P-ISSN:2355 -8245 E-ISSN: 2614 - 5480

# J-PIPS (JURNAL PENDIDIKAN ILMU PENGETAHUAN SOSIAL)

Available online: http://ejournal.uin-malang.ac.id/index.php/jpips

Vol. 9, No. 1, Desember 2022 Pages: 53 - 62

# **Development of Adiwiyata-Based Integrated IPS Teaching Materials** (Study of Environmental Wetlands and Sustainable Development at SMPN 11 Kota Banjarbaru)

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Received: 18-11-2022.; Revised: 06-12-2022; Approved: 14-12-2022

Permalinks/DOI: http://dx.doi.org/10.18860/jpips.v9i1.18024

**Abstract:** The purpose of this study was to find out the students' needs for Integrated IPS learning which was then integrated with Adiwiyata values-based learning by using media (local content) to provide additional material for students. Teaching materials are a set of learning materials that is arranged systematically to provide a complete mapping (description) related to the competencies students have acquired in learning activities. The material presented allows students to acquire competence consistently, systematically and accumulates all the competencies acquired in a complete and integrated manner. The function of teaching materials is as a guide for teachers who will guide all activities in learning and represent the contents of competencies that will be taught to students. The research method used by researchers in this article is the Four-D development model which consists of 4 stages, namely: (1) The defining stage is a series of establishing and defining learning needs; (2) The design stage is designing teaching media in the form of an integrated IPS teaching module based on Adiwiyata values which are substituted in learning material; (3) Development stage produce teaching modules that have been revised based on comments, suggestions and assessments from expert lecturers, class teachers, limited field tests and operational field tests; and (4) Dissemination stage namely the dissemination of Adiwiyata-based teaching modules through the google book application. The research results from the development of teaching materials with the 4-D model obtained student responses with valid categories (3) and a percentage of 75%.

Keywords: development; teaching materials; integrated IPS; adiwiyata

#### **INTRODUCTION**

A school is a place for students to get an education, including environmental education. Schools that have a compassionate and cultural attitude towards the environment are called Adiwiyata Schools (Arifin, 2018). Adiwiyata comes from two Sanskrit words, namely *adi*, which means great, big, good, perfect, while *wiyata* means a place to receive knowledge and norms (Putri, 2019). From these series of words, it can be concluded that Adiwiyata is a very good and ideal place to obtain all knowledge, the prevailing norms, and ethics that form the basis for realizing the ideals of a prosperous society and sustainable development (Efendi, 2013; Pradini, Sudjanto, & Nurjannah, 2018).

In 2006, the Ministry of Environment developed an environmental education program for primary and secondary schools using the Adiwiyata program (Indahri, 2020; Khairullah, Mukodi, & Mustofa, 2021). The Adiwiyata Program is a program of the Ministry of Environment and Forestry (KLHK) and is a derivative implementation of the Minister of Environment Regulation to realize the development of environmental education at the basic level as stipulated in Ministerial Decree No. 02 of 2009 (Desfandi, 2015). This program is a form of award given by the government with qualifications and assessments based on the direct application of school activities and its citizens who integrate environmental values into educational activities and daily life.

SMPN Banjarbaru 11 is one of the schools that has won the National Adiwiyata, it can be said as a National Adiwiyata Mandiri school and uses the Curriculum 2013 in its learning activities. Basically this adiwiyata program refers to the main principles of education, participation, and sustainability. Based on observations and interviews with one of the teachers in charge of the adiwiyata program at SMP Negeri 11 Kota Banjarbaru, there are eight excellent school programs including; (1) water management in schools; (2) sterilization; (3) waste management; (4) energy savings in schools; (5) schoolyard management; (6) vertical garden management; (7) UKS Administration and (8) Healthy Schools. The eight independent adiwiyata programs implemented at SMPN 11 Kota Banjarbaru have not been fully integrated into the curriculum, so the basic principles of a participatory and sustainable adiwiyata program are still not maximized. This condition is also not balanced by the existence of adiwiyata-based teaching materials used by teachers as a reference for transferring knowledge to students.

So far, teachers have only used teacher thematic book and student thematic books from the government as well as several references from the internet without accelerating renewable material, so the lessons delivered are rigid and less interesting (Kuncahyono, 2017). These problems require the existence of a learning tool that can integrate the adiwiyata program into the 2013 curriculum learning process. One of the learning tools that can integrate the adiwiyata program in the implementation of the 2013 curriculum is teaching materials in the form of books whose contents are based on local material (*local content*) so that the basic principles of the adiwiyata program can be achieved.

Implementation of quality and thorough learning, of course, requires learning planning based on a systems approach (Efendi, Prayoga, & Mukaramah, 2021). To plan a learning activity, various models can be developed from simple to complex in every learning organization. Based on the facts in the field, there are various patterns and learning designs that are not the most effective (Purwanto, 2014). Therefore, in determining patterns and designs for building effective and interesting learning programs, it can be realized with a teacher's consideration of which pattern to use or choose in the implementation of learning, one of these efforts is to develop teaching materials (Hardianto, 2005).

Teaching materials are a set of learning materials that is arranged systematically and structured to provide a complete mapping of the competencies students have acquired in a learning activity (Octariani & Rambe, 2018). The material displayed allows students to acquire competence consistently and systematically so that the

accumulated competencies obtained can be described as a whole and integrated (Cahyadi, 2019). The function of the textbook is as a guide for teachers who will lead all activities in learning and represent the contents of competencies that will be taught to students (Laila & Yanti, 2019; Megeron, Wijayanti, & Basyar, 2018).

Adiwiyata-based teaching materials will be one of the best references for teachers in conveying information or transferring knowledge during learning activities. To realize more adaptive teaching materials and renewable between theory and practice in the preparation of teaching materials, a contextual learning approach and having a novelty value are needed. Currently, inquiry-based learning models are often used by teachers because they are relevant to the needs of students. The implementation of learning in the classroom can be matched with direct practical activities in the field (Arisanty & Efendi, 2017). The inquiry learning approach is a learning model in which the learning process begins with students' curiosity about something (Efendi, 2014). Inquiry-based learning is a learning activity that empowers all students to develop the ability to explore and investigate systematically, critically, logically, and analytically, and develop their insights with confidence. It is compatible with the 2013 curriculum guidelines, namely the development of a balance between mental and social attitudes, curiosity, creativity, intellectual and psychomotor skills, and cooperation in a balanced manner, as well as a taste for the condition of schools in a wetland environment, which often experience various disasters, both those are floods, droughts, and land fires (Efendi, Nasruddin, & Karani, 2022; Wardhani, Al-Muhdhar, Suhadi, & Ahmad, 2022).

#### **METHODS**

The research method used by the author in this article is Research and Development, which is a process or steps to develop a new product or perfect an existing product and can be accounted for (Haryati, 2012). Research and Development research can also be interpreted by the research methods used to produce certain products and test the effectiveness of these products (Sugiyono, 2012). Research and Development is also referred to as a research-based development.

Furthermore, Borg & Gall, (1989) explained that the research and development model is "a process used to develop and validate educational products". This research is sometimes referred to as research-based development, with an emphasis on the substance of the strategy or the latest methods and aims to improve education quality. Research and development, apart from developing and validating educational outcomes, also aims to find new knowledge through basic research or answer specific questions about practical problems through applied research that helps improve learning practices. steps specified in the 4-D development model (Nasrul, 2018). Thiagarajan (1974) describes the 4-D development model as consisting of 4 main stages, namely: (1) Defining stage; (2) The design stages; (3) The development stage; and (4) The dissemination stage (Lesmono, Wahyuni, and Alfiana, 2021).

The subjects in this study were class VII students of SMPN 11 Kota Banjarbaru semester 1 of the 2022/2023 Academic Year. With a total of 20 students, consisting of 120 male students and 132 female students. The researcher's consideration for choosing class VII as the research subject was because he considered that the teaching materials in the form of modules used were less integrated with learning, while on the one hand, State Junior High School 11 Banjarbaru was a school that won Adiwiyata Mandiri. This research is part of a development activity carried out in collaboration between teachers, students, and writers. Teachers and researchers are a team that will sit together to design

teaching materials based on experience, potential, and existing conditions (Wijiningsih, Wahjoedi, & Sumarmi, 2017).

This research is expected to produce certain products in the form of teaching materials, by referring to needs analysis. Furthermore, to test the effectiveness of these products, so it can function in society, research is needed to test the effectiveness of these products. So, this research and development moves in rhythm and is longitudinal (Sugiyono, 2016). The product produced in this development research is an adiwiyatabased module with a sub-study of the environment and sustainable development, with local content. The resulting product is a teaching module based on adiwiyata values. To test its validity the author uses research instruments that first a validation test was carried out under the expert's assessment. After reviewing the module product made by the author, the expert appointed by the researcher validates the assessment by providing comments and suggestions regarding the module. In addition, the authors analyze descriptively and qualitatively the review data obtained from the validator and use it as a reference for revising the product to make the product suitable. The product design developed is evaluated by the validator using a validation sheet. Based on the validation instrument, it can be classified into 5 options (Sofyan, Wagiran, & Komariah, 2015). To measure the instrument, a Likert scale is used, namely a value of 5 (very valid), a value of 4 (valid), a value of 3 (quite valid), a value of 2 (invalid), and a value of 1 (very invalid).

#### RESULTS AND DISCUSSION

Thiagarajan (1974), explained in the first 4-D development model, namely the defining stage (define) is a series of determining and defining the needs in the learning that will be carried out which includes initial analysis, analysis of learning implementation plans (RPP), student analysis, concept analysis, task analysis and specification of learning objectives.

Furthermore, the second stage is the design stage, namely the development (design) of modules that will be developed in Integrated IPS learning in class VII. At this stage, the researcher designed a form of teaching media in the form of an integrated IPS teaching module based on adiwiyata values which were substituted in the learning material through the following stages; (a) test preparation; (b) media selection; (c) selection of teaching material formats; and (d) initial design.

The third stage is the development stage which aims to produce teaching modules that have been revised based on comments, suggestions and assessments from expert lecturers, class teachers, limited field tests and operational field tests. The stages in this development include; (a) the validation stage; (b) the revision phase of part one; (c) the limited trial stage and; (d) the revision stage of part two.

The last stage is the dissemination stage. At this stage, the dissemination of adiwiyata-based teaching modules is carried out with a sub-study of the environment and sustainable development to promote the products that have been produced.

## **Learning Analysis**

Based on the analysis conducted on 7th-grade students at SMPN 11 Kota Banjarbaru, it was found that students still experience difficulties in understanding concepts and applying social studies learning materials in everyday life while studying. Of course, this is heavily influenced by the too long online learning conditions. So that the level of concentration and efforts to find up-to-date learning resources are very

rarely carried out by students to confirm social studies learning studies. In fact, sosial studies learning is still considered theoretical and the substance of the theories must be memorized. This situation makes students get bored quickly, lack enthusiasm for learning along with the pandemic situation which requires them to study online.

Based on table 1, it was found that various student responses related to social studies learning were carried out at SMPN 11 Kota Banjarbaru, including those related to social studies subjects which were delivered online which had a negative response, because students felt difficult when the concepts in social studies learning were conveyed online. This is in line with the student's response regarding their desire to deliver material offline with local content-based material, they consider this learning to be far more sophisticated than using the rote method and explanation of concepts without any practice or visuals that students can experience directly.

Based on the field findings described in table 1, development is carried out on learning substance using local content to provide a wealth of material for students with the support of developing social studies teaching materials based on Adiwiyata values as a trigger to understand theory and application in IPS learning on "environmental studies and sustainable development"

Table 1. Student response to IPS learning

No	Confirmation Quarties	Percentage (%)		Understanding
	Confirmation Question	Yes	Not	Level
1	Do you like IPS subject?	62,26	37,74	Enough
2	Would you like it if social studies lessons were delivered offline using the local content method?	84,91	15.09	Well
3	Do you find it difficult if IPS learning is delivered online?	96,23	3.77	Very good
4	Do you like up-to-date learning resources?	86,79	13,21	Very good
5	Do you know about adiwiyata school?	79.25	20.75	Well
6	Do you know about the 8 adiwiyata school programs implemented in your school?	69,26	30,74	Well

Source: processed from primary data, 2022

## Learners

The research subjects in this study were class VII students of SMPN 11 Kota Banjarbaru as a pilot school as well as a place for research on module development based on adiwiyata values developed by researchers. Analysis of student data shows that the basic knowledge possessed by students, attitudes and understanding of students in the learning process, the results achieved and the results obtained are still weak and do not appear to reflect the attitude of implementing adiwiyata values in students. Based on the results of the field, further developed teaching materials for students. In particular, we developed an IPS module based on Adiwiyata values to understand the theory and applications presented in social studies learning.

# **Concept Accuracy**

Concept analysis in this study includes the acceleration of adiwiyata values into the material to be taught. The success of learning as a whole can be measured through the ability of the teacher in designing teaching materials in the form of Teaching Modules based on adiwiyata values. So that, the material presented can be understood easily and students can apply it in everyday life, then the success of learning will also be reflected in the evaluation of learning whose results meet the KKM.

Teaching materials designed must be relevant to learning so that learning activities can be carried out properly, to achieve learning objectives. These targets must be consistent with student learning objectives. The materials developed in this study are Humans, Places and Environment in class VII CHAPTER I which specifically discusses "environmental studies and sustainable development" which is then integrated with learning based on Adiwiyata values.

# **Learning Objectives**

Learning objectives are developed following the 2013 curriculum and student learning needs. Learning objectives describe the process and learning outcomes achieved by students under the basic skills requirements. Learning objectives are determined based on core competencies, basic competencies and indicators related to the curriculum. The following specifications apply to the development of learning objectives used in this study, namely: (1) students are able to understand environmental concepts; (2) students are able to explain interactions between environmental spaces (humans, environment, and wetlands); (3) students are able to mention examples of interactions between spaces (humans, environment and wetlands); (4) students are able to mention examples of interactions between spaces in their area and (5) students are able to explain the interdependence between humans, the environment and wetlands.

## **Teacher Response to Teaching Modules Based on Adiwiyata Values**

Based on table 2, it shows that the teacher's response to teaching modules based on adiwiyata values is in the valid category with scores above 3 (75%) meaning that this teaching material is good, feasible, and can be used according to student needs. For each aspect, including aspects of the instructions for use and the display quality of the teaching materials presented, an average rating level of 3.54 with a percentage of 88.46% is categorized as valid. 3.42 with a percentage of 85.58% is categorized as valid, then seen from the aspect of language content in teaching materials, an average rating level of 3.52 with a percentage of 87.98% is categorized as valid.

Table 1. Teacher response to teaching modules based on adiwiyata values

No	Aspect	Rating Level	Average in Percentage (%)	Information
1	Instructions for Using the Module	3.54	88.46%	Valid
2	Module Content	3,42	85.58%	Valid
3	Language Content in the Module	3.52	87.98%	Valid
4	Module Display Quality	3.54	88.46%	Valid

Source: processed from primary data, 2022

#### **Student Responses to Teaching Modules Based on Adiwiyata Values**

Based on table 3, it shows that students' responses to teaching modules based on adiwiyata values are in the valid category with scores above 3 (75%) meaning that this teaching material is very interesting and the material is based on local content and is upto-date. Furthermore, related to the content of the teaching materials presented, an average rating level of 3.31 with a percentage of 82.69% is categorized as valid, then seen from the aspects of the language content presented in the teaching materials, an average rating level of 3.58 is obtained, with a percentage of 89.42% categorized as

valid, then seen from the aspect of language content in teaching materials obtained an average rating level of 3.85 with a percentage of 96.15% categorized as valid.

Table 2. Student responses to teaching modules based on adiwiyata values

No	Aspect	Rating Level	Average in Percentage (%)	Information
1	Module Content	3,31	82.69%	Valid
2	Language Content	3.58	89.42%	Valid
3	Module Display Quality	3.85	96.15%	Valid

Source: processed from primary data, 2022

#### **CONCLUSION**

Based on the results that have been presented from the development of integrated social studies teaching materials based on adiwiyata (study on wetland environments and sustainable development), the authors draw the following conclusions: (1) Students still have difficulty understanding the concept and implementing social studies learning materials in everyday life. This is influenced by the learning conditions that take too long online so that the level of concentration and efforts to find up-to-date learning resources are rarely carried out in an effort to confirm social studies learning studies; (2) It is necessary to develop the learning media of students, namely, the development of IPS modules based on adiwiyata values as a trigger to understand the theories and applications displayed by students both in learning and outside of learning; (3) The materials developed in this study are Humans, Places and Environments in class VII CHAPTER I which specifically discuss "environmental studies and sustainable development" which are then integrated with learning based on Adiwiyata values using media (local content) and the inquiry training approach to provide additional material for students; and (4) Based on students' responses to teaching modules based on adiwiyata values, they are in the valid category with scores above 3 (75%) meaning that this teaching material is very interesting with its presentation of material based on local content and is up-to-date.

# **ACKNOWLEDGMENTS**

Thank you very much to the leaders and school members at SMPN 11 Kota Banjarbaru as a research partner, the Social Studies Education Study Program at the State University of Malang (UM) as a publisher and the University of Lambung Mangkurat for funding the lecturers' research activities. This article was published from the results of research conducted by the academic community in the Geography Study Program. This activity was funded by the DIPA of Lambung Mangkurat University for the 2022 Fiscal Year Number: SP DIPA-023.17.2.677518/2022 dated 17<sup>th</sup> November 2021 Lambung Mangkurat University, Ministry of Education and Culture. In accordance with the Decree of the Chancellor of the University of Lambung Mangkurat Number: 458/UN8/PG/2022 dated March 28, 2022.

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