

PAPER • OPEN ACCESS

The practicality of odonata handout in invertebrate zoology course

To cite this article: M K Riefani *et al* 2020 *J. Phys.: Conf. Ser.* **1422** 012028

View the [article online](#) for updates and enhancements.



IOP | ebooks™

Bringing together innovative digital publishing with leading authors from the global scientific community.

Start exploring the collection—download the first chapter of every title for free.

The practicality of odonata handout in invertebrate zoology course

M K Riefani¹, Badruzaufari², Dharmono¹

¹Biology Education Department, Faculty of Teacher and Training Education, Universitas Lambung Mangkurat, Jl. Brigjen Hasan Basry 87 Banjarmasin, South Kalimantan, Indonesia

²Biology Department, Faculty of Mathematics and Natural Science, Universitas Lambung Mangkurat, Jl. Ahmad Yani 36 Banjarbaru, South Kalimantan, Indonesia.

maulanakhalidriefani@gmail.com

Abstract. Wetlands around the University of Lambung Mangkurat (ULM) Banjarmasin has been the habitat for dragonfly (Odonata). It has the potential to be utilized as a learning resource. A handout is one of the effective learning resources to achieve learning goals. Researchers created a handout to facilitate students to learn about the diversity and activities of Odonata at the wetlands around ULM Banjarmasin. This study aims to describe practicality of the Odonata handout. Research and development of handouts are based on Borg and Gall development model. This research was conducted in ULM Banjarmasin. The research subjects included three expert validation, nine students for small readability tests, and 18 students for small-scale field trials. Data analysis uses descriptive categorical techniques. The practicality of handout is indicated by students' activity and students' responses after they use handouts. The handouts based on students' activity showed very high activity and showed a very strong positive response.

1. Introduction

The learning process on campus is a process of learning subject interaction with learning objects to increase knowledge, skills, and attitudes student. The use of various methods, media, and learning resources can increase student attention towards lecture material, stimulate student interest in expanding knowledge, and improve student ability. The selection of learning models or strategies must be oriented to the competencies desired by educators and learning objectives [1] [2]. Learning strategies can be learned and used in learning activities. The type of material, learner characteristics, situations, and conditions of the learning process must be adjusted. College student domination of learning material needs to be supported by the availability of learning resources, learning tools, and selection of appropriate learning strategies.

Teaching materials are the main of supporting teaching and learning processes that contain important concepts and supported by information in the form of data and facts to facilitate educators in carrying out learning and building effective learning communication for students [3] [4]. One of the teaching materials that effectiveness connects educators, students, and important concepts in the form of data and facts to achieve learning objectives and support the learning process is a handouts.

The use of handouts reduces the verbosity of the material delivered, increases the active role and learning outcomes of students in learning, streamlines time, and helps educators as managers and



facilitators [5]. Handouts can make it easy for students to understand the material presented and improve their learning achievement. The use of handouts in universities has begun to increase and contain complete components, but the contents of the handouts have not been sequential, are less interesting, and sample material is always based on book sources that are usually unknown to students. The research and development handouts that contain the implementation of students' knowledge and life experiences are very important, especially in understanding the surrounding environment, providing opportunities for students to learn, practice, understand teaching and learning, stimulate thinking skills, develop rational potential for thinking, skills, and personality, train in problem-solving, recognize the problems and assessments, and improve critical thinking skills.

One effort that can be done to improve students' critical thinking skills is using local potential based handouts. Students need to explore the potential of the environment as a source of learning, so students can observe directly, find their own knowledge, and gain direct learning experience from learning objects in the environment. Nature gives great potential as a source of learning and contextual teaching material and makes it easier for students to learn [6]. The natural environment is a laboratory that has an important role and presents natural phenomena that can lead to scientific problems and phenomena that can be used in human life [7]. The environment around the campus has potential as a source of learning that can be utilized in the learning process. Learning resources available in the environment have not been utilized optimally to support the learning process. Various factors cause the teaching and learning process is not going well, for example, factors of lecturers, students, infrastructure, tools and media available, as well as environmental factors that are less supportive. Educators must be more creative in utilizing local potential as a source of learning, having knowledge, understand learning material, and using learning media in the environment to achieve learning objectives. Local potential based learning tries to optimize the utilization of the potential area. Teaching materials that are prepared using local potential can provide examples to students so that learning activities are in accordance with the local potential of the region [8].

The area of Universitas Lambung Mangkurat (ULM) Banjarmasin is located in a wetland in the form of a swampland with a depth of hard soil layer about 30 m from the surface of the water. The supporting facilities from wetland become a safe, comfortable place, and breed for plants and animals. Habitat conditions with various species of life or life interactions between physical components make a safe and comfortable habitat for plants and animals [9]. Utilization of the campus area can be optimized by supporting data about plants and animals, as well as the ecosystem. In general, available data include vegetation and animals such as birds, while data from invertebrate fauna groups such as insects are not sufficient. We did not get environmental documents or official reports containing fauna data (especially in this case, Odonata) in the ULM. The number of animal species in the early monitoring was used as the baseline value [10].

One of Insect around ULM area is Odonata. Odonata is one of the Insects closely related to environmental factors, especially the aquatic environment and that have high species diversity. The survival of Odonata depends on habitat pollution, so Odonata is used as environmental bioindicators [11]. The function of Odonata as bioindicators because Odonata Nymphs cannot live in polluted water or rivers that have no vegetation, nymphs feed on small insects in the waters, and collect toxic pollutants from their prey. Odonata also plays a role in health and agriculture, but are rarely used as a source of learning based on local potential or the surrounding environment.

The ULM environment needs to be developed as a learning resource because not learning objects such as the Arthropoda phylum, especially Odonata can be brought into the classroom or laboratory, so lecturers must have creativity in learning by utilizing the potential of the campus environment. ULM students can utilize the campus area as a source of learning and get additional insight from the environment. Material about Odonata and their lives are studied by biology education students in the Invertebrate Zoology course. The learning quality of Invertebrate Zoology is still dominated by learning activities using the lecture method. The lecturer holds on the contextual theory in the book, and even many students memorize terms that are not well understood. The low use of variations in methods, media, and learning resources causes curiosity and student achievement to decrease. The

content or material aspects of teaching materials especially Arthropods topic, still need to explore facts, concepts, principles, and theories that are in accordance with the learning objectives.

The developed handout contains Odonata diversity in the ULM area and connects students with objects to be studied through the activities in the handouts to improve their critical thinking skills. The research aims to describe the practicality of the development of Odonata handouts in the ULM area.

2. Research Method

This type of research is research and development (R&D) with a modified model from Borg & Gall [12]. The study was conducted in December 2018 - June 2019. Odonata data collection was carried out in the Universitas Lambung Mangkurat Banjarmasin, which is a product of this research and development. The measurement of the practicality of the development handouts was carried out in the Biology Education Department of Teacher Training and Education Faculty, Universitas Lambung Mangkurat. Research subjects to measure practicality were 18 college students who had taken the Invertebrate Zoology and were chosen randomly.

Practicality is obtained from two data, namely student activity and student response to the handouts. Student activity observation data is a description of student activities from observations regarding the implementation of the learning process in a small test. The instrument used was the student activity sheet. Data response results are measured by Likert scale. Each question is given a score and counted. The results of the questionnaire were analyzed descriptively. The data obtained is then converted into a percent — the closer to 100%, the more positive response to teaching materials.

3. Results And Discussion

Research and development (R&D) on the Odonata handouts are expected to contribute to the learning of Invertebrate Zoology, improve students' critical thinking skills, and deepen the material and apply it. Development of learning resources with the model Borg & Gall (1993) produces beneficial for improving learning outcomes because Borg & Gall model has a more complete and systematic description of the stages than the other models. The practicality of product development can be obtained by observing whether users of the book have difficulty in using the product [12]. Based on these theories, the practicality of the developed handouts will be reviewed from the activities of 18 students observed by observers and students' responses using handouts.

3.1 Student Activities

The practicality of the handouts was seen through the activity of 18 students who used the handout. A summary of the practicalities of the handouts based on student activities can be seen in Table 1.

Table 1 shows the very high student activity (99.07%) in using the developed handouts. These results illustrate that the diversity of Odonata handouts is very practical to be used as enrichment material for Invertebrate Zoology and shows students' learning abilities using handouts independently without lecturer supervision. The high practicality value of teaching materials shows the varied attitude for students and helps students in understanding the concept of biology independently [13] [14] [15].

The handouts that was developed outlines examples of the diversity of Odonata around ULM area, so that it can help students to understand the material and achieve learning objectives optimally. The use of Odonata that are simple but appropriately becomes the main consideration in choosing handouts developed in Invertebrate Zoology learning. Presentation of complete material in the handouts greatly helps students to find out information about the material being studied, and a meaningful learning process is created. The use of Odonata examples around the ULM area and the pictures of Odonata placed on the handouts provide student motivation to prove hypotheses or assumptions and directly observe the morphological features of Odonata in the field.

Table 1. Summary of Student Activities for Handouts Use

No	Student Activities	Result (%)
1	Students sit in groups	100
2	Students read the material on the handouts	100
3	Students observe the picture on the handouts	100
4	Students ask questions	88,89
5	Students make a problem statement	100
6	Students make hypotheses	100
7	Students take samples of Odonata	100
8	Students observe morphological characteristics of Odonata samples	100
9	Students note morphological characteristics in a notebook	100
10	Students use Odonata identification keys	100
11	Students analyze data	100
12	Students make conclusion	100
Average		99,07
Criteria		Very High

The pictures mounted on the handouts are Odonata diversity that is often found active in the around ULM area and are often present in the daily lives of students. The Odonata diversity a source of learning that can be optimized for the achievement of quality learning processes and learning outcomes. Learning resources in the campus area further enrich students' insights and knowledge, make student learning more accurate because they experience it directly, and optimize the potential of the students' five senses to communicate with objects.

Images with original colors are important visual elements that can give the impression of separation or emphasis as well as heightening the level of realism of the object or situation depicted, showing similarities and differences, creating certain emotional responses to students, and increasing the attractiveness of students' learning and attention [16] [17] Pictures that are interesting and clarify ideas, illustrate or provide a variety of facts, according to the material being studied, the picture is meaningful, contains information, and is taken from the correct source can be used in the learning process and makes it easier for students to understand the material and provide initial concepts or stimulus to students regarding the material to be studied [18] [19] [20].

The development of teaching materials must be contextual, meaning that they come from the immediate environment and are familiar with everyday life [21]. Teaching materials that are compiled based on local potential will make it easier for students to understand the role and benefits of orgasm in nature and make students get examples or conduct learning activities in accordance with the local potential of their area [8] [22]. Local potential in teaching materials used in the learning process outside the classroom has an effect on the closeness between the objects to be taught with students [23] [24] [25]. The existence of local potential that is integrated with teaching materials can help students in understanding the concepts taught.

Presentation of the characteristics of the Odonata diversity observed directly in the handouts is very useful for student curiosity, so the learning process has a high significance. By presenting morphological features and complete information about Odonata, students can streamline the process of collecting data or information. In addition, the completeness of the material can increase the knowledge of students in learning the material diversity of Odonata. The concept of relevance is very important to believe that students are motivated to learn it. The aspects of definition and explanation have explanatory indicators: explanatory tools such as, for example, descriptions, analogies, or metaphors that facilitate reader understanding and science process skills.

The most difficult aspects were the ability for inferring and classifying. When student inferring, they used formulating assumptions or possible explanations based upon observations. The ability to classify, in which the students did grouping or ordering objects or events into categories based upon characteristics or criterion [26]. Data or information collection and observational accuracy are

important activities to identify the characteristics of certain objects with their sensory devices [27]. The results of observations with full accuracy can be done by students if students have guidelines in conducting data collection [28]. Learning content (relevance) that is being studied must be related to students' knowledge, so students can adapt science to their lives [17] [26].

The use of handouts can show activities that lead to the learning process, such as asking questions, submitting opinions, doing assignments, answering lecturers' questions, and collaborating with other students [28]. Twelve student activities in using handouts are very high (88.89% - 100%). Learning that supports high-thinking ability of learners is the replacement of learning patterns that provides the active participation of students [29]. Student activity in asking questions was high (88.89%), but low compared to 11 other activities. Students to be silent, do not ask, rarely give criticism, ideas, and opinions, and accept the information provided. The low activity of students in asking questions is because students feel confused about the material, do not read the material provided, have no interest and are able to ask questions (fear of inferior and quality questions), low self-confidence, and are hesitant in expressing opinions and answers [30] [31].

3.2 Student Responses

The responses of 18 students were used to see practicality, handouts diversity of Odonata. A summary of the practicalities of the handouts based on student responses can be seen in Table 2.

Table 2. Summary of Student Response Results to Handouts Use

No	Aspect	Amount				Percentage (%)			
		Sa	Ag	La	Di	Sa	Ag	La	Di
1	This handout motivates me to study	14	4	0	0	77,78	22,22	0	0
2	I can study at my own pace	4	14	0	0	22,22	77,78	0	0
3	I am also encouraged to discuss with other friends	13	5	0	0	72,22	27,78	0	0
4	I can use handouts easily	12	6	0	0	66,67	33,33	0	0
5	I can link the material in this handout with other biology material or with other subjects in problem-solving and its application.	6	12	0	0	33,33	66,67	0	0
6	I can learn actively and independently with this handout	11	7	0	0	61,11	38,89	0	0
7	I can easily understand the material presented in the handouts	9	9	0	0	50,00	50,00	0	0
8	I gained deeper knowledge in the handout, especially Odonata	13	5	0	0	72,22	27,78	0	0
9	I am interested in studying the material of Invertebrate Zoology, especially the concept of Odonata	6	12	0	0	33,33	66,67	0	0
10	I came to understand because the material in the handouts was given in sequence	9	9	0	0	50	50	0	0
11	I can read the text easily because the type and size of the letters are right	11	7	0	0	61,11	38,89	0	0

No	Aspect	Amount				Percentage (%)			
		Sa	Ag	La	Di	Sa	Ag	La	Di
12	I like the look at the handouts because it has a color composition that matches	16	2	0	0	88,89	11,11	0	0
13	I can understand the material with the help of pictures that have good quality	16	2	0	0	88,89	11,11	0	0
Number of scores		140	94	0	0	777,78	522,22	0	0
Average						59,83	40,17	0	0

Information: Sa (strongly agree), Ag (agree), La (less agree), Di (disagree)

The results of the students' responses stated that 59.83% strongly agreed, and 40.17% agreed to the use of the developed handouts. The handouts are very easy for students to understand because the presentation of the material in the handouts is accompanied by pictures that are associated with knowledge and adjusted to the student's experience. The presentation of the original images in the handouts plays a very important role in the learning process, especially the students' ability to think critically, facilitate understanding, strengthen memory and understanding, and display their interest. The original images can be used to practice thinking skills, develop students' imagination abilities, show real situations, show variation and diversity of Odonata, show differences and similarities, and reduce the occurrence of verbalism.

The handouts that was developed has operational instructions to improve students' critical thinking skills and invest the concept of critical thinking when reading parts of the material displayed in certain parts of the handouts. Students become trained to think about things related to the material being studied. This condition will have a positive impact on students' critical thinking skills with different backgrounds. The differences in the background of student and learning processes in their school underlie the differences in each student' level of thinking ability [29]. Critical thinking skills need to be trained continuously and can become a habit [32]. This habit will become a basic attitude, and eventually, a critical thinking disposition is formed.

Teaching materials can be interesting if using pictures or illustrations that clarify the contents of the material that are easily understood by students [33]. The selection of images in teaching materials has several conditions, namely having links with the main information in the reading text, accommodating all discussion material, drawing close to the original and interesting image so that it clarifies the contents of the material and is easily understood by students [34] [35].

Table 3. Summary of Average Results of Student Responses

No	Aspect	Average	%
1	This handout motivates me to study	3,78	94,44
2	I can study at my own pace	3,22	80,56
3	I am also encouraged to discuss with other friends	3,72	93,06
4	I can use handouts easily	3,67	91,67
5	I can link the material in this handout with other biology material or with other subjects in problem-solving and its application.	3,33	83,33
6	I can learn actively and independently with this handout	3,61	90,28
7	I can easily understand the material presented in the handouts	3,50	87,50
8	I gained deeper knowledge in the handout, especially Odonata	3,72	93,06
9	I am interested in studying the material of Invertebrate Zoology, especially the concept of Odonata	3,33	83,33

10	I came to understand because the material in the handouts was given in sequence	3,50	87,50
11	I can read the text easily because the type and size of the letters chosen are right	3,61	90,28
12	I like the look at the handouts because it has a color composition that matches	3,89	97,22
13	I can understand the material with the help of pictures that have good quality	3,89	97,22
Average Total			89,96

The average total response of students to the handouts developed showed a very strong practicality category (89.96%). This shows that the handouts developed according to students is very practical to be used to improve students' critical thinking skills in studying the subjects of Invertebrate Zoology, especially on the Insects material of the Odonata. This student response is used as an indicator of the practicality of the developed handouts. The end of the practicality test produces a handout that will be seen in its effectiveness using a large test. There are advantages or characteristics resulting from the development of handouts in this study:

- The handouts cover design that was developed has been made with attractive and colorful. The front cover is presented natural behaviour of Odonata, so students can be motivated and practice their critical thinking skills, attracts students' attention in learning material, and focus students' interest and attention in learning. Teaching material chosen in the learning process must be easy to see, attractive for students to pay attention to the message, the perfect design has characteristics, and can optimize the achievement of learning objectives [16] [34].
- The unique handouts title, "Kasasiur": Diversity of Odonata in the around ULM area, makes students curious and interested in reading it. The handout developed is effective because the handout is placed in a meaningful learning context so that it can be understood by students, and the learning objectives can be achieved. Student interaction with handouts can show the process of delivering information. Effective teaching materials will make learning materials clearer in meaning so that they are easily understood by students and allow mastery and achievement of learning objectives [36].
- The material description in the handouts is made coherently and systematically, containing research procedures, documentation techniques, how to make a dichotomy chart, simple identification keys for Odonata, diversity of Odonata in the around ULM area complete with pictures, morphological features, sizes, classification, distribution, local names of Odonata, conservation status, behaviour, and habitat, so that they are easily understood by students. The content of instructional materials in biology learning requires an active role of learners based scientific, experience to develop intellectuality and thinking based on facts, develops student skills, makes it easier for students to learn, and guide students accustomed to thinking coherently [29] [37].
- The images presented in the handouts are mostly original images, so they are useful in relation to motivation, memory, and understanding, and make it easier for students to recognize the types of Odonata (Zygoptera and Anisoptera) studied. Original and images can attract someone's attention rather than black and white images and provide real experiences to grow their own business activities and motivate students to learn and keep learning [38] [39].
- The presentation of the handouts is equipped with usage guidelines and arranged in such a way as to facilitate students learning it. Clarity of instructions, the suitability of content, preparation and suitability of material, harmony of colors, display of images, writing on material, and language standardization of teaching materials can be used to help students understand the material [40].

- Presentation of handouts is made simply and uses popular language styles, simple, concise, easy to learn, relying on thinking, not boring, not bound by scientific writing rules, easy to carry, so that it attracts reading interest and is easily understood by a wide audience. This is shown by the presentation of the contents of the handouts that are arranged in such a way that they are easy to use, not boring, and do not result in inefficiency in learning. Good teaching material is teaching material written in good language, easily understood by students, easily obtained, easy to use, and helps facilitate teaching assignments [35]. The language used in teaching materials must be simple and communicative. The language used must be in accordance with the correct language and use terms that are in accordance with the concept of discussion [22]. Good learning is done interactively, inspiringly, it is fun, challenges, and motivates students to participate actively [41].
- Certain pages in the developed handouts contain statements to improve students' critical thinking skills. The existence of these statements makes students coherently or systematically study part by part of the material presented in the handouts. Practical teaching materials can produce useful learning and are focus on students through the use of appropriate procedures.
- Each species of Odonata that are displayed presents the names of the regions or local names so that they are easily recognized and understood by students. The introduction of the Odonata diversity around the ULM area will enable students to make it easier to be directed in improving their abilities and achievements. The display of local names will increase the curiosity of students to learn more details about the material being studied, especially the types of Zygoptera and Anisoptera. The local potential that is used as teaching material will increase their sense of ownership that will eventually be easily understood by using its common sense, making it easier for students to achieve the desired goals, and increasing their critical thinking skills [42].

Based on the advantages of the handouts above, it is hoped that this researcher's development product can provide solutions in overcoming the problem of learning Invertebrate Zoology in particular to improve students' critical thinking skills.

4 Conclusion

The results of research and development handouts of Odonata diversity in the campus ULM show very practical handouts used to improve critical thinking skills in learning Invertebrate Zoology courses that are seen in very high student activities (99.07%) and get a positive response from students who are very strong (89.96%).

Reference

- [1] Uno H 2009 *Model Pembelajaran Menciptakan Proses Belajar Mengajar yang Kreatif dan Efektif* (Jakarta: Bumi Aksara)
- [2] Munthe B 2009 *Desain Pembelajaran (Yogyakarta: Insan Madan)*
- [3] Amri & Ahmadi 2010 *Konstruksi Pengembangan Pembelajaran* (Jakarta: Prestasi Pustaka)
- [4] Riyani Y 2012 *Jurnal Eksos* **8** 19 – 25
- [5] Fauziah, Y Syafi'i W Firdaus L N & Zainun 2017 *IBT* **1** 1-7
- [6] Prabowo D, L Nurmiati. & Maridi 2016 *National Seminar XI Education Of Biology Faculty Teacher And Education Science UNS, 192-195.*
- [7] Suratsih 2010 Pengembangan Modul Pembelajaran Biologi Berbasis Potensi Lokal dalam Kerangka Implementasi KTSP SMA di Yogyakarta Penelitian Unggulan UNY (Yogyakarta : Universitas Negeri Yogyakarta)
- [8] Novana Sajidan & Maridi 2014 *J Inkuiri* **3(2)** 108-122.
- [9] Riefani M K Soendjoto M A & Munir A 2019 *Biodiversitas* **20 (1)** 218-225
- [10] Soendjoto M A Riefani M K Triwibowo D & Metasari D 2018 *Biodiversitas* **19 (1)** 323-329.

- [11] Rahadi S, W Feriwibisono, B Nugrahani, M P Putri, & Makitan, T 2013. *Naga Terbang Wendit: Keanekaragaman Capung Perairan Wendit, Malang* (Malang: Indonesia Dragonfly Society)
- [12] Borg W R & Gall M D 1989 *Educational Research: an Introduction (5th ed.)*. White Plains (New York: Longman)
- [13] Ibrahim M & Subali B 2017 *Workshop Pendidikan Biologi : Pengembangan Bahan Ajar & Pengembangan Instrumen Pengukuran Pembelajaran Biologi* (Banjarmasin : ULM press)
- [14] Gagne R, M Briggs L J & Warge W W 1992 *Principle of Instructional Design (4th ed)*. Fort Worth (TX: Harcourt Brace Jovanovich College Publishers)
- [15] Sugiyono 2015 *Metode Penelitian dan Pengembangan Research and Development untuk Bidang Pendidikan, Manajemen, Sosial, dan Teknik* (Bandung: Alfabeta)
- [16] Arsyad A 2011 *Media Pembelajaran* (Jakarta: PT. Rajagrafindo Persada)
- [17] Suparman M A 2012 *Panduan Para Pengajar Desain Instruksional Modern* (Jakarta: Erlangga)
- [18] Angkowo R & Kosasih A 2007 *Optimalisasi Media Pembelajaran* (Jakarta: Grasindo)
- [19] Daberty, S 2015 *Pengembangan Lembar Kerja Siswa (LKS) Berorientasi Model Pembelajaran Guided Inquiry untuk Meningkatkan Kemampuan Berpikir Kritis Siswa Pada Materi Sistem Sirkulasi Kelas XI SMA Unpublished Undergraduate school* (Riau: Universitas Riau)
- [20] Syafi'I W Sari R F & Arnentis 2016 *J. Biogenesis* **13(1)** 77 – 84
- [21] Aisyi F, K Elvyanti, S Gunawan, T & Mulyana, E 2013 *J. Invotec* **9(2)** 117-128
- [22] Suwarni E 2015 *Bioedukasi* **6(2)** 86-92
- [23] Sarah S & Maryono 2014 *J Technoscintia* **2(6)** 185-194
- [24] Ardan A S 2016 *Intl Journal of Higher Edu* **5(3)** 190-200
- [25] Ilma S & Wijarini, F 2017 *JPBI* **3(3)** 194-201
- [26] Utami N H & Riefani M K 2017 *The 5th South East Asia Development Research (SEA-DR) International Conference Proceeding* 100: 382-384
- [27] Nuryani R 2005 *Strategi Belajar Mengajar Biologi* (Malang : Universitas Negeri Malang)
- [28] Munadi Y 2013 *Media Pembelajaran: Sebuah Pendekatan Baru* (Jakarta: Referensi)
- [28] Yasa D 2008 *Aktivitas dan Prestasi Belajar* (<http://www.ipotes.wordpress.com/prestasi-belajar>)
- [29] Riefani M K & Utami N H 2017 *The 5th South East Asia Development Research (SEA-DR) International Conference Proceeding* 100: 350-351
- [30] Siswati 2010 *Jurnal Psikologi Undip* **8 (2)** 124-134
- [31] Idris T 2018 *Bioedusiana* **3(1)** 1-7
- [32] Lambertus 2009 *Forum Kependidikan* **28 (2)** 136-142
- [33] Dewi A W 2010 *Teori dan Pengukuran Pengetahuan dan, Sikap dan Perilaku Manusia*, (Yogyakarta: Nuha Medika)
- [34] Sulton 2003 *Desain Pesan Buku Teks IPS SD di Wilayah Kota Malang: Suatu Kajian Terhadap Buku Teks IPS kelas III, IV, dan V SD Unpublished Dissertation Postdoctoral programe* (Malang : Universitas Negeri Malang)
- [35] Musfiqon 2012 *Pengembangan Media dan Sumber Media Pembelajaran* (Jakarta: PT. Prestasi Pustakaraya)
- [36] Sudjana N & Rivai A 2009 *Media Pengajaran Cetakan ke-8* (Bandung: Sinar Biru Algenisindo)
- [37] Belawati T 2003 *Pengembangan Bahan Ajar* (Jakarta: Universitas Terbuka)
- [38] Monica & Laura C J 2011 *Humaniora*, **2(2)** 1084-1096.
- [39] Prastowo A 2014 *Penduan Kreatif Membuat Bahan Ajar Inovatif* (Yogyakarta : DIVA Press)
- [40] Sukiman 2012 *Pengembangan Media Pembelajaran* (Yogyakarta: Pedagogi)
- [41] Akbar S 2013 *Instrumen Perangkat Pembelajaran* (Bandung: PT. Remaja Rosdakarya).
- [42] Situmorang R P 2016 *JPS* **4(1)** 51-57.