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Supplement Teaching Materials Development Based on PBL with Animal Digestive System Material to Increase Concept Mastery of Junior High School Students

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Abstract

Supplementary teaching materials were developed based on the analysis of student needs and observations in learning. Supplements are prepared as supporting teaching materials for teachers to assist in learning activities in the classroom. Researchers made observations on learning resources, the material on the animal digestive system did not contain relevant images, the textual discussion and the examples presented were less varied. One of the learning media that can help overcome these problems is by developing supplementary teaching materials for PBL-based animal digestive system materials to teach junior high school students mastery of concepts. The use of media during the learning process aims so that students can form their own concepts. This study aims to test the eligibility of teaching materials supplements based on validator assessments, test the readability of teaching materials supplements, analyze students' conceptual mastery by looking at improving learning outcomes through the n-gain test and analyze the practicality of teaching materials supplements based on teacher and student responses. This research uses the R&D approach and the ADDIE model. The sample used in this study was class VIII H SMP N 13 Semarang. The results of the assessment of the eligibility of the teaching material supplements were declared very feasible by material and media experts with feasibility scores of 88% and 95% respectively. The readability test of teaching material supplements was stated to be easy to understand with an average score of 82.5%. The n-gain test on the pretest and posttest obtained a result of 0.7 with high criteria. Teacher and students gave a practical or good response after using teaching material supplements as evidenced by an average score of 81% and score teacher response of 89%. Supplements for teaching materials based on PBL for animal digestive system materials that have been developed are effective in supporting learning.

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INTRODUCTION

Quality education is needed to produce quality human resources (Paramita, 2018). Quality education can be realized through quality learning (Samani, 2012). Education is said to be of quality, if it can produce graduates who are able to face the challenges of life they face (Mustofa, 2017). Quality education can be realized through efforts that are able to optimally synergize all components of education so that the interaction process between students and learning resources can run according to the study plan (Arofah, Rahmat, 2019). One of the ways to improve quality education is by developing learning resources as media for the better. In accordance with the opinion of Hanik et al. (2018), the use of media during the learning process aims to enable students to form their own concepts.

Good learning resources can assist students in obtaining maximum learning outcomes, for example, the ability to conceptualize a learning material. In line with Rusman's (2010) statement, teaching materials are anything that can be used to channel messages (subject materials), stimulate students' thoughts and feelings, concerns and abilities, so that they can encourage the learning process. Teaching materials are also very necessary in the learning process, in line with the statement of Belawati (2004). Teaching materials have a very important role in the learning process, namely as a reference for students and teachers to improve learning effectiveness. For students, teaching materials become reference materials that are absorbed by the contents in the learning process so that they can become knowledge. As for teachers, teaching materials are a reference for delivering knowledge to students. Teaching materials or learning materials (instructional materials) are knowledge, attitudes, and skills developed based on graduation competency standards (SKL), competency standards (SK), and basic competencies (KD) on Content Standards (SI) that students must learn in order to achieve competencies that have been determined (Amin, 2006). In addition, Siddiq et al. (2009) revealed teaching materials as the "design" of a material or learning content that is embodied in objects or materials that can be used for student learning in the learning process. Meanwhile, Triyono et al. (2009) stated that teaching materials are information, tools, and written and unwritten texts that are systematically arranged and used to assist educators in carrying out teaching and learning activities so as to create an environment or atmosphere that allows students to learn.

Based on a number of expert opinions, it can be concluded that teaching materials are the design of a material that contains knowledge, attitudes, and skills that are realized in the form of written or unwritten objects or materials to be used in the student learning process so that it can run effectively. Biology is a branch of science that examines scientific concepts about living things. One of the concepts studied is the material of the digestive system.

Several junior high school students interviewed considered that the digestive system, especially animal digestion, was a complex subject and full of conceptual relationships that were not easily understood directly. The concepts are real and definite because of the relationship between structure and function, as well as the mechanism by which these organs work in digesting food. In addition, the animal digestive system is not included in the basic competencies that must be mastered by students, and if there are only certain general animals to study

Based on the results of interviews with several students, it was found that the learning resources used to support the learning of the digestive system, especially the insight into the animal digestive system, were not equipped with pictures. The material presented was textual, and the case examples presented were still general, so the discussion was less comprehensive and difficult to understand.

In an effort to achieve student success, teachers not only act as motivators and facilitators, but are also able to transfer their knowledge by applying various strategies and variations of learning media. Many factors that affect the learning process do not run effectively. One of these factors is the lack of a variety of learning media Paramita, 2018). Media is used to make it easier for teachers to convey material in the learning process. Learning media has various forms, including visual, audiovisual, and audio media (Prastowo, 2013). The use of media is also adjusted to the purpose of use and the information to be conveyed. One form of media that can be used in the learning process is digital media, to support distance learning during the pandemic.

Based on the information obtained, an interesting supplement is needed that can increase students' motivation in studying the animal digestive system. Supplements are suitable for use in the learning process if they are developed according to the needs of the learning subject and are used optimally. In line with the statement (Pangestu, 2019), learning resources with pictures can increase students' reading interests and motivate them to learn the contents of books. Adequate supplements will help the role of educators and students in the learning process. The learning process involves various parties, not only involving educators and students, but the role of teaching materials is also very much needed in the learning process (Nurdiansyah et al., 2015). PBL-based teaching material supplements are suitable to be applied in learning both as a companion and as the main source,because the subjects presented are adjusted to cognitive abilities and attractive designs so that students do not get bored when studying. Problem-based learning is a learning method that makes students the center of learning through unstructured problem solving. In Febyarni Kimianti (2019), Problem-Based Learning helps knowledge construction when students activate their knowledge in initial discussions (Schmidt, De Volder, De Grave, Moust, & Patel, 1989) in Febyarni Kimianti (2019). In line with Hamdayama's statement (2016:116), the Problem-Based Learning learning model is learning that focuses on meaningful life problems for students. Learning that was originally teacher-centered has turned into student-centered learning. The use of supplements is one of the alternatives and learning objectives that have been planned. Educators are more directed to act as facilitators and motivators. Encourage students to grow independently.

Based on the background, this study aims to analyze the readability of teaching material supplements, test the feasibility of teaching material supplements based on expert assessments, analyze teacher and student responses to the developed teaching material supplements, and analyze the effectiveness of teaching material supplements in terms of learning outcomes.

RESEARCH METHOD

This research is an R&D (Research and Development) project (Sugiyono, 2015) using the ADDIE model. ADDIE (Analyze, Design, Development, Implementation, and Evaluation). The analysis stage in the research is carried out to analyze needs and problems. In the design phase, activities are carried out to design the product to be developed.

In the development phase, the development and production of products in the form of supplements for teaching materials for the animal digestive system is carried out. The resulting product was then validated by a validator consisting of two experts (material experts and media experts). The product is also tested for readability to find out how much it can be understood by students. The sample of this research is class VIII H SMP N 13 Semarang. The sample size for assessing the readability of teaching materials supplements is 10 students, from the total number of students. The research sample was selected using a simple random sampling technique. The data collected includes product feasibility validation and readability data. The data collection method used a questionnaire questionnaire. The instruments used were an expert validation questionnaire sheet, a teacher validation questionnaire sheet, and a legibility questionnaire sheet. Product validation data by experts as well as readability test data were analyzed by calculating the percentage of the scores obtained. The results of the validation by teacher and student readability tests were used as a reference for improvement. Improvements are made so that the final product is obtained, then the product is implemented in learning.

In the implementation stage, the final product is implemented in learning with the aim of knowing how effective the product is in teaching concepts and knowing student responses after using the product. The sample in the implementation and response to supplementary teaching materials is 30 students, from the total number of students. The sample was selected using the one-group pretest-posttest design technique. The data collected includes learning outcomes based on pretest and posttest as well as student responses to supplementary teaching materials. Methods of data collection using questionnaires and test questionnaires The instruments used include pretest-posttest test items and student response questionnaires. The n-gain test was used to analyze data on student learning outcomes, while the percentage of the scores obtained was used to analyze data on student responses.

In the evaluation stage, after the product is implemented, the results obtained are analyzed. The collected data is organized into categories such as observation data, test results, and questioneres. The data that has been collected is grouped according to its respective categories. The resulting data is presented in the form of a narrative or table, adjusted to the characteristics of the data as a result of the evaluation to determine the effectiveness of the product in learning.

RESULTS AND DISCUSSION

Development research is carried out to produce products in the form of supplements for teaching materials for the animal digestive system. The research was developed using the ADDIE model R&D step. The results of the study were to determine the feasibility, practicality, and effectiveness of supplementary teaching materials in teaching students' conceptual mastery.

Eligibility of Teaching Material Supplements

Validity comes from validity, which means the level of accuracy and accuracy of a measuring instrument in carrying out its function. An instrument is said to have high validity if it is able to provide measurement results that are in accordance with the measurement objectives (Widodo, 2006), while validation is a technique to assess the feasibility of products developed through validity testing. The validity test was carried out to check the product from the aspects of curriculum suitability, material, grammar, presentation and appearance. Supplements for teaching materials for the animal digestive system are arranged based on the learning objectives to be achieved. The feasibility of the product is determined based on an assessment by 2 validators consisting of material experts and media experts(V1 and V2), such as statements (Lestari et al., 2018). Validation tests are carried out by validators, namely lecturers. Material experts will assess and validate aspects of the feasibility of content and linguistics while media experts assess aspects of feasibility, presentation, graphics, and effects on learning.

The results of the validity test were obtained from the average value of the feasibility of content, language, presentation, graphics, and the effect on learning. The analysis of the results of the validator's assessment of teaching material supplements is shown in Table 1 below.

Table 1 Analysis of the results of the validation table for teaching materials supplements by experts

Aspects of assessmen	Presentage		Average percentage (%)	Criteria
	V01	V02		
Content Eligibility	42	-	88	Extremely Valuable
Linguistic Eligibility	18	-	90	Extremely Valuable
Presentation Eligibility	-	11	92	Valuable
Graphic Eligibility	-	20	100	Extremely Valuable
Feasibility Effect on Learning	-	22	92	Valuable
Total Number	**88**	**95**	**92**	**Extremely Valuable**

Based on Table. 1, The validity test on the feasibility of the content aims to measure the achievement of the concept using the substance of the developed product (Syamsurizal et al., 2021). The aspect of assessing the feasibility of the content has been prepared based on guidelines for the preparation of teaching material supplements that have been adapted to the objectives of this study. The feasibility of the content of the teaching material supplement is said to be valid if the information contained in the supplement is in accordance with the information needed by students to increase their knowledge (Dewi & Wahyuningsih, 2018; Mahendra, 2015). In the aspect of product content feasibility by material experts is 88%, with very feasible criteria. The material presented in the supplement is in accordance with the needs and can overcome the problems faced by students regarding the material of the animal digestive system. The material includes understanding of nutrition, various sources of nutrition, understanding of the digestive system, digestive organs, digestive mechanisms, and digestion of nutrients by animals that can help teach students concepts about the animal digestive system. In addition, the supplement of teaching materials developed also includes student discussion sheets, independent activities, and group activities. This aims to be a student evaluation

material after studying each part, which will improve their conceptual ability regarding the animal digestive system.

The following aspects that are assessed are linguistic feasibility, which is adjusted to the level of student development, communicativeness, coherence and unity of learning presentation ideas, and completeness of presentation (Wardani, 2017). In the aspect of linguistic feasibility by material experts is 90%, with very decent criteria. The supplement uses language that is adapted to the cognitive abilities of junior high school students so that it is easy to understand and does not cause misinterpretation when students use the supplement.

The feasibility aspect of presenting teaching material supplements includes presentation systematics, presentation support, learning presentation, coherence and flow of thought (Sinambela and Sinaga, 2020). The presentation of a product is said to be valid if the material in the supplement of teaching materials contains the main material and complete details of the material (Syamsurizal et al., 2021). In the presentation aspect by media expert is 92%, with appropriate criteria because the teaching material supplements are attractively designed with an arrangement that is in accordance with each subject, clear instructions for using supplements, and clear concept maps (see Figure 1) so that students do not feel difficulties when studying these supplements, and the main problems presented are adjusted to those found in the surrounding environment.

Aspects of the feasibility of graphics are aspects that include size, format, cover design, and content design (Kantun et al., 2015). In the graphic aspect by media expert is 100%, with very decent criteria, because the appearance of the supplement is very attractive, equipped with an attractive cover, clear images, and the colors used are not boring, do not cause double meaning, and are able to increase students' motivation to learn.

In the aspect of the effect on learning by media expert is 92%, with appropriate criteria because the supplement provides student discussion sheets and independent and group activities to facilitate students in improving conceptual skills, which results in increased learning outcomes.

Overall, the results of the validator's assessment of all aspects of teaching material supplements are 92%, which is very decent criteria. The assessment shows that the product developed is very feasible to be used as a supplement for teaching materials to teach mastery of concepts in line with Akbar's statement (2013: 41). The results of the feasibility assessment are declared very feasible if they reach a percentage of between 85% and 100%. This finding is reinforced by previous findings which found that supplementary teaching materials were feasible and valid to be used in the learning process (Dewi & Wahyuningsih, 2018; Harahap et al., 2020). By using teaching materials, learning becomes more effective and efficient (Gunawan, 2020; Kirana, 2020). By utilizing supplementary teaching materials, it is hoped that it can help students with the learning process, attract interest and motivate students to learn, increase learning independence, and gain new experiences in learning using supplementary teaching materials. The appearance of the teaching material supplements can be seen in Figure 1 below.

Figure 1 Display of supplementary teaching materials for animal digestive system materials

With the appearance of an attractive supplement and the content of the material aligned with what is needed by students, it will increase motivation to learn so that the learning outcomes that will be obtained are optimal.

In addition to quantitative data, there is also qualitative data in the form of comments and suggestions from validators, followed by follow-up by researchers as a reference for improving the developed teaching material supplements (Table 2).

Table 2 Validator's comments and suggestions, as well as follow-up by researchers

Validator	Validator comments and suggestions	Follow up by the researcher
V01 (Material Expert)	-Explain the order of the digestive tract and organs, the enzymes involved in the digestive process, and the difference between ruminants and monogstrik (mammals), especially in the digestive process, and do not include a description of the animal.	-The order of the digestive tract and organs, the enzymes involved in the digestive process, and the differences between ruminants and monogastric have been explained.
V02 (Media Expert)	- Regarding the language used, some of the words chosen were too foreign for junior high school students. The language style needs to be rearranged and adjusted to the cognitive level of 8th grade junior high school students. The language used is also too formal and does not motivate students to like the material they read. - Although it is a supplement, the language is too broad and in-depth, making it more suitable for high school students and even undergraduates. It is necessary to consider reducing the level of depth and breadth of the discussion because it will reduce students' motivation to learn. -The discussion activities listed in the book are not activities that make students discuss because the problems discussed are not problematic. Some only give the names of the animal parts so that they can be filled in by themselves without the need for discussion. Please remember that in PBL, the issues discussed must be problematic and real.	- Language usage has been improved. - The use of language and terms has been adjusted to the cognitive condition of junior high school students. - The discussion activities listed in the book have been corrected and adapted to the PBL syntax.
V03 (Maple Teacher)	- Overall, aspects of content, language, presentation, graphics, and effects on learning are appropriate and good. - Need improvement in purpose, design, image, and layout of text margins. - The arrangement of the table of contents is made more systematic between chapters and sub-chapters.	- The purpose, design, image, and layout of the text margins have been improved. - The arrangement of the table of contents between chapters and sub-chapters has been improved.

Based on Table 2, the researcher obtained comments and suggestions from the validator as well as carried them out by the researcher. After obtaining comments and suggestions from the validator, the researcher made improvements to the product. The revision process refers to the comments and suggestions given so as to produce a final product fit for use to teach students' mastery of concepts.

The readability test was carried out with the aim of knowing the ease with which students understand the supplements of teaching materials that were developed. The results of the analysis of the student readability test are shown in Table 3.

Table 3 Readability Analysis by Students

Assessment Aspect	Score Total	Score (%)	Criteria
Use of existing case examples to understand	33	82.5	Easy to Understand
Clarity of instructions for use of supplements	34	85	Easy to Understand
The ease with which the language can be understood	35	87.5	Easy to Understand
Cultivating curiosity about the contents of the SBA	32	80	Easy to Understand
Image clarity	35	87.5	Easy to Understand
The attractiveness of the teaching material supplement covers	32	80	Easy to Understand
Types and sizes of supplementary teaching materials	32	80	Easy to Understand
Neatness of preparation of teaching material supplements	34	85	Easy to Understand
Ease of use of teaching material supplements	32	80	Easy to Understand
Adding insightful information	35	87.5	Easy to Understand
Presentation of problems encourages analysis	31	77.5	Easy to Understand
Learning topics with clarity	33	82.5	Easy to Understand
Growing reader interest due to attractive appearance	34	85	Easy to Understand

Use of supplements in independent or group studies	33	82.5	Easy to Understand
The proportion of images is greater than text	32	80	Easy to Understand
Average all aspects		**82.5**	**Easy to Understand**

Based on Table. 3, overall, the average percentage of all aspects of the readability assessment is 82.5% with easy-to-understand criteria. This can be seen from several aspects of the assessment, such as the ease with which case examples are provided, the clarity of the instructions for the supplement, the language used, the clarity of the images displayed, and the ability to add insight to the reader.

Practicality of Teaching Material Supplements

The results of the product practicality assessment were obtained after the implementation of teaching material supplements in the learning process. Implementation was carried out in one experimental class. Practicality data was obtained through student response questionnaires to supplementary teaching materials and learning processes. Respondens filling out this questionnaire were 30 students in class VIII H SMP N 13 Semarang. Aspects of practicality assessment in student response questionnaires include assessments of supplementary teaching materials and learning processes. The results of the assessment of student responses to teaching material supplements are shown in Table 4.

Table 4 Student responses to teaching material

Aspect	Response (%)	Criteria
Learning using SBA increases students' enthusiasm for learning	82	Practical
Learning with SBA makes students understand animal digestive problems	87	Very Practical
Gaining new knowledge by participating in a series of activities in the SBA	85	Very Practical
The SBA's utility in expressing ideas	78	Practical
SBA makes students discuss how to solve problems and exchange ideas	79	Practical
SBA allows students to draw conclusions from a problem	79	Practical
SBA understands the digestive systems of animals and their effects	83	Practical
Understanding of the digestive systems of animals increases after using SBA	81	Practical
Learning to use SBA can describe a statement accurately	78	Practical
Learning using SBA fosters students' cognitive abilities	77	Practical
Learning using SBA, one is able to express opinions in writing	76	Practical
Ease of understanding the contents of the supplement	79	Practical
The attractiveness of the display of teaching materials supplements	82	Practical
The Advantages of SBA Content	85	Very Practical
Ease of understanding the content of the material	83	Practical
The contents of the SBA encourage discussion and express opinions	77	Practical
The real cases presented encourage analysis activities	83	Practical
Supplementary words or sentences are easy to understand	83	Practical
Interested in learning more about animal digestive system materials	81	Practical
The image presented is clear	86	Very Practical
The language style is simple to grasp	84	Practical
Compatibility between problems in supplements and real life	80	Practical
The use of discussion sheets to communicate material	78	Practical
The benefits of posters to communicate opinions or arguments	77	Practical
Average	**81**	**Practical**

Based on Table 4, several aspects are assessed, including the ease of students in understanding the material presented, whether the cases or problems presented are relevant to the state of the surrounding environment, whether the images presented are clear, and various other aspects are presented effectively and efficiently for use in learning. So the results of the calculation of the overall average value of the respondents are 81%, according to practical criteria and response from teacher is 89% according to very practical criteria. In line with Amir's research (2018), which states that the percentage of student responses that have reached 75.4% is said to be a positive response from respondents.

The Effectiveness of Teaching Material Supplements

Increased understanding of students' concepts of the material of the animal digestive system can be seen from the results of the n-gain test analysis of pretest and posttest scores. Learning is carried out online with a total of 30 students in class VIII H SMP N 13 Semarang in the 2020/2021 school year. This study only measures the increase in concept understanding in one experimental class. The condition of class VIII H students is that they have diverse or heterogeneous abilities.

Figure 2 below shows the appearance of the teaching material supplement that was developed along with the completeness of the content presented. It has an attractive supplement cover with the aim of attracting students' reading interests when studying, combined with bright colors and clear images.

Figure 2 Cover display and content of teaching material supplements

Based on Figure 2 above, the supplement of teaching materials presents material on the meaning of nutrition, understanding of the animal digestive system, organs of the animal digestive system, and the mechanism of animal digestion. Aside from that, supplementary teaching materials are also equipped with student discussion sheets to assist students in understanding concepts such as system understanding, animal digestion, understanding of nutrition, and examples of digestive organs and how animals digest food. Independent activities and group activities were also added to improve mastery of previously understood concepts by linking them to problems encountered in the surrounding environment.

The test of the effectiveness of teaching material supplements and student achievement was carried out in one experimental class and carried out in one meeting using PBL-based teaching material supplements. The sample selection is from class VIII H, totaling 30 students. The supplementary teaching materials contain multiple-choice animal digestive system evaluation questions that are given to students to determine the improvement or student learning outcomes after using the supplementary teaching materials. The problem has been validated by a material expert. There are four criteria in item validation, including the achievement of learning indicators, the suitability of the items with the applied cognitive domain, the use of Indonesian, and the suitability of the material to the characteristics of junior high school students. Evaluation questions were given at the beginning of the lesson as a pretest and at the end of the lesson as a posttest to determine the improvement that occurred. The results of the pretest and posttest were analyzed for the value of learning outcomes.

The learning outcomes analyzed in this study are learning outcomes from the cognitive domain. Assessment of learning outcomes is done by means of a test assessment. The cognitive learning outcomes of students from the C1-C6 domain (Erawati, 2001:100-102) were assessed with multiple choice tests. The test was carried out at the end of the lesson.

The pretest and posttest data that have been obtained are then analyzed by calculating the gain value. This test can be done by calculating the increase in each aspect as well as the overall average. The n-gain test was conducted to determine the increase between pretest and posttest. The results of the N-Gain test analysis can be seen in Table 5.

Table 5 Overall N-Gain Analysis

Pretest Average	50.4
Posttest Average	84
Maximum Value	100
N-Gain	0.7
Criteria	High

Based on Table 5, it is known that the average posttest score obtained is higher, which is 84, when compared to the average pretest score, which is 50.4. with high criteria, the results of this test yielded an n-gain value of 0.7. this indicates that there has been a significant increase in student learning outcomes before and after using supplementary teaching materials in learning. supplements of teaching materials developed are effective for use in learning because they are able to teach students' mastery of concepts, which results in increased student learning outcomes. the existence of teaching materials also allows students to learn a competency systematically, so that, in the end, they are able to master all competencies as a whole. Thus, the learning objectives will be achieved properly.

CONCLUSION

Based on the results of the analysis and discussion, the conclusion of this study is that PBL-based teaching material supplements are feasible and practical to use. The supplementary teaching materials developed were also easy to understand and received good responses from validators and students. In addition, the supplement of teaching materials developed is also effective for increase mastery of concepts in the material of the animal digestive system.

REFERENCES

Akbar, S. (2013). *Instrumen Perangkat Pembelajaran.* Bandung: PT. Remaja Rosdakarya

Amin, M., Chandra, W., Rinie, M., Sulastri & Sumartini. (2006). *Panduan Pengembangan Bahan Ajar IPA.* Malang: Direktorat Pembinaan SMP.

Amir, M. F. (2018). Pengembangan Perangkat Pembelajaran Berbasis Masalah Kontekstual untuk Meningkatkan Kemampuan Metakognisi Siswa Sekolah Dasar. *Journal of Medives:Joyrnal of Mathematics Education IKIP Veteran Semarang, 2(1), 117-118.*

Belawati, D. (2004). *Pengembangan Bahan Ajar.* Jakarta: Universitas Terbuka.

Dewi, E. R., & Wahyuningsih, S. (2018). *Efektivitas Booklet dalam Meningkatkan Pengetahuan pada Dokter Kecil tentang Keamanan Pangan Sekolah.* Jurnal Kesehatan Masyarakat, 6(2), 73-83. https://doi.org/https:doi.org/10.31596/jkm.v6i.242

Erawati, E. A. (2013). *Pengembangan Paket Bahan Ajar IPA Kontekstual untuk Meningkatkan Prestasi Belajar Siswa Kelas VIII Olahraga.* Tesis tidak diterbitkan. Malang: PPs UM.

Gunawan, H. (2020). *Pengembangan E-Modul Akuntansi Kompetensi Dasar Mencatat Transaksi dalam Persamaan Dasar Akuntansi di Sekolah Menengah Kejuruan.* Jurnal Pendidikan dan Ilmu Pengetahuan Akuntansi, 4(1),84, https://doi.org/10.31851/neraca.v4i1.4322.

Hanik, N.R., Hartono S., & Nugroho A.A. (2018). *Penerapan Pendekatan Contextual Teaching and Learning Dengan Metode Observasi untuk Meningkatkan Hasil Belajar pada Mata Kuliah Ekologi Dasar.* Jurnal Pendidikan Matematika dan IPA,9(2) : 127-138.

Harahap, I.A., Helendra, H., Farma, S. A., & Syamsurizal, S. (2020). Validitas Booklet Sistem Pernapasan Manusia sebagai Suplemen Bahan Ajar IPA Kelas VIII SMP. *Bioeducation Journal, 4(2), 103-110.* https://doi.org/https://doi.org/10.24036/bioedu.v4i2.272

Kantun, S., & Budiawati, Y. S. R. (2015*). Analisis Tingkat Kelayakan Bahan Ajar Ekonomi yang Digunakan Oleh Guru di SMA Negeri 4 Jember.* Jurnal Pendidikan Ekonomi, 9(2), 129-146.

Kimianti, Febyarni., & Zuhdan Kun Prasetyo. (2019). *Pengembangan E-Modul IPA Berbasis Problem Based Learning Untuk Meningkatkan Literasi Sains Siswa.* Jurnal Teknologi Pendidikan. 07(02): 91-103.

Kirana, R. W. (2020). Pengembangan Bahan Ajar E-Book Praktikum Akuntansi Perusahaan Dagang Berbasis *Scientific Approach* Sebagai Sumber Belajar Alternatif. Jurnal Pendidikan Akuntansi Indonesia, 18(1), 80-90, https:doi.org/10.21831/jpai.v18i1.32292

Mahendrani, K. (2015). Pengembangan Booklet Etnosains Fotografi Tema Ekosistem untuk Meningkatkan Hasil Belajar pada Siswa SMP. *Unnes Science Education Journal, 4(2).* https://doi.org/10.15294/usej.v4i2.7936.

Mustofa, I. (2017). Pendidikan Islam Sebagai Institusi Politik Demokrasi Tertinggi di Indonesia. *Halaqa: Islamic Education Journal 1, 27-42.*

Nurdyansyah. N. & A. Widodo. (2015). Manajemen Sekolah Berbasis *ICT*. Sidoarjo: *Nizamia Learning Center.*

Pangestu, R. (2019). *Meningkatkan Minat Membaca dengan Menggunakan Media Gambar Berseri pada Kelas II SD*. Jurnal Pendidikan Guru Sekolah Dasar, 8(1), 43-53.

Paramita, Ratna., Ruqiah Ganda Putri Panjaitan., & Eka Ariyati (2018). *Pengembangan booklet Hasil Inventarisasi Tumbuhan Obat Sebagai Media Pembelajaran Pada Materi Manfaat Keanekaragaman Hayati.* Jurnal IPA dan Pembelajaran IPA. Vol. 02: 83-88

Prastowo, A. (2013). *Panduan Kreatif Membuat Bahan Ajar Inovatif.* Jogjakarta: DIVA Press.

Rahmat, Arofah Hari Cahyadi. (2019). Pengembangan Bahan Ajar Berbasis ADDIE Model. *Halaqa: Islamic Education Journal. Universitas Muhammadiyah Surabaya.* Vol. 3.

Rusman. (2010). *Model-model Pembelajaran.* Jakarta: PT. Raja Grafindo Persada.

Samani, M. (2012). Profesionalisasi Pendidikan. Surabaya:*Unesa University Press.*

Siddiq, M. D., Munawaroh, I. & Sungkono. (2009). *Pengembangan Bahan Pembelajaran SD.* Jakarta: DEPDIKNAS

Sinambela, P. Nauli josip mario. (2013). Kurikulum 2013. Guru Siswa Afektif Psikomotorik Kognitif. *E-Jornal. Universitas Negeri Medan.6(2): 17-29.* https://jurnal.unimed.ac.id/2012/index.php/gk/article/view/7085/6067

Sudjana, Nana. (2016). *Penilaian Hasil Proses Belajar Mengajar*. Bandung: Rosdakarya

Sugiyono. (2015). Metode Penelitian & Pengembangan *(Research and Development)*. Bandung: Alfabeta.

Syamsurizal, S., Aghnia, E., Darussyamsu, R., & Alicia, S. (2021). JPBI (Jurnal Pendidikan Biologi Indonesia) *Developing human movement system booklet as a biology teaching material supplement for XI grade students. 7(1), 95-103.*

Triyono, M. B. , Siswanto, B. T., Hariyanti, & Wagiran. (2009). *Materi Diklat Training of Trainer Calon Tenaga Pengajar/Dosen Lingkungan Badiklat Perhubungan.* Magelang: Badan Diklat DEPHUB

Wardani, G. T. W. dan I. K. (2017). *Efektifitas Suplemen Bahan Ajar IPA dengan Pendekatan Saintifik untuk Siswa Kelas IV SD.* Pendeka. 3, 41-55.

Widodo, P. B. (2006). *Reliabilitas dan Validitas Konstruk Skala Konsep Diri untuk Mahasiswa Indonesia*. 3(1), 1-9.