The teachers and the pre-

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service teachers who become the participants in this study are aware of using some different modes in supporting the presentation of ideas in their digital storybooks. Teachers' creativity in developing learning materials and presenting them attractively in multimodal digital storybooks becomes essential. Creative presentation of knowledge through multimodal digital storybooks may capture and sustain readers' attention and facilitate their understanding. The digital creation may influence cognitive processes (Liu et al., 2024), information encoding (Bali et al., 2023), good language and literacies outcomes (Savva et al., 2022).

Sometimes a page is even dominated with pictures, which shows the power of the message of the topic. The combination of animated pictures, music, sound, and story text, may help integrate nonverbal information and facilitate readers' memory of the text content or the information (Bus et al., 2015). Multimodal is the dynamic convention of multi-communication modes within a text. The modes are integrated to determine the meaning of the text (New London Group, 1996). Multimodal is a way to articulate voice and communicate feeling (Kim et al., 2021). Visually, a multimodal book is organized with different colors and fonts, to help readers remember the contents easily. Digital stories allow the integration of words either spoken or written and other modes, such as images, gestures, and videos, which facilitate users' reading (Kress, 2010).

Multimodal digital storybooks accommodate the characteristics of learning sources that can be self-accessed. Different modes of presenting information also function as accommodating readers' learning styles, i.e. auditory, visual, kinesthetic, reflective, which tightly influence the way the readers learn better. In this current time, independent learning is more suggested to get more knowledge and to personalize learning. Independence is one of demanded personality characters besides caring, modern, innovative, warm, strong, honest, experienced, genuine, sophisticated, and successful (Temporal, 2002). Multimodal digital storybooks were proven to make students enthusiastic in learning, although without teachers' supports (Prasetya & Hirashima, 2018).

Being successful is the peak of personality character as the other one's function as prerequisites to reach success. Character grows over time but it gets most positive when we study in college. This is due to student-centered teaching and varied learning experiences students engage (Rockenbach, 2020). Multimodal digital storybooks contribute to student-centered teaching and learning.

Personal experiences may be used to combine original stories when writing digital storybooks. Illustrations, writers' own voices are used to enhance the meaning of the story content (Ulusoy, 2020). The creation of pre-/in-service teachers in writing multimodal digital story books in this study, may be identified through the integration of reflection sheet, portfolio assessment, image content, authentic materials, online worksheet, and online quizzes besides the accommodation of new ideas, graphs/diagrams, tables, images, and videos, besides text, verbally attractive page, visually attractive page, motivational and inspirational sentences.

Reflection sheets guide readers to identify things they have and have not learnt. Reflection is recommended dealing with the process of interpretation and internalization of academic activity (Karm, 2010), reflection raises consciousness of implicit assumptions (Mezirow, 1997; Schön, 1983).

Another integration found in the multimodal digital storybooks is portfolio assessment. Integrating portfolio assessment is advisable since it enhances motivation, confidence, and levels of learner autonomy. Using portfolio also develops teacher pedagogical and content knowledge (Lam, 2018).

To maximize readers' understanding of the presented information, the writers also present image contents. This presentation may influence users' active engagement (Li et al., 2020) and cognitive processes (Liu et al., 2024). Image and other digital creations determine meaning decoding.

Authentic material become one of the choices of mode in multimodal digital storybooks. Students and teachers are often benefited from using authentic material. Among all the benefits are: (1) stimulating and sustaining learning motivation, (2) providing authentic cultural information, (3) serving real presentation, (4) representing a creative approach to teaching (Кобзева & Куимова, 2011). With its authentic cultural information and real presentation authentic material narrow the gap between theory and practice in English translation (Duc Hoang, 2021).

Worksheet is an essential part of a textbook since it may enhance students' creative thinking skills (Krisdiana et al., 2019). Online worksheets were used to suit the characteristics of digital storybooks and the preference of students as the millennial generation. An example of online worksheet are found on the pages of Personal Letter and Voice and Accent (Nafis et al., 2022; Syafa'ah & Widyaningrum, 2021). The worksheets also give evidence of the technological mindedness of the writer by using quizizz, Google Form, Kahoot! Wordwall, Quizlet. The other kinds of quiz may be made through such platforms as Quiz Maker, Google Form, ClassMarker, Microsoft Forms, Typeform, Survey Monkey, Proprofs Quiz Maker, Wonder Share, Test Vocab, and GoConqr.

Online quizzes are more multimodal because the questions may be given based on pictures, video, and audio, besides based on text only. Online quizzes also make students more engaged as their appearance is more interesting and fresh, facilitating the test takers' understanding (Gamage et al., 2019). Life worksheet promotes the effectiveness of doing exercises without consuming papers and the space of the book. In addition, writing less may also mean showing the important parts of the writing, which is in line with what Hans Hofmann, a German-born American abstract expressionist painter, that simplification is the deletion of unimportant thing to emphasize the important thing (becker, 2008).

CONCLUSION

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Developing appropriate learning materials and presenting them through multimodal digital storybooks may facilitate readers' understanding and support their learning. The characteristics of multimodal books capture readers' attention, sustain their reading enjoyment, and influence their meaning making.

The pre-/in-service teachers' creativity in writing multimodal digital storybooks is presented through the accommodation of new ideas, the use of graphs/diagrams, tables, images, and videos besides text, the verbal attractiveness of each page, the visual attractiveness of each page, the use of motivational sentences, the use of inspirational sentences. The pre-/in-service teachers also use reflection sheet, portfolio assessment, image content, authentic materials, online worksheet, and online quizzes.

Viewed from its creative process, accommodation, and production, writing multimodal digital storybooks may influence teachers' pedagogical and content knowledge as well as teachers' identity. Teachers and students are benefited from this creative project.

AUTHOR STATEMENT

Siti Tarwiyah: project initiation, abstract composition, introduction, method, data collection and analysis, results, Discussion, manuscript submission, corresponding author. **Nuna Mustikawati Dewi:** data collection, draft revision, reference, manuscript proofreading, editing **Suja'i;** conclusion, reference, proofreading, editing.

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REFERENCES

- Asowayan, A. A., Ashreef, S. Y., & Aljasser, H. S. (2017). The Modern Trends and Applications in the Development of Academic Staff in the University of Maryland & George Mason University. *English Language Teaching*, 10(10), 102–113.
- Bali, C., Matuz-Budai, T., Arato, N., Labadi, B., & Zsido, A. N. (2023). Executive attention modulates the facilitating effect of electronic storybooks on information encoding in preschoolers. *Heliyon*, 9(1). <https://doi.org/10.1016/j.heliyon.2023.e12899>
- Becker, joshua. (2008, August 20). Hans hofmann on minimalism. *Becoming Minimalist*. <https://www.becomingminimalist.com/hans-hofmann-on-minimalism/>
- Bus, A. G., Takacs, Z. K., & Kegel, C. A. T. (2015). Affordances and limitations of electronic storybooks for young children's emergent literacy. *Developmental Review*, 35, 79–97. <https://doi.org/10.1016/j.dr.2014.12.004>

- Campbell, L. O., & Cox, T. D. (2018). Digital Video as a Personalized Learning Assignment: A Qualitative Study of Student Authored Video Using the ICSDR Model. *Journal of the Scholarship of Teaching and Learning*, 18(1), 11–24.
- Çelik, V., & Tümen Akyıldız, S. (2021). Creativity in EFL Classes: Examining Turkish Secondary School Teachers' Attitudes and Thoughts. *International Online Journal of Education and Teaching*, 8(3), 2007–2027.
- Creswell, J. W. (2015). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Pearson.
<https://thuvienso.hoasen.edu.vn/handle/123456789/12789>
- Duc Hoang, D. (2021). Learners' Perspectives on the Benefits of Authentic Materials in Learning Vietnamese-English and English-Vietnamese Translation. *Proceedings of the 2021 6th International Conference on Distance Education and Learning*, 266–270. <https://doi.org/10.1145/3474995.3475040>
- Edwards-Groves, C. J. (2011). The multimodal writing process: Changing practices in contemporary classrooms. *Language and Education*, 25(1), 49–64. <https://doi.org/10.1080/09500782.2010.523468>
- Gallagher, J. J. (1985). *Teaching the Gifted Child* (3rd ed.). Allyn and Bacon.
- Gamage, S. H. P. W., Ayres, J. R., Behrend, M. B., & Smith, E. J. (2019). Optimising Moodle quizzes for online assessments. *International Journal of STEM Education*, 6(1), 27. <https://doi.org/10.1186/s40594-019-0181-4>
- Harun, U. B. (2020). Project-Based Learning Integrated to Stem (Stem-Pjbl) To Enhance Arabic Learning Hots-Based. *Al-Bidayah: Jurnal Pendidikan Dasar Islam*, 12(1), Article 1. <https://doi.org/10.14421/al-bidayah.v12i1.230>
- Irawati, T. (2018). Digital Storybook to Improve Writing Narrative: The Ttw Strategy Presented and Tested. *Jo-ELT (Journal of English Language Teaching) Fakultas Pendidikan Bahasa & Seni Prodi Pendidikan Bahasa Inggris IKIP*, 5(1), 49–56. <https://doi.org/10.33394/jo-elt.v5i1.2297>
- Jiang, L., Yu, S., & Zhao, Y. (2020). An EFL Teacher's Investment in Digital Multimodal Composing. *ELT Journal*, 74(3), 297–306. <https://doi.org/10.1093/elt/ccaa010>
- Karm, M. (2010). Reflection tasks in pedagogical training courses. *International Journal for Academic Development*, 15(3), 203–214. <https://doi.org/10.1080/1360144X.2010.497681>
- Kim, D., Yatsu, D. K., & Li, Y. (2021). A multimodal model for analyzing middle school English language learners' digital stories. *International Journal of Educational Research Open*, 2, 100067. <https://doi.org/10.1016/j.ijedro.2021.100067>
- Kress, G. R. (2010). *Multimodality: A social semiotic approach to contemporary communication*. Routledge.
- Krippendorff, K. (2018). *Content Analysis: An Introduction to Its Methodology* (3rd ed.). SAGE Publications.
- Krisdiana, I., Masfingatin, T., Murtafiah, W., & Widodo, S. A. (2019). Worksheet-Based Learning Research to Improve Creative Thinking Skills. *Journal of Physics: Conference Series*, 1254(1), 012054. <https://doi.org/10.1088/1742-6596/1254/1/012054>
- Kristiawan, D., Ferdiansyah, S., & Picard, M. (2022). Promoting Vocabulary Building Learning Motivation and Cultural Identity Representation through Digital Storytelling for Young Indonesian Learners of English as a Foreign Language.

How to Cite (APA Style):

Tarwiyah, S., Dewi, N.M., Suja'i, (2024). Pre-/in-service teachers' creativities: behind the creation of multimodal digital stroybooks. *EduLite: Journal of English Education, Literature, and Culture*, 9 (2), 186-202. <http://dx.doi.org/10.30659/e.9.2.186-202>

- Iranian Journal of Language Teaching Research*, 10(1).
<https://doi.org/10.30466/ijltr.2022.121120>
- Lac, A. (2016). Content Analysis in R. J. R. Levesque. In *Encyclopedia of Adolescence* (2nd ed., pp. 1-5). Springer International.
<https://doi.org/10.4324/9781003271734-17>
- Lam, R. (2018). *Portfolio Assessment for the Teaching and Learning of Writing*. Springer. <https://doi.org/10.1007/978-981-13-1174-1>
- Li, M., Yu, F. R., Si, P., Wu, W., & Zhang, Y. (2020). Resource Optimization for Delay-Tolerant Data in Blockchain-Enabled IoT With Edge Computing: A Deep Reinforcement Learning Approach. *IEEE Internet of Things Journal*, 7(10), 9399-9412. IEEE Internet of Things Journal.
<https://doi.org/10.1109/JIOT.2020.3007869>
- Liu, M., Zhang, L. J., & Biebricher, C. (2024). Investigating students' cognitive processes in generative AI-assisted digital multimodal composing and traditional writing. *Computers & Education*, 211, 104977.
<https://doi.org/10.1016/j.compedu.2023.104977>
- Mardiyana, L., Setyarini, S., & Amalia, L. L. (2021). Indonesian EFL Learners' Responses To Extensive Reading: Benefits and Challenges. *Jurnal Penelitian Pendidikan*, 21(3), Article 3. <https://doi.org/10.17509/jpp.v21i3.39871>
- Mc Hugh, R., & McBride, O. (2020). Self-medicating low mood with alcohol use: Examining the role of frequency of alcohol use, quantity consumed and context of drinking. *Addictive Behaviors*, 111, 106557.
<https://doi.org/10.1016/j.addbeh.2020.106557>
- Mezirow, J. (1997). Transformative Learning: Theory to Practice. *New Directions for Adult and Continuing Education*, 1997(74), 5-12.
<https://doi.org/10.1002/ace.7401>
- Nafis, S. R., Alluri, P., Wu, W., & Kibria, B. M. G. (2022). Wrong-way driving crash injury analysis on arterial road networks using non-parametric data mining techniques. *Journal of Transportation Safety & Security*, 14(10), 1702-1730.
<https://doi.org/10.1080/19439962.2021.1960660>
- Navila, A., Rochsantiningsih, D., & Drajadi, N. A. (2023). EFL Pre-Service Teachers' Experiences Using a Digital Multimodal Composing Framework to Design Digital Storytelling Books. *Indonesian Journal of English Language Teaching and Applied Linguistics*, 8(2), 217-231.
- Nazilah, H., & Dewi, N. M. (2022). *Multimodality and English Learning in the Information Era*. CV. Anagraf Indonesia.
- Neely, E., LaMarre, A., McKibben, L., Sharp, K., & Simons, S. (2023). Knowing-being-doing with digital stories: Affective and collective potentialities in the higher education classroom. *Pedagogy, Culture & Society*, 0(0), 1-19.
<https://doi.org/10.1080/14681366.2023.2249905>
- Neergaard, M. A., Olesen, F., Andersen, R. S., & Sondergaard, J. (2009). Qualitative description - the poor cousin of health research? *BMC Medical Research Methodology*, 9(1), 52. <https://doi.org/10.1186/1471-2288-9-52>
- New London Gorup. (1996). A pedagogy of multiliteracies: Designing social futures. *Harvard Educational Review*, 66(1), 60-92.
<https://doi.org/10.17763/haer.66.1.17370n67v22j160u>

- Nicholas, M., & Paatsch, L. (2024). The shared reading of digital storybooks with young children: Parents' perspectives. *Research Papers in Education*, 39(4), 650–667. <https://doi.org/10.1080/02671522.2023.2205411>
- Nikkola, T., Kangas, J., & Reunamo, J. (2024). Children's creative participation as a precursor of 21st century skills in Finnish early childhood education and care context. *Learning and Individual Differences*, 111, 102437. <https://doi.org/10.1016/j.lindif.2024.102437>
- Nulis, J. (2016). *Rahasia Menulis Buku Ajar* (1st ed.). Deepublish.
- Oakley, G. (2020). Developing pre-service teachers' technological, pedagogical and content knowledge through the creation of digital storybooks for use in early years classrooms. *Technology, Pedagogy and Education*, 29(2), 163–175. <https://doi.org/10.1080/1475939X.2020.1729234>
- O'Byrne, W. I., Houser, K., Stone, R., & White, M. (2018). Digital Storytelling in Early Childhood: Student Illustrations Shaping Social Interactions. *Frontiers in Psychology*, 9. <https://doi.org/10.3389/fpsyg.2018.01800>
- Prasetya, D. D., & Hirashima, T. (2018). Design of Multimedia-based Digital Storybooks for Preschool Education. *International Journal of Emerging Technologies in Learning (iJET)*, 13(02), 211. <https://doi.org/10.3991/ijet.v13i02.8188>
- Rockenbach, A. N. (2020). Character Education for the Public Good: The Evolution of Character Capacities in and Beyond College. *Journal of College and Character*, 21(1), 6–13. <https://doi.org/10.1080/2194587X.2019.1696834>
- Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing & Health*, 23(4), 334–340. [https://doi.org/10.1002/1098-240x\(200008\)23:4<334::aid-nur9>3.0.co;2-g](https://doi.org/10.1002/1098-240x(200008)23:4<334::aid-nur9>3.0.co;2-g)
- Santosa, A. W., Fauziati, E., & Supriyadi, S. (2020). Context of Situation in Students' Textbook: A Pragmatic Study. *ELS Journal on Interdisciplinary Studies in Humanities*, 3(1), Article 1. <https://doi.org/10.34050/els-jish.v3i1.9521>
- Savva, M., Higgins, S., & Beckmann, N. (2022). Meta-analysis examining the effects of electronic storybooks on language and literacy outcomes for children in grades Pre-K to grade 2. *Journal of Computer Assisted Learning*, 38(2), 526–564. <https://doi.org/10.1111/jcal.12623>
- Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. Basic Books.
- Stephens, L. C., & Ballast, K. H. (2011). *Using Technology to Improve Adolescent Writing: Digital Make-overs for Writing Lessons*. Pearson.
- Syafa'ah, N., & Widyaningrum, L. (2021). *Voice and Accent: A Textbook for English Learners* (1st ed.). Yudha English Gallery.
- Tarwiyah, S., Dewi, N. M., & Sukarni, S. (2024). Learning to Collaborate through Collaborative Professional Learning: An Exploration of Social Learning Experiences. *Journal of English Education and Teaching*, 8(2), Article 2. <https://doi.org/10.33369/jeet.8.2.337-354>
- Tarwiyah, S., Dewi, N. M., & Syukur, F. (2021). Portfolio assessment in the frame of multi-layered peer coaching: An alternative portfolio for pre-service teachers. *EduLite: Journal of English Education, Literature and Culture*, 6(2), Article 2. <https://doi.org/10.30659/e.6.2.270-286>

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- Temporal, P. (2002). *Advanced Brand Management: From Vision to Valuation*. John Wiley & Sons.
- Thomas, E. (2020). *The Meaning of Travel: Philosophers Abroad*. Oxford University Press.
- Thornhill-Miller, B., Camarda, A., Mercier, M., Burkhardt, J.-M., Morisseau, T., Bourgeois-Bougrine, S., Vinchon, F., El Hayek, S., Augereau-Landais, M., Mourey, F., Feybesse, C., Sundquist, D., & Lubart, T. (2023). Creativity, Critical Thinking, Communication, and Collaboration: Assessment, Certification, and Promotion of 21st Century Skills for the Future of Work and Education. *Journal of Intelligence*, 11(3), Article 3. <https://doi.org/10.3390/jintelligence11030054>
- Tse, J. K. Y., Chan, S. W. Y., & Chu, S. K. W. (2021). Quality Assessment for Digital Stories by Young Authors. *Data and Information Management*, 5(1), 174–183. <https://doi.org/10.2478/dim-2020-0039>
- Turnbull, D., Chugh, R., & Luck, J. (2020). Learning Management Systems, An Overview. In A. Tatnall (Ed.), *Encyclopedia of Education and Information Technologies* (pp. 1052–1058). Springer International Publishing. https://doi.org/10.1007/978-3-030-10576-1_248
- Ulusoy, M. (2020). Pre-Service Teachers as Creators and Students as Viewers of Children's Literature-Related Digital Stories: A Formative Experiment. *International Journal of Progressive Education*, 16(6), 365–389.
- Wright, K., & Howe, S. K. (2023). *Multimodal and Digital Creative Writing Pedagogies*. Lexington Books.

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