Research Article

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Analysis of the need for development of e-module based on interactive media learning in the era of the pandemic

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Article Information	ABSTRACT
	The COVID-19 pandemic has had a big impact on almost all sectors, including the education sector. What felt from this outbreak is the learning process from offline to online. The change in the learning process requires educators to be creative in developing learning resources, especially online learning resources to facilitate the learning. The purpose of this study was to obtain initial data as a requirement for the development of interactive media-based e-modules. The research that will be conducting is descriptive qualitative. The population used is students of SMP/MTs in Malang, with a sample of 30 students of class IX in MTs. Sunan Ampel Poncokusumo, 30 Class IX students at SMPI Nurul Hikmah Assalafiyah Poncokusumo, 15 SMP Sunan Kalijogo Jabung Class IX students at and 15 Class IX students at SMP Plus Fityani Pujon. The instruments used are observation sheets, questionnaires and interview sheets. Data collection techniques were carried out using observation, distributing questionnaires and interviews. Data were analyzed using descriptive analysis. The results of the needs analysis test show that online-based teaching materials are needed to support the learning process in the era of the covid-19 pandemic, where 96.67% of students need an online-based teaching material and 100% of the results of teacher interviews need to develop online-based teaching materials. Based on the results of the research and discussion, it can be concluded that there is a need for the development of interactive media-based e-modules as a learning solution in the pandemic era. The results of this need analysis test can be used as basic data for the development of interactive media-based e-modules. **Keywords:** E-module; teaching materials; interactive media
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INTRODUCTION

The COVID-19 pandemic has a big impact on all sectors (Aeni, 2021). The education sector is no exception (Sudrajat et al., 2020). The pandemic in education has had many influences, especially in the

learning process. As we know before the pandemic, the learning process was carried out face-to-face (offline), where educators met face-to-face with students to transfer knowledge or discuss. However, the pandemic has changed the learning process where learning is required online (Latip, 2020). This of course has a great influence on the course of the educational process, where a good adaptation process is needed from educators to students in carrying out online learning.

This adaptation process is certainly not easy for both educators and students it takes time for them to become familiar and comfortable with the online learning process. Moreover, educators must be able to carry out a fun online learning process for students so they are not easily bored. This is certainly a challenge for educators because this is a must in the pandemic and the 4.0 learning era. Siahaan (2020) explained that teachers must re-think and re-analyze appropriate learning models to adapt to the learning process in the current pandemic era. One of the challenges that must be faced and overcome is the ability of teachers to provide facilities and infrastructure such as media, learning resources or teaching materials for students (Rumaksari, 2021). In the pandemic era, especially in the 4.0 learning era, teachers are currently required to produce teaching materials that are easily accessible to students wherever and whenever. However, in reality, the availability of teaching materials/learning resources currently available is limited and inadequate in supporting the learning process. Arsanti (2018) and Abdias et al. (2019) their research stated that the existence of teaching materials to date can be said to be limited and inadequate to support the learning process. Setiawan et al. (2020) explain that the availability of teaching materials that can be utilized by students is currently very lacking, especially teaching materials developed by teachers and lecturers themselves. Both teachers and lecturers generally only use pre-existing teaching materials from book publishers in general. This is also reinforced by the results of observations made at MTs Sunan Ampel and SMPI Nurul Hikmah Assalafiyah Poncokusumo show that in science learning, educators only use teaching materials from publishers and some of the teacher's handbooks, so learning is less effective and interesting. In addition, educators also rarely use e-books to be used as learning resources for students.

These problems must be overcome, especially in the current pandemic era to produce one of the teaching materials that support the online learning process. Teaching materials are one of the important elements to help the learning process run smoothly (Ardiansyah et al., 2016; Irawati & Saifuddin, 2018). One of the teaching materials that can be developed is modules. Munadi (2013) explained that the module is a teaching material designed so that students can learn independently according to their respective abilities and speed. The development of the module itself will be more useful and on target, especially in the current pandemic era if the module developed is in the form of an electronic module (e-module). In line with this, Sufiyah and Sumarsono (2015) state that to support the learning process in the technology-based era, electronic modules should be developed to replace print modules, to save time and train students to learn independently. Sidiq and Najuah (2020) clearly state that students are currently less interested in printed teaching materials such as books, handouts and modules. One way to overcome this is to make teaching materials in electronic form such as e-modules.

The development of e-modules will be even better and can improve student learning outcomes and motivation if in the development process using learning media (Setiarini et al., 2016; Imansari & Sunaryantiningsih, 2017; Pratita & Djahir, 2020). The development of e-modules itself for now is quite a lot, but in utilizing the existing media or applications to attract students' interest there may be only a few. Therefore, it is necessary to develop an e-module based on a media or learning application in order to attract students' reading interest. One of the learning media that can be used is interactive learning media. Arsyad (2014) explains that the existence of interactive learning media can increase learning motivation

and bring a good psychological effect on students. Interactive media used in e-module development can take advantage of existing application media such as Canva, Autoplay and Articulate Storyline. Based on the description above, the researcher aims to develop an e-module based on interactive media in order to produce an e-module that is able to attract students' reading interest.

RESEARCH METHODS

This research is a qualitative descriptive study because it aims to reveal the issues or phenomena observed (Moelong, 2010). This research is also the initial stage of development research (R&D). Especially at the define stage in the 4D development model was adapted from Thiagarajan. Conduct in November-December 2020. The research population was junior high school and equivalent students in Malang. There are 90 samples used, with details as 30 students of class IX in MTs. Sunan Ampel Poncokusumo, 30 Class IX students at SMPI Nurul Hikmah Assalafiyah Poncokusumo, 15 SMP Sunan Kalijogo Jabung Class IX students at and 15 Class IX students at SMP Plus Fityani Pujon. Observation sheets, questionnaire sheets (seven question items) and interview sheets (seven question items) are the instruments used. Data collection techniques in the form of observation, distribution of questionnaires and interviews. The data were analyzed using descriptive analysis to determine the percentage of the results of the questionnaire distributed and then translated into the following categories can be seen in Table 1. E-module teaching materials can be said to be needed to be developed if the percentage obtained exceeds 50%.

Table 1. Guttman scale percentage

Presentase	Kategori
0 – 1	There is not any
2 – 25	Fraction
26 – 49	Less than half
50	Half
51 – 75	More than half
76 – 99	Most of the
100	All

Munggaran (2012)

FINDING AND DISCUSSION

Data obtained by direct observation observing the ongoing learning process. The results of the observations are as listed in Table 2.

Table 2. Observation Results

No	Observation results
1	Some students are still passive in the online learning process
2	Some students have not focused on the learning process because not all of them have reference books that are used in the online learning process
3	The teaching materials used are only those used by the teacher
4	The teacher seems dominant in learning

Summary of Table 2, shows the online learning process is still not optimal. It can happen because one of them is the availability of teaching materials owned by students (point number 2). In addition, less optimal learning is also due to the high dominance of educators (point number 4). Furthermore, to see the results of the distribution of the questionnaire can be seen in Table 3 below.

Table 3. Questionnaire Results

No	Statement item	Results
1	Enthusiastic students in taking science lessons online	25,56%
2	The learning strategy applied by the teacher can support the online learning process	8,89%
3	Students find it difficult to follow the online science learning process	93,33%
4	Students have textbooks or other handbooks for science lessons	16,67%
5	Students look for other teaching materials through the internet, magazines or other media	25,56%
6	Students need interesting learning media and can make it easier to understand the material	95,56%
7	Students agree that electronic teaching materials such as e-books, e-modules and the like are developed to make it easier for students to learn	96,67%

Summary Table 3 shows the need to develop electronic teaching materials such as e-modules (point no. 7) with a percentage of 96.67%. It is necessary to develop e-modules to help students in the online learning process. The development of e-modules is also needed because the willingness of students to seek teaching materials, learning resources or learning media is still low with the result of point 5 which gets a percentage of 25.56%. The interview results can be seen in Table 4.

Table 4. Interview Results

No	Statement item	Results
1	Enthusiastic students in taking science lessons online	50%
2	The teacher finds various kinds of problems experienced by students during online learning	100%
3	The teacher understands the causes of various kinds of problems experienced by students during online learning	100%
4	The teacher finds students who have difficulty during online learning	75%
5	The teaching materials used by the teacher are adequate and facilitate students in learning	50%
6	Teachers develop electronic teaching materials such as e-books, e-modules and the like	25%
7	The teacher agrees if an electronic teaching material is developed such as e-books, e-modules and the like	100%

Table 4 of the results of interviews with teachers shows the need for the development of electronic teaching materials such as e-modules to support online learning (point 7). The results of interviews also show that teachers have not developed their own electronic teaching materials (point 6). The majority of teachers only use existing printed books produced by publishers in general. The results of the study show that it is necessary to develop an interactive media-based e-module. These results indicate that during the current pandemic, an update is needed in the learning process, especially in providing teaching materials that can help students learn. The development of e-modules helps students to learn independently wherever and whenever. Especially during the pandemic in this digitalization era, the existence of e-modules which are one of the electronic teaching materials will be very helpful in the implementation of the learning process. Sufiyah and Sumarsono (2015) state that the existence of e-modules will support the learning process in the classroom for the better. The use of e-modules will certainly be able to increase the enthusiasm of students in participating in online learning, so that the results of research in point 1 related to student enthusiasm in online learning will increase.

In Suryadie's opinion (2014) and Herawati & Muhtadi (2018) that the existence of electronic teaching materials (e-books) makes the learning process more fun & students are more enthusiastic in participating in learning. This is because students prefer the use of e-books compared to the use of printed books only. The choice of e-module in this study is not without reason. E-modules are electronic modules that arrange in detail, measurable and accompanied by instructions on how to use them to make it easier for readers to understand the material presented. This is by Asmiyunda et al. (2018) and Riyadi & Qamar

(2017) which state that e-modules are electronic modules that are arranged systematically, directed, operationally and have instructions for use for both educators and students. The development of this e-module was also carried out based on the results of research which showed that 25% of teachers were still developing electronic teaching materials such as e-books, e-modules and the like. The lack of development of electronic-based books can occur, one of which is the implementation of conventional learning processes in schools, so that it is less motivating for teachers to develop an electronic-based book. In line with Pramana et al. (2018) stated that until now there are schools that still apply conventional methods in the learning process and the lack of technology-based learning media that can facilitate students in learning.

In addition, e-modules can improve the learning process because the e-modules make students more ready to take part in learning. This is because e-modules can train students to learn independently before the learning process takes place. This independent learning process can be done by students anywhere and anytime so that the preparation of students will be better. This is by Sufiyah and Sumarsono (2015) and Asmiyunda et al. (2018) which explains that the existence of e-modules will help students learn independently both at home and school. The use of technology in the learning process allows students to learn anytime and anywhere. This independence of the learning process must be trained by teachers to students so that in the online learning process students can have more readiness without having to wait from teachers.

The existence of high motivation and readiness to learn from students indirectly using e-modules can improve student learning outcomes from the cognitive side. By the results of research by Asmiyunda, et al. (2018) and Sidiq and Najuah (2020) that attractively made e-modules will increase students' learning motivation so that they can empower their learning outcomes. In addition, e-modules will empower student learning outcomes if their development utilizes a learning media to attract students' interest in reading. Sahronih et al. (2020) menjelaskan bahwa pemanfaatan media interaktif akan mampu meningkatkan motivasi belajar serta mempercepat kemampuan belajar siswa untuk memahami suatu materi.

CONCLUSION

Based on the results of the research and discussion, it can be concluded that there is a need for the development of interactive media-based e-modules as a learning solution in the pandemic era, where 96.67% of students need an online-based teaching material and 100% of the results of teacher interviews need to develop online-based teaching materials. The results of this need analysis test can be used as basic data for the development of interactive media-based e-modules.

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