

Multiliteracy-Based Teaching Materials To Improve Student Understanding

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Abstract. This research is a development research that aims to produce a product in the form of multiliteracy-based teaching materials. The product development of this research is based on the Borg & Gall development research model proposed by Sugiyono. The development of teaching materials is carried out by applying various types of literacy according to Waskim in each part of the module including basic literacy, library literacy, media literacy, technological literacy, and visual literacy. As a result, basic literacy activities include reading material and writing assignments, media literacy in the form of using digital media and print media during the learning process, library literacy in the form of directing students to understand the basics of libraries, technological literacy, namely the use of various technologies such as cellphones and laptops, and visual literacy in the form of various images related to learning materials. All of these literacy activities can improve students' ability to understand learning.

Keywords: *teaching materials, multiliteracy, development*

1 Introduction

The development of the times has influenced various fields, including the field of education. This development requires students to be more active in the learning process at school with teacher guidance or independently. This is because the current curriculum is adapted to the learning system in the 21st century, which is referred to as the K13 curriculum. This curriculum is different from the previous curriculum which is teacher-centered. Now the focus and center of the K13 curriculum is on students. Thus students are required to always be active in the learning process, such as finding and finding concepts independently.

Literacy is a term that cannot be separated from the learning process. In simple terms, literacy is the ability to read and write. Then this understanding develops into the ability to read, write, listen and speak. Over time, the term literacy has been widely understood, shifting from a limited understanding to a broader understanding that includes several other fields.

Literacy is used in various fields of science directly related to the media as a means of communication and meaning formation. This is in line with the belief that the process of critically understanding information is not solely through texts. Meaning will be formed if it is understood through the use of various media such as pictures, performances, videos, films and various other media.

Setiawan (2018: 1) argued the term literacy were more extensive, but still refers to skills or basic writing and reading competence, ie the ability to read and write. Basically, the most important thing about literacy is to be free from illiteracy in order to understand the whole concept from a functional point of view, and one way to get this literacy skill is through the learning process.

The journey of information and communication technology led to the development of the definition of literacy until it entered the fifth generation. This fifth generation literacy is referred to as multiliteracy. The term multiliteracy implies that there is skill in the use of different methods of expressing and understanding an idea or information. These skills range from using various forms of conventional text, symbols, to utilizing innovative multimedia.

The multiliteracy learning process emphasizes the ability of students to understand and use various forms of text, symbols, and media in improving learning understanding. The increase in this ability is directly proportional to the ability to understand learning. The way that can be done to improve this ability is to apply various literacy activities in the learning process. These literacy activities include reading and writing, visually understanding images, and using technology.

2 Theoretical Basis

2.1 Teaching Materials

Teaching materials are the most important thing in learning activities. In line with Mulyasa's opinion (2006: 96) he argues that teaching materials are teaching resources that contain specific and general learning messages and can be used in learning. Dick and Carey (2009:253) also reveal about teaching materials, where teaching materials are teaching resources that contain material and must be studied by students in order to achieve learning objectives. These teaching materials can be in print or not.

Widodo and Jasmadi (2008: 40) put forward the meaning of teaching materials. Teaching materials are a set of learning tools that contain knowledge, limitations, methods, and assessment tools that are designed systematically and attractively in order to achieve certain learning objectives. This goal is achieved through the acquisition of competencies and sub-competencies in all their complexities. Thus, teaching materials must be designed based on learning development rules that are tailored to the material, learning needs, there is an evaluation, and most importantly designed to be attractive for students to learn.

According to Mulyasa (2006:46), the forms of teaching materials include the following:

- (1)Printed teaching materials (*printed*)
- (2)Listening Teaching Materials (*Audio*)
- (3)Hearing Teaching Materials (*Audiovisual*)
- (4)Interactive Teaching Materials

Module. The learning module is the smallest unit of teaching and learning program , which can be used by students in learning the material either independently or taught by students on their own (self-instructional) (Winkel, 2009:492). Meanwhile, according to Anwar (2010: 46), the learning module is a systematic and interesting teaching material that contains materials, assessments, and methods that can be used independently in achieving a required competency.

According to Daryanto (2013: 9), the module is one of the teaching materials that is fully and systematically arranged, containing a set of learning experiences that are scheduled and made to assist students in achieving a specific learning goal. One of the functions of the module is to become an independent learning tool. This independence does not depend on a speed, so students can learn according to the speed of each understanding. The module must contain objectives, learning materials/substances and assessment.

Learning modules are teaching materials that students can use independently. Modules can be said to be good if they are arranged in an attractive, clear, and systematic way. One of the advantages of the module is that it can be used anytime and anywhere according to student needs. The learning module is packaged in a complete and systematic way, and must contain special learning in order to help students master a competency. The module serves as a vehicle for independent learning, so students can learn independently according to their time and understanding. The minimum module contains learning objectives, materials, and assessments.

Multiliteracy. Literacy was originally understood as the ability to read and write. Literacy comprehension turns into the ability to read, write, listen and speak. Over time, the term literacy has been widely understood, shifting from a limited understanding to a broader understanding that includes several other fields.

The journey of information and communication technology led to the development of the definition of literacy until it entered the fifth generation. This fifth generation literacy is referred to as multiliteracy. The term multiliteracy implies skills in the use of different methods of expressing and understanding an idea or information. These skills range from using various forms of conventional text, symbols, to utilizing innovative multimedia. The multiliteracy learning process emphasizes the ability of students to understand and use various forms of text, symbols, and media in improving learning understanding. Learning must be in accordance with technological changes, and relate directly to the global environment.

In this 21st century, the general goal of literacy learning is to enable students, through their multi-intelligence abilities, to become competent communicators in multi-literacy, multi-cultural and multi-media contexts. Multiliteracy is a skill to understand information and express various ideas, using conventional texts and innovative texts related to the cultural context through various 21st century technological media. In education and learning, multiliteracy is understood as the skill to understand learning materials through the surrounding cultural context and is supported by various technological media.

Multiliteracy learning is learning that aims to maximize multiliteracy skills in realizing effective learning (Abiddin, 2015:20). Various multiliteracy skills used include language skills and mastery of information and communication media skills. The concept of multiliteracy proposed by Eisner (Abidin, 2015:20) also states that multiliteracy comes from the concept of literacy which is defined as the ability to capture the meaning of written symbols and various symbols that have meaning. Literacy is also understood as the ability to generate ideas using various media, using conventional language codes and high-tech codes.

The concept of multiliteracy is related to multi-context, multimedia and multicultural. Multi-context as a derivative of the concept of multiliteracy is related to skills in understanding various contexts, both situations and scientific contexts. Multiliteracy learning does not only use one type of media, but uses various types of media ranging from conventional media to digital media. Multiliteracy is also related to multiculturalism, which means that a text composed is influenced by the author's background and understanding of certain cultural elements.

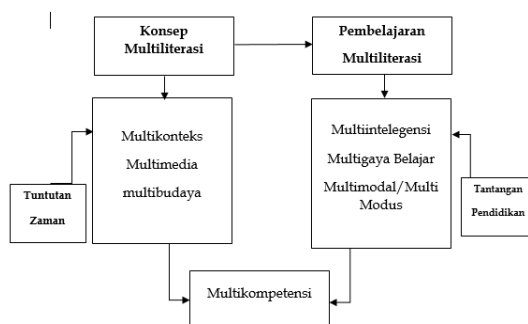


Fig. 1. The concept of multiliteracy learning

The concept of multiliteracy learning was developed based on the basic elements of multiliteracy. Multiliterate learning is developed based on students' abilities. This ability is seen from several aspects such as intelligence, learning style, and learning capital. The concept of multi-intelligence in multi-literacy learning is based on the type of intelligence of each student that differs from one another. These various types of intelligence are related to the level of students' understanding of learning.

The text is multimodal, which means that the text is not limited by words but is broader and can be in the form of images, performances, musicals, or digital texts based on information and communication technology. Then in line with multi-intelligence and multimodal, multi-literacy learning also considers the various learning styles carried out. In the process of understanding learning materials, students do not only use one learning style/method, but also various kinds of learning methods.

As the main concept of multiliteracy, literacy is understood through various learning perspectives. Some of these points of view are the language point of view (on the text), the cognitive point of view (on thinking), the cultural point of view (on the group), and the knowledge growth point of view (on growth). Viewed from the point of view of language, literacy learning is carried out so that students are able to use various language systems to understand and instruct language. Viewed from a cognitive point of view, literacy learning aims to improve students' ability to use various processes and strategies to form certain meanings based on texts, objectives, and audiences. Viewed from a cultural point of view, literacy learning aims for students to form meanings related to certain social groups. And when viewed from the point of view of knowledge growth, literacy learning aims to enable students to develop their literacy skills so that they can understand the meaning in the text.

Based on the explanation above, the application of multiliteracy in learning can improve students' understanding of learning materials. In more detail, multiliteracy in the learning process is carried out by implementing various literacy activities. The following are the types

of literacy activities that can be applied to learning to improve learning abilities. These types of literacy were put forward by Waskim (2017:71) which are divided into five types, namely:

1. Basic Literacy, literacy that aims to maximize the ability to speak, listen, write, read, and count. The ability to count is related to the ability to analyze calculations (calculating), interpret information (perceiving), communicate information, and describe information (drawing) based on personal understanding and experience.
2. Library Literacy, is the ability that a person has with regard to the basics of literature. The basics in this library include understanding the function of the library as a place to obtain information. Basically, library skills that must be known include understanding fiction and non-fiction, references and collections, understanding the Dewey Decimal System as a classification system in libraries, using catalogs and indexes, obtaining information, papers, and research.
3. Media literacy is the ability or skill to understand and use various kinds of media. In general, media consists of three types, namely print media (magazines, newspapers), electronic media (radio, television), and digital media (internet). The ability to use media as a tool to receive information or knowledge and convey good information in expanding knowledge.
4. Technological literacy, is the ability to understand various technologies along with the times. This understanding includes knowledge of the difference between hardware and software, understanding printing technology, presenting, and accessing the Internet, and applying ethics in the use of technology.
5. Visual Literacy, is the ability to understand information visually (visible). This capability is an extension of media literacy and technological literacy. The management of various images that seem to never stop every day needs to be improved. Various visual and audiovisual information seemed to flood from various corners of the media from print to digital.

3 Research Methods

Teaching materials were developed according to the needs analysis which were then re-analyzed based on the assessment of the material expert team and the design of teaching materials using a rubric developed with slight modifications by expert opinion. The criteria for teaching materials based on the criteria for the suitability of multiliterate-based teaching materials are still guided by the syllabus as a reference for the competencies developed. The researcher adapts the development applied by Borg and Gall on the grounds that the development design has the objective of developing and validating the product. The development of teaching materials is structured programmatically with preparation and planning with the following steps: Research and information gathering, planning the form of teaching materials, developing a preliminary form of teaching material products, expert validation, testing, revision of profuk and final products of teaching materials for scientific work multiliteracy based.

4 Discussion

4.1 Multiliteracy-Based Teaching Materials

Multiliteracy-based teaching materials contain various literacy activities such as basic literacy, media literacy, library literacy, technological literacy, and visual literacy. This is in line with the concept of multiliteracy proposed by Abidin (2015: 4) that multiliteracy is not only understood as the ability to capture meaning in written symbols but also in various other meaningful symbols. Along with the times, the process of capturing and producing meaning is also related to various media and technologies.

At the beginning of the learning activities students will carry out basic literacy activities, namely reading the objectives and learning materials and are directed to write down the results they observe. The provision of stimulus at the beginning of the learning process is carried out by carrying out media and visual literacy activities, then students will carry out basic literacy activities by writing down their observations.

Basic literacy is literacy that includes reading and writing activities. The cover section of the module presents the readable writing of the module title along with illustrated images that can be used as a starting point for introducing learning materials to students. The picture of a pile of books on the cover can provide a visual understanding which means that students have carried out visual literacy activities.

Basic literacy is the main step in the learning process. These abilities include the ability to listen, speak, read, write, and count. This has been stated by the Ministry of Education and Culture (2019:1) in the Innovation magazine, basic literacy skills are the main foundation of all stages of the learning process, especially in the 21st century. Thus, reading activities are a basic activity in the process of understanding learning materials.

This statement is supported by research conducted by Khatimah (2020: 63) with the conclusion that basic literacy activities affect the reading interest of fifth graders at SD Negeri 32 Buakang, East Sinjai District, Sinjai Regency. This is evident from the average score of students before the basic literacy treatment is 64.38 and after the basic literacy activity treatment is 87.53. This shows that basic literacy activities that are applied to the learning module can increase students' interest and reading ability which is the main basis in the learning process.

The research was also proven by Amri and Rochmah (2021) who showed the effect of basic literacy, namely student reading on student achievement. This research was conducted by an elementary school in Pegagan Village, Palimanan District by looking at the students' reading ability and then associated with student achievement. Reading literacy ability with learning achievement of SDN students in Pegagan Village, Palimanan District has a positive relationship with a value of 23.2%.

Visual literacy is the ability to interpret visual forms in obtaining and creating a message. In line with the research conducted by Ayu (2019) with the conclusion that visual literacy plays a role in students' cognitive formation because it makes students better understand concepts and strengthen memory.

Mansyur, et al. (2015:280) suggests that visuals are very useful in improving learning. This is because visual literacy is an activity that is carried out before verbal literacy activities in building

information. Capturing information in the form of images in the thought process is the basis of reading and writing activities.

A concept map is an image that describes several concepts of an interrelated learning material. Concept maps aim to enable students to understand and relate the flow of the material being studied. The existence of a concept map in this module serves so that students can understand the material well. The concept map is designed simply and colored green in order to give calm and stimulate students' creativity. In this section students have done visual literacy. Visual literacy activities carried out in the form of interpreting concept map images containing details of Basic Competencies. Students will find it easier to know what abilities they must have after studying the module through marker lines that indicate and connect several competencies.

The introductory part of the module contains several things such as time allocation, Basic Competencies and detailed indicators, descriptions of learning materials, and instructions for using the module. The introduction section serves as a guide in using the module, such as the tools and media needed to support learning. Time allocation shows the length of learning time. Basic Competencies are knowledge and skill competencies that must be mastered by students which are then translated into several indicators. The material description is the part that explains the material discussed in the module in general, while the instructions for using the module contain a series of instructions and tools needed to make it easier for students to use the module. The introduction section contains several literacies, namely basic literacy, technological literacy, and visual literacy.

Media literacy is in the form of presenting a qr code and must be scanned using high-tech objects, namely cell phones. The scan results from the qr code will take students to a medium, namely digital media (browsing internet) so that simultaneously students have done media literacy. Media literacy in the module does not only use digital media, this module also directs students to use print media in the form of newspapers and magazines as a source of learning. This is contained in the exercise section of each indicator. Thus, students have learned to use various media that will improve their abilities. The use of various media as learning resources also supports library literacy activities for students.

The role of various media in the process of improving student learning outcomes has been proven by Audie (2019) through his research. He stated that the use of various media in the learning process in addition to making it easier for teachers to convey material can also increase student motivation so that students are more active and innovative in learning. Learning media can help the effectiveness of the learning process.

Lisiswanti, et al (2015:102) mention that the use of media in learning can increase student interest so that learning materials are easy to understand. The use of media in learning also has several foundations such as philosophical, technological and empirical.

Basically, learning activities are a learning process that is given to students in accordance with the basic competencies to be achieved. The learning activities in this module are divided into three learning activities and each learning activity contains materials, exercises, and summaries. Materials and exercises are arranged according to the basic competency indicators. Each learning activity is accompanied by pictures and contains multi-literacy activities such as basic literacy, media literacy, library literacy, technological literacy, and visual literacy. The training section includes basic literacy activities, media literacy, library literacy, and technological literacy. While the summary only contains basic literacy.

Technological literacy is carried out through the use of various technologies in the learning process. In addition to using cell phones, students are also directed to use laptops to complete various exercises as a form of technological literacy. Technology has a significant influence in the field of education, because technology is able to provide convenience in learning.

Amanda (2020) mentions several roles of technology in education, namely it can improve the quality of education. Technology can facilitate the teaching and learning process by teachers and students, besides that it can also be used in obtaining a lot of information related to learning materials. Technology can also be used as a media to support learning so that students do not feel bored because of monotonous learning. In obtaining a variety of information, technology is the key in this regard. Technology also provides unlimited media that can support or even be a solution when the learning process cannot be done directly.

Technology has a role in the learning process. Lisiswanti, et al (2015:102) suggest that learning media in the form of machines (technology) is seen as the application of knowledge in the form of electronic media or other learning machines occupying a strategic position in facilitating and facilitating learning. The ability to understand and use technology is known as technological literacy.

Understanding requires students to seek information from various sources so that students can distinguish which sources are relevant and irrelevant to learning. This is one of the library literacy activities. Library literacy is a skill regarding fiction and nonfiction, references and collections, understanding the Dewey Decimal System as a classification system in libraries, using catalogs and indexes, obtaining information, papers, and research.

Library literacy and technological literacy activities are applied to the training section of each indicator. Literacy activities will increase students' understanding of various sources of relevant and valid information. The information they searched for was not only sourced from books and the internet but also from various media such as newspapers and magazines. Then students will be directed and guided by using various technologies during the process of completing the exercise tasks through technological literacy activities.

Understanding learning materials requires the ability to collect, use, process, and assess information (Cahyadi 2018:141). Libraries are one of the largest sources of information, having skills related to library basics will make it easier to obtain information. So that scientific writing can be done. Not only scientific work material, the ability to obtain information is also very much needed in the learning process.

Research conducted by Mangnga (2015) also shows that the library is very influential on the learning process in schools. He stated that there are several roles of libraries, namely libraries are very supportive of school educational achievements, libraries are very important and must exist in every school at all levels of education, library management must be carried out in accordance with its objectives and functions. Thus, skills in understanding the basics of the library have an influence on student achievement in school.

After the students have finished participating in the three learning activities, it is followed by the process of determining the level of ability and understanding of students on scientific work material called evaluation. The evaluation in this module consists of 10 multiple choice questions and 1 description question. Discussion of the answers to each evaluation question is described in the answer key with scoring criteria. This section supports basic literacy activities because students are required to read and write.

The function of the glossary is to provide preliminary knowledge about several terms that will later be found in various learning activities so that students will more easily understand learning. Like the concept map, the column containing the glossary is colored green and the text is black for better contrast and legibility. Glossary reading activities are included in basic literacy.

Pillay (2020) published an article entitled “Embracing Multiliteracy For Teaching And Learning In Higher Education”. He stated that multiliteracy learning plays an important role in creating an effective learning environment. Multiliteracy is also supported by increasing student literacy activities before starting learning. This article also emphasizes that active learning strategies must be based on multiliteracy, cultural and linguistic diversity, and multimodal textual practices so as to create a dynamic learning environment that will equip students with the skills needed to face a rapidly changing world. Thus, the use of multiliteracy-based modules can improve students' literacy skills.

5 Conclusion

Various literacy activities can be applied to teaching materials, to improve students' understanding abilities. These various literacy activities are referred to as multiliteracy, including basic literacy, media literacy, library literacy, technological literacy and visual literacy. Basic literacy activities almost cover all parts of teaching materials in the form of modules, such as learning objectives and materials, writing observations. The provision of stimulus at the beginning of the learning process is carried out by carrying out media and visual literacy activities. library literacy in the module, which provides direction and activities related to library basics, such as seeking information from relevant sources. Visual literacy in the module can be seen in the use of images that serve as explanatory material for learning. And technological literacy in this module is the use of various technologies in learning such as mobile phones and laptops.

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