

## Indonesian Young EFL Learners' Experiences in Learning Environmental Literacy through Digital Storytelling: A Case Study

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### ABSTRACT

Although studies on the issue on digital storytelling (DST) have been extensively conducted, the adoption of digital storytelling to promote environmental literacy is rarely reported in the literature. This study aims to explore Indonesian young EFL learners' experiences in the creation of digital storytelling to foster their environmental literacy. Framed in a narrative case study, four young EFL learners, aged 8-12 years old, were recruited to participate. Data were garnered through semi-structured interviews. The data were analyzed employing thematic analysis, i.e., listening to talking data, transcribing interview data, sorting out vignettes, interpreting data, and building data credibility. Study findings showcase that the adoption of DST could encourage young EFL learners' interest in learning environmental literacy to protect their environment. Furthermore, learning environmental literacy through DST engaged young EFL learners more actively in learning English. The empirical evidence also demonstrates the use of DST creation engaged young EFL learners in learning English, and environmental literacy and helped young EFL learners preserve their environment.

**Keywords:** *digital storytelling; environmental literacy; learning English; meaning-making process; young EFL learners*

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## INTRODUCTION

Human life and the environment are interconnected with each other. Human life changes the environment, and otherwise. Bad relationships between forms of human treatment and the environment can lead to environmental problems. Human life has a very big influence on this important problem facing the world. Their influence is manifested in global warming, the destruction of the ozone layer, air pollution, biodiversity being under threat, and the destruction of rainforests (Genc & Akilli, 2016). Besides, the underlying causes of these global and environmental issues are primarily associated with people's lifestyles and extensive activities in natural habitats (Erdogan & Ok, 2011). Therefore, the environment should be conserved to save our earth.

Many environmental problems exist in Indonesia, and some members of society are unconcerned about the environment. This can be seen as they litter the river, the street, the park, and so on. Parker (2018) reported many environmental issues in Indonesia. In her research, she proposed that Indonesian citizens do something to raise environmental awareness. Delivering environmental literacy is critical in dealing with this, especially in this situation (Pirchio et al., 2021).

The phenomenon of environmental destruction has drawn the attention of educational policy makers for several decades. After learning the value of natural resources and the environment, many people work tirelessly to prevent their

depletion (Omran, 2014). We should spread the word. To cope with this situation, environmental literacy should be delivering in each school (Cheng & So, 2015; Harness & Drossman, 2011; Hsiao & Shih, 2016; Hwang, 2009; Karimzadegan & Meiboudia, 2012; Kasapoğlu & Turan, 2008). In Indonesia, environmental education has been delivered through reading text commonly found in government-created all courses of all grades and commercial books (Putri, 2018). The course books provide some illustrations about environmental literacy to make students digest the multimodal text.

The promotion of environmental sensitivity not only can be delivered in formal education but also can be incorporated into informal education. An example of informal education includes outdoor experiences or learning in nature. Kim (2019) argues that outdoor experiences are beneficial in enhancing environmental sensitivity, like observing their surrounding environment, looking around their village, and looking daily-activities in their village. Some of the village's young learners are unconcerned about the environment. Some of them were seen throwing trash into the river, yard, and road. This condition is one of the ways to raise awareness among young learners. The phase of young learners is the best for increasing environmental awareness (Hsiao & Shih, 2016). Fidan and Ay (2016) received positive feedback after using environmental education as a theme to

practice and make other people aware of environmental problem.

The current study promotes technology to introduce the surrounding environment to young learners in order to make the connection between environmental literacy and young learners. One of the technologies incorporated into learning is digital storytelling (DST). This technology advancement helps in the learning process. Further, Puspitasari et al. (2018) reported the use of technology integrated into the learning English process to provide bullying literacy.

According to the studies, digital storytelling is appropriate for integrating technology into classroom to support learning process (Sadik, 2008; Thang et al., 2014). The use of technology is benefit in education. Yuksel-Arslan et al. (2016) demonstrated through digital storytelling, their study incorporated technology into childrens' learning activities. Their findings described how digital storytelling can assist teachers in sharing their materials and fostering students' understanding of the learning materials. Therefore, digital storytelling is important for young learners to help their education and to more understand the use of technology. Likewise, digital storytelling is attractive to students of all ages and in all subjects to helps them in learning process.

Some pupils in primary schools argue that learning English is difficult. Their difficulties involve English listening, speaking, and writing because it is a foreign language to them. They rarely practice

English at school. Therefore, the researchers facilitated digital storytelling to engage them in learning English in different ways. The advancement of digital storytelling project can engage young learners in learning English. Through this project, young students become more creative (Lestariyana & Widodo, 2018). Smeda et al. (2014) divides digital storytelling into three categories: 1) personal narratives - stories about significant events in one's life; 2) historical documentaries - stories about dramatic events that help us understand the past; and 3) stories that inform or instruct the viewer on a specific concept or practice.

Nevertheless, there are benefits and drawbacks to using digital storytelling. Students become more creative, practice their public speaking skills, and are interested in this project. Meanwhile, the disadvantages of digital storytelling include narration difficulties, PC issues, and copyrights. With guidance of young EFL learners during the project, teachers can minimize the disadvantages of digital storytelling (Kasami, 2018).

Many academics have studied the promotion of environmental literacy to raise students' awareness to engage them in language learning process. These studies have shown that the students' needs to elevate their environmental literacy in an EFL classroom. However, closer inquiry into the area of environmental literacy for young learners in learning English through digital storytelling is essential to conduct. As a result, the present study delves deeper

into Indonesian young learners' experiences in learning English via digital storytelling to promote environmental literacy in an EFL classroom. In response to this, the study investigates the research question: how do Indonesian young learners experience in learning English through digital storytelling project to promote their environmental literacy?

## **METHOD**

This study, which was designed as a case study, used a collective study approach. According to Hancock and Algozzine (2006), the approach assists researchers in conceptualizing theory by addressing the problem at hand while also contributing to the literature base. As a result of using a collective study approach, the researchers expect to gain a thorough understanding of Indonesian young EFL learners' experiences in promoting environmental literacy through DST by combining information. One of the appropriate methods for this research design is interviews (Hancock & Algozzine, 2006).

This study reports the experiences of Indonesian young EFL learners in learning environmental literacy through DST production. The study was overtaken in a learning community in Pekalongan, Central Java, Indonesia. Four young EFL learners of primary schools volunteered to participate in this study: Neula, Solin, Szal, and Sukna (pseudonyms). There are three factors that led to their selection as participants. They are as follows: 1) the

young learners had been learning English since third grade, 2) people in this area were unconcerned about the environment, and 3) the participants had smartphones to produce digital storytelling. The Indonesian young EFL learners shared the process of DST production to promote their environmental literacy after experiencing learning process organized in a four-week period. All of the participants were Indonesian primary school pupils from Pekalongan. Prior to collecting the data, it was required to ensure that the participants consented to participate in this research. Personal information about the research participants was treated confidentially.

The DST production was divided into seven steps. First, the researchers explained the purpose of the project. Second, the researchers recruited the members. The participants chose the topic. The topic was "keeping our natural surroundings". Next, they observed their surrounding environment. In the next meeting, the young EFL learners made an outline and a draft. Afterwards, they designed digital storytelling, outlined, drafted and captioned in digital storytelling using English language. Finally, the young learners shared the DST project with their friends.

The researchers managed semi-structured interviews to garner the data. The interviews were conducted in Indonesian language. The use of mother language in interviews makes participants enjoy and feel free to express their feelings (Papadopoulou, 2014). The interviews were

conducted individually around 30 minutes with several questions concerning their experiences during joining the project. The data from the interview process were recorded and then transcribed for data analysis. The researchers employed thematic analysis (Braun & Clarke, 2006). There are five steps in thematic analysis, i.e., listening to the data several times, transcribing the data, analyzing the data by using participants' words and sentences, communicating the data that match with participants, and building data credibility by asking feedback on the data interpretation to the participants (Widodo, 2014).

## **RESULTS AND DISCUSSION**

All participants agreed to write, speak, and learn English and environmental literacy through DST creation. The researchers gathered the data from four young EFL learners who participated in this study, i.e., Neula, Solin, Sazal and Sukna (pseudonyms). The researchers identified the Indonesian young EFL learners' data related to their experiences in fostering environmental literacy through DST production after analyzing the data from interviews and observations. The researchers discovered two emergent themes related to the Indonesian young EFL learners' experiences with environmental literacy through DST production.

### **The efficacy of learning English for young learners' awareness of environmental preservation through digital storytelling**

The first emerging theme is the efficacy of learning English for Indonesian young EFL learners' understanding how to preserve environment. This theme focus is on the explanation of young learners based on their experiences in learning English and environmental literacy. According to the interview data, the young EFL learners described their experiences during following the DST project. The second step of DST creation is choosing a topic. The power of digital storytelling lies in the topic of the story and how it is expressed rather than the the actual visual, background, lightning, and sound effects (Lambert, 2013). Therefore, the researchers had to choose an interesting topic and make digital storytelling more interesting to express the topic by integrating technology. In this respect, they discussed the appropriate topic based on their environment. The topic is "keeping our natural surroundings". It can be seen in the following interview data:

#### **Student Vignette 1**

*"Umm, we chose the topic because, in this situation, keeping our environment free of rubbish is a very important thing. (Experience)" (Neula, Semi-structured Interview, April 6, 2021, Researcher's Translation)*

### Student Vignette 2

*"We clean up our environment, so our village is neat and clean (An example of keeping environment)." (Solin, Semi-structured Interview, April 6, 2021, Researcher's Translation)*

### Student Vignette 3

*"I think we understand the surrounding environment (understanding nature), recycle the rubbish, and if we protect the environment, we can get many things from nature (understanding the basic concept of nature)." (Sazal, Semi-structured Interview, April 7, 2021, Researcher's Translation)*

### Student Vignette 4

*"The video and posters illustrate that the functions of nature the functions of nature is like water flowing to a river (understanding the natural system and their experience)." (Sukna, Semi-structured Interview, April 7, 2021, Researcher's Translation)*

The phrase *"keeping our environment free of rubbish"* indicates that their environment had some issues. The problems in their environment were identified by the young EFL learners. Furthermore, *"is a very important thing"* refers to their experiences after observing their surroundings environment. They found the problems and suggested to keep our environment is important in this situation. The data portray that their

experiences of environment's function was understood by the participants.

Sazal and Sukna's answers depict that the young learners understand their nature. The sentences *"we know more about nature"* and *"the functions of nature is like water flowing to a river"* refer to how they learned environmental literacy. Their answers show their understanding of the natural system and they tried to protect the environment. In addition, Sazal's answer refers to the connection between nature and the social system. She explained that if we tried to preserve our nature, nature will keep us back. Her answer means that we should keep our earth. Sazal's answer is in line with (Ardoin & Heimlich, 2021), stating that humans are constantly always processing and absorbing information about our surroundings environment, including what we sense and how an environment makes us feel, even if we are not always conscious of the world around us at any given point in time.

The sentence *"they clean up our environment"* indicates that she looked for some people who used to clean up their houses and their surroundings. The finding confirms Ardoin and Heimlich (2021) arguing that nowadays, people have usually intense learning experiences that stand out from daily-life, punctuating a moment, sparking a desire for further investigation, marking a memory, or encouraging deeper contemplation. Sazal, Sukna, Neula, and Solin's answers also agree with Gola (2017) reporting that if environmental educators are successful in

developing methods to instill such environmental ethics, then citizens may be able to influence future policies and positive environmentally focused decision making.

The interview data demonstrate that young EFL learners observed their environment. They observed their environment in the third step of DST production. In this step, they looked around their surrounding environment and found some of environmental problems. Lots of garbage in the river was one of the environmental issues in the village. Based on their experience in observing their village surroundings, the young EFL learners assumed that their environment was dirty because of trash. The garbage was produced by the villagers. They threw their domestic trash in the river. Based on their opinion, all people in their village had to contribute to preserving their environment. The finding also accords with Thor and Karlsudd (2020), which showed that two of most important elements mentioned, forming the initial basis for the goals presented below, are knowledge of the environmental issue and a positive sense of being able to participate and contribute to protect surrounding environment.

Considering the observation, the study results are also supported with a poster campaigning environmental literacy as follows:



**Figure 1. Poster Campaigning Environmental Literacy**

Figure 1 depicts a poster learned by the young learners. They discovered this in the third step of DST production. The poster explains what we should and should not do with our environment. They realized what they needed to do in their situation. The young learners explained that they picked up plastic bags, paper, and plant trees. The young learners analyzed, synthesized, and evaluated the information from the poster in order to relate it to the social situation in their village in this step. In this step, the researcher gave an explanation using English and Indonesian to make it more understandable. Therefore, in this step, they gained new vocabulary from learning environmental literacy. The finding reflects Boeve-de Pauw and Van Petegem (2018) who also found that a personal investment and motivation to work toward remediation of issues of particular concern to them are used in their knowledge of basic strategies for initiating and implementing social or technological change.

This study supports evidence from previous researchers who argued that

understanding environmental problems is the important step in encouraging participants to participate in environmental awareness (Gola, 2017). In this regard, the study also promotes that understanding environmental literacy is critical in delivering environmental literacy. They also learned the basic concepts of nature and to keep environment while taking pictures, watching movies, reading short stories, writing captions, and explaining the pictures during the DST creation. The findings of this study are consistent with Burchett (2015), who stated that the goal of environmental knowledge is for everyone to understand the values of their surroundings environment and try to protect it.

Figure 1 also shows the positive and negative effects of human activities. In these steps, the researchers motivated the young learners to protect their nature. The use of DST in these steps as a motivational tool to draw young learners' attention and increase their interest in seeking new ideas (O'Byrne et al., 2018). Comparison of the findings with those of other studies confirms that incorporating cutting-edge technological tools, storytelling has enveloped into a motivating tool for students in learning English to read and write more. We can conclude that this steps give young learners motivation to be aware of their surrounding environment (Abdel-Hack & Helwa, 2014).

Based on the explanation, the young EFL learners felt happy and enjoyed following the DST production. They

learned how to keep their environment in the first, second, third, and fourth steps of DST production. This project helped them gain knowledge about their environment. Likewise, they were more aware of their surrounding environment and they tried to preserve. Furthermore, young EFL learners are effective at learning English in the first, third, fifth and sixth steps. Therefore, the experiences of the Indonesian young EFL learners in learning English and environmental literacy are beneficial and meaningful for this world.

### **Digital storytelling creation as a meaning-making process of fostering environmental literacy in an EFL class**

The young EFL learners' responses in learning environmental literacy in learning English using Digital storytelling (DST) creation were positive. All the young learners felt that collaborative environmental literacy in learning English through DST creation benefited them. Meanwhile, the interview data show their experiences during attending this project. The young EFL learners narrated their experiences after joining the DST project to foster their environmental literacy. The interview data are presented as follows:

#### **Student Excerpt 5**

*"I am very happy to be following this project because it makes me more aware of my environment. (Environmental literacy can engage her). Besides, I learn fun English in this activity. With this*



*project, we can discuss how to make caption and choose the phrase in English during DST production. I can also interact with the researcher by asking questions which do not understand.” (Sukna, Semi-structured Interview, April 6, 2021, Researcher’s Translation)*

#### Student Excerpt 6

*“This is good project because DST creation makes me excited during learning English and helps me understand my environment. In this project, it makes me more active in choosing phrases or sentences to write in English captions in DST to be more understandable. (The DST makes her aware of her environment and easy to learn English).” (Solin, Semi-structured Interview, April 6, 2021, Researcher’s Translation)*

#### Student Excerpt 7

*“It is fun learning because with this project, I feel more interesting when making the captions in English. The researcher helps us during this project to make fun English learning. In addition, I will try to protect my surrounding environment from rubbish. (They enjoyed the process and understood the project).” (Neula, Semi-structured Interview, April 7, 2021, Researcher’s Translation)*

#### Student Excerpt 8

*“It’s happy and funny because not only we learn about our environment, but we also learn English with different ways*

*(They get a lot of knowledge).” (Sazal, Semi-structured Interview, April 7, 2021, Researcher’s Translation)*

From the interview vignettes, the findings reveal that the young EFL learners agreed with fostering environmental literacy in learning English through DST creation as meaning-making process because it could make the learners easier in learning English and more aware of their environment through DST creation. Meanwhile, learning English with promoting environmental literacy through DST creation makes them feel happy, curious, and motivated to more aware of their environment. Besides, they were more interested in learning English because the position of English in Indonesian primary school is not a compulsory subject, but complementary one. Therefore, the researchers provide an alternative way for them to watch cartoon or movies with subtitles and use online dictionaries to understand unfamiliar words. In addition, the young EFL learners used writing captions for the DST and repeated reading for this purpose until they could fluently tell the story and understand the content of the text.

Informed by the interview excerpts, the young EFL learners learned environmental literacy and English in the third steps of DST production. The steps were observing their surroundings and collecting photos. They narrated their experiences based on their observation in their environment. Besides, they shared

their experiences in writing script process of the DST production. In this step, they did meaning-making process regarding their observation and their opinion about their environment.



**Figure 2. Observing their Surroundings**

Figure 2 illustrates the condition of river in their surroundings. This captures the activity in the fourth steps of DST creation. The step was writing the script for the DST project. Based on their discussion, the young learners argued that the garbage had a negative impact on the social heritage of their village. It is encouraging to compare this finding with that found by Omran (2014) who found that the existence of citizens who are aware of their surroundings is important because it is easier to develop their awareness. The figure also depicts that village residents disregarded for their environment, and everyone had to be active in delivering environmental literacy to change their habits. The goal of environmental awareness is for people to become more environmentally aware while also understanding that they have role to play in

managing and active to protecting the environment (Boeve-de Pauw & Van Petegem, 2018).

In the fourth steps of DST creation, the young learners were writing scripts. The researchers and the young learners discussed together to write a relevant caption illustrating the figure. This step may encourage the young learners to create narratives based on their experiences, imagination, and perceptions. Digital stories are adaptable ways to express oneself (Rajendran & Md Yunus, 2021). Consistent with the literature, this research found that participants who reported producing DST text also shows that a figure that evokes positive feelings is the most effective tool for influencing human behavior and emotions. By displaying real-life problems or conditions that are more relatable with the situation, one is led to believe that one's of commitment make a difference (Curdt-Christiansen, 2020). Finally, the young learners can express their feelings, experiences, and imagination through digital storytelling when designing a digital storytelling project as shown in Figure 3.



**Figure 3. Designing a DST Project**

Figure 3 portrays that the EFL learners discussed their DST production through the video when it was being played. This figure depicts the first step of DST production. The step was collecting information about environmental literacy. She told her friends that the boy's leg had become entangled in a piece of plastic trash as they discovered a lot of trash in the river. They contributed the garbage while celebrating Bear's birthday. It was because that they threw garbage into the river. The young learners contended that the problems originated within them, that they discovered the problems and felt motivated to solve the problems. Their arguments are in agreement with Benavides-Lahnstein and Ryder (2020) research, in which he claims that it is dependent on two dimensions, i.e., awareness and motivation.

Based on Figure 3, the young EFL learners collected information by watching a video. The figure demonstrates that the researchers proved powerful research about the environment to engage young EFL learners in conversations with them to teach and promote the comprehension of story facts and message (Benavides-Lahnstein & Ryder, 2020). Therefore, in this step, the purpose of collecting information by watching videos or reading posters is to give story facts and messages about their environment. Based on the explanation, the young EFL learners participated in activities of environmental literacy in the first, third, fourth, and fifth steps of DST production. They got many experiences in watching movie, carrying out observation

and collecting photos, writing script for captions, and arranging photos. Those steps make them engage in DST creation to get meaningful knowledge and experience. These results corroborate the ideas of Rahiem (2021), who suggested that the interaction between listening, writing, and speaking during digital storytelling creation has great potential to help students learn language. Finally, DST project may help young EFL learners in many aspects, including English language learning and environmental literacy.

## CONCLUSION

Environmental literacy can be fostered to engage Indonesian young EFL learners in environmental awareness through digital storytelling production. It gives young learners hands-on experience observing the village and becoming aware of their surroundings. The study findings are divided into two themes. First, the Indonesian young EFL learners receive experiences in understanding how to preserve environment. In this finding, young learners narrated their experiences during joining the DST project. The second result is digital storytelling creation as a meaning-making process of fostering environmental literacy. This theme focuses on that DST can engage the young EFL learners to keep their nature and learning English in fun ways.

The study also recommends further researchers to focus on teachers' experiences in promoting environmental literacy through DST project by employing

narrative inquiry, photovoice study, or case study. Teachers may also adapt to the production of digital storytelling to incorporate environmental literacy in other age level, e.g., kids and teenagers. Next researchers, additionally, can focus on delivering environmental literacy in different ways, including film, pictures, and short stories. Besides, researchers and teachers can also provide young learners with cleanliness literacy, religious literacy, perceptions of participants in learning environmental literacy, and Coronavirus literacy.

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#### AUTHOR CONTRIBUTION STATEMENT

Under the supervision of FA and DP, FSR was putting together this manuscript. FA and DP are working as teacher educators and played a role as writing consultants for FSR. Regarding the manuscript, FA and DP made several excellent recommendations.

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