21st-century skill-based literacy learning guide for elementary schools

Gede Wira Bayu, Ni Nyoman Padmadewi, I. Nyoman Sudiana, Ida Bagus Putrayasa

Ganesha University of Education, Singaraja, Indonesia.

Abstract Reading literacy is a basic literacy that must be learned early on. Many studies have studied solutions for improving student writing skills, but most of these studies only examine how to create learning by collaborating learning with literacy programs, making reading corners and developing books that can be used to improve basic literacy. However, the solution has not been effective in optimizing literacy learning. Therefore, this study aims to produce a Literacy Learning Guide to Skills Based on 21st Century Skills in Elementary Schools. This study uses the Four-D development model consisting of 4 stages, namely, define, design, develop, and disseminate. The subjects in this study are content experts, learning design experts, and teachers. Sampling in this study was carried out using saturated sampling techniques with samples obtained from all SD Piloting K13 in Buleleng District. The number of samples in this study was grade 3 elementary school teachers with 9 people and class III students totaling 61 students. Data collection is carried out by the method of observation and distribution of questionnaires. The data analysis technique used is qualitative and quantitative analysis techniques. The results of this study indicate that the literacy condition of reading students is still said to have not been maximized because of their ability to read and write. The results of this study also show that the Literacy Literacy Learning Guide based on Abab-21 skills is needed in elementary schools, and the effectiveness of the 21st Century Ib-Based Literacy Learning Guidelines for elementary school students is declared effective.

Keywords: literacy, learning guide, 21st century skills

1. Introduction

Industrial Revolution 4.0 is an era of computerization and digitalization that is full of technological content. Industrial Revolution 4.0 made many changes in all aspects of life (Bilotta et al 2020). One of the changes that has occurred is to automate all life processes without human intervention. It is also very closely related to technological progress (Alaloul et al 2020). Currently, humans must be able to transform and grow into humans who are able to survive the onslaught of technological advances. Humans also need 21st century skills to survive. The skills that need to be learned and imparted are known as the "4Cs", which include communication skills, collaboration skills, critical thinking and problem solving, creativity and innovation. Everyone is required to master 21st century skills so that they can overcome the challenges and problems of life in the 21st century (Redhana 2019). Communication skills are very important for students, and communication skills are basic things that everyone must master. Communication skill itself is a person's ability to convey or express his thoughts to others. In addition to communication skills, collaboration skills must also be possessed by students.

Collaboration is the ability of students to build relationships with other people, respect each other, and participate in all activities to work together as a team to achieve the same goals. In the learning process, teachers need to create situations that provide opportunities for students to learn together or in groups (Rahmawati 2019). Students who have collaborative skills can contribute to other students in the learning process (Falcione et al 2019). The ability to collaborate provides opportunities for students to improve their learning achievement (Robbins and Chad Hoggan 2019). This is due to cooperation between peers and peers helping, guiding and supporting fellow peers so that they are able to build learning through interaction and collaboration (Andersen and Watkins 2018). Furthermore, what students must have is the ability to think critically.

Critical thinking is independent thinking that generates new and innovative ideas and solves problems, reflects critically on experiences and learning processes and makes effective decisions (Indraswati et al 2020). To develop critical thinking and problem solving skills, the learning process should enable students to think critically by connecting learning with contextual problems that exist in everyday life. In addition to critical thinking, creative thinking is also important. Creative thinking includes many higher thinking skills, such as analysis, testing, communication problem solving, and scientific process skills. (Redifer et al 2023; Yildiz and Guler Yildiz 2021; Zhang et al 2021). Creative thinking includes flexibility, fluency, and novelty (Huang et al 2020; Kassim et al 2014). This will demand learning that is able to involve students actively in small group learning as well as developing thinking skills (Hardy et al 2017; Montag-Smit and Maertz 2017). Therefore, learning must create conditions for
students to be creative and innovative. The teacher becomes a facilitator in accommodating the results of creativity and innovation developed by students. In addition to 4C skills, students are also required to master literacy.

Literacy is one of the initial steps to face the demands of the 21st century. Generally, literacy means the ability to read and write (Soliokhah 2015). However, the term literacy has a broader meaning over time. Literacy is currently not only interpreted as the ability to read and write but also has meaning and implications from basic reading and writing skills to the acquisition and manipulation of knowledge through written texts, metalinguistic analysis of grammatical units to the structure of spoken and written texts, and the impact of human history on philosophical consequences. and Western social education (Musfiroh and Listyorini 2016). Literacy ability can be used as a weapon to face challenges in today's life. Through literacy, an individual will develop cognitive aspects of himself. Literacy includes various types of skills, such as reading, writing, processing information, ideas and opinions, decision making and problem solving (Tavdgirdize 2016). There are six basic types of literacy, namely, literacy, numeracy, science literacy, digital literacy, financial literacy, and cultural and citizenship literacy.

Reading literacy is a type of literacy that is already familiar. Reading literacy is the knowledge and skills to read, search, browse, process, and understand information to analyze, respond, and use written texts to achieve goals, develop understanding and potential, and participate in the social environment (Nudiasi and Sudijerpermama 2020). Reading literacy is considered important because it is a basic ability to continue toward other abilities. Reading is a process of absorption of information that is more effective than listening and even has a positive effect on creativity. According to Marion Lawrence quoted by Wendyataka Fauzi (2018), children are only able to remember 10% of what they hear, 50% of what they see/read, 70% of what they say, and 90% of what they do. Reading is the gateway of knowledge to intelligence. Therefore, the continuous growth of interest in reading is necessary to achieve a society that is religiously, intellectually, socially and economically intelligent so that it will not easily accept false information or news. In addition to reading literacy, writing literacy also has a very important role.

Writing activity is an activity that can explore thoughts and feelings about an object, choose what things to write about, and write it down so that readers will easily understand it clearly. Writing involves children's cognitive abilities in the form of ideas that are realized in the form of arranged words in symbolic and written form (Huber et al 2020). Writing ability is related to students' literacy skills (Hadis and Manvender 2016). Therefore, writing is an activity that needs to be mastered and become a habit because the ability to write will affect the ability to think (Ediyono and Alfiai 2019; Nisa 2020; Rosenhan and Galloway 2019) and improve communication skills (Jack 2015). For this reason, writing literacy must be well developed because literacy is not something that comes in a short time but takes a long time (Syafei et al 2019). Based on these descriptions, it can be said that literacy is very important to address the challenges of learning in the 21st century.

The reality that occurs in the field, based on literacy tests conducted by several institutions, Indonesian students' reading and writing literacy needs to be improved (Indriyani et al 2019). There is still no visible culture of children's literacy either at school or at home (Ifadah 2020). Reading and writing activities carried out by students are still lacking, which indicates that students' literacy is low (Ati and Widiyarto 2020). Furthermore, children no longer have an interest in books and instead turn to gadgets that offer various pictures and motion games, resulting in children's reading power being very low, as evidenced by libraries that are no longer crowded with students (Aswat and Nurmayas G 2019). This statement is supported by data from the 2018 PISA study report released by the OECD on Tuesday (3 December 2019) for the literacy category. Indonesian students scored 371 out of an average score of 487. In the field of mathematics, Indonesian students scored 379, which is still lower than the average score of 487. In addition, students' reading abilities combined with low students' writing abilities are still not optimal (Windarto 2020).

This condition is also supported by the results of observations showing that students who just read the text and when asked questions by the teacher are unable to answer because they do not understand the contents of the reading. Based on observations, students tend to stare directly at the lines of reading without knowing what they mean by reading the text, meaning that students do not know what they are reading. Students also seem as if they are not responsible for what they read, whether they understand it or not. As if reading only through the jungle of words without meaning. They generally do not know how to read. This condition is caused by several factors, one of which is literacy before learning, in which the teacher only uses student literacy guides provided by the Ministry of Education and Culture with literacy materials only sober reading texts.

In addition, the teacher does not use many variations of the text because the existing guidelines only emphasize 15 minutes of literacy time before learning without guidance regarding the text that must be used according to the class (low grade-high grade) where literacy is carried out. This is because teachers still have difficulty choosing texts that can improve students' literacy skills in both low and high classes. This results in students feeling bored quickly and unmotivated in participating in literacy activities. The results of the initial analysis also found that teachers are currently still using basic literacy guidelines issued by the Ministry of Education and Culture, which still need to be enriched with readings or activities that provide more opportunities for students to read and write activities. This condition is supported by the results of interviews with several teachers where the teacher needs a guide that is in accordance with the development of science and technology and according to the needs of students.
Many solutions have been made to overcome this problem. These solutions include research that states that there is a significant influence of the literacy corner on students' reading interest, where the category of student reading interest is good, with a percentage of 83.89% (Dafit et al. 2020). Research states that the Wattpad application can help students hone literacy skills. The use of Wattpad is considered to provide an interesting learning experience for students. Research that states that the product produced in this research and development is a fable story learning enrichment book based on literacy for second grade elementary school students. This product is declared fit for use in terms of content, presentation systematics, use of language, and illustration design. This development product has been used as a book to support the learning process both at school and at home. In addition to being used as a means of understanding the values of character education and training students' discourse skills, this product can be used as a means of entertainment to stimulate students' imagination with the aim of having fun (Nuha et al. 2019).

Based on the descriptions of the solutions described above, it can be said that the solutions that were carried out were more for creating learning by collaborating learning with literacy programs, creating reading corners and developing books that could be used to improve basic literacy. However, these solutions are still not optimal in increasing basic literacy because they have several weaknesses, namely, the lack of infrastructure. The understanding of schools that have not given priority in developing a literacy culture and the lack of understanding of teachers in translating the emphasis on literacy development in national education principles and programs, as well as the basic framework of the curriculum (Dafit et al. 2020; Nuha et al. 2019). To overcome the shortage of existing solutions, it is necessary to develop a guide to implementing literacy learning based on skills in 21st century education.

Guidelines for implementing literacy learning based on educational skills in the 21st Century which is a guide for implementing literacy learning based on skills in Education in the 21st Century. This guide will be developed and supplemented with guidelines on how literacy activities will be carried out by students and teachers. This guide is equipped with students' reading and writing literacy activities and learning procedures that must be carried out by the teacher. With the complete package offered, it is hoped that it will have an effect on literacy skills in addition to implementing various solutions that have been provided in previous studies. It is also hoped that this guide will be able to complement and enhance literacy learning to read and write that has been implemented in schools. The purpose of this research is to develop a 21st century skill-based reading and writing literacy learning guide in elementary schools.

2. Methodology

This research uses the type of development research. The development model used is the Four-D model. The Four-D development phase consists of four steps, namely, define, design, development, and dissemination. The defining stage is to identify and analyze the needs related to product development. The development of 21st century skills-based reading and writing literacy guide products is carried out in several stages, namely, 1) Analysis of the current curriculum, namely, the 2013 curriculum. 2) Analysis of basic competencies for the formulation of learning indicators related to literacy activities. 3) Analysis of the characteristics of students who will receive learning. 4) Analysis of learning material is carried out to match the indicators of literacy activities carried out. For the development of literacy reading text criteria, several stages were carried out, namely, 1) Analysis of the current curriculum, namely, the 2013 curriculum, with the aim of determining the teaching materials developed to suit basic competencies. 2) Analysis of the characteristics of students performing literacy activities. Analysis is important to do so that the literacy material provided matches the students who will use it. 3) Formulate criteria for reading material for literacy to limit to not deviate from the characteristics of students and the learning process that is carried out afterwards. The design stage is to design a 21st century skill-based reading and writing literacy activity guide design and reading text criteria based on 1) the results of the 2013 curriculum analysis, 2) the results of the analysis of the characteristics of students who engage in literacy activities, and 3) the results of material analysis learning that will be carried out after the literacy process. The development stage is to test the developed guidelines and reading criteria. Product design validation was carried out by 5 people consisting of 3 lecturers who are experts in their fields, including literacy experts, child development experts and learning design experts, and 2 teachers as practitioners. At this stage, an effectiveness test was also carried out, and the results of the guide effectiveness test using the t test formula obtained a tcount of 2.523. The tcount obtained was consulted with the ttable value with a significance level of 5% and degrees of freedom df = n-1. The Dissemination stage carries out packaging and product dissemination activities. Learning tools that have been developed and have been validated and tested for effectiveness as well as revised according to the input provided by experts and practitioners are then packaged and distributed to all K13 Piloting Elementary Schools in Buleleng District.

Subjects or participants in this study were content experts, instructional design experts, and teachers. The object in this research is the data collection method used is observation and distributing questionnaires. The data analysis techniques used in this study are qualitative and quantitative data analysis techniques. Qualitative data analysis was carried out by compiling data in the form of words, sentences, pictures and charts. This technique is used to analyze data obtained from suggestions and comments from experts. Meanwhile, quantitative data analysis was carried out by grouping data based on variables and performing data calculations (Sugiyono 2018). Meanwhile, quantitative analysis techniques are data processing in the form of numbers or percentages. This technique is used to analyze the needs, validity, reliability and effectiveness of the developed learning material.
literacy guide. Sampling in this study was carried out using a saturated sampling technique. This sample was taken from all K13 Piloting Elementary Schools in Buleleng District. The samples in this study were grade 3 elementary school teachers with a total of 9 people and grade III students for a total of 61 students.

3. Results

This study obtained results in accordance with the objectives of this study for the first problem related to the analysis of learning needs for literacy literacy, which will be described in Figure 1.

![Figure 1 Analysis of Reading and Writing Literacy Learning Needs 21st Century Skills Based.](image)

Based on the results above, it can be concluded that the need for literacy learning is based on 21st century skills that support the learning process of literacy literacy to cover deficiencies in students who still cannot read and write well. This 21st century skills-based literacy learning is appropriate as a need for literacy learning, and 21st century skills-based literacy learning is not carried out in these elementary schools. To carry out learning, various needs are needed, such as guidelines or learning guides for 21st century skills-based literacy literacy, with a percentage of 100% in the very high category. In addition to implementing 21st century skills-based reading and writing literacy learning, 21st century skill-based learning tools are needed as well, such as Learning Implementation Plans (RPP), Learning Media, LKPD, Teaching Materials, along with an assessment rubric that will be used to measure student activity or performance in learning. The percentage of this learning device is 100%, which is in the very high category, which means that the need to implement 21st century skill-based literacy learning is quite high. This needs analysis is very well done because it can determine and be a solution for the need to apply skills-based literacy learning in the 21st century.

After designing the guide, the guide that has been made is tested for feasibility, practicality, and effectiveness. The results of the content validity test obtained a percentage of 92% with a very good category based on the percentage range and PAP qualitative criteria with a scale of five. Then, the results of the language validity test obtained a percentage of 85% with a good category based on the percentage range and PAP qualitative criteria with a scale of five. Furthermore, the results of the design validity test obtained a percentage of 94% with a very good category based on the percentage range and the PAP qualitative criteria on a scale of five.

After the validity test was carried out, a practicality test was then carried out involving three practitioners. The results of the assessment from Practitioner 1 obtained a percentage of 83.92%, and the results of the assessment from practitioner 2 obtained a percentage of 78.57%. Based on the results of the practicality test percentage analysis, an average percentage or final percentage of 81% was obtained with a good category based on the product practicality conversion guide. After testing the validity and practicality, the product in the form of a reading and writing literacy guide was revised according to input from experts and practitioners. Furthermore, the effectiveness of the guide can be tested. The results of the guide effectiveness test using the t test formula were obtained as \( t_{count} = 2.523 \). The value of \( t_{count} \) obtained was compared with the value of \( t_{table} \) with a significance level of 5% and degrees of freedom \( df = n-1 \), and the obtained value of \( t_{table} \) was equal to 1.671. Therefore, if the value of \( t_{table} < t_{count} \), then H0 is rejected and H1 is accepted. Therefore, it can be concluded that the use of 21st century skills-based literacy learning guides is effective for increasing the literacy literacy of third grade elementary school students.

4. Discussion

Literacy in reading and writing is important to develop because reading skill is the main skill to achieve other skills. There are five reasons for literacy to be the main skill in other literacy activities, namely, reading is a builder of meaning, reading and writing are the same knowledge, in the sense that knowledge gained from writing is based on the ability of the reading process,
learning to write and read can improve achievement, reading and writing can improve the ability to communicate, and by reading and writing, students can improve critical thinking skills (Dwijayati and Rahmawati 2021). The results of the study showed that there were still students who could not read and write well. Therefore, it is necessary to have learning innovations that can improve students’ reading and writing skills. For this problem, 21st century skills-based literacy learning will be designed.

This research shows that literacy in elementary schools is not optimal and maximal. Therefore, the learning process must be optimized. The learning process is an interaction carried out by students and educators or teachers; in the learning process, students are expected to be able to follow and accept the learning well (Widiatmaka 2016). In elementary schools, students are currently actively participating in learning, but in the classroom, there are still some students who cannot read and write well, with a percentage of 100%. There are obstacles experienced by teachers, but until now, teachers have always found ways to overcome existing problems. To implement 21st century skills-based literacy learning, there are several needs that need to be prepared so that later teachers can apply this learning in elementary schools. These needs consist of 21st century skills-based literacy learning guidelines. In addition to implementing 21st century skill-based reading and writing literacy learning, 21st century skill-based learning tools are also needed, such as learning implementation plans (RPPs), learning media, LKPD, and teaching materials, along with an assessment rubric that will be used to measure student activity or performance in learning. The percentage of this learning device is 100%, which is in the high category, which means that the need to implement 21st century skills-based literacy learning is quite large. This needs analysis is very well done because it can determine and become a solution for the need to apply skills-based literacy learning in the 21st century.

The results of this study also indicate that the content validity of the literacy learning guide that has been designed is included in the feasible category. This is because the content and learning steps are in accordance with the characteristics of students. The learning provided truly needs to be adapted to the characteristics of students so that learning can be carried out properly and effectively. The characteristics of students are very important to understand so that teachers can design learning to achieve appropriate learning outcomes (Munawaroh 2021; Septianti and Afiani 2020). Furthermore, the results of the validity of the language literacy guide to reading and writing are included in the feasible category. This is because the language used is straightforward and communicative. Using clear and communicative language will help the reader to more easily understand the meaning conveyed. The results of the validity of the literacy learning guide design are also included in the feasible category. This is due to the design of reading and writing literacy learning guides that are attractive and can help readers more easily understand the contents of the guide. Good design can attract readers to read the guidelines that have been developed.

Furthermore, the results of the practicality test show that the learning guide is practical to use because the guide is quite easy to use and does not require a large cost. Finally, the results of the guide effectiveness test show that literacy learning guides are effectively used to improve students’ literacy literacy and 21st century skills. Learning effectiveness is a measure of the success of the interaction process in educative situations to achieve learning objectives (Rohmawati 2015). Based on this understanding, learning to read and write by applying literacy guidelines is considered successful in achieving literacy learning objectives, namely, being able to increase student literacy. Reading and writing literacy learning guides can help make it easier for teachers to plan literacy lessons so that learning becomes more effective. The learning planning process requires careful thought so that it will serve as a guide in achieving learning objectives (Putrianingsih et al 2021). Therefore, this reading and writing literacy learning guide can assist teachers in designing fun literacy learning so that the learning objectives of reading and writing literacy are achieved.

This is in line with several relevant research results regarding the significant influence of the literacy corner on student reading interest, where the category of student interest in reading is good, with a percentage of 83.89% (Dafit et al 2020). Previous research states that the Wattpad application can help students hone literacy skills. The use of Wattpad is considered to provide an interesting learning experience for students (Nuha et al 2019). These studies focus more on creating learning by collaborating learning with literacy programs, creating reading corners and developing books that can be used to improve basic literacy. However, in this research, a guideline has been developed that will guide the 21st century skills-based literacy learning process. Therefore, literacy skills and learning literacy in elementary schools can run more effectively and optimally. This guide is also different from other guides because it collaborates with 21st century skills that are needed by students.

4. Conclusions

Learning to read and write in elementary schools is said to be not optimal, so 21st century skill-based literacy is urgently needed in the learning process. In addition, 21st century skills-based reading and writing literacy learning guides in elementary schools have produced valid, practical, and effective products used in the learning process as an effort to improve the quality of learning outcomes, especially in students’ literacy.

Ethical considerations
This research did not receive any financial support.

References


