Utilization of Interactive E-Modules in Formation of Students's Independent Characters in the Era of Pandemic

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Abstract.
During this covid-19 pandemic, students are required and expected to be independent in the activities of the learning process with the help of technology. This study aims to see how the use of interactive e-modules in increasing student learning independence. The research method used is a qualitative method with data collection techniques using literature studies from journals and previous research. Analysis of the literature review includes data collection, data reduction, data presentation, and concluding. The results showed that the use of interactive e-modules in increasing students learning independence proved to be effective because the form of presentation was arranged systematically and attractively which was a combination of several media such as audio, video, images, text, evaluation and was also equipped with instructions for use. Thus, interactive e-modules are very appropriate to be used in increasing student learning independence.

Keywords: *Interactive e-module, Learning Independence, Technology*

I.   INTRODUCTION

Indonesia is a country that makes education important in the context of development towards a developed country. Education is a planned, purposeful, structured process that is capable of producing quality human resources. This can be seen from one of the national goals of the Indonesian people, namely to educate the nation's life. This national goal of the Indonesian nation can be realized through the existence of educational institutions, especially formal education that provides various opportunities for students to be able to do learning.John Dewey (in Edward Purba and Yusmamadi, 2017: 77) says that education is a process of forming fundamental basic abilities, both concerning thinking power or intellectual power, as well as emotional power or feelings that are directed to human nature and each other. So that education becomes a supporting factor for the progress of the nation, which is used as a benchmark for the progress of a nation. Therefore, education is an aspect that is considered in every country, including IndonesiaThe use of media as a learning resource is part of a very influential component in the learning process. Learning resources need to be adapted to current conditions and the learning strategies applied by the teacher. Grelach & Ely (in Azhar Arsyad, 2009: 3), say that "media are people, materials, or events that build conditions that enable students to acquire knowledge, skills or attitudes". Furthermore, according to Gagne and Briggs (in Azhar Arsyad, 2009: 4), said that learning media includes tools used to deliver teaching materials, including books, video cameras, films, and computers.

The rapid development of science and technology in this century has brought a new paradigm to learning media in the world of education. Products from technology and information provide alternative learning media that students can use in digital form such as interactive multimedia-based electronic modules, or can be called interactive e-modules. The use of interactive e-modules to support learning is not only to improve the quality and effectiveness of learning, but also to improve the mastery of the material for both teachers and students.Arsyad (2009) revealed that *interactive e-modules* allow students not only to involve the senses of hearing but also sight. The more senses that are used to receive information, the more likely the information is remembered and understood. Especially when talking about the current world situation that is facing the Covid-19 pandemic.

With the emergence of the Covid pandemic, the majority of community activities rely on technology, for example working from home, ordering goods via online motorcycle taxis (on the network), to learning from home which requires people to always be online.One form of alternative learning that can be carried out during the Covid-19 emergency is online learning. According to Moore, Dickson-Deane, & Galyen said that online learning is learning that uses the internet network with accessibility, connectivity, flexibility, and the ability to bring up various types of learning interactions (in Firman and Sari, 2020).

Furthermore, Gikas & Grant (in Firman and Sari, 2020) said that online learning in its implementation requires the support of mobile devices such as smartphones, tablets, and laptops that can be used to access information anywhere and anytime. The use of mobile technology has a major contribution to the world of education, including the achievement of distance learning goals.In this pandemic era, which requires online learning, of course, makes students more independent. Indirectly the independent nature of students can be formed by itself. This is of course because online learning encourages this independent nature, such as doing assignments, working on certain projects and all things in studying existing learning. For this reason, the learning strategies used by a teacher in the classroom should be aimed at facilitating the achievement of the competencies that have been designed in the curriculum document so that in turn each student can become an independent learner. The main implication of independent learning activities according to the Ministry of National Education (in Komang, et al 2018) is the need to optimize learning resources while still providing opportunities for greater autonomy for students in controlling their learning activities.Therefore, based on the explanation above regarding education, learning media, the development of science and technology up to the covid-19 pandemic which requires learning to be done online so that students must learn independently. This strongly supports the need for *e-modules* as the main learning source in online and independent learning activities. This study aims to find out how the benefits of *interactive e-modules* are in the formation of students' independent nature in this pandemic era.

II.   THEORETICAL FRAMEWORK
A.   Interactive E-module

The module is one of the media to obtain material effectively because students can learn according to their ability to understand the material independently in the sense that they will not always depend on the teacher's orders. As a type of print media, the module itself can be transformed into an electronic or digital form of presentation, which we know as an e-module. With the transformation from a module to an e-module, it can reduce the use of printed paper piles in learning activities. This is one of the reasons why in the current era many *interactive e-modules* have emerged, namely to facilitate the learning process during the COVID-19 pandemic.According to Kurniawan (2015), *interactive e-modules* can be defined as multimedia in the form of a combination of two or more media (audio, text, graphics, images, animation, and video) which is presented in the form of a compact disk and interaction occurs between the media and its users. The same understanding was also put forward by Nurmayanti (2015), e-module is defined as teaching materials that are systematically arranged which are presented in electronic form, in which there are audio, video, animation, and instructions that make users more interactive with the program. While Laili, et al. (2019: 309) explained that an e-module is a learning resource that contains materials, methods, limitations, and evaluations that are designed systematically and attractively to achieve competencies following the curriculum.

But in general, interactive e-module is one of the computer-assisted media in which it contains images or animations accompanied by material. Computers can accommodate students who are slow in receiving lessons, because they can provide a more effective climate more individually, never get bored, and of course very patient in following the program instructions used. The existence of *interactive e-modules* is expected to be a new source of learning for users, and can further improve understanding of concepts and independence in learning (Imansari and Sunaryatiningsih, 2017).Based on research conducted by Fonda and Sumargiyani (2018) which

examines the feasibility of using *interactive e-modules*, it proves that students have high enthusiasm in using products either accompanied by teachers or used as independent teaching materials. The function of the e-module is in accordance with the research results of Kuswandari et al (2013:41) that the use of the module can train students' independence in group and independent study.

In its application, the use of *interactive e-modules* makes students more interested in the learning process, because it can be accessed anytime and anywhere, supported by adequate tools, and does not make it difficult for students (Irian et al., 2020).The *interactive e-module* is used as a means of learning by the teacher which includes a description of the material in the form of pictures, writings, and videos. In addition, the interactive e-module is also equipped with learning methods and evaluations that have been designed as practical as possible so that they can attract student interest. Therefore, the integration of *interactive e-modules* with attractive displays makes students more flexible in choosing and elaborating the knowledge they want to learn and master (Rita, 2014).According to Asyar (2012), in general the criteria for a good *interactive e-modules* are, in the form of an attractive image and color display, the material is presented interactively, using language that is easy to understand, according to the characteristics of students, the material and the objectives to be achieved. The success of *interactive e-modules* in history learning is also evidenced by the research of Najuah, Ricu, and Pristi (2020) showing very feasible and effective results for developing *interactive e-modules* as a source of student history learning. An in-depth learning process will certainly be realized if it is integrated into the form of an *interactive e-module.*

B.   *Student learning Independence*

Independent learning is one thing that is very important in the process of learning activities. According to Astuti.E.P (2016) Independent learning is needed for every student so that they can learn to be responsible for self-discipline in addition to developing learning abilities of their own accord. These various attitudes need to be possessed by every student as a form of the characteristics of an educated individual maturity.According to Hadi & Farida (2012) Independent learning is a dominant learning activity driven by self-efficacy, self-choice, and self-responsibility in learning. Students who are said to be independent are those who take the initiative and have been able to carry out learning tasks without dependence on teachers or other people. This means that independence will be shown by being able to overcome problems or obstacles without the help of others and having high confidence in these activities. Independent learning is certainly very necessary in the education system because it can help students to learn more activelyAccording to Huda, Mulyono, Rosyida, & Wardono (2019), independent learning combined with student activity to support the learning process is very dependent on current conditions.

The development of the times accompanied by the COVID-19 pandemic situation demands that each experience changes following the conditions of the learning process, especially supported by the fact that students are closer to smartphones and technology when compared to learning media such as textbooks commonly used in schools. The problem that occurs today is that the learning process has shifted from face-to-face to online learning, making students have to practice their independent learning to keep getting effective learning.According to Mulyaningsih (2014) independent learning is not learning individually, but a learning process that demands the independence of a student to learn. Independent learning is also defined as a learning activity carried out by individuals with their freedom without relying on others as an increase in both knowledge and skills and utilizing various learning resources needed. Learning independence is also very useful for individuals in overcoming problems that are formed with the competence and knowledge they already have.

III.   METHODS

This research uses a qualitative method by studying literature (documents) from several sources, both print and electronic media, as well as books and e-journals. Based on the search results obtained and selected data that meet the criteria. Analysis of the literature review includes data collection, data reduction, data

presentation, and drawing conclusions. Qualitative research is very relevant to be used to describe current conditions and become the background for research, namely the use of interactive e-modules in the formation of student self-reliance in the era of the covid-19 pandemic. The subjects in this study were students, while the object in this study was the use of e-modules in the formation of students' independent nature in the era of the covid-19 pandemic.

IV.   RESULTS AND DISCUSSION

The learning process that occurs in the world of education during the COVID-19 pandemic, of course, cannot be separated from the influence of the curriculum and applicable policies. At this time, Indonesia enforces the K-13 Curriculum which demands the independence of students to learn. The independence of students in learning is needed so that students have the responsibility to organize and discipline themselves. The enactment of the K-13 curriculum also demands a change in the learning paradigm which was initially teacher-centered, turning to students so that it requires learning innovations to be applied, one of which is the use of learning resources in supporting the success of a learning process.One example of a learning resource that is currently widely used is an *interactive e-modules*. The use of *interactive e-modules* in supporting student learning independence is indeed very appropriate to use during the current pandemic. As a result of the shift in the learning process from face-to-face to online or distance learning, teachers cannot directly supervise students. This makes the need for a learning media that can build student learning independence, namely with *interactive e-modules* equipped with learning instructions that can direct students to follow learning through the stages in the e-module.

This *interactive e-module* is usually equipped with a link to make it easier for students to download or save files on desktops and computers. *Interactive e-modules* can also be equipped with animations and moving images to create a new learning experience that is not boring, displays clear colors and images, and provides automatic feedback so that students can find out the evaluation results of the questions they are working on. However, before arriving at the stage of implementing this interactive e-module, it must first pass validation carried out by experts in accordance with their fields. Usually, this validation is carried out on material experts and media experts and also tested on small groups of students in small numbers to determine the feasibility of using the *interactive e-modules*. validators are usually allowed to assess so that the interactive e-module is suitable for use in the learning process.Interactive E-Module is a form of presenting self-study materials that are systematically arranged into certain learning units, which are then presented in a digital format, where each learning activity in it is usually connected with a link as navigation that directs students to be more interactive with the program. which is also equipped with video, audio, and animation to enrich the learning experience. Based on the development of an *interactive e-module* carried out by (Adri & Rafli, 2019), the e-module is equipped with several features with a 3-dimensional display in the form of material explanations, videos, and practice questions that are designed interactively, so that it is very helpful in training the independence of its users.

The use of *interactive e-modules* to increase student learning independence will result in different behavior patterns for students. Where students can practice critical, creative and innovative thinking skills. This is because in the *interactive e-module* there are questions that can train students' understanding of the material. This is also in line with the opinion expressed by Thoha in Sudayana (2016) about the characteristics of independent learning, namely being able to think critically, creatively and innovatively, solve problems by thinking deeply when encountering problems, they are solved by themselves without the help of others, and are responsible for their actions. alone. According to Sukestiyarno & Diana (2019), after the learning process using *interactive e-modules* was carried out, there was an increase in students' critical thinking skills. This indicates that the use of e-modules is intended to be designed for students to be able to learn independently. Students' critical thinking skills are seen when they can evaluate arguments and conclude learning accurately and

clearly.The use of *interactive e-modules* in learning activities is certainly very helpful for teachers and students to continue learning effectively even though they cannot meet face to face. The use of learning media such as *interactive e-modules* in the learning process allows teaching materials to be modified to be more interesting because they mix and match educational and entertainment principles that make learning more fun. Usually, *interactive e-modules* only cover one subject of learning material so that users, both students and students, really focus on the material that is being run.

With forms that have been integrated (audio, animation, video) with steps for using the module into an interactive product, users of *interactive e-modules* can be used alone without relying on other media. In its development, *interactive e-modules* have been designed concisely, not long-winded and more importantly adjusted according to the way students think so that students will not be bored learning (Nufus et al, 2020). The use of e-modules can also increase students' learning motivation because the content contained in the e-modules is packaged nicely to make it easier for students to understand the subject matter (Wulandari, Yogica & Darussyamsu, 2021). Besides being able to increase students' independence and learning motivation, the use of *interactive e-modules* also affects the level ofachievement and student learning outcomes. This is in line with research conducted by Suzana & Aspriyani (2020), in which student learning outcomes have increased after learning using *interactive e-module* media. In another study conducted by Suwindra (2012), the results of the analysis show that the use of interactive multimedia-based software can improve understanding of concepts and student learning outcomes.

Based on research conducted by Hutahaean, L., Siswandari & Harini, the use of *interactive e-modules* as a medium and learning resource has advantages and disadvantages, including the following:

1. Advantages of Using *Interactive E-Modules*
    a. Allows students to access multimedia-based information in the form of video, audio, images, and animation.
    b. The *interactive e-module* is presented coherently according to the order of the e-module parts.
    c. E-module is easy to operate using PC/Laptop
    d. Just download it once and can be saved on your laptop to be studied over and over again.
    e. Increase student learning independence.
    f. Ease of operation of the multimedia content contained in the electronic Module
    g. Instructions for using e-modules are clear and not confusing
    h. There are buttons on the practical tutorial video
    i. Also equipped with navigation buttons on the quiz to evaluate understanding.
2. Disadvantages of Using *Interactive E-Modules*
    a. It takes a long time for novice students who are not familiar with digital devices
    b. The ability of a computer or smartphone affects the speed of accessing efficiently
    c. There is a possibility of technical problems because a lot of software is required to operate it.

The various conveniences and difficulties above need to be considered by teachers in choosing what kind of *interactive e-module* is appropriate to be applied to students.

V.   CONCLUSION

Technological advances coupled with the COVID-19 pandemic have led to the emergence of innovations that can be applied in the learning process to increase student learning independence. One of them is the integration of electronic media in learning modules, or what is known as *interactive e-modules*. E-module is a learning resource that contains materials, methods, and learning evaluations that are packaged in such a way and attractively as possible to attract students' interest in learning. *Interactive e-modules* adapt the components that exist in the print module (conventional). The difference between a module and an *interactive e-module* can be seen in terms of its physical presentation only. However, when compared, this *interactive e-module* is more

efficient because it does not require production costs and can be used as an alternative learning media that is effective, efficient and interactive. The use of *interactive e-modules* in learning is made by combining video, audio, text, graphics, and images to create a relationship between students and the module so that it can encourage students' motivation to be active, creative,and independent in learning.

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