AOSIS

Teachers' perceptions on the need to use digital storytelling based on local wisdom to improve writing skills

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Background: Important to improve writing skills in elementary school students; therefore appropriate teaching materials are needed to fulfil learning facilities. Digital storytelling based on local wisdom is a teaching material solution that is relevant to the times and precisely facilitates storytelling learning to improve students' skills of expression through writing.

Aim: Purpose of this study was to describe teachers' perceptions of the importance of digital storytelling based on local wisdom in improving writing skills.

Setting: This research begins with a survey of several elementary schools in the Pandeglang Regency of Indonesia to explore the extent to which digital storytelling is based on local wisdom selected by purposive sampling.

Methods: Collection of research data combines quantitative and qualitative methods and uses data triangulation techniques. Quantitative data were obtained through a questionnaire instrument filled out by 60 teachers, while quantitative data were obtained through semi-structured interviews conducted with 24 teachers. The collected data were then analysed using descriptive methods.

Result: Results of this study are that teachers respond that it is imperative to develop storytelling material through digital storytelling based on local wisdom to improve elementary school students' writing skills.

Conclusion: Digital storytelling learning based on local wisdom is urgently needed to improve students' writing skills. Based on this, it is important to develop storytelling materials based on local wisdom through the use of digital storytelling to improve elementary school students' writing skills.

Contribution: This research can be an input for educators, especially elementary school teachers, in innovating to develop teaching materials to create an active and fun learning process to achieve learning goals.

Keywords: digital; storytelling; local wisdom; writing; story.

Introduction

The substance of learning Indonesian is carried out according to the orientation of learning objectives, so that each process encourages students to become proficient in Indonesian. This orientation causes students to easily understand the subject matter so that learning outcomes are achieved optimally. Indonesian language learning that remains focused on learning outcomes can train students' thinking power in a coherent, orderly and comprehensive manner. This learning process is more memorable for students so that they can easily remember the material they have learned. Digital storytelling teaching materials based on local wisdom are interesting and easy to remember so they can be developed and applied as storytelling teaching materials in class (Lee 2014 and Robin 2016).

The learning programme is not just a series of topics, but an issue that students must understand and master and can use in their lives. Basic education in Japan shows that previous conceptions about something students have based on character and cultural background are important in the learning process. Students of all ages have concepts about various phenomena they bring to class (Widisuseno 2019). The initial ideas these students possess can be sourced, among others, from cultural backgrounds, family, media and other

things. Students directly hear, see, experience and at the same time, use it. This concept proved to be very helpful and valuable in the context of his life, likewise with students' writing abilities. The right strategy will encourage writing skills to develop by learning objectives.

Local wisdom is part of the culture. Language and culture cannot be separated because students learn language through their surroundings. Bearing this description in mind, this matter *needs to use its language to handle concepts*. Learners need to use their language to work through the concept. Local wisdom is an important part of the pillars of environmental preservation (Marfai 2019). Local wisdom consists of two words: local and wisdom. Local wisdom was born from the culture acquired by humans as they were born into the world (Hasanah 2016). This culture continued through generations because, without culture, a person would have a hard time surviving. Local wisdom can be a guide in dealing with global hegemony. Local wisdom can take the form of culture (values, norms, ethics, beliefs, customs, customary laws, special regulations), unwritten rules, language—either spoken or written (folk tales, chants, proverbs, wisdom, advice, ancient books, slogans and others), wise speech (advice, proverbs, rhymes, poetry, folklore (oral stories), as well as in the form of concrete objects (Affandy 2019).

Local wisdom is also an effort to face the challenges of cultural change. Some of them function as part of life, directions and expressions of nobility to the owner. Maintaining local wisdom is a joint obligation so that it can be made to identify and differentially continue the culture. This differential culture is elastic and can form itself and can be negotiated in social interaction (Banda 2013). In anthropology, the known term local *genius* is also referred to as cultural *identity* so that the nation can accept foreign cultures in accordance with character and ability alone. Local wisdom, known as indigenous *wisdom,* is understood as a wealth of local people who have good, living thoughts that accommodate policies (*wisdom*) in the wisdom of life in society or community.

Writing is one of the most complex cognitive activities that involves many cognitive components (Olive 2004). Individuals find the thoughts and ideas they want to express in their stories through the writing process (Miller 2010). With digital storytelling, students can learn the art of writing good stories, how text and art can be integrated and how technology can be used creatively (Miller 2010). In addition, when students fully engage in the writing process, they compose stories and participate more effectively in the digital story creation process by developing good scenarios (Xu, Park & Baek 2011). Previous research has shown that *digital storytelling* develops students' writing skills and can be used as an effective learning tool, especially in computer-assisted language acquisition (Abdollahpour 2018).

Changes in the learning paradigm during the pandemic in schools, especially elementary schools, have made fundamental changes in terms of objectives, processes and learning outcomes. Limitations and even prohibitions for face-to-face learning forced teachers to strive to create safe learning according to students' needs. Therefore, digitalisation in learning is a must. Based on observations in the field during both offline and online learning periods, researchers found that the learning process was still conventional; most teachers used books as the main medium that was often used in learning. Even though currently the implementation of education in the world has undergone drastic changes, previous face-to-face learning is now hybrid learning (Ololube 2014), blended learning (Fong 2007) and flipped learning (Casselman et al. 2020). This has had a significant impact on learning but demands digital skills and literacy for both teachers and students (Grimaldi & Ball 2019). This research is motivated by the current educational situation that requires technology-based learning innovations in elementary schools. One of them is by developing digital teaching materials.

The statement above aligns with the research results (Pujilestari 2020) regarding using information technology as a keyword in online learning to enable students to learn better, faster and smarter. Another term is ICT (information and communications technology). United Nations Educational, Scientific and Cultural Organization (UNESCO) revealed that several benefits could be obtained by implementing ICT in the education system, namely facilitating and expanding access to educational networks, increasing educational equity, learning quality, teacher professionalism and more effective and efficient management and governance of education (Adisel & Gawdy 2020). People who are digital and information technology literate can be said to have adequate ICT literacy (Tesi Muskania & Wilujeng 2017). Teachers implementing online and offline learning must also have sufficient ICT literacy to facilitate learning. Teachers need special training to improve their competence in ICT (König, Jäger-Biela & Glutsch 2020).

Digital storytelling emerges from digital integration and *storytelling* to meet learning needs, such as communication and self-expression, and to facilitate teaching in improving language skills, one aspect of story writing skills. The results of previous research indicate that *digital storytelling* is effective in developing cognitive structures, which, initially, the development process of cognitive structures is believed to develop over a long period. Therefore, this study reveals the contribution of *digital storytelling* to the development of visual memory, which positively impacts the development and acquisition of information and abilities acquired during the learning process (Sarica & Usluel 2016).

Other research shows that *digital storytelling* in learning can evoke positive responses to engaging learning, and the use of *digital storytelling* is recommended for continuous integration into the curriculum, which further supports

effective learning (Yocom et al. 2020). Media *digital storytelling* shows that it can increase self-confidence and open-mindedness. Research subjects become more aware of power, alternative voices and potential choices for them (Chan 2019).

Interactive computer-based applications are said to be suitable for use in elementary schools. This is supported by research results showing that computer-based media play an important role as current learning media in the learning process. Computer-based applications are acceptable for use in learning because they can enhance the independent learning process and the active part of students (Rachmadtullah, Zulela & Sumantri 2018). This shows the need to develop *storytelling* developed in elementary schools to meet the needs of the learning process. Furthermore, research that reviewed 57 literature reviews showed that the use of *digital storytelling* exhibited continued interest in elementary and middle school students and higher education. The use of *digital storytelling* is also often used in learning. This study recommends further research on *digital storytelling* for use in education (Wu & Chen 2020).

Furthermore, it can be seen that moral messages and real pictures about everyday life will be able to stimulate the social spirit of students. In accordance with the learning objectives of improving the aspects of knowledge, attitudes and skills of students, media *digital storytelling* will play a role in creating all these three aspects. Thus, the creation of the media *digital storytelling* for students is very important, not only for playing a role in improving cognitive aspects but also as affective and psychomotor aspects of students as provisions for life in the future (Ratri 2018).

Learning observers Lee (2014) and Robin (2016) stated that *digital storytelling* is an effective tool for students to improve their language skills. It is created by combining a number of digital media, such as sound, image and video components, with a duration of 3–5 min, and in some circumstances up to 10 min (Stasiulis 2019). Digital storytelling employs the use of media to present personal stories, as well as documentary recordings and stories that educate and put certain ideas or practices into practice (Robin 2016). Furthermore, instructors have a variety of opportunities to engage and assist students through digital storytelling tools (Dreon, Kerper & Landis 2015).

According to Lee (2014), digital *storytelling* is created by combining many digital media elements such as sound, images and video. They are often made available free of charge via video services such as YouTube and other media video services that are increasingly easily accessible through *browser internet* (Ohler 2013). Frazel (2011) said that *digital storytelling* is a method of combining several media to enrich and enhance the written or spoken word.

In line with some of the explanation about *storytelling* above, Fatih (2020) states that *digital storytelling* is defined as the creation of a short film using software to incorporate the multimedia artifacts provided by technology to a story or axis of events. The goal is twofold: to leverage storylines to make information much more effective and lasting and to use technology to encourage students to become active participants in learning.

Writing initial scripts, developing *storyboard*, discuss and refine the script, sequence images through the video editor, enter narrative text, add special effects and transitions and add soundtracks. These are the seven phases of the digital storytelling process. This is based on Yulianis' research, S. Hartanto, D. (2022) by implementing five video storytelling. Based on the findings that learning systems need digital tools to create new content, folklore and sounds that appeal to students and teachers.

Following the several opinions stated above, it can be concluded that the media *digital storytelling* is a media that utilises digital images formed in innovative media in order to create learning methods that make it easier to understand learning as well as fun for students because they are in the form of real pictures in the surrounding environment and in accordance with the cultural background and social life of students.

The development of teaching materials is one of the obligations of teachers to become professional educators. One of these teaching materials is learning media. Learning media can send messages to stimulate students' thoughts, feelings, concerns and interests in such a way that the learning process occurs. By its function, learning media is basically to improve the quality of teaching and learning. Therefore, in teaching and learning in schools, learning media has a very important role (Fahrurrozi, Hasanah & Dewi 2019). The development of learning media must pay attention to several things. The main principle of choosing instructional media is the effectiveness of teaching media in achieving learning objectives and helping students understand the material that will be presented. We must consider whether the learning media that will be used is more effective when compared to other media. Learning media must also be selected based on the principles of the level of student thinking (Ediyani et.al. 2020). The third principle that must be considered in choosing media in classroom learning is interactivity and flexibility (Alexander, Adams Becker & Cummins 2016).

Teaching materials chosen by teachers for teaching and learning activities in the classroom must have good interactivity and flexibility. Teaching materials are said to have good flexibility if they can be used in a variety of situations. Thus, some of these things are used as considerations for researchers to develop teaching materials in elementary schools. As knowledge and technology advance, teaching materials have evolved to suit various situations (Huang et al. 2019).

Teaching materials are more effective if information can be seen, heard and done. In this case, the researcher will develop language learning, especially aspects of writing stories for fourth-grade students in elementary schools (Munajah & Karyadi 2021). The use of *digital storytelling* shows that in the learning process, children quickly understand and adapt the various mechanisms behind the system to create their stories, mostly involved in creating narratives or playing language games (Suastika 2018). This research describes the application of digital manipulative techniques in an educational context, demonstrating that it is a useful tool that integrates into high-quality learning practices (Sylla et al. 2015).

There is an increase especially in abilities in the field of information technology, especially in the digital domain, namely making videos using certain software, the ability to work together in groups and the ability to make presentations in addition to speaking skills and vocabulary mastery (Asri et al. 2017). Research (Bron & Barrio 2019) shows that the existence of digital-based media that has been implemented in elementary schools is in the form of presentation slides, instructional videos and animated videos. *Digital storytelling* is an interactive illustrated storytelling medium in the form of a combination of animated illustrated video, story text and audio-visual so that learning will be more enjoyable and contextual (Anisimova 2020).

The application of *digital storytelling* used by students makes students feel even happier and they don't want to change lessons immediately. For this case study, the researcher included additional pictograms or pictures with vocabulary related to the cards used by the children. The idea is first to see if children know this vocabulary and if they don't, it is taught first by showing the corresponding word marks, then they are asked to associate each word with a specific story card (scene). To start with, the teacher begins teaching literacy from stories created by students and selected vocabulary based on the current knowledge and age of children's literacy (Flórez-Aristizábal et al. 2019).

The above shows why teachers' perceptual knowledge of local wisdom-based digital storytelling in learning is an important factor that will help implement local wisdom-based digital storytelling teaching materials in the education system effectively (Munajah, Sumantri & Yufiarti 2023). Perception is any process selection, organisation and interplay of information input, sensation received through sight, feeling, hearing, smell and touch to generate meaning (Hasanah, Astra & Sumantri 2023). The novelty of the research lies in the initial data for integrating local wisdom and digital storytelling that will be developed by researchers and research following the current developments and technological needs in learning activities in elementary schools.

Therefore, the researcher conducted a needs analysis study, which is important because further development research is

carried out. The formulation of the problem in this study is as follows: What is the teacher's perception of teaching materials commonly used in learning to write stories? What is the teacher's perception of the need for innovation in developing teaching materials for learning to write stories? What is the teacher's perception of the need to use local wisdom-based digital storytelling materials to improve story writing skills?

Methods

This research uses mixed methods by combining quantitative and qualitative data collection and data triangulation to go beyond the limitations of single-method studies by increasing credibility teaching materials *storytelling* based on local wisdom in improving writing skills.

Research design

The data were collected on teacher perceptions about the need for Local Wisdom-based Digital Storytelling Learning Workshops that were collected, based on the following three aspects: (1) teacher perceptions of the suitability of teaching materials commonly used with teaching material selection criteria, (2) teacher perceptions about the need to develop digital storytelling teaching materials based on local wisdom to support Indonesian language learning and (3) the teacher's perception of the need to use digital storytelling teaching materials based on local wisdom to improve students' writing skills. The research was conducted in two stages: the first was giving questionnaires to 60 teachers; the second part conducted semi-structured interviews with 10 teachers selected from a sample questionnaire. Ten teachers were interviewed about the same construct to gain a deeper understanding of the research constituents measured by the questionnaire. The data collected in the form of quantitative analysis data from the needs on which the research is based are analysed using percentage calculations. Qualitative data analysis was carried out by analysing the results of interviews and field notes on teachers' perceptions of the development of teaching materials to improve writing skills.

Participants

The sample questionnaire consisted of class teachers spread across Pandeglang. Questionnaires were available online so that teachers can easily access them anywhere to fill them out. This research was conducted in January 2021, in Indonesia, which was still experiencing the coronavirus disease 2019 (COVID-19) pandemic. A total of 60 teachers who returned the completed questionnaire were considered the study sample. Given the physical distancing policy during this pandemic, a purposive sampling technique was used by distributing online questionnaires using Google Forms. Descriptive data on demographic characteristics, which include gender, length of teaching experience, educational background and teacher education level, are presented in Table 1.

TABLE 1: Participant's characteristic (*n* = 60).

Aspect	Frequency	%
Gender		
Female	48	80
Male	12	20
Working years as a teacher		
1–5 years	5	8.33
5–10 years	34	56.67
10–15 years	21	35
Educational background		
Primary teacher education	57	95
Others	3	5
Level of education		
Bachelor's	59	98.33
Master's	0	0
Others	1	1.67

Findings

Data from questionnaires and interviews were obtained based on the perceptions of 60 elementary school teachers in the Pandeglang district. The suitability of the criteria begins with the results of the teacher's perception of the teaching materials that are often used with the suitability of the requirements for selecting teaching materials. Furthermore, to make the data more comprehensive, interviews were then conducted as a follow-up to obtain data about the need for innovation in selecting teaching materials for writing stories and how teachers perceive the need to use digital storytelling teaching materials based on local wisdom to improve story writing skills in elementary schools.

Research method

The use of a mixed method using two methods: questionnaires and semi-structured interviews with elementary school teachers in this research activity is prioritised to obtain data on the results of respondents and the results of the answers of the subjects so that it will facilitate data triangulation accuracy in validating and in efforts to strengthen the data from the initial findings in the questionnaire activity. And also to enrich the data in additional dimensions, as well as help facilitate and correlate research answers from different and more focused angles to answer the research problem formulation.

The data collected in the form of quantitative analysis data from the needs on which the research is based are analysed using percentage calculations. Qualitative data analysis was carried out by analysing the results of interviews and field notes on teachers' perceptions of the development of teaching materials to improve writing skills.

Questionnaire

Based on the results of the literature study and field observations, the researcher compiled a questionnaire to obtain information on a representative basis through the suitability of teaching materials commonly used with the criteria for selecting teaching materials; the suitability of the research questions evidenced this. The questionnaire has been designed based on a Likert scale. This questionnaire is related to the principle of meaningfulness, the doctrine of authenticity, principles of cohesiveness and functioning principles, communicative performance principles, contextual principles and assessment principles.

Semi-structured interviews

The second part, through open and semi-structured interviews, discusses the need for innovation in the development of Indonesian language teaching materials in elementary schools. the third part examines teachers' perceptions of using digital storytelling teaching materials based on local wisdom. This activity is carried out to increase the validity and validity of data collection data.

Procedures

In this activity, before distributing the questions, the questionnaire was tested first for its validity and reliability. Its validity is checked through the degree of accuracy and the accuracy of the questions so that the research results are by the theoretical reasons and empirical facts about the suitability of the criteria or principles of selecting teaching materials, both in terms of content, construction and requirements. It was found that the general validity of the three components reached 0.52–0.64, recorded in the moderate category so that the questionnaire questions could be distributed to 60 elementary school teachers in the Pandeglang district. The reliability level also reached 0.66, based on the Gregory Questionnaire index which has been prepared accordingly to be distributed to teachers as research respondents.

Results

The research results were obtained from questionnaires and interviews, which described the present key research findings from quantitative and qualitative research data. These findings are very helpful in determining the implementation of local wisdom-based digital storytelling learning.

Quantitative analysis

Based on the results of an analysis of the answers of 60 respondents, it was found that there are interesting things in conformity with the 60 principles. The results of the questionnaire are shown in Figure 1.

Based on the data, the result obtained is that the level of nonconformity is still high, especially in the criteria for applying contextual principles; reaching 95% is not appropriate, then the authenticity becomes 25% inappropriate, the meaningfulness is still 30% inappropriate and the functionality is up to 40%. This shows that efforts are still needed to adjust the teaching materials used in schools.
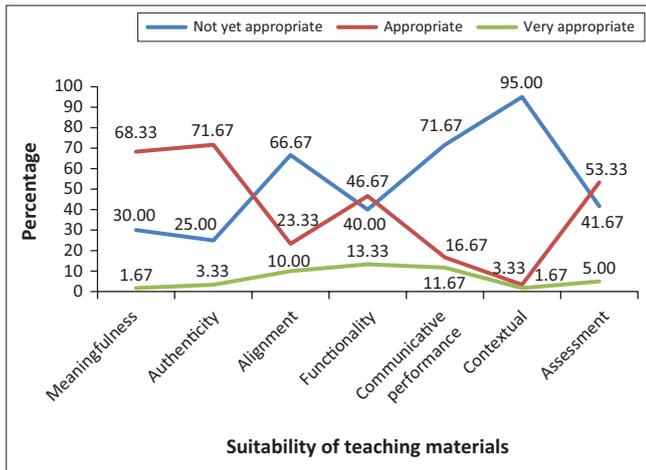
FIGURE 1: Questionnaire results.

Qualitative analysis

To obtain comprehensive data, the results of the questionnaire data were then strengthened by conducting semi-structured interviews with a target of 24 people randomly representing each school in the Pandeglang sub-district. Based on the results of interviews with elementary school teachers, it can be concluded that the types of Indonesian teaching materials currently used are predominantly student worksheets. In conformity with the principle of meaningfulness, most teachers perceive that there are still few teaching materials that encourage students to train independently to express the right thoughts, ideas, ideas and information to others. Furthermore, in the aspect of the principle of authenticity, the teachers perceive that the teaching materials that have been used have not been able to meet the needs of children in communicating. In the aspect of integrating the required learning material, the material is conveyed as a whole, not partial, so that it helps children communicate. The teacher's perception of the working principle of teaching materials still needs to encourage children's creativity in language acquisition. In terms of the direction of communicative performance, teaching materials, according to the teacher, need to provide experiences – experiences that are comprehensive and meaningful in everyday life. On the principle that the teacher's perception shows that teaching materials are not contextually appropriate, teaching materials need to be prepared and adapted to students' cultural backgrounds, learning readiness, children's interests and student learning styles so that children can speak properly and correctly according to the context. In the principal aspect of assessment, it is found from the teacher's perception that review in teaching materials is to measure students' competence, especially in language skills in communicating, not just theory or grammatical aspects. Thus, all teachers think that there is a need for innovative Indonesian language teaching materials for elementary schools and choosing digital-based teaching materials. This is in line with the results of research conducted by Harjono et al. (2022) which found that the learning process assisted by video learning models can improve students' creative thinking skills. The creative thinking aspect in this study is in line with students'

creativity in story writing activities. Furthermore, according to Sumantri et al. (2021) the use of technology in current learning can support the effectiveness of learning, with the use of technology that is currently developing in a positive direction; of course it can minimise the negative impact of the rapid development of technology. This statement certainly supports research to develop teaching materials *digital storytelling* based on local wisdom. Teaching materials *digital storytelling*, which also includes learning video media, is in line with the opinion of Heinich et al. (2001) and Edgar Dale (1969) who argue that learning interactions will be successful if using the right learning media according to the needs and learning objectives. One of the learning media that can be used is digital media in the form of learning videos, audio-visual and animation. This statement is also in line with Lee (2014) who found that *digital storytelling* is created by combining many digital media elements such as sound, images and videos to aid the learning process. Learning videos are often provided free of charge through video services such as *YouTube* and other video media services that are increasingly accessible via *browser internet* (Ohler 2013). Frazel (2011) says that *digital storytelling* is a method of combining several media to enrich and enhance the written or spoken word. Therefore, developing teaching materials *digital storytelling will* be highly useful in elementary schools to improve writing skills in particular, and of course it can also be used for other aspects of language skills in students in elementary schools.

Conclusion

Based on the research findings and discussion, most teachers' agree that they should immediately develop local wisdom-based digital storytelling materials to improve elementary school students' story-writing skills. This result is supported by several statements: (1) the principle of meaningfulness is still a bit of teaching material which encourages students to train independently to be able to express thoughts, ideas, and appropriate information to others, (2) the principle of authenticity of teaching materials in order to meet children's needs in communicating, (3) the aspect of integration of the required learning material is the material delivered in its entirety not as partial, (4) the principle of the functioning of teaching materials needs to encourage children's creativity in language acquisition, (5) in terms of the principle of communicative performance, teaching materials need to provide a rich experience comprehensive and meaningful and everyday life, (6) in terms of contextual principles, the teacher perceives that teaching materials are prepared and adapted to students' cultural backgrounds, learning readiness, children's interests and also student learning styles, so that children can speak properly and correctly according to the context and (7) the principle of assessment in teaching materials in order to measure competence. Students' overall comprehension, especially in language skills in communication, not just grammatical aspects solely. The results of this study are the first step of the next research, namely the development of teaching materials. This needs analysis can be used as an overview of the conditions of

Indonesian language learning in elementary schools. It can be used as a reference for future researchers who wish to develop appropriate teaching materials for elementary school students.

Limitations and suggestions for future research

This study used a survey to explore teacher perceptions and experiences while teaching students Indonesian language learning, especially in story writing skills. As with all research, this study has limitations. This research is a small representation of elementary school teachers who experience online and offline learning models in the Pandeglang city area. For this reason, future research should be more comprehensive and should be based on quantitative or mixed methods studies with a wider sample. Future research can discuss the development of teaching materials that can be used in online and offline learning. This research can also be used as preliminary research for developing models and teaching materials for learning Indonesian appropriate for elementary school students from various backgrounds.

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Competing interests

Authors' contributions

R.M., S.S.M. and Y. all contributed to the research and the writing of the article.

Ethical considerations

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Data availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Disclaimer

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