

## THE STUDENTS' RESPONSES: IMPLEMENTATION OF AN ELECTRONIC MODULE ON THE CLASSIFICATION OF LIVING THINGS INTEGRATED WITH SIDOARJO LOCAL WISDOM

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### Abstract

*Positive learning response is an important element of learning activities. Learning response to learning can attract students' attention in learning activities carried out. The purpose of this study was to analyze student responses after using an electronic module on the classification of living things integrated with Sidoarjo local wisdom. This research method is a quantitative research method using instruments in the form of questionnaires given to students. Based on the research that has been done, it shows that student responses when using the electronic module of living creature classification material integrated with Sidoarjo local wisdom obtained a good response with a percentage of 45.85%. Further research is expected to improve and develop 4 aspects of electronic modules based on local wisdom of other science materials, namely presentation of material, language, usefulness and graphics in order to get student response criteria at least in the good category.*

**Keywords:** Implementation, Sidoarjo Local Wisdom, Classification of Living Things, Electronic Module, Student Response

### 1. INTRODUCTION

The learning process requires a positive response from students. Positive learning response is an important element to increase students' curiosity towards learning (Kusmaryono & Setiawati, 2013); (Kabir & Rahman, 2016); (Thuneberg, Salmi, & Bogner, 2018). Students who have a positive learning response tend to be more active, creative, and dare to take every opportunity, for example in asking questions, providing ideas and explaining to their friends if there are things that are not understood by their friends (Kusmaryono & Setiawati, 2013). From the literature, it emphasizes the importance of only giving positive responses to students to build their understanding and having accurate and realistic responses that can help them gain the skills needed to learn (Pintrich, 2003). With this kind of thing, it will affect students' understanding of learning material and also student activeness in learning, so that the end result is that students' understanding of learning material increases and student learning outcomes (Thuneberg et al., 2018). Thus, student response to learning

is one of the important factors to be developed so that the learning carried out provides satisfactory results. Through a good student response to learning, students will like the components used in learning, students will be interested in participating in learning in the next activity (Ahmad, Nasution, & Harahap, 2020).

Learning response to learning can attract student attention in learning activities carried out. Student attention can be activated by using a real medium, which can be directly observed, felt, and modified by students, so that students will be more interested in the subject matter being studied, one of which is science. Teachers in the science learning process must use a variety of learning media so that students are interested in learning (Kusmaryono & Setiawati, 2013). In carrying out a series of lessons, the teacher in the classroom will influence the success of students in learning science so that teachers must have creativity in choosing the learning media used. Through learning media, students will be motivated to always be active in discussing and doing assignments so that the teaching and learning process can run

effectively and efficiently (Jabnabillah & Reza, 2022). This phenomenon is particularly noticeable in the school context, where students who have a positive view of the role of science in society express a lack of interest among students in science, and thus do not engage with important science-related social issues (Swarat, Ortony, & Revelle, 2012). Therefore, it is necessary to have the latest learning media so that it can attract students' attention which will have an impact on increasing students' interest and learning outcomes.

Facts in science learning, so that the material is interesting and gets a positive response from students, teachers need to develop learning media. On the other hand, the use of learning media during the learning process is still in the form of power point presentations that tend to be static and simple, this can be a factor in low curiosity and active participation of students during the learning process (Roemintoyo & Budiarto, 2021). Learning media is a tool that can be used in conveying messages and stimulating the learning process, so that it can clarify the meaning conveyed to students in acquiring knowledge, skills, or attitudes. Thus, learning objectives can be achieved properly and perfectly (Novaliendry, Darmi, Hendriyani, Nor, & Azman, 2020). Learning by using digital technology to deliver content and facilitate learning. Similarly, using pictures and words in the teaching-learning process can include multimedia elements, such as videos, interactive simulations, and multimedia presentations. Such technologies facilitate the learning process and can improve teachers' teaching skills, as well as stimulate students' learning and motivation (Ambe et al., 2024). Learning using digital technology can be in the form of learning media. One of them is digital learning media that is interesting and gives a positive response to students.

Here are some previous research results related to digital learning media that are interesting and provide positive student responses as follows (1) Research results (Octalia, Rizal, & Ardiansyah, 2021) Digital comics can provide a sense of convenience, attractiveness and motivation to students in the classroom learning process. (2) Research results (Abdulatif & Muh. Husen Arifin, 2023) The digital storybook learning media was designed using Canva and IbispaintX as an

application platform, the responses from material experts, media experts and linguists received very good responses and were worthy of being tested on students. The responses from student users and teachers received positive responses. From some of these responses, digital storybook media is suitable for use in learning and gets a positive response from student users and teachers. (3) Research results (Sahara & Thohir, 2022) Students' attitudes towards the use of digital media always show a positive attitude towards the use of learning media when the teaching and learning process takes place.

One of the digital learning media is electronic modules (E-modules). E-Modules are digital and non-print teaching media that are arranged systematically and used for self-study purposes, so that they can require students to learn to solve problems in their own way. E-modules are the latest innovation from printed modules that can be accessed using a smartphone (Gufran & Mataya, 2020). Electronic modules have characteristics in the form of relatively small file sizes so that they can be stored on a flash disc, easy to carry, can be used offline, can be studied anytime and anywhere as long as there is a computer or laptop. Then there are links that help to browse the material linearly or non-linearly so that it directs students to certain information. The electronic module is also equipped with animation and practical simulations and students can find out learning completeness through interactive self-evaluation (Mulyono, Charli, Fiani, Raflesia, & Hidayati, 2022). The advantages provided by electronic modules such as the use of multimedia in electronic modules, easy access, organization, easy to return to titles and text in electronic modules, and can be loaded on tablets and mobile phones which makes it easier to use anytime and anywhere (Amril & Thahar, 2022). The disadvantages of e-modules are: (1) the cost of developing materials is high and the time required is long, (2) it determines a high learning discipline that may be lacking in students in general and immature students in particular, (3) it requires high diligence from the facilitator to continuously monitor the learning process of students, motivate and consult individually every time students need (Gufran & Mataya, 2020).

Here are some previous research results related to science learning using electronic

modules that are commonly done but interestingly integrated with local wisdom as follows (1) Research results (Setiyawan et al., 2024) The e-module developed can improve understanding of the material and student responses indicate that the e-module is feasible to use in independent learning and the learning process at school. (2) Research results (Holisoh, Setiani, Firdaus, Nulhakim, & Ruhiat, 2023) electronic modules that are attractive and can be accessed anywhere and anytime and contain practice questions for personality development and value formation in students. (3) Research results (Dewi & Suniasih, 2023) E-Modules based on Balinese local wisdom developed get very good qualifications and are very feasible to use in the learning process based on expert tests and also product trials given to students. This Balinese local wisdom-based teaching E-Module IV received a very good response, so it is valid and effective for use in the learning process. (4) Research results (Kumalasari, Fathurohman, & Fakhriyah, 2023) E-modules based on local wisdom of Grobogan region have a good impact on student learning outcomes.

The research focused on Sidoarjo local wisdom. Local wisdom of Sidoarjo includes places, food, dance, heritage, culture, tourism and so on. Ethnographically, Jabon sub-district, Sidoarjo is a farming area so that the form of local potential of the area is fresh fish, all kinds of sea grass, various types of mangroves and so on. More precisely, the local advantage in Jabon Sub-district is everything related to the processing of pond products, such as making fish into crackers, smoking fish (Smoked Fish), Shrimp Petis, and Mangroves (Shofiyah, Hasanah, & Miluningtias, 2020). Mangrove is a science

material, namely Classification of Living Things, which is integrated with Sidoarjo's local wisdom, which is packaged in an electronic module, which is expected to generate student interest and positive responses. The hope of this research is that the material is easy to understand and has the opportunity to stay in long-term memory. This research was conducted with the urgency of increasing knowledge of local wisdom that is very close to the student's environment. In addition, as an illustration for teachers to integrated various regional local wisdom in learning.

This study is to answer the problem of how students respond in implementing electronic modules on the material of classification of living things integrated with local wisdom of Sidoarjo. Further research is expected to develop electronic modules on other science materials.

## 2. METHODS

This study is a survey research to see students' responses to the implementation of electronic modules on the classification of living things integrated with local wisdom in Sidoarjo. The sample used in this study totally 48 students. The data collection technique used was a questionnaire (Creswell, 2012; Rahmadani, 2020). After data was collected from the distribution of questionnaire instruments, the data was analyzed using the following statistical formula:

$$R_s = \frac{\text{Number of Student Responses per Indicator}}{\text{Number of Statement Items}} \times 100\%$$

The statement items in this study were 20 items grouped into 4 aspects. The following more details can be seen in the following table.

**Table 1. Student Response Questionnaire Grid** (Kurniawan, Yunianta, & Kriswandani, 2023)

No	Indicator	Statement
1	Presentation of Material	This e-module is a lot of fun.
		Learning by using electronic modules makes learning interesting.
		Electronic modules are better than textbooks.
		I do not mind using electronic modules as teaching materials.
		Electronic modules are more attractive than other teaching materials.
2	Linguistics	The material learnt with the electronic module is easy for students to remember.
		I like reading electronic modules more than reading other teaching materials.
		I can read the e-modules continuously.
		Reading the electronic module retains the meaning of the material.
		Reading electronic modules does not waste time while studying.

		I learnt many useful things when reading the e-modules.
3	Expediency	Learning using electronic modules can improve learning ability. This e-module is for intermediate learners. Electronic modules can be used independently. Electronic modules are a valuable benefit in the learning process. This e-module suits me.
4	Graphics	Learning with electronic modules provides a more realistic picture than other teaching materials. I hope other concepts can be developed in the form of electronic modules. Electronic module learning resources provide a learning experience. If I am a teacher, I would like to use this e-module in my teaching.

The data analysis technique uses quantitative descriptive statistics. Descriptive statistics is a way of collecting, compiling, presenting and analyzing data in the form of numbers (Suhara, Siska, Fadilah, & Supriyadi, 2022). These results can be concluded by looking at the student response criteria in Table 2 below.

**Table 2.** Student Response Criteria

Student Response Score (%)	Category
$75 < R_S < 100$	Very good
$50 < R_S < 75$	Good
$25 < R_S < 50$	Good enough
$0 < R_S < 25$	Less good

Sumber : (Gola, Subiki, & Nuraini, 2022)

### 3. RESULT AND DISCUSSION

The research was conducted in class VII, with 48 students as respondents. The study aimed to determine student responses when using electronic modules on the classification of living things integrated with Sidoarjo local wisdom. Responses were obtained after students finished learning by using the e-module. The questionnaire consists of 20 statements. Questionnaires were given to students after carrying out learning using the electronic module of classification of living things integrated with local wisdom of Sidoarjo through the following google form link <https://forms.gle/ubpkM3i46qvWfCni8>. The results of the student response questionnaire were then analyzed and concluded according to the student response criteria shown in Table 2. The following data analysis of student response results is shown in Table 2.

**Table 2.** Data Analysis of Student Response Results

No.	Student Response Questionnaire Indicators	Index (%)	Criteria
1	Presentation of Material	55.15	Good
2	Linguistics	43.85	Good enough
3	Expediency	46.75	Good enough
4	Graphics	37.65	Good enough
	<b>Average</b>	<b>45.85</b>	<b>Good enough</b>

Based on Table 2. shows that the material presentation indicator is 55.15% with good criteria, the material presentation indicator is 43.85% with fairly good criteria, the material presentation indicator is 46.75% with fairly good criteria and the material presentation indicator is 37.65% with fairly good criteria. Meanwhile, the average analysis of student response results was 45.85% with fairly good criteria. The material presentation aspect focuses on students, the material determines the knowledge, skills and attitudes that need to be mastered so that learning activities can be on target by referring to the competencies that have been set both in the core competencies and basic competencies (Qotimah & Mulyadi, 2021) The material presented is good with concepts that do not cause many interpretations, the images and videos on the e-module are in accordance with reality, the material presented has been adjusted to the independent curriculum which includes conformity with the learning outcomes and learning objectives contained in Permendikbud

No 033/H/KR/2022. The presentation of material on the e-module has referred to valid and reliable sources or books such as books published by Kemendikbud. The suitability of the material serves to increase motivation, interest in learning, and the user's desire to learn the material presented in the teaching materials. (Fauziah, Susanti, & Sari, 2023). Thus, the content of the material can be conveyed well, because it is visualized with images to encourage learning motivation, clarify and simplify complex and abstract concepts to be simpler, concrete, and easy to understand. The use of images and videos on the e-module that are in accordance with the material, gave a different impression, because a presented the problems or cases that can build students' high-level thinking, so the e-module is interesting and feasible to use (Rukiyah, Suningsih, Rantina, Rahmayanti, & Aurel Saptaria, 2023).

The linguistic aspect of the e-module has the accuracy of sentences that have represented the information conveyed, the sentences used are simple, the sentences used are in accordance with the ability of students and the terms contained in the e-module are in accordance with the KBBI, and the spelling used is in accordance with the EYD. Teaching materials should use language that is simple, brief, clear, and not double-meaning because it can affect the communicative language of the learning resource. Printed materials should pay attention to easy language, including: flow of vocabulary, sentence explanations, and sentences that are not too long so that they are easily understood by students (Fauziah et al., 2023). Aspects that received a high average score consisted of: the electronic module aspect makes students learn many useful things. Electronic modules which are teaching materials are arranged systematically both written and not so that an atmosphere is created that allows students to learn. This aspect is one of the benefits of teaching materials, namely obtaining teaching materials that are in accordance with the demands of the curriculum and according to student learning needs (Nazara, Halang, & Rezeki, 2022). Digital modules are also developed by paying attention to color composition, suitability of cover layout, suitability of layout, synchronization between graphics and visuals. Electronic modules are also developed by using consistent words and terms. In addition,

the shape, font, and layout are consistent. Electronic modules are also developed by paying attention to aspects of color, clear illustrations of images and videos. This is in line with the opinion stating that an electronic module must be developed with graphic aspects. These things make the electronic module based on local wisdom very feasible to be used by the admin (Hendri, Handika, Kenedi, & Ramadhani, 2021).

E-Modules are equipped with instructions for self-study, so that students can learn according to their abilities and can fulfil all the competencies that must be mastered by students. In accordance with the characteristics of the material, in delivering the material or explanation to students requires a variety of examples, because for students to understand this material requires a variety of varied example models. It is not enough just to describe the formula for doing it, but it takes more to the varied ways of solving it so that it becomes interesting and students can remember it well (Salfia, 2021). E-modules can effectively increase student learning activities and motivation, as well as improve student learning outcomes (Fujiarti, Meilania, Angraeni, & Umah, 2024). Conceptually, there is no significant difference between print-based modules and electronic modules (e-modules). All components contained in the print-based module are also contained in the electronic module, be it the formulation of objectives, instructions for use, materials, worksheets, assessments and others (Irmawati, Baktiar, & Hutapea, 2023). E-Modules that have been completed can later be published in SWF HTML or in PDF form which can be sent to students through online applications that support learning such as WhatsApp, E-Mail, and others (Ramadhina & Pranata, 2022). How to use this E-Module is by sliding the page to the left to continue to the next page or to the right to return to the previous page. This electronic module is equipped with a barcode and Youtube link to connect to certain animations or explanations on several sub-materials that function to facilitate students in understanding the material (Syarah Syahiddah, Dwi Aristya Putra, & Supriadi, 2021).

Based on the results obtained, the average student response score of 45.85% with good enough criteria so that the electronic module of classification of living things integrated with Sidoarjo local wisdom is practically used

in learning. The good enough category obtained is due to the use of e-module products that tend to be easy so that they get a fairly good response by users of these teaching materials, namely students (Hasanah, Supeno, & Wahyuni, 2023). The positive response given by students is due to the use of electronic modules on the classification of living things integrated with Sidoarjo's local wisdom is something that students really like so that students are happy to take part in the learning process. In addition, the material learned with electronic modules is easy for students to remember and learning with electronic modules provides a more realistic picture than other teaching materials, making students more interested in learning science material on the classification of living things integrated with local wisdom of Sidoarjo. The electronic module that was designed and developed also refers to the principles of constructivism theory, cognitive theory and behaviourism theory. Through the theory of constructivism, the software is based on user experience and provides an environment that creates an atmosphere of wanting to learn by using a digital technology theme where users are free to choose the topics they want to learn and allow users to enter and exit the learning environment at any time. Through cognitive theory as well, the designed and developed e-Module is used as a guide to provide lesson contents and exercises to the users where explanations have been provided within each lesson contents and the lesson contents have been conducted and arranged from easy to difficult. Based on the behaviourism theory as well, the designed and built e-modules also emphasize output generation which can be observed and measured on the user through the learning objectives provided at the beginning of the topic and the amount of time required by the user to answer all the questions provided correctly (Mohamad & Mohamad, 2017). This is in line with the results of research conducted by (Zulkhi, Rusdyanti, & Astari, 2022) which obtained research results that the use of Electronic Modules that have been developed has a good effect on increasing student learning responses.

Response is a mental tendency towards something that consists of feelings of pleasure, attention, sincerity, and motives in achieving a goal. So that the level of student attention or pleasure in the subject is influenced by the

student's level of interest. Electronic modules are more effective than conventional modules because students quickly feel bored and less interested in learning the material contained in the module, this usually affects student learning outcomes. Less efficient because students have to spend more money to reproduce modules. In addition, currently smart phone technology users are increasing rapidly and students also play gadgets every day, of course this is a motivation for teachers to innovate in developing technology-based learning that suits the demands of the times. to anticipate things that are less positive such as students spending more time playing social media or online games. Therefore, the electronic module can make students study at home and reduce playing social media or online games (Fitriani & Indriaturrahmi, 2020). This research is supported based on previous research on the development of Electronic Modules integrated with local wisdom which obtained a response to the results of a large group trial with 22 students who obtained a score of 0.81 high (Dewanti, Setyowati, & Nurcahyo, 2023). In addition, research conducted by (Gola et al., 2022) The results showed a positive student response of 76.56% on the aspect of display indicators and images of android-based physics e-modules (Andromo) made me interested in participating in learning. The reason is that local wisdom is appropriately implemented into the current learning process so that learning not only leads to the utilization of technology but also leads to the development of local character potential. Currently, there is not much local wisdom implemented in learning so it is important to raise a learning that involves local wisdom in it (Anjasti, Alawiyah, & Sari, 2024).

#### 4. CONCLUSION

Based on the results of the study, it can be concluded that the response of students when using the electronic module of classification of living things integrated with local wisdom of Sidoarjo obtained a percentage of 45.85% with fairly good criteria, which includes indicators of presentation of material categorized as good, language categorized as good enough, usefulness categorized as good enough, and graphics categorized as good enough. This shows that the electronic module of classification of living things integrated with



Sidoarjo local wisdom still needs to be refined and tested further so that it can be categorized as at least good. The suggestions for future researchers can make improvements to the electronic module of living creature classification material integrated with Sidoarjo local wisdom that has been developed by making electronic modules that can be used in various types of mobile phone operating systems. In addition, future researchers can revise and test electronic modules of other science materials integrated with Sidoarjo local wisdom.

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