Analysis of Vocational High School Students Interest on Interactive Learning Multimedia of Product Creative and Entrepreneurship (PKK) Subjects Based on Android

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SUMMARY

This research aims to describe the needs learning media (PKK) in the online learning pandemic Covid-19 situation and to know the interest of students on interactive learning multimedia based on android. This research used a descriptive quantitative method and data were collected by questionnaires and interviews by teachers and students PKK subject teachers in two vocational high schools around Klaten Districts, Indonesia. It's to understand their learning media often used in PKK's online learning, the responses of student using media, learning media students want in PKK's online learning and the student interest in android-based interactive learning multimedia. The results that can be found in the research are 1. Students were bored in the online learning process by using WhatsApp 2. The students want interactive learning multimedia based on android which has so many sources of learning and can be easily accessed online 3. Students were very interested of the online learning of PKK if they were using interactive learning multimedia based on android. It is necessary to develop PKK's interactive learning multimedia based on android in online learning of PKK subject.

Keywords: Interest Analysis, PKK's Interactive Learning Multimedia, Android

INTRODUCTION

Making Indonesia 4.0 is one form of implementing the Industrial revolution by the government. One of the goals of Making Indonesia 4.0 is to encourage Indonesia to become the top 10 countries that have the strongest economies in the world by 2030. Making Indonesia 4.0 has designed an integrated roadmap to implement strategies in creating a sustainable economy in Indonesia. Vocational high school has the opportunity to answer the challenges of industry 4.0 because vocational secondary education graduates are formed into graduates who are ready to enter the world of work and can compete according to the areas of expertise that have been taken during school. Kennedy (2011: 167) states that vocational education is indeed directed at increasing individual independence in entrepreneurship according to their competencies. Vocational education must be able to prepare a variety of competency options according to market needs.

The education program in vocational school is specifically created for students who are able to work, and open jobs that are tailored to the abilities, and skills they possessed, for instance, by entrepreneurship (Tentama & Papuntung, 2019). Frinches (2010) Entrepreneurship has a very important role in a society because it's named as a tool to create improvements and changes in realizing the standard of people's lives. Entrepreneurship can contribute to making, developing, and improving a product or service in order that it'll improve the economy and quality of lifetime of someone. Entrepreneurship can increase the standard of life, offering new jobs, promoting sector productivity, increasing economic process, facilitating social mobility, and so on. (Reynold, 2007).

Product Creative and Entrepreneurship (PKK) subject is similar to entrepreneurship lessons, it's designed to be a way out in an answering industry challenges 4.0 in Indonesia. Through PKK subjects, the creativity, and skills of students will be trained and developed to produce or develop innovative products and services, so they can create their jobs. Besides, the aim of developing PKK is to produce intellectual and inspirational-pragmatic skilled human resources (Directorate of Vocational Development, 2019).

There are three main subjects in the PKK lesson, including product design, industrial engineering, and entrepreneurship. Product design means product design starting from product identity, product development goals to packaging design. Industrial engineering deals with the engineering design and management of organizational systems. Meanwhile, Rukosvara (2011: 3) explains entrepreneurship as a real action with a product orientation, namely innovation through resource management to increase productivity, the creation of new commodities or new ways to produce them, and the creation of new markets or new materials. Entrepreneurship contains activities and actions to pursue and take advantage of opportunities by creating an

organization. Entrepreneurship education is defined as the development of the ability of learners, such as entrepreneurial knowledge, attitudes, and skills (Ahmed, et., al., 2017; Hutasuhut, et., al, 2020).

The three main subjects refer to the established learning goals which then become the basis for developing the syllabus and teaching materials. From the three main points of learning, it can be explained that PKK subjects contain elements of creativity and innovation starting from bringing up creative business ideas for goods or services in the form of product recipes, packaging, and promotional media for product marketing. Then plan and test the product or service until it is feasible and can be used to carry out marketing based on the market segmentation that has been analyzed.

PKK subjects are included in the C3 class which means that these lesson are subjects that emphasize the competence of student vocational skills. Following the decision of the Director-General of Primary and Secondary Education Number 330 / D.D5 / KEP / KR / 2017, it is explained that the C3 expertise competence is a core competency and a basic competency of specific expertise that accommodates the competence of the relevant expertise. The PKK is one of the government's breakthroughs in developing entrepreneurship in society, especially vocational students, so it can be interpreted that this subject is a form of education for life, so the learning process in this subject must be carried out properly so that the purpose of this subject can be achieved. Because basically, students are going to be prepared to begin entrepreneurship right after graduating from vocational highschool.

According to the students' interviews, teachers carried out the PKK subjects' learning conventionally by providing teachers' materials through lectures. Besides, discussions carry out in the middle of the learning process. However, at this time, the learning process of PKK subjects currently uses online learning methods. This is because, at this time, the world is facing a Covid-19 outbreak. Covid-19 (Corona Virus Disease-2019) could be a virus that emerged at the top of 2019 in Wuhan, China and started to enter Indonesia in March 2020. On March 9, 2020, WHO (World Health Organization) declared Covid-19 as a worldwide pandemic which suggests that covid-19 has spread outside the world (Covid-19 Acceleration Handling Group, March 2020). The impact of the emergence of this pandemic has resulted in many shifts and changes in various aspects of people's lives. The education aspect is one that is affected by Covid-19 pandemic.

In March 2020 the Minister of Education and Culture of the Republic of Indonesia, Nadiem Makarim issued Circular No. 4 of 2020 concerning the Implementation of Education Policies in an Emergency for the Spread of Covid-19. The letter contains a change in the learning process, which was originally implemented face-to-face at school, changed to online learning/ remote at home, and the cancellation of the National Examination. The existence of this era and letter makes all levels of education from Elementary School, Junior High School, Senior High / Vocational School, to Higher Education must be able to implement online learning. Schools and teachers must be ready to facilitate online learning activities.

Besides, students are indirectly forced to learn from home. This is done to prevent the transmission of Covid-19. Online learning might be a positive necessary alternative method for learning and teaching during Covid-19 (Mulenga and Marán, 2012; Basilaia and Kvavadze, 2020; Naciri: 2020). The current learning demands make schools and teachers compete to make strategies in online learning so that students feel comfortable and are not burdened with online learning at home, including in the PKK learning process. According to Circular No. 4 of 2020 concerning the Implementation of Education Policies in Emergency the Spread of Covid-19, the process of learning from home is carried out with the following conditions; 1) Learning from home through online/ distance learning is implemented to provide meaningful learning experiences for students without being burdened with demands to completing all curriculum achievements for grade promotion and graduation, 2) Learning from home can be focused on life skills education, including regarding the Covid-19 pandemic, 3) Learning from home learning activities and assignments may vary between students, according to their interests and conditions, including considering gaps in access/learning facilities at home, 4) Evidence or product of Learning from Home activities to give good feedback that is qualitative and useful from the teacher, without providing a quantitative score.

In its application, distance learning must be carried out under existing settings, so that it does not cause the emergence of a problem. Bao (2020) states that teachers or educators who are important elements in learning must be willing to make a large-scale migration from face-to-face learning to online education or distance learning. It has many very real impacts and effects on education. First, distance learning is a very flexible system, which means that it can be interpreted as not limited to a specific scope but can be used by all groups (gender, race, and age). Second, it's required minimal costs or can be said to be very economical because there is no need to move from your residence to incur travel costs to get information. Third, the information provided provides access on a large scale and a broader geographic reach. Besides, in its application, it must carry out distance learning by existing settings not to cause the emergence of a problem. Many preparations must be made, both from educators, students, government, institutions, or society. It takes training or planting an understanding that every human being must motivate himself to find the information they need and be responsible for himself.

The curriculum must also be designed according to its application. Hardware and software facilities must be able to support system implementation. In short, this new system's performance must be accompanied by an appropriate system design to effectively improve the quality of education in a country (Akhter, 2005).

In the PKK learning process, which is carried out online, the teacher uses WhatsApp as a learning medium. Dahdah (2020: 240) is one of the most significant applications that almost every student uses is WhatsApp. This was conveyed by S, H, and W as teachers of the PKK subjects because most students were accustomed to using WhatsApp. There were minimal obstacles related to technical implementation. According to data from LPMP East Java in Indonesia, it shows that the platform most used and in demand by teachers as a learning medium is the WhatsApp Group (28.14%). The next rank is Learning House (20.78%), Google Suite For Education (19.41%), Microsoft Office (6.42%), Teacher's Room (5.12%), Edmodo (4.76%), Learning Online Sekolah.mu (3.32%), Smart Class (2.09%), Moodle (1.88%), Quipper School (1.44%), Quizizz (1.01%) and the rest use other platforms. From this data, it can be concluded that the application of online learning in Indonesia is mostly still using hardware in the form of smartphones and utilizing a learning system platform as its software. Even though each subject has different characteristics, which means that there are still many choices of learning media that can be used to facilitate online learning. There is no data that the learning process using interactive multimedia learning based on Android even though Android-based interactive learning multimedia can be a useful learning media if it follows the characteristics of the subjects being taught, especially issues that use much practice require various examples the learning material.

In the PKK, for example, the characteristic is trans-science-knowledge, which is developing knowledge and training life skills. The PKK learning objectives according to Setiawati & Karpin (2018: 9), the first is to hone students 'skills (make and create products according to their interests and purchasing power), secondly to increase students' innovation and creativity (making various products), third to cultivate attitudes, enthusiasm and entrepreneurial abilities of students, next is to realize student stability to produce creative product making, and the last is to create a climate of learning, working, creating and participating in fun learning.

From the explanation above, it can seem that the learning process in PKK is about how teachers can develop and encourage students to work by equipping students with knowledge about entrepreneurship, which can give birth to students who are creative in entrepreneurship and can create jobs independently. This means that the online PKK learning process requires complex learning media that can stimulate student creativity. One of them is to use interactive multimedia learning based on android. Kitchenham (2011: 9) states that the utilization of smartphones in educational programs makes this device a type of device which will be used as an alternative in media development.

Suripno and Gafur (2015: 109) say that multimedia learning is a product designed and developed using a computer-based program to present learning material, besides that there are instructions for use, training/evaluation, and others. This product is also supported by other elements that can help focus the attention of students, such as photos, coloring, audio, and animation.

According to Vaughan (2011: 1) "multimedia is a woven amalgamation of digitally used by text, photographs, graphic, art, sound, animation and video" which means that multimedia is a form of a combination of digital devices consisting of various elements, namely text, graphics, sound, animation, and video. Surasmi (2016: 593) the use of multimedia in learning is an effort to create a creative and innovative learning atmosphere and can change student behavior that can be measured and observed.

According to Nazaruddin (2012: 1) Android is an operating system on a Linux-based smartphone. Android opens a platform for software developers and programmers to create their applications according to their needs. Meanwhile, Android-based interactive learning multimedia means multimedia that can be operated via a smartphone so that it has a very flexible nature, which can be operated anywhere and anytime while carrying a smartphone. In Indonesia, the operating system most widely used is android (Salbino, 2015).

Some relevant research includes research on the development of interactive learning media based on android for online learning by Firmansyah, et., al (2019). The results showed a positive response from students, as evidenced by the normal curve of the assessment that has been carried out. The data obtained can be used as a reference in developing interactive learning media that is easy to develop in learning. The content contained in the digital module is also beneficial for students in the learning process, and the appearance or interface of this application is quite interesting so that it doesn't make students feel bored to learn using this Android-based interactive learning media.

Research by Kurniawan (2017) that mobile learning media uses android to facilitate online learning. The study describes that mobile learning can support learning to be more efficient, effective, and real-time. Also, students can explore the material optimally, making it easier for students to learn.Besides, according to Belina & Batubara (2013), the design of an Android-based mobile application is suitable for implementation for distance learning.The test results prove that mobile learning applications can access content in the form of subject matter

(text, images, video, audio, animation) and download material. The use of mobile learning will make learning more flexible. Students can study according to their needs and wants.

The analysis of interest in multimedia interactive learning based on PKK based on android aims to describe the needs of students for PKK learning media in the Covid-19 pandemic situation and to find out students' interest in android-based interactive learning multimedia. Therefore, a study entitled the analysis of vocational high school students' interest in android based PKK interactive learning multimedia needs to be done.

METHOD

Types of Research

This type of research uses descriptive quantitative research methods. By using this type of research, this study can describe and identify as clearly as possible the student's response and perceptions about online media learning. This research was conducted during the Covid-19 pandemic, so it was conducted online.

Respondents

The respondents of this study were were three PKK teachers and 27 grade XI students from two different schools, namely, SMK Negeri 4 Klaten and SMK Swadaya Klaten. The members of respondents was randomized using cluster random sampling techniques.

Data Collecting Tools

The data and information were obtained by distributing questionnaire and interview activity. Interviews were carried out directly by visiting the source's house, namely the PKK teachers, while the questionnaire was distributed to students via google form. The questionnaire consisted of two parts. The first part collected information about learning media used in online learning and student's response about it which consists of two questions 1) the learning media that are often used in online learning 2) student responses to learning media that are often used in online learning. This part is partly adapted from the effectiveness of distance learning using online media by Mustakim (2020). The second part consists of two questions that collect information about the learning media that students want and interest in learning media in online learning. The questionnaire of part two is partly adapted from the mobile learning perception by Yusri, et., al. (2015). The interview was used to match and adjust the questionnaire data result with the actual condition.

Data Analysis

The results were processed with simple descriptive statistics in the form of percentages. Data from questionnaires were tabulated, analyzed, interpreted, and described by percentage. Meanwhile, the data from interview were identified, analyzed, interpreted, and described qualitatively.

FINDINGS

Learning Media Often Used in Online Learning PKK.

The first data is learning media which is often used in online learning. Based on interviews that have been conducted with two subjects, namely the PKK teachers with the initials SW, H and W, the results of the study show that the media that is often used in the online learning process for PKK is the WhatsApp application using the WhatsApp group feature. While the results obtained from the questionnaire distributed to SMK students, data was obtained that the learning media that is often used in PKK online learning is WhatsApp. The data is presented in the diagram image below:
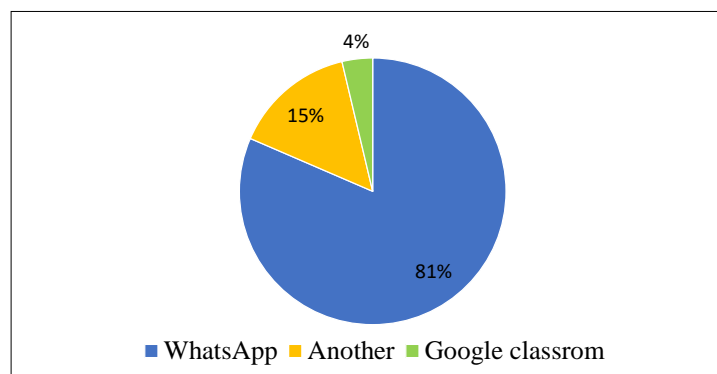

Figure 1.Media that is often used in online learning PKK

From the graphic above, it is known that WhatsApp learning media has the highest percentage at 81%, then followed by other learning media as much as 15% and Google classroom as much as 4%. This is the same as the results of previous interviews that the media that is often used is WhatsApp. The reason why teachers choose WhatsApp as a simple application to access and use because WhatsApp is easier to use and most students have it in their smartphone. Dahdal (2020: 246) WhatsApp is a very popular application among students to online interact with their facilitator/ teachers, and classmates.

Rambe and Chipunza (2013: 333) revealed that WhatsApp usage enabled students to share material or data on distinct issues about the course. Conversations between and among students using WhatsApp demonstration of sharing all of the tutorial material. Whatsapp is an application that is used as a means of communication between individuals and individuals, individuals with groups, or groups with groups. Whatsapps is not designed to collaborate effectively to create content, research, or resource management. (Abe & Jordan, 2013).

The use of WhatsApp as a learning medium in PKK learning isn't appropriate, because the characteristics of PKK subjects are trans-science-knowledge, which requires variations in the delivery of knowledge, practice, and active participation. As expressed by Setiawati & Karpin (2018), one of the objectives of learning in PKK subjects is to create a climate of learning, to work, creating, and participating in fun learning. Active participation will train creative expressive abilities, which is shown by expressing ideas and ideas that are then rationalized to stimulate creativity in students.This will result in less facilitation of the PKK learning process which is carried out online. Koomson (2019) WhatsApp clings a particular advantage over other digital tools because it's already installed on most smartphone and it provides a low entry point for adoption as a lively learning tool too.

Student Responses to Online Learning of PKK Subjects Using Whatsapp Media

The next data is about students' responses to online learning in PKK subjects using WhatsApp as their learning media.
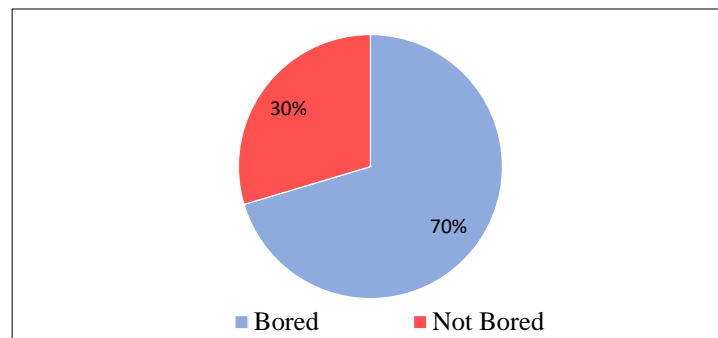

Figure 2. Student Responses Using WhatsApp

This data shows that 70% of students feel bored when in the online learning process PKK subjects are carried out only by using WhatsApp media and 30% are not bored. A study from Kusuma & Hamidah (2020) revealed that in the implementation of learning the WhatsApp application, several students complained about the lack of communication and interaction between teachers and students. According to interviews from three students, it was revealed that PKK learning using WhatsApp made them less understanding of the material, many reading texts were given to them as a learning resource, so they felt bored and less motivated in the online learning process using WhatsApp.

On the other hand, teachers tend to often give assignments so that students feel overwhelmed by these tasks. Also, Yensy (2020) revealed that the WhatsApp application has weaknesses, including 1) students will find it difficult to follow learning with WhatsApp if the internet signal is bad, 2) The number of chats on the WhatsApp application makes smartphone memory full so it becomes slow.

Learning Media Students Want in PKK Online Learning

To support and facilitate the online learning process of PKK subjects, learning media are needed that are per the characteristics of the teaching materials and the students themselves. Based on the responses obtained, it was found that 52% of students chose Android-based interactive multimedia learning, 33% chose Google classroom, 11% chose Zoom and 4% chose another (Microsoft Office 365, WhatsApp and YouTube). From these data, it can be seen that more students choose Android-based interactive learning multimedia as a learning medium in PKK lessons.

According to Munadi (2013: 152-153), Multimedia learning can be a solution to these problems because multimedia learning can increase student learning motivation and is interactive which can give full control to

students when using multimedia learning in the process. In comparison to other media, multimedia that's developed so utilized in the learning process will have an advantage because of the fabric is presented with text, audio, video, and visualization of image displays (Margaret & Aaron, 2007: 170).
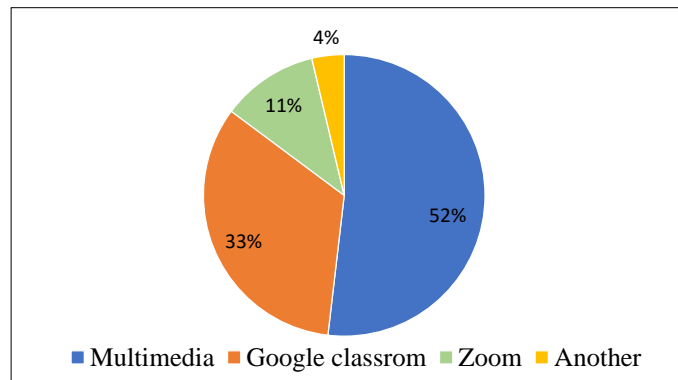

Figure 3. The Learning Media Students Want

Student Interest in Android-Based Interactive Learning Multimedia

After showing an example of multimedia interactive learning based on android through screenshots embedded in the google form, it was obtained that 52% of students were very interested in the online learning process of PKK subjects using android-based interactive learning multimedia and 48% were interested. Daryanto (2010: 52) states that one of the advantages of interactive multimedia learning is that it can increase student attractiveness and attention.
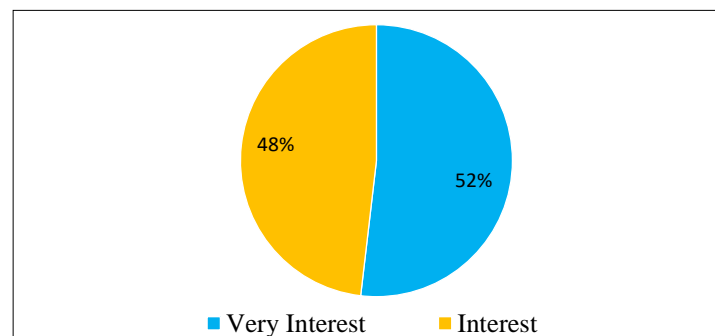

Figure 4. Application of Android-based Interactive Learning Multimedia in PKK Subjects

According to Munir (2012: 132-133), the benefits of using interactive multimedia in learning include; 1) The learning system is more innovative and interactive, 2) Education will always be required to be creative and innovative in trying to find learning breakthroughs, 3) Be ready to combine text, images, audio, music, animation, pictures, and videos in one unit that helps the accomplishment of learning objectives. 4) Build up the motivation of students during the teaching and learning process to make the desired learning objectives, 5) Able to visualize material that has been difficult to clarify just with conventional explanations or teaching aids, 6) Herd students to be more independent in gaining knowledge.

These various advantages can be seen that Android-based interactive learning multimedia is by the characteristics of PKK subjects. Besides, this is also supported by data from students who stated that they prefer Android-based interactive learning multimedia over other media and they are very interested when online PKK learning uses android-based interactive learning multimedia. From the data that has been obtained, it can be described that the online learning situation using WhatsApp as a learning medium causes boredom in students. Students want other learning media that are more varied. Android-based interactive learning multimedia is the choice that students want, this is evidenced by the data that shows students are very interested in Android-based interactive learning multimedia when used as online learning media for PKK subjects.

CONCLUSION AND DISCUSSION

Discussion

The PKK subject has the aim of producing intellectual and inspirational-pragmatic skilled people, so that this subject can be an alternative in preparing graduates who are able to create their job opportunities. The PKK

learning that is currently being carried out uses the online method, this is because the world is facing the Covid-19 pandemic. Whatsapp is the media most often used in PKK's online learning process. This certainly causes boredom from students. In addition, the use of WhatsApp is not in accordance with the characteristics of the material on PKK subjects. PKK subject have material that focuses on how to build entrepreneurial interest and courage, not entrepreneurship theory or business management theory. PKK materials require clear operational instructions for carrying out activities related to entrepreneurial creativity. It is necessary to have visualization in the form of pictures and videos as inspiration to develop students' entrepreneurial creativity.

Integration is needed between learning methods and learning media that are oriented towards learning materials. One form of integration is to develop interactive multimedia learning based on android. According to the data obtained 52% of students chose Android-based interactive multimedia learning, 33% chose Google classroom, 11% chose Zoom and 4% chose another. Android-based interactive learning multimedia can have the potential to achieve the appropriate PKK learning objectives. Armansyah et., al. (2019: 225) explains that interactive multimedia is a text / e-book solution in making it easier for students to learn material compared to monotonous ones. This result is also supported by the findings of Kholina, et al. (2013: 49) which states that 100% of students are interested in participating in multimedia assisted learning.

In addition, multimedia produced based on android will make it easier for students to take part in learning. Another thing to consider is that Android-based interactive learning multimedia is in accordance with the characteristics of vocational students. The first characteristic that is very visible is that students who are research subjects enter into adolescence. According to Piaget in Budiningsih (2012: 39) adolescents enter the formal operational stage (aged 11/12 to 18 years), the main characteristic of this stage of development is that they can think abstractly and logically by using the "possibility" thinking pattern. At this stage students begin to be able to have scientific thinking models with hypothetico-dedutive and inductive types, which means that students have begun to be able to draw conclusions, interpret, develop hypotheses and reason scientifically. The second characteristic is that students have expertise in operating digital devices such as computers, laptops, smartphones, etc.

Tamimuddin (2007: 4) states that learning using a smartphone is special learning because students can access their learning material and support educator learning activities to be active among learners. Therefore, learning using a smartphone can support a more active learning process that is not bound by place and time. Dodit & Rini (2012: 121) states that the advantage of using android is the harmonious approach. Students will be able to open Android-based interactive learning multimedia anywhere, anytime in any situation. They can manage their own additional study time flexibly. Prabowo, et., al. (2019) Students can learn by opening applications on their smartphones everywhere for example when they on public transportation, in the restaurant, at home, or in other public places. They can operate it day and night.

Conclusion

At this time the learning media that teachers often use in the implementation of online learning is WhatsApp, even though from the data obtained, as many as 70% of students feel bored if in the online learning process PKK subjects are carried out only by using WhatsApp media. The learning media that students want, namely other media, the data shows that 52% of students choose Android-based interactive multimedia learning, 33% choose Google classroom, 11% choose Zoom and 4% choose others. After showing an overview of android-based interactive learning multimedia, 52% of students were very interested in the online learning process of PKK subjects using Android-based interactive learning multimedia and 48% were interested.

Based on the summary of the data, it can be concluded that students have a high interest in Android-based interactive learning multimedia if it is applied in the online learning process of PKK subjects. Therefore, it is necessary to develop android-based interactive learning multimedia as a learning medium in the online learning process of PKK subjects.

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