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DEVELOPMENT OF DIGITAL STORYTELLING BASED ON LOCAL WISDOM

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Abstract: The purpose of this study is to support learning using digital media based on local wisdom. The device product resulting from the development process in this study is Digital Storytelling which is validated and tested through four stages of testing, namely: Content testing by experts in the field of Technology and Information, experts in early childhood education materials, language and culture experts, and experts in the field of learning media. Product testing as a learning medium through reviews from various experts, namely: design experts, media experts, material experts and content experts, as well as field trials conducted on small groups of lecturers, teachers, and students in Early Childhood Education. This digital storytelling development research uses the system approach stage of the research and development model. Results of the research show that digital storytelling based on local wisdom as a medium and learning resource is very effective in disseminating knowledge and philosophical meanings of local wisdom, attracting interest and increasing children's learning motivation.

Keywords: digital storytelling, local wisdom, philosophy for children, learning media.

Introduction

Each region has its own characteristics and uniqueness as a characteristic that can make it a special attraction for every visitor who comes. These characteristics and uniqueness are known as local wisdom, both knowledge and culture or social value systems. Local wisdom as knowledge discovered by a particular local community through a collection of experiences of trying and combining it with an understanding of the natural culture of a place is very important to be valued. Local wisdom is part of the community culture that cannot be separated from the language of the community itself since local wisdom is usually passed down from generation to generation through direct or indirect stories.

Each community usually has a culture that has social values and provides great benefits to its members and users. The culture of a commu-

nity includes ideas, beliefs, knowledge, rules, and values, as well as symbols used to respond to its environment. Therefore, the development of print and digital learning media and learning materials that refer to people's lifestyles directly or indirectly develop insights into the natural, social, and cultural environment. Including activities and relationships in the real world and the digital (virtual) world that need to pay attention to the natural, social, and cultural environment in maintaining ethical interaction and communication. So that everything can go well and be balanced.

In a learning program in early childhood education that contains the content of local culture and local wisdom to students, it seems that it is not enough to just speak orally or use monotonous learning methods. Other learning resources are needed to support learning outcomes to get to know more about the natural, social, and cultural environment. One of the media and learning resources that adapts to current developments is technology-based learning resources. The learning environment in the context of learning can be a contextual learning resource with an approach to real life that is not just a classroom simulation in the learning design created. Thus, students can know and get to know their learning environment more intimately by understanding the learning situation in which they are active. Digital storytelling provides information and learning that attracts and motivates students. Because "the ethics of digital storytelling combined with digital tools like Padlet, provides an opportunity for teachers to be able to include questions in every step of story development" (Khamcharoen, Kantathanawat, & Sukkamart, 2022). Everything related to local wisdom can be conveyed and told in digital form. This is what is called Digital Storytelling, which can be an alternative or selection of the right learning resources at this time and can continue to be developed. Learning based on local wisdom with the help of technology can be a teacher's strategy in learning activities that involve students. By applying the principles of collaboration and communication to create creativity in producing digital storytelling learning projects based on local wisdom, the learning objectives can be easily achieved.

The development of the digital world has had a positive impact on schools, developing their learning systems. Many schools provide support tools to facilitate learning activities. Teachers have many opportunities and challenges to use and take advantage of the tools provided in their schools. Teachers are required to have creativity that can be taught to children and have initiatives in innovating to create learning conditions that can provide a stimulus for students with various appropriate media without having to feel constrained and burdensome. Therefore, the acceptance of something new in the development of educational technology at a more rapid level of change and development must be acceptable and well-implemented. In this case, teachers can develop skills and creativity in creating innovative and varied learning media that can be used in the learning process. The use of media in the learning process can attract the interest and motivation of students in the classroom, thus greatly allowing for an active, innovative, creative, effective, fun, and student-centred learning atmosphere. Child-centred philosophy is the theoretical basis of the principle of personality-oriented education, which combines the requirements of deep and specific individualization and their implementation based on different forms of differentiation (Adamenko et al., 2021). This technology-based media can be one of the learning resources needed by teachers and students. And in line with the purpose of the research, namely, to develop digital storytelling "Philosophy Sang Bumi Ruwa Jurai", which is local wisdom in the social value system of society in the digital era.

Theoretical Framework

Learning through storytelling with the help of digital media is an innovation in schools that have never used it. Digital storytelling is a learning tool or media to increase the interest, attention, and motivation of the digital generation in the classroom. Digital storytelling is a form of presenting material to bridge various student learning methods. Digital storytelling – as a tool to create a creative generation by encouraging students to find and tell topics from their point of view. Digital Storytelling on the innovation activities of "Quiver-3D Coloring application based on Augmented Reality Technology in developing early childhood creativity" has shown positive acceptance, usefulness and real success (Kisno et al., 2022, p. 38). Digital Storytelling

involves multimedia in its creation. The results of Digital Storytelling can be enjoyed by all groups, both children and adults. Digital Storytelling can be used for a long and continuous period.

According to J. Gomez, L. Jaccheri, M. Maragoudakis, and K. Sharma (2019), storytelling is an important asset in today's society. Digital platforms for storytelling can facilitate the development of collaborative stories. The storytelling process, if well facilitated, can lead to the creation of stories that improve the relationship between players. Also, the story conveys important information about the player and his interactions. Yussof argues that: "Broader knowledge and better tools are needed on how to facilitate good storytelling and analysis to harness the power of the resulting data. Storytelling is one of the interesting elements that should be expanded in the educational syllabus. Students can enrich their literacy and naturally understand grammar by listening to and enjoying stories (Yussof, Abas, & Paris, 2013)".

According to Smeda (Smeda, Dakich, & Sharda, 2014), "Students at different levels have different skills and knowledge, so they need different levels of help. For example, primary school students who have basic skills and knowledge need more direction and guidance to create a digital story" (p. 10). One of the reasons why digital stories fit perfectly with today's students is because they combine skills, tools and practices that resonate with contemporary learners. For teachers who teach about media, as teachers, in general, do when learning, it has great implications for the management of learning or pedagogical systems. In this case, it provides an opportunity for students to learn how learning media and learning resources are developed in accordance with their learning environment, and this is a right for students to use and utilize learning media and resources in accordance with the characteristics and needs of each child based on their development. With the increasing number of children, it tends to open up increasingly open access to creating, using and utilizing these technology-based learning media and resources outside the classroom (Buckingham, 2007). In line with what Basuki et al. state, "Learning is a conscious effort carried out in a planned, systematic manner, and using certain ways to change relatively permanent behaviour through interaction with learning resources" (Anwar, Wibawa, & Ibrahim, 2019).

Storytelling is one of the skills possessed by a human being. Since the author has maintained this technique, it is also the reason we become human beings (Gottschall & Bortolussi, 2012). An important part of the heritage is a story, and it is our cultural heritage that is commonly used in activities such as in the context of learning in education that is used as a support tool by teachers in student-centred learning activities (Robin, 2008). Digital Storytelling can be seen as a form of integration or merging of traditional stories in regions with the use of technology in the form of multi-media (Tahriri, Tous, & Movahedfar, 2015). Technological advances include: digital-based cameras; software for editing; tools used for writing; all of them play an important role in efforts to increase the use of technology in the classroom that can help children to learn how to express ideas and gain knowledge then present and be able to share it effectively and efficiently (Elahi, Mahmood, Shazadi, & Jamshed, 2016).

This opinion is reinforced by Park (2014), who states that: "computers, digital cameras, editing software, and other technologies are becoming more accessible in the classroom, and providing learners and teachers with tools to create digital stories easier than ever before". While Ohler (2008), in his research says, that: "Digital Storytelling is organized into three parts. Part one directs the reader by placing digital storytelling and its principles within the larger educational setting, the new pedagogical landscape. This allows readers to see the great potential of using digital storytelling in the classroom; as the author puts it, "digital storytelling allows today's students to speak in their own language" (p. 10). Digital storytelling helps students to develop their creativity to solve important problems in innovative ways. Software and multimedia, and other technical skills can be used by students to create digital stories based on stories about education or learning provided by their teachers. According to Chaeruman, this model is important to apply in the field of education, especially in the field of instructional design, so that an effective instructional design system based on these guidelines and frameworks can be used optimally with instructional design as the expected model (Anis Chaeruman, Wibawa, & Syahrial, 2018). Thus, it can be said that digital storytelling technology is a learning or pedagogical system management

tool that is quite effective in increasing motivation for students and being able to adapt students to their learning environment in a conducive and constructive learning atmosphere through collaborative, reflective and communicative stories between students.

Another interesting thing about digital-based stories is as an embodiment of the use of multimedia in education. This is an important part of life and the learning process in schools. In this regard, hardware plays an important role in facilitating its functions and working systems, such as digital cameras, scanners and the software used. Of course, many schools or educational institutions have optimized the utilization and use of digital storytelling (Robin, 2008). Furthermore, Robin (2016) stated: "Digital Storytelling can be a powerful educational tool for students at all ages and grade levels who are tasked with creating their own stories; This use of digital storytelling harnesses students' creative talents as they begin researching and telling their own stories, learning to use libraries and the internet for research-rich and in-depth content while analyzing and synthesizing various information and opinions" (p. 19).

Storytelling activities as a function of media and learning resources. This function will be more visible when the activity is digital-based storytelling. The use of digital media as an intermediary for storytelling is not just a method of uniting thoughts and ideas; but also a technique for sharing certain experiences and stories that can start from family, friends or communities, school to the world (Tahriri et al., 2015). The emergence of this technology that is considered new, as well as the consideration of its important role in the world of education, has emerged a new model of storytelling techniques. That way, students can be given by the teacher new skills with tools or media and learning resources. Digital storytelling is one of the tools in question and has been widely used in the scope of higher education, namely narrative through the help of multimedia (Bou-Franch, 2012). Concepts and information taught through digital storytelling (DST) are very important in learning activities (Tahriri et al., 2015). According to Hwang and Huang (Hung, Hwang, & Huang, 2012; Fatmawati, Kisno, Nawangsasi, & Ardiansyah, 2019), digital stories are considered short, individual, and multimedia stories. In carrying out their activities in the learning process, teachers can use digital storytelling media as a pedagogical tool as a learning system management, especially in the field of language learning to produce quality learning which is seen from three important indicators, namely: interest, motivation, and attention of students.

As mentioned by Michalski, Hodges, and Banister (2005), "Digital storytelling involves storytelling using multimedia technology, providing a format for students to unite their minds, visually, aurally, and kinesthetically" (p. 3). There are three important things in the function and benefits of digital-based storytelling, namely: 1) the opportunity to control the learning process; 2) the increase in their confidence in learning; and 3) the increase in learning motivation (Tahriri et al., 2015, p. 144). Some things that also need to be considered in learning are the steps in developing a model, which includes needs analysis; collaborative learning design; creativity, lab-based media with macro flash; and evaluation and testing of the effectiveness of the model. Then for the stages of developing collaborative and creative models, namely: apperceptive, exploration, collaborative, creative, evaluative, and there is feedback. The development of this model is used to improve the quality of learning in the classroom, minimizing the limitations of laboratory instruments as real instrumental analysis (Zurweni, Wibawa, & Erwin, 2017). This can be one of the references in the development of digital media to be developed.

We know that the customs in every region in Indonesia have a philosophy of life. Likewise with Lampung Province. The philosophy of life is one of the guidelines for people living in an area, including Lampung Province, to live their lives. The philosophy of life of the people of Lampung is contained in the book Kuntara Raja Niti, which is a book of customs of the Lampung people that can still be found and read today, both in the original script and written in Latin script.

Piil Pesinggiri is a view of life or customs used by the people of Lampung or the people of Lampung as a way of life. The word Piil comes from Arabic, which means behaviour and Pesinggiri, which means high morality, big mind, self-knowledge, knowing rights and obligations.

Piil pesinggiri values are views or rules as laws not only in the form of thoughts or concepts

but as value systems referred to and internalized by society. The development of diverse and integrated learning media must pay attention to local culture in accordance with its character (Fatmawati & Kisno, 2017). Piil pesinggiri values are parallel to the very important concepts of honour and self-esteem because they have purity, prestige, glory and greatness (sacred, prestige, radiance, glory, presence).

Methodology

Digital media storytelling development research uses the educational model research and development (R&D) system approach stage according to Borg and Gall, who adapted dick and Carey's model by adding one stage at the beginning of preliminary research and one stage at the end of the effectiveness test stage through experimental testing. Preliminary research is carried out through the stages of identification and analysis of learning development design. Then for media development, it begins with an analysis of needs by finding information from three groups of people, namely: students as prospective teachers, the community as graduate users, educators, and students.

Regarding the information extracted from the study, this leads to three main things, namely: first, the desired value that exists today in learning; secondly, the characteristics required by the future teacher and the characteristics that exist; third, the characteristics desired by the current implementers of education. This analysis of sustainability needs continues in one cycle. In developing a local content learning model based on digital multimedia storytelling, the researchers used software including Adobe Flash Maker and Microsoft PowerPoint, which then created an application installed on the Play store.

Each stage of research requires a long process. The process carried out at this stage includes several stages, especially in the development of digital storytelling learning materials based on local wisdom, namely designing a draft that includes: a description of the learning material entered at the beginning of each unit to find out the general instructional objectives and specific instructional objectives and the length of time used; furthermore, knowledge of the student's initial abilities before studying material

related to the philosophy Sang Bumi Ruwa Jurai; then, instructions for the use of learning with the digital storytelling philosophy "Sang Bumi Ruwa Jurai" that can provide clear directions for students to know what is being done in the development learning model; After that, providing direction to learners in learning activities that are not only beneficial in classroom learning but also beneficial to families and communities, that is the ultimate goal of any digital fairy tale development learning model applied.

Some of the important elements that are possessed in digital storytelling and can be used as a measurement reference are the overall purpose of the story; point of view of the narrator; dramatic questions; content selection; clarity of sound; stages of the narrative; meaningful soundtrack; visual quality; detailed and economical stories; grammar; and other relevant elements that will be outlined in the digital storytelling stage.

The data collection technique in this study was carried out through three stages, namely: observation, interview, and documentation study. The data obtained are then analyzed qualitatively and quantitatively, including data obtained and recommended by experts, including early childhood education material experts, learning design experts, and learning media experts, regarding digital storytelling products developed.

Result and Discussion

This research resulted in an innovative digital story, "Sang Bumi Ruwa Jurai," which was systematically and systemically designed. In developing digital media storytelling, it goes through several stages, namely the needs analysis stage, the planning stage, the development stage, and the evaluation stage.

Need Analysis

At the stage of needs analysis, the instruments used are interview and observation techniques. To conduct a needs analysis, a preliminary study is carried out, which is the initial stage in "observing learning activities to identify problems and potentials" in the field. Identification activities are carried out through observation and interviews with student activities, lecturers and ear-

ly childhood education teachers who are the object of research. Then observations were made on student activities and facilities and early childhood education teachers in Lampung Province. The interview contains the learning process, the availability of learning resources and curriculum for the benefit of learning resources, learning media, and learning support facilities.

Based on the results of the interview, it can be concluded that the learning media used requires storage and maintenance, so it has not been supported in the era of the current rapid development of information and communication technology. Proper and effective learning media is a digital media that can be done anywhere and anytime. Maintenance and storage that can be used anytime and anywhere. For this reason, it is necessary to update learning media so that the learning process is feasible and effective. To overcome this, digital storytelling media is needed so that the local wisdom of "Sang Bumi Ruwa Jurai" can be preserved forever. This is because digital media can be stored for a long time and does not require maintenance, and is easy to use anytime and anywhere.

Result and Findings

Based on the findings of the problem in the needs analysis carried out by the researcher, it is concluded that an idea has an important and indispensable role in developing and creating digital storytelling designs based on local wisdom about the philosophy, knowledge, and culture of the existing community value system, so that competence and quality learning which are important goals of the process aspect and results can be achieved. The material described in digital media is obtained from various primary and secondary sources. Materials from primary sources are obtained directly from the Lampung area, while secondary materials are obtained from literature in printed books and journals.

The product trial process was carried out on thirty (30) students according to the characteristics and number of Early Childhood Education programs in Lampung Province. Students are given digital media that can be invited through social media or play store applications and are given the opportunity to learn digital storytelling based on the local wisdom of the philosophy

Sang Bumi Ruwa Jurai. The main reason for the implementation of this test is to identify the weaknesses, shortcomings and strengths that need to be maintained in digital media, both materially, instructional objectives, as well as expected results. With the main objective of developing the digital storytelling media Sang Bumi Ruwa Jurai is to preserve the values of local wisdom of Lampung province. In addition, the criteria for field trials are pretest and posttest, likewise with the response of students who use digital media storytelling to follow the developer according to the learning media that has been carried out as a first step.

Discussion

This research produced innovative learning products in the form of digital storytelling media based on the local wisdom of the Sang Bumi Ruwa Jurai philosophy. The development of digital learning media is carried out properly and effectively. Based on the needs analysis and supported by relevant theories related to methodological aspects, the digital storytelling philosophy of Sang Bumi Ruwa Jurai was developed, namely the social value system in Lampung Province. The things done in this study are planning and developing learning media using Microsoft PowerPoint software and hyperlinks through social media; the resulting product is easy to use so that the learning process becomes feasible and effective and easily accessible on the play store and website that has been prepared.

This opinion is supported by previous researchers, namely M. Orey, V. J. McClendon, and R. M. Branch (2013), who stated that: "Classroom teachers may have a strong sense of these aspects as a result of classroom interaction with students. Interactive media make learning effective, and learning progressive" (p. 159). In line with research (Pierra & Aziza, 2017), which states that" the integration of a multilevel interactive classroom is instrumental in facilitating the student's knowledge acquisition phase" (p. 9). So that the application of learning media facilitates learning as learning materials, learning resources, and effective and interactive learning, R. Firdaus and B. Wibawa (2019b) said, "the experience of rations with several generations of technology associated with the introduction of new

technologies in teaching and learning in post-compulsory learning is quite well understood" (p. 2221).

J. Vogel-Walcutt, L. Fiorella, and N. Malone (2013) say that "instructional is an attempt to provide stimulation, guidance, direction and encouragement to students to make the learning process" (p. 1490). Further, X. Tang, E. Pakarinen, M. Lerkkanen, J. Muotka, and J. Nurmi (2019) revealed that "Teachers who adopt a child-centred style rely most often on child-centred practices that support children's autonomy and interests. On the contrary, teachers who adopt a teacher-directed style focus mostly on didactic practices and rote learning without considering children's interests and initiatives" (p. 27). Learning is the process by which behaviour (in a broader sense) is or is transformed through practice or training. Learning is a series of physical and mental activities to obtain behavioural changes as a result of the experience of the individual in interaction with his environment involving cognitive, affective and psychomotor. "Experiential value provides vicarious experiences, allowing viewers to see something in a video that they might not be able to see in everyday life. Nurturing value refers to a video's power to motivate and connect with its audience through the affective domain" (Hansch et al., 2015, p. 5). Learning plays an important role in instruction because, in instruction, there are learning events and teaching events.

In line with the above statement that learning can be said to be a psychophysical activity because of such instructional activities. This opinion is strongly supported by Nie, who states that: "media is effective in increasing the use of study time, especially short breaks during the working day, new strategies in reading the subject matter, and low costs" (Nie, Armellini, Witthaus, & Barklamb, 2017). This research is also supported by researchers M. J. Sousa and Á. Rocha (2019) states that digital instructional can be a driver of skills development. It is also supported by researchers Hawlitschek and Joeckel that "digital media can motivate students to improve skills, improve performance, and performance satisfaction in digital media" (Sartika, 2017). Learning media has an important role in the process of teaching and learning activities (Umami et al., 2022).

Mastery of skills such as content and learning

perspectives that are not provided as part of the curriculum for students is increasingly needed. Children need to build additional skills and support to learn with digital media as a learning resource (Cress et al., 2018). What is interesting and no less important is the student's previous learning experience and how to respond to the e-learning experience (Killoran, 2013). Some important points, such as objects that use text elements, images, audio, and video to make the story more interesting, can be a learning experience (Hsin & Cigas, 2013). This has a positive effect on increasing students' interest, achievement motivation, and confidence in learning activities (Suwiwa, Santyasa, & Kirna, 2014). The use of technology and social media that suits their learning needs can increase their interest and enthusiasm for learning (Jamridafrizal, Wibawa, & Ibrahim, 2019). Video media is widely used by teachers in learning activities (Kisno & Fatmawati, 2017). It is also widely used by teachers to provide online learning opportunities to their students. However, it is necessary to realize that video is a static medium and a specially designed learning platform that is usually used for face-to-face online learning. The learning platform is commonly used by researchers in their learning and research. Therefore, the initial action that must be taken before the research design is carried out is to introduce the platform. First, it is important to do because it can make it easier for users to use and utilize it (Jiang & Jiang, 2022).

Conclusion

Based on the results of the discussion on research and development of digital storytelling media about the local wisdom of Sang Bumi Ruwa Jurai as a social value system in Lampung Province and providing innovations in storytelling learning, several conclusions can be drawn as follows:
1. The product of this development is the digital storytelling media of Sang Bumi Ruwa Jurai to preserve the local wisdom of Lampung province and provide innovations in storytelling learning in the form of print and digital media.
2. The results of the validation of the expert team that product development has been carried out correctly and follows the methods, procedures, principles, and development ac-

cording to the guidelines, ranging from needs analysis, planning, design, evaluation, and testing. So, the team of experts recommended that the developed structural product be suitable for use.

3. From the results of field trials, it was found that the use of digital media for storytelling, "Sang Bumi Ruwa Jurai", can facilitate storing learning and is able to create appropriate and effective learning and motivate students in learning.

During the research and development process of digital storytelling media, there are many positive implications for the use of the resulting digital products. The product developed is a digital media that can facilitate the learning process of early childhood education by teaching digital storytelling based on local wisdom. Therefore, it is very suitable to be used by teachers, students, parents, and the community as a medium and learning resource for children in introducing the philosophical values of local wisdom.

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