

**NEEDS ASSESSMENT OF INTERACTIVE RECORDKEEPING SIMULATOR  
DEVELOPMENT FOR ELECTRONIC ARCHIVAL LEARNING IN VOCATIONAL HIGH  
SCHOOLS**

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**ABSTRACT**

This study aims to explore the analysis of the needs of developing electronic archival learning media in office administration skills programs in vocational schools. This research uses qualitative methods with descriptive qualitative analysis. Research subjects are informants who provide research data through surveys and interviews. The informants in this study were all students of class X office administration at SMK Negeri 2 Semarang and office administration teachers participating in MGMP activities in Kendal city, Kudus district, Semarang city, Cilacap district, and Wonosari city. Based on the survey's results of 108 students, a researcher found exciting findings. First, 70% of students had difficulty understanding learning without simulation media. Second, 88% of students are interested in the material. Third, 99% of students agree on media development. Fourth, 78% of students choose a web platform as a development medium. Fifth, 74% of students want the media to cover the whole material. Sixth, 81% of students want the media to contain simulation elements. Seventh, 89% of students want the media to be accessed online. Last, 71% of students state that they have never seen an electronic records management system in the real world. The results of interviews show the need for the development of media that supports visualization and simulation. Media also needs using a centralized database that can be accessed online to make it easier to monitor student activities and in the evaluation process. Based on the findings, the researcher wants to develop electronic archival learning media by the analysis of teacher and student needs in the future.

**KEYWORDS:** interactive multimedia, learning media, electronic archival learning, office administration, vocational school.

**INTRODUCTION**

Digital transformation encourages organizations to follow technological developments to increase competitiveness and productivity so as not to compete with competitors (Porter, 1985; Townsend, DeMarie, & Hendrickson, 1998). The application of a variety of automation technologies has been shown to increase productivity (Townsend et al., 1998). However, the use of automation needs capable human resources (Bresnahan, Brynjolfsson, & Hitt, 2002).

Current trends indicate that the world of work is increasingly virtual (Afful et al., 2018). Since the millennium era, according to Yahaya (2000), government agencies and offices have produced email, document-based word processors, and databases in vast numbers. Admittedly, computerization now touches various fields of work to produce types of electronic documents. The challenge is how to

manage electronic records to be effective and efficient (Brendan, 2012). Therefore we need competent human resources in managing electronic documents following the rules of managing electronic records.

The industrial era 4.0 will have a significant impact on vocational education (Baygin et al., 2016; Sharoom & Hussin, 2018; Benešová & Tupa, 2017)). The World Economic Forum (2016) estimates that until 2020, existing core skills will be lost because employment does not need them anymore. The implications of technological advances in the industrial world for education spur the development of learning resources, models, methods, and learning media. On that basis, through curriculum renewal, teaching materials will be adjusted to the needs of the industry, so according to (Afful et al., 2018) can minimize the existing gap.

In Indonesia, electronic archival management competencies are part of the archival material learned in the office administration skills program at the Vocational High School (SMK). Following the order of the 2013 curriculum, based on Ministry of Education and Culture Decree No. 330 / D.D5 / KEP / KR / 2017, each graduate of the program is required to master two essential competencies (KD) in electronic archival management. First KD 3.12, namely implementing electronic archive management. Second KD 4.12, namely managing electronic records. Through these two essential competencies, graduates are expected to have up-to-date competencies to fit the needs in the workforce.

In practice, the limitations of the media cause the implementation of electronic archival management learning is not optimal. Electronic archive management material requires visualization to explain concepts and requires simulation for practice. Finally, students are less able to understand theories and concepts in-depth if the technological approach to simulation and practice in learning that requires less visualization (Kim, 2011), given the concept of learning in vocational schools requires the latest facilities for practice (Damarjati, 2016).

Based on the results of preliminary interviews, a researcher found that not a few teachers who chose not to carry out electronic archival management learning. This phenomenon is caused by 1) the teacher not understanding the material, 2) the availability of learning resources (books and modules) that are very limited, and 3) the scarcity of media that supports simulation. Whereas according to the mandate of K13, graduates of the Office Administration expertise program should be equipped with electronic archival management competencies. Following the objectives of vocational education, according to Muladi & Moses (2018), ideally, vocational graduates are prepared to be able to enter the workforce directly.

Based on the above explanation, an effort is needed so that the implementation of electronic archival management learning in the future can run better. These efforts through the development of computer-based learning media following the analysis of teacher and student needs. The developed

media should be able to use visualization to explain concepts. Media should also be used for simulation of procedural activities in the practice of electronic archival management which includes recording and storing, retrieval, and retention.

## **RESEARCH METHOD**

This type of research is qualitative descriptive research. Descriptive qualitative research is describing a variable, symptoms and circumstances systematically, and in accordance with the facts (Arikunto, 2013). Data collection techniques using study of literature, observation, survey and interview techniques. The research subjects in this study were informants that included students and teachers.

### **Research Population and Sample**

The informants consisted of 108 X grade students of SMK Negeri 2 Semarang. Total of 108 students are included in this research to explore about student's preferences and needs about electronic archival learning both materials and learning media.

Informants also came from office administration teachers who participated in MGMP in Central Java (2013), MGMP in Kendal district (2014), MGMP in Kudus Regency (2015), MGMP in Semarang City (2015), MGMP in all districts Purwakarta (2015), training for students of Sunan Giri Demak Vocational School (2016), training for students of SMK Negeri 1 Bantul (2016), training for students of SMK Negeri 1 Kudus (2017), MGMP in Magetan Regency (2017), MGMP as a whole Cilacap Regency (2018), and MGMP in Wonosari City, Gunungkidul (2019).

### **Data Collection Technique and Instrument**

The data collecting techniques used in this research are:

#### **1. Literature Study Methods**

Literature study conducted by utilizing documents and references that are related to the research conducted, namely on the information system website and its use, and various information systems for managing archives for government agencies and offices.

#### **2. Interview Methods**

The interview method is used to obtain preliminary information about the problems faced by teachers and students related to learning about electronic archive management. Interview guidance are used during review with teachers.

#### **3. Observation Method**

This method is carried out to observe the learning of electronic archive management relating to the media used so far in the learning process.

#### **4. Survey Method**

This method is used to explore student's preferences and needs by giving questions to individual respondents openly and in depth accompanied by explanations by researchers for each question point.

## RESULTS

### **Literary Study Results of Electronic Archival Management**

Electronic records management is very different from conventional paper-based records management. Management requires a unique computer-based system. The system is known as an electronic file management system or Electronic Document and Record Management System (EDRMS). Therefore according to (PABRICA, n.d), the development of EDRMS has been so rapidly in recent decades. EDRMS was developed with ISO 15489 standards and has been widely applied in various types of organizations (Gunnlaugsdottir, 2008). Whereas in Indonesia, the management of electronic records also has a clear legal rule, namely Law no. 2007. One application in Indonesia is the Dynamic Archive Information System (SIMARDI) developed by the Indonesian National Archives Institute (ANRI).

Based on the results of the study, the implementation of a computer-based archive management system in office management is proven to make a positive contribution to information management, and archival performance (Akashah et al., 2011) can create organizations that have excellent performance and efficient management (Heckman, 2013). The same thing was also declared by Johnston and Bowen (2005), Saman and Haider (2012), and Demirtela and Bayram (2014). Therefore, there are currently many government agencies and private organizations throughout the world developing and implementing electronic records management systems.

### **Literary Study Results of Characteristics of Electronic Archival management Learning**

The implementation of K13 is following MoEC Decree No. 330 / D.D5 / KEP / KR / 2017 brought updates on the implementation of archival learning in the Office Administration skills program at SMK. Learning to manage electronic records following K13 covers three main activities, namely storage, retrieval and borrowing - repayment, and shrinking records. Each main activity contains procedural sub-activities that must be carried out by the rules of archival management in force in Indonesia.

The abstract nature of electronic archival management material will be complicated for students to understand if the learning process is not accompanied by instructional media that allows teachers to provide an overview or visualization of how electronic records are and how to manage them. Furthermore, electronic archival management teaching materials that contain procedural knowledge are expected to be practiced by students through a simulation process during learning. Without learning media that can support the needs of simulation, students will not be able to understand how the process of managing electronic records following the correct procedures.

The characteristics of archival learning require learning media that support material visualization and simulation of electronic archival management procedures procedurally. Besides, the learning process also requires computer-based facilities to support the process of delivering the material and in the

process of practice by students. The learning material is difficult for both teachers and students if the availability of media is limited or even not available.

Consequently, electronic archival management learning will only be able to run if there is learning media in the form of computer-based applications. The use of media allows teachers and students to directly visualize and simulate interactive procedural activities based on case studies in archival management. The argument is based on studies that show that the use of multimedia with a case study-based learning approach can improve student performance (Bider, 2015). Also, students will more easily understand the material taught and support the acquisition of skills following the expected competencies (Hassan, Puteh, and Buhari, 2015).

## **Field Study Results**

The 2013 curriculum contains new essential competencies (KD) which must be mastered by students through archival learning. First, KD 3.12, implement electronic archive management. Second, KD 4.12, manage electronic records. That two KDs which are contained in archival subjects and contained in the 2013 curriculum according to Ministry of Education and Culture Decree No. 330 / D.D5 / KEP / KR / 2017 turned out to create its own difficulties for teachers. Following the results of interviews conducted with teachers of archival subjects at SMK N 2 Semarang, it was concluded that teachers experienced difficulties both in designing and implementing electronic archival management learning.

From 2013 to 2019, there were activities of the Teacher Subject Meeting (MGMP) AP expertise program and training activities that discussed the implementation of E Archives in learning. E Archive is an electronic archival learning model that utilizes computer-based media supported by Microsoft Access applications. Periodically, MGMP activities that have been carried out are MGMP in Central Java (2013), MGMP in Kendal Regency (2014), MGMP in Kudus Regency (2015), MGMP in Semarang City (2015), MGMP in Purwakarta Regency (2015), training for Sunan Giri Demak Vocational School students (2016), training for Bantul 1 Public Vocational School students (2016), training for Kudus 1 Vocational School students (2017), MGMP in Magetan Regency (2017), MGMP in all Regencies Cilacap (2018) MGMP in Wonosari City, Gunungkidul, Yogyakarta (2019).

Limitations of learning resources cause difficulties for teachers. The availability of teaching materials both from book sources and the internet is limited. From interviews with several MGMP participant archiving teachers, it is known that there are teachers who have not dared to carry out electronic archival management learning because they feel they do not understand the material and procedures for the correct implementation. MGMP teacher participants admitted this because, in reality, it was indeed challenging to find the right reference. If forced, it is feared that the results will not be maximal. Teachers also need role models and guidelines to be able to carry out electronic archive management learning so that both individually and in groups take the initiative to attend

workshops and seminars. Teachers also join Focus Discussion Groups (FGD), and MGMP with the topic of digitizing archives in learning in order to enrich references before carrying out learning. Based on the results of follow-up interviews with MGMP participant archival subject teachers, it is known that there are gaps between the demands of essential competencies that students must master following the 2013 curriculum and the availability of adequate learning media. As a result, students find it challenging to understand the concepts and practices of electronic archival management. The teacher also states that in the latest curriculum structure, there are competency units that operate software applications with essential competencies to implement electronic archival management so that instructional media are needed for student practice. Revealed by Kim (2011) that students cannot understand theories and concepts well if the technology to practice in learning is still lacking, whereas in SMK requires cutting-edge learning facilities (Damarjati, 2016) in order to be in harmony with the progress of the workforce.

## **Study Results of Available Electronic Archival Learning Media**

E Arsip is an electronic archival management learning model developed by Agung and Ashari in early 2013. This model uses an electronic archive management system application based on Microsoft Access. E Arsip also includes a module for its use which is published in book form and includes a CD containing the application as a simulation medium. The initial purpose of developing E Arsip is to provide a relevant learning model or media as an initial solution to the problem of scarcity of electronic archival learning media. Since its introduction in 2013, the E Arsip model has been tested in several community service studies. It has been used in training for both teachers.

E Arsip also has been used as a learning medium in SMK Negeri 1 Kudus. However, the E Arsip model still has various weaknesses that need to be refined because the development process does not use development research (R&D) procedures.

Weaknesses or limitations E Arsip are identified based on entries from participants obtained during MGMP activities and training mentioned above. The weaknesses are: 1) application dependency to be run requires Microsoft access at least the 2010 version; 2) the stability level of the E Arsip application based on Microsoft Access is not yet good because there are still quite frequent errors 3) the data as a result of the simulation are stored separately from one student to another, making it difficult for teachers in the process of evaluating the results of student work; 4) the scope of material in the E Arsip application does not include all archival administration activities from recording to depreciation or archive retention. Therefore, there is a need to develop the E Arsip model by utilizing the latest technology, so that it is more in line with the electronic archival management procedures which is certainly adjusted to the results of the analysis of teacher and student needs.

## **Observation Results of Electronic Archive Management Learning**

Based on the results of observations made during the implementation of electronic archival management learning in SMK N 2 Semarang, it is known that the teacher approach when delivering

the concept of material mostly uses a theoretical approach with variations in the use of PowerPoint slides. The teacher has not used media that supports visualization and simulation of how electronic archival is managed. Students also do not have the opportunity to practice electronic archival management procedures according to archival rules because relevant simulation media are not available.

### Student Perception Survey Results on Material and Media Development

The survey was conducted in an integrated manner with each question point explained in detail by the researcher before students gave answers to each question. The results of a survey of 108 students of class X AP SMK N 2 Semarang obtained the following data:

**Table 1. Student's Answers Analysis**

No	Student's Answers	%
1	Students answer that it is difficult to understand electronic archival management material without using computer-based learning media	70
2	Students answered interested in understanding electronic archival management materials in depth	88
3	Students answered agree that learning media was developed for the visualization and simulation of electronic archival management	99
4	Students choose a web platform as a media development platform	78
5	Students choose the range of electronic archival management materials ranging from recording, storage, retrieval and borrowing, and retention	74
6	Students choose interactive multimedia as a type of media that is developed	81
7	Students choose multimedia that can be accessed online	89
8	Students have never seen electronic archival management learning media	71

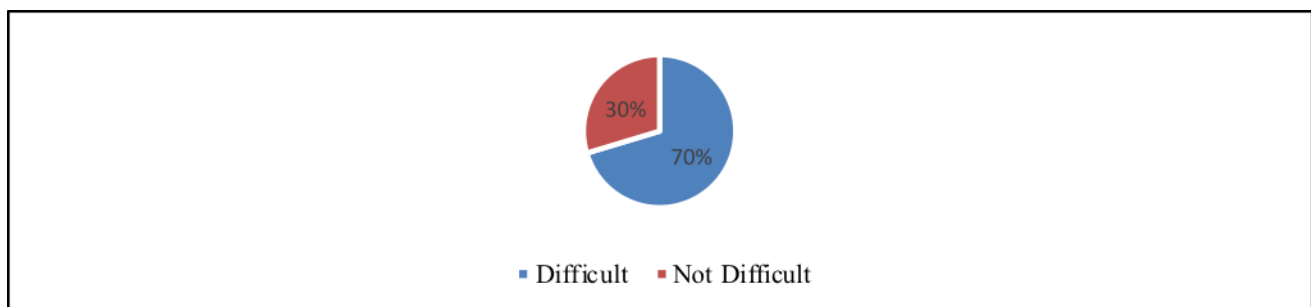
## DISCUSSION

### Need for E Archive Development

From 2013 to 2019, the E Arsip model has been tested in various studies and training activities in the MGMP, which are followed by archival subjects. Until now, several schools have also used E Arsip as a learning medium in implementing electronic archival management learning. However, the development of E Arsip is very much needed to create electronic archival management learning media that are following the needs of teachers and students, which can later be widely used. Based on the results of surveys and interviews conducted, it was concluded that the need for additional coverage of material in the E Arsip in the form of shrinking activities and archive retention.

### The Need for Development of Electronic Archival Management Learning Media

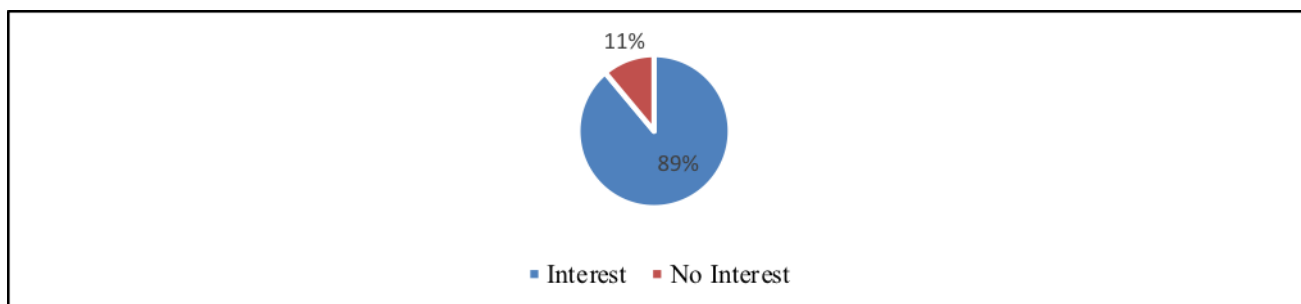
The survey results show that students of the X class office (AP) office administration expertise program at SMK Negeri 2 Semarang still experience difficulties in understanding electronic archival management materials. Of the total 108 students representing class X AP 1, X AP 2 and X AP 3, 76 students (70%) stated that electronic archival management materials are challenging to understand because the material is abstract and requires media to be able to visualize and simulate procedural activities according to the rules applicable archives (Figure 1).



**Figure 1. Percentage Graph of Difficulty of Students in Understanding Material**

The results of preliminary observations and interviews with students indicate that one of the materials that are considered difficult to understand by students is the procedure of storing, borrowing, and shrinking computer-based archives. In the case of instructional media used by archival subjects, the media used are limited to the use of PowerPoint slides with a theoretical learning approach in the classroom. Then in terms of learning methods, the discussion in the class is quite unusual for students. However, students more often find information related to the material independently via the internet, so students feel worried that the material obtained will not correspond to what will be needed in the world of work.

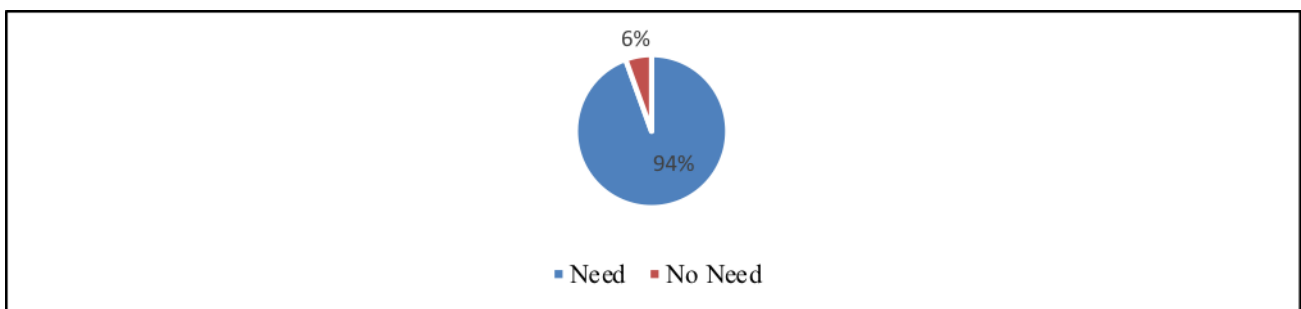
Furthermore, the authors also find out how interested students are in electronic archival management material through surveys. Obtained as many as 88% of the total of 108 students found the electronic archival management material interesting. Students also want to be able to understand the material both conceptually and also in practice (Figure 2). That is, students' interest in this material is quite significant, considering the subject of archiving is one of the productive subjects in the office administration expertise program.





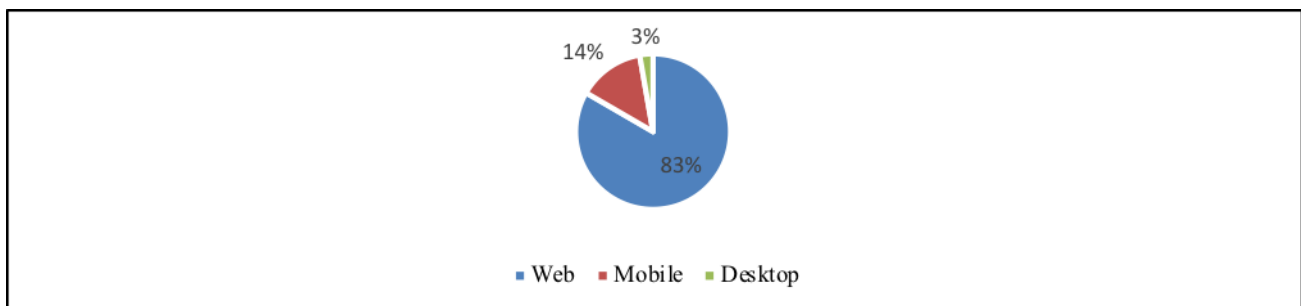
**Figure 2. Percentage Graph of Student Interest in Material**

Then the results of the analysis of student needs showed that out of a total of 108 students, 99% of students stated the need to develop archival computerized learning media so that it was not dull and the material was easier to understand. As many as 94% of the 102 students agree that the learning media developed can be used for practice in the administration of digital archives because according to students. Students not just memorizing the steps according to those conveyed by the teacher in class (Figure 3).



**Figure 3. Graphic Percentage of Student Needs for Media Development**

In line with what Drake et al. (2014) explained that teaching and learning activities that include group collaboration, task visualization and simulation through laptops and the internet, direct experiments are elements that can enrich student understanding. Efforts can be made to prepare competent human resources to improve the quality of learning through the application of technology in the teaching and learning process. This application is intended to train and familiarize students with work trends in the digital age that demand speed and accuracy. As found by (Aloraini, 2005; Akbarini, Murtini & Rahmanto, 2017; Wibisono, Baedowi & Indrawati, 2017), technology-based interactive learning media has a significant effect on improving student learning outcomes.



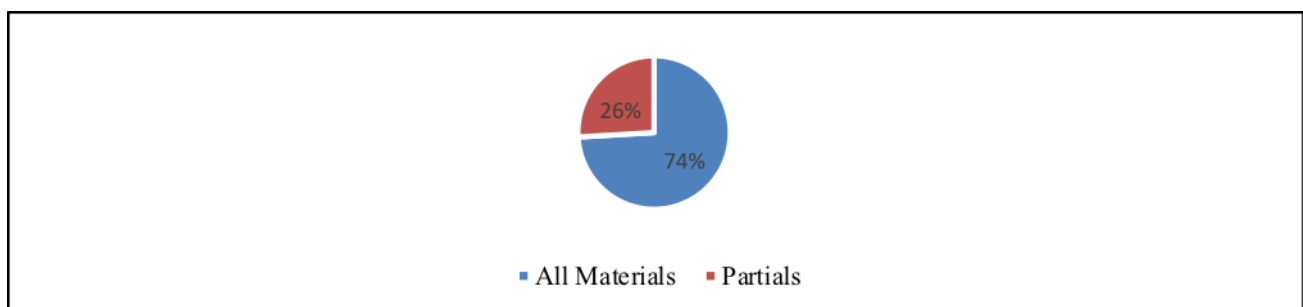
**Figure 4. Percentage Graph of Platform Types Selected as Media Development Platforms**

Furthermore, following Figure 4, the survey results show that students prefer media to be developed using a web platform. Web stands for the World Wide Web is a network of documentation that is

very large and interconnected with one another. The web provides a distributed multimedia hypertext system that can be used in teaching, research and administration (Tian, 2001: 74).

Students prefer the platform because of the ease and flexibility of the media and do not require an installation process. Web-based media can be accessed either through computers, laptops, smartphones or even cellphones. Besides, students are very familiar with the activity of browsing the web with the internet both through their smartphones and computer devices available in school laboratories. However, this type of web-based media is very dependent on the availability of a stable internet network so that the experience while using media is more enjoyable.

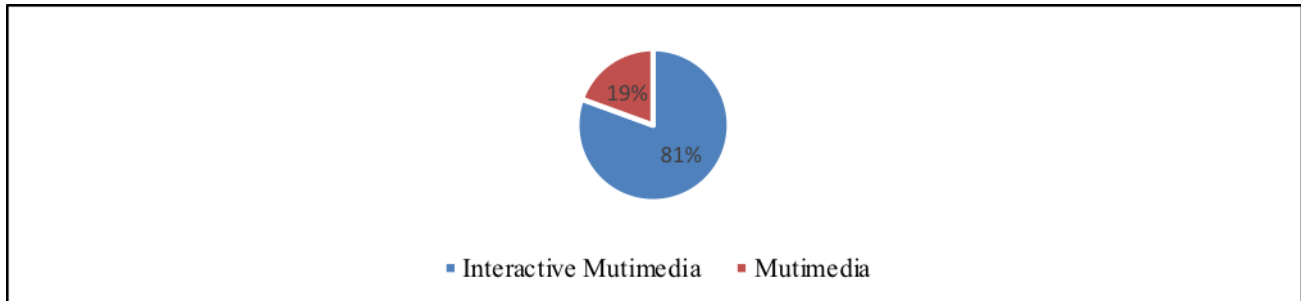
The use of web technology for media development has been widely carried out. Trieb (2016: 301) argues that web-based applications can build student interest and can powerfully enhance students' interactive communication skills. The advantages of using web-based media when used in simulation methods, learning will be following the characteristics of complex archival management material, requires a database and requires data integration to produce the expected output. Therefore, web technology was chosen as a platform for developing learning media for electronic archives.



**Figure 5. Percentage Graph of Student Preference on Material Coverage**

Based on Figure 5, it can be seen that students want a learning media that includes all electronic archival management procedures, from recording, retrieval and borrowing-repayment, to shrinking records. This desire may be based on a high level of student interest in electronic archival management material even though it is considered severe. However, the entire material can be grouped into steps - procedural activities that can be outlined in the form of simulations with a case study model.

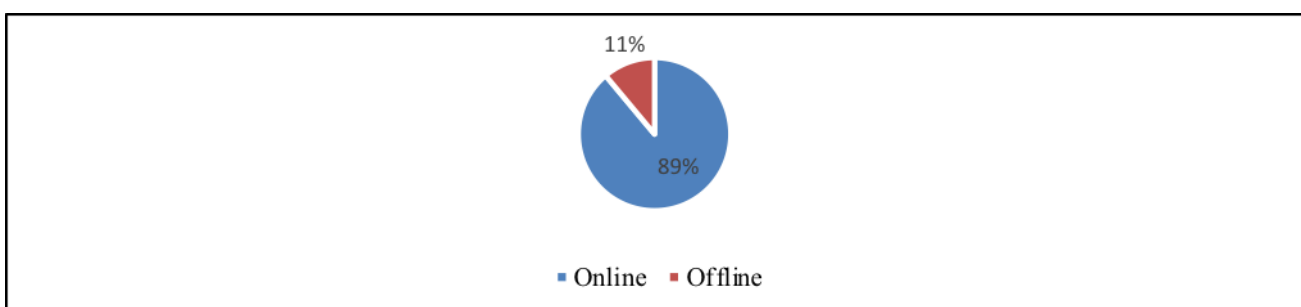
The characteristics of electronic archival management procedures which are procedural can be packaged into a case study for each step or procedure in the form of simulation activities in the media. The use of multimedia, together with a case-based learning approach, does improve overall student performance (Bider, 2015: 130). Through the use of technology in the learning process, students can more easily understand the subject matter and support the acquisition of skills following the expected competencies (Hassan, Puteh, and Buhari, 2015: 324).



**Figure 6. Percentage Graph of Student Preference on Types of Interactive Multimedia in Media Development**

The results of the next survey showed that students wanted to develop media that contained interactivity. Besides being not boring because it allows for feedback in two directions, interactive multimedia is also considered effective in learning. Utilization of technology in multimedia used can support collaborative activities between teachers and students so that they can be more active and interactive in teaching and learning. Based on the multimedia learning grand theory namely dual coding theory (Paivio, 2006: 2), Schuler, Scheiter and Genuchten (2012: 2210) explained, multimedia in the form of images and texts gave rise to different representations pointing to the same information in long-term memory. The information more accessible when compared to text conditions only.

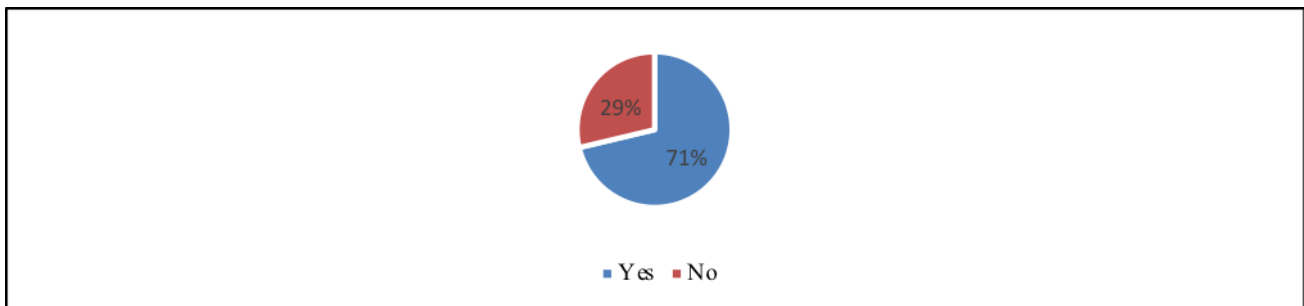
As stated by Aloraini (2012: 76), multimedia programs can provide experiments that are more effective and more influential than using each technology separately in learning. Interactive learning media can support two-way communication between teacher and students. This interaction process can increase student activity and have an impact on learning outcomes.



**Figure 7. Graphic Percentage of Student Needs for Development of Media That Can Be Accessed Online**

By student expectations shown in Figure 7 and the results of interviews with teachers, the media developed should use a centralized database and can be accessed using the internet. Bruno, Silva, and Teixeira (2012: 201) find that the use of the web as a learning media platform can be a solution for

storing and sharing learning material more quickly because the information is centralized. On that basis, the selection of web technology as a base for development is appropriate because there are currently more applications to develop the web using RDBMS (Relational Database Management System). The use of RDBMS can make the software more interactive and facilitate organizing various types of data formats (Nigrelli, Chiarle, Nuzzi, Perotti, Torta, and Giardino, 2013: 101) so that the distribution and management of data in applications become easy.



**Figure 8. Percentage Graph of Student Experience Viewing Electronic Archival Management Information System**

Then based on Figure 8, students state that they have never seen an electronic records management system in the real world. This shows the need for the development of multimedia following the real world of work. The intended multimedia that supports visualization and simulation in order to be able to give students an idea of how the process of implementing electronic archival is procedural. The goal is that students more easily understand the material and what is learned in sync with the needs of the business world or the industrial world.

### **Web-Based Interactive Learning Multimedia Ideas**

The idea to develop interactive multimedia web-based learning is based on dual coding theory (Clark and Paivio, 1991). The dual coding theory states that information received by someone is processed through one of two channels, namely verbal channels such as text and sound, and visual channels (nonverbal images) such as diagrams, pictures, and animations. Various research results state that this type of media can increase activeness (Ergul & Koc, 2013), interests (Norhayati & Siew, 2004), motivation (Lin & Jou, 2012), critical thinking skills (Salleh, Tasir, & Shukor, 2012) and student learning outcomes (Ozdener & Celen, 2009; Wirawan, Indrawanti, & Rahmanto, 2017). According to Kamat (2009), interactive multimedia is usually used for subjects such as science, mathematics, geography, history and others. Interactive multimedia is also considered far better than traditional learning, which relies on teachers who only use blackboards and lectures.

Multimedia is combining various types of media. The combination of text, sound and diagrams is considered adequate for presenting learning materials (Beacham et al., 2009) that require visualization to improve understanding of concepts (Evans & Gibbons, 2007) and improve learning

outcomes (Cheng, Cheng, & Chen, 2012). Interactive multimedia contains an element of interactivity (stimulus from students and responses from the media) to enable two-way communication. The interactivity element in interactive multimedia is also considered to have a positive impact on learning outcomes when compared to multimedia alone (linear multimedia). Liu (2009) argues that multimedia consisting of text, audio and video content that is equipped with interactivity is more able to motivate students in learning than media that only contains text, text and audio, or text and video or video and audio.

One of the technologies that make it possible to develop interactive multimedia is web technology. Today's web technology has supported the integration of various content such as text, sound, images, video, animation and other types of content on one page (W3C, 2009). Besides, in the use of the web, the interactivity element is very dominant, there is always input from the user and from the web. On the basis of the capabilities of the web and ease of access, the web is used as a technology used to develop interactive multimedia. The results of Chen's, Lambert, and Guidry (2010) research stated that students who use web technology in learning tend to get higher scores.

Students also likely to use a higher-order thinking learning approach, so students can have practical competencies and can support self and social development they.

Electronic archival management material also has the characteristics of procedural knowledge with practical competence so that it is suitable to use the web through simulation methods to improve student understanding (Surjono, 2017: 57). Also, simulations can contribute to the development of critical thinking processes, analytical skills in the process of understanding, increasing motivation so that it can influence the ability of students to engage in interactive learning (Bakrc, 2011; Alabdulkareem, 2015).

The application of interactive multimedia can be used in various scenarios, for example, visuals in simulations. Learning with game simulation has a positive impact on cognitive learning outcomes (Nkhoma et al., 2014) and students can find some knowledge in other ways that are more interesting and can be more meaningful in learning something (Hoffos, 2015). So that students' understanding through interactive multimedia-based learning is also better, through a combination of visual and audio and good interactivity, learning becomes more interesting, and students are more motivated to learn.

In line with the above thinking, interactive multimedia has the potential to create a quality learning environment and improve student learning skills (Nusir, AlKabi, & Alsmadi, 2011). Multimedia in learning can be used as a means of delivering information that supports the conceptualization and contextualization of new material presented that can actively involve students in learning (Cairncross & Mannion, 2014). Web-based multimedia-assisted learning will make students more independent in building sophisticated knowledge by connecting scientific ideas and making it easier for teachers to

monitor the learning activities of each student (Petra et al., 2016). Therefore, this type of interactive multimedia is considered suitable to be used as a type of output in the development of archiving electronic learning media.

## CONCLUSION

Characteristics of electronic archival management learning teaching materials that are abstract and contain procedural materials make students have difficulty understanding the material in the learning process. On the other hand, teachers also have difficulty in finding learning resources in the form of books, modules and articles because their availability is minimal. As a result, the process of implementing electronic records management has not been running optimally. Therefore, we need a solution so that the problems above can be minimized. The solution offered is the idea of developing computer-based electronic file management learning media as.

Based on the results of needs analysis, students' interest in this media is very high. Supported by the fact that there are MGMP activities every year, it proves that there is a need for the availability of learning resources and learning media that can support the implementation of archival management learning. The development of relevant media needs to be done.

The basic specifications of the media developed should: 1) contain the entire archival management procedure; 2) contains interactivity elements; 3) support the procedural simulation of archival management procedures; 4) contains evaluation elements; 4) use a centralized database to simplify the process of monitoring student activities and performance by teachers; and 5) can be accessed online. Based on these specifications, according to researchers, the type of technology or platform that is appropriate for media development is a web platform.

Web technology makes it possible to combine various media and interactivity elements. The use of web technology in learning has also proven to be effective in learning and can increase activeness, interest, motivation, critical thinking skills and student learning outcomes. Based on the description above, the authors intend to develop interactive multimedia learning media as a simulator for future practice learning as a solution to the problems found in the learning of electronic archival management.

Based on the results of the research and discussion above, suggestions can be made as follows: 1) Considering the importance of media that can visualize and simulate the process of managing electronic archives that are considered difficult by students and the need for archiving computerized learning media, it is necessary to carry out further research namely the development of multimedia learning management of electronic archives for archival subjects in the office administration program in SMK. 2) For every teacher of archival subjects in Vocational Schools, it is expected that later it can use multimedia electronic archival management learning that has been appropriately developed and optimally.

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