

Clinical Supervision to Grow Scientific Literacy Through Teaching Materials Based on Local Wisdom in Pati Regency at Grade IV Elementary School Students

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ABSTRACT

The implementation of the development of *flipbook* teaching materials is based on the low scientific literacy of students due to limited material and incomplete companion books, then students are not accustomed to being skilled at carrying out scientific literacy in the Pati Regency environment. The research method in this article was systematic literature review. The purpose of developing *flipbook* teaching materials was to produce learning media that can be used independently by students to foster scientific literacy in class IV of elementary schools in Pati Regency. grade IV Elementary School in Pati Regency. This research sought to build scientific literacy through *flipbook* teaching materials based on local wisdom in Pati Regency, Central Java Province with the subject matter of substances and their changes. With clinical supervision carried out through two stages, there are professional guidance for teachers and school principals and scientific literacy tours with the target of writing learning articles.

Keywords: Clinical Supervision, Scientific Literacy, Teaching Materials, Local Wisdom.

INTRODUCTION

Education according to Law number 20 of 2003 is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual

strength, self-control, personality, intelligence, noble character, and the skills needed by them, society, nation, and state (Marwa et al., 2023). In addition, education is an effort to form human beings who are whole physically and spiritually, intelligent, healthy, and have noble character (Khusna et al., 2018). Education can shape personality through environmental education that can be learned either intentionally or not (Syarif & Abuamar Ratuloly, 2020).

Pancasila student profiles are also guided to students in addition to the teacher's role. The character of Pancasila students is described as having noble character in everyday life, having independence, critical reasoning, creativity, cooperative spirit and global outlook. Strengthening the profile of Pancasila students is focused on strengthening the national character and being able to implement it into daily practice (Seminar & Fkip, 2019). The profile of students with the spirit of Pancasila is contained in the personality of the community, especially the outlook on life that exists in Indonesia and the implementation of Pancasila values (Nurhikmayati & Sunendar, 2020). During the amplification of the era, local wisdom has begun to be neglected undermined by patterns of community life that consider it

old-fashioned (Niriavidya & Werang, 2023). Strengthening character education based on local wisdom is very urgent as an effort to preserve local culture (Ridho et al., 2021). Character building is very important for elementary school education because it will ensure the path taken by the nation's morals and character in future generations. Therefore, from the elementary school level students are fostered about local culture (Yao & Guo, 2018).

The government is making efforts to find out the position of science achievements of Indonesian students with other countries, that is by participating in several international assessments, namely the Trend in International Mathematics and Science Study (TIMSS) and the Program For International Students Assessment (PISA). In terms of the results of PISA measurements, the Organization for Economic Cooperation and Development (OECD) announced that Indonesia's scientific literacy score until 2018 was still low (Pratiwi et al., 2019). PISA took measurements by involving 12,098 students from 399 schools from the Indonesian region. The number of Indonesian students in the field of science still have competence below the minimum level, that is 66%, in the field of reading, that is 75%, and in the field of mathematics, that is 76%. This PISA score has not experienced a significant increase in the last ten to fifteen years. The study showed that there were large disparities between regions and between socio-economic groups in terms of the quality of learning. This situation is getting not good by the COVID19 pandemic (Nilayati et al., 2019). To overcome this, the Ministry of Education and Culture simplified the curriculum under special conditions (emergency curriculum) to mitigate learning loss during the pandemic. As a result, 31.5% of schools that used the emergency curriculum showed that using the emergency curriculum could reduce the impact of the pandemic by 73% (literacy) and 86% (numeracy). The effectiveness of the curriculum under special conditions

further reinforces the importance of changing the curriculum design and implementation strategy in a more comprehensive manner (Kemdikbud, 2022: 1).

An independent curriculum in which all science learning content becomes an IPAS, which is a combination of natural and social sciences. One of the fundamental scientific disciplines is science learning, because it keeps abreast of the times. Science learning, because it keeps up with the times. Science learning has goals based on the Ministry of Education and Culture (2020), namely increasing intellectual abilities, solving problems, thinking critically, developing students themselves. Facing the life of this century, students need to be literate in science. Literate towards science such as science, math, and language skills as the minimum basic skills needed to survive in an increasingly complex and competitive life (Ni Made Widya Padmini et al., 2022).

However, from research on increasing students' learning motivation using technology-based teaching materials, *flipbook* teaching materials were expected to make it easier for students to understand the material on problem-solving abilities (Sulthan Ontowijoyo et al., 2022). Variations of learning media involving the senses make it easier for students to absorb and process the content of the lesson; the more senses involved, the better it can be understood and remembered. The availability of electronic learning media for teaching materials based on the local wisdom of Pati Regency is the perfect step to foster student literacy (Khusna et al., 2018). The existence of learning media is the most important way that can be implemented in overcoming the problem of instilling literacy in relation to the environment. Learning media in the form of illustrated electronic books received very high scores according to the validity test from learning media experts and learning material experts. That functions as a tool to increase scientific literacy with the local wisdom of the local area (Dani et al., 2023).

One of the interesting themes in learning natural sciences in Grade IV SD is chapter 2 of the subject matter and its changes. This is in line with the problem that there is a lack of learning that relates to the environment around students in Pati Regency, namely the local ones in the area such as the process of making salt, smoking fish, making burnt batik which is connected to material substances and changes. Students who live in the area should really understand the material regarding substances and their changes. There are many examples that are close to their environment, but in fact, according to them, the substance and its changes are material that is difficult to understand in learning.

Based on students' interest in *flipbook* teaching materials based on local wisdom in Pati Regency. *Flipbook* teaching materials can be used to facilitate students during the teaching and learning process and will have an impact on the success of students in learning to increase scientific literacy in Pati Regency. Based on this statement, researchers have carried out research that aimed to develop teaching materials to foster scientific literacy in the matter of substances and their changes. Media designed with the help of the Canva application. In the teaching materials there was an attractive display of pictures and explains local wisdom in Pati Regency that make students can be motivated and can increase scientific literacy with this teaching material learning media.

MATERIALS & METHODS

Research with the concept of systematic literature review has techniques that are carried out in three stages, there are: formulating research questions, mapping and searching for articles that are in accordance with the research questions posed, analysing articles. The articles contained in this study are all articles that raise the topic of supervision, teaching materials, and local wisdom. The search process is through the Google Scholar database published from 2019 to 2023 using the Schiwheel application.

The search results obtained 1000 articles after reading each title. These articles were then selected and analyzed based on: (1) identification of the title, name of the researcher, and abstract; (2) research objectives, methods and results; (3); analyzing the articles included in the lesson content (4) assessing the selected studies. After going through the selection, there were 10 articles that were considered for research in further analysis.

RESULT & DISCUSSION

Flipbook teaching materials based on local wisdom in Pati Regency are learning media for fourth grade elementary school students which are arranged according to the independent curriculum (Suwarti et al., 2020) . This teaching material is designed to improve students' scientific literacy and critical thinking skills as a study guide (Niriavidya & Werang, 2023). Teaching materials based on local wisdom can be accessed online to make it easier to use. The ten articles that meet the criteria are further explained in table 1.

Tabel 1. Result of Systematic Literature Review

No	Author and Year	Title	Method	Result
1	Luh Tu Selpi Wahyuni, Nyoman Ayu Putri Lestari, I Made Aditya Dharma, I Wayan Lasmawan, I Wayan Suastra (2023)	The existence of Balinese local wisdom in the merdeka curriculum in elementary schools	Qualitative	The results of the study showed that subjects in the Merdeka curriculum that can be integrated with local Balinese wisdom are IPAS and mathematics
2	I Komang Muliantara	Application of creative problem-solving learning model oriented to the concept of tri hita karana to improve IPAS learning outcomes	Quantitative	The results showed that the application of the Tri Hita Karana-oriented Creative Problem-Solving learning model could improve IPAS learning outcomes of fourth grade students at SD Negeri 4 Bebetin
3	Hamida Gusnilawati dan Hadiyanto (Gusnilawati & Hadiyanto, 2021)	Implementation of Clinical Supervision to Improve Science Learning Process in Elementary Schools	Descriptive method with an analytical approach	The results of his research showed that carrying out clinical supervision can increase the professionalism of teachers in teaching science.
4	Faris Yudianta Putra, Moh; Rezanah, Vanda (2023)	Development of Student Worksheets (Lkpd) Based on a Scientific Approach at Class IV in IPAS Conten	Quantitative (RnD)	The results showed that 89.67% of the media was stated to have a very good or very feasible category to use.
5	Rohmadi, SHRH (2022)	Mapping and Orientation of Merdeka Curriculum Based on Local Wisdom in Basic Education	Qualitative (Literature review)	The results of the study showed that the learning design with the implementation of the merdeka curriculum had attention to the advancement of global insight based on the wisdom of local cultural values which is the basis for character education in facing the digital and millennial era, by looking at the scientific structure and implementation of the learning curriculum in elementary education.
6	Mahlianurrahman, Mahlianurrahman; Aprilia, Rapita (2022)	Workshop on Local Wisdom-based Video Learning Media Development on the Merdeka Curriculum	Qualitative (Literature review)	IPA learning based on local wisdom can be used as a reference for learning to build local wisdom values and the character of students. So that it can make students as students characterized, competent, and behave in accordance with the values of Pancasila.
7	Ngazizah, Nur; Rahmawati, Rosita; Oktaviani, Dwi Lestari (2022)	Development of Comic Media Based on Local Wisdom in Integrated Thematic Learning	Quantitative (RnD)	The results of the study showed that it was necessary to use comic media as a learning medium.
8	Kurnia, Utomo dan Sumarti (2020)	Implementation of Problem based learning Assisted with Science Comic Books to Improve Critical Thinking Skill of Elementary Students	Classroom action research	The results of the study showed that there has been an increase after implementing the PBL model with the help of science comic book media.
9	Dewi, Lintangari dan Kusumawardani. (2020)	Local Wisdom Based Stories in Conserving Water Resource	Qualitative Research	The results of his research revealed that the Singosari people still keep local culture by believing in mystical stories to preserve nature such as springs, these stories can be used as a medium for learning English with narratives that are turned into interesting stories.
10	Nofha Rina (2020)	Character Education Based on Digital Comic Media	Quantitative (RnD)	This study aimed to produce character-based comic media for the development of character education.

In this article, the researcher developed *flipbook* teaching materials based on the local wisdom of Pati Regency, which is a modification of teaching materials that were applied to IPA learning materials of substance and change and their relationship with the media, that was integrated IPAS learning content according to the independent curriculum by raising the existence of local wisdom of Pati Regency material. substances and their changes. An example is presented which is explained in more detail based on local wisdom and the

history and non-local wisdom. This can increase students' knowledge about culture in Pati Regency. This *flipbook* teaching material can be accessed online anytime and anywhere which can make it easier for students and teachers to learn about the potential of Pati Regency's local wisdom. Some displays of *flipbook* teaching materials based on local wisdom in Pati Regency which can improve scientific literacy and critical thinking skills are as follows:



Figure 1. Cover of teaching materials



Figure 2. preface



Figure 3. Instructions for use



Figure 4. Table of contents



Figure 5. Material



Figure 3. LKPD



Figure 4. Evaluation questions



Figure 5. Bibliography



Figure 3. Glossary



Figure 4. Back cover



Figure 5. Author identity

The mechanism for compiling *flipbook* teaching materials includes: 1) the stage of analysing the needs of teaching materials for science content, 2) the planning stage of teaching materials, 3) the validation and refinement stages. The details of the mechanism for preparing teaching materials as followed: Steps to analyse the needs of teaching materials, the design of teaching materials is determined according to the teaching module. At the planning stage *flipbook* teaching materials are carried out based on problem-based learning teaching modules that can be integrated with existing scientific literacy in Pati Regency.

The application of *flipbook* teaching materials in the learning process is very useful because students are directly known with the culture in Pati Regency. Besides that, with online teaching materials with pictures, students are interested in learning anywhere and anytime. Thus, students will find it easy to understand material substances and changes that have been integrated with examples of local wisdom in their homes.

Problem-based learning is a learning model that is quite effective in achieving mastery of learning substance and change material for science content learning. This activity of identifying problems that are related to material substances and their changes around the local wisdom-based environment of Pati Regency can add new insights regarding scientific literacy. By solving problem students can think critically, creatively to find their ideas.

Growing scientific literacy requires media that can stimulate students to develop ideas, think critically, so that students can

understand the material presented. The media that is very effective and efficient is used, that was *flipbook* teaching materials based on local wisdom in Pati Regency to foster scientific literacy in class IV students using the *Problem based learning* (PBL) learning model.

CONCLUSION

Clinical supervision to build scientific literacy through *flipbook* teaching materials based on local wisdom in Pati Regency for fourth grade elementary school students in the Science of Science content subject matter and change. The implementation of *flipbook* teaching materials based on problem-based learning is intended where students are asked to solve a problem related to material and changes that occur in the surrounding environment and then present it. *Flipbook* teaching materials are displayed, after reading students can foster scientific literacy by understanding the substances material and changes related to Pati Regency local wisdom such as the process of making salt, making burnt batik, and more. This research sought to strengthen literacy culture through *flipbook* teaching materials based on local wisdom in Pati Regency. With clinical supervision that will be carried out in two stages, there were by providing professional guidance for teachers and school principals and scientific literacy tours with the target of writing learning articles that continue to writing research proposals based on previous articles and problems in class IV until a development research proposal is realized.

Declaration by Authors

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