Visual Communication Platform Learning Animation Development for Educators

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Abstract

Technological development is currently continuing to develop following the flow of an industry that continues to grow, the industrial revolution 4.0 in fact has an amazing impact on the field of animation and games. According to the 2019 Association of Technology Data, currently 65% of the world's population are active game users, this is quite surprising when education began to be boosted by the industrial revolution 4.0, game and animation platforms emerged that provide virtual reality and augmented reality technology. The development of Learning Innovations, of course, also has a big contribution to continue to compete with these technologies, one of which is virtual learning that can be accessed through LMS, MOOC's and Edmondo and the like. With the virtual learning, of course, the creative content that fills the virtual learning will also continue to develop. The main problem is that virtual learning content or more precisely online learning has a weakness in the diversity of learning content contained in it, even though animation, video and embedded AR and VR mechanisms can already be done in online learning, departing from these problems the concept of Visual Communication Platform (VCP) learning animation) which helps teachers to explain efficiently and in detail can be done easily. Through VCP learning animation, teachers can visualize 3D Modeling, Machine Parts, and Objects that cannot be seen directly. VCP learning animation has an important role in the world of education because it holds the main key to the attractiveness and efficiency of learning content, this cannot be achieved by conventional modules. Learning animations allow students to interact with Learning Animation Avatars directly, this is a plus in learning because it has feedback and interaction with the user. Researchers want to develop learning animations that are in accordance with learning content in vocational schools, with the hope that VCP learning animations will be a good role model for the diversity of content in online learning. The results of the Usability test with 35 respondents showed quite satisfactory results, with a valid test category, indicating user satisfaction, in this case educators reaching 91% which is quite high for the learning supplement category. Then the user friendly test also showed that 82% in the valid category, educators felt the ease when used. In the effectiveness test, the test also shows the same thing even though it is not as big as the usability test and the user friendly test is 78%, this is indeed related to the condition of school infrastructure suggestions which sometimes the internet is down or the availability of devices that support the development of VCP learning content, but the average is still in the good category, below in Table 2 will be shown the Test Test on the Implementation of VCP for educators in Malang district.

Keywords*—Visual Communication, Platfrom, Animation*

1. INTRODUCTION

The current development of science and technology is rapidly changing the teaching and learning process to be different from before, with the conditions of the learning process allowing asynchronous and synchronous concepts to occur in the learning process, this is normal because humans are a race that continues to develop and adapt to conditions that may occur. The big impact in the teaching and learning process has very real implications in the application of teaching and learning, in Malang Regency itself the teaching and learning process is carried out fully online in 2021, in 2022 it starts to use the hybrid concept

but is constrained because the increase in the Malang Regency level to Level 3 is influential In the teaching and learning process, this obstacle causes teachers to race hard to rack their brains to provide appropriate learning to their students. Malang Regency is a district that has many schools at the junior high and high school levels spread throughout the district, for example, districts that are close to the Malang City and Batu City areas have good infrastructure in the application of online learning, but when looking at schools located in remote areas, the infrastructure is very poor. lacking, furthermore, the concept of transfer of knowledge between district schools is still lacking because the distance between remote areas and large state universities in Malang is too far. In 2021 the PKM 2022 proposed team has carried out service in the context of introducing the application of IT in learning, the positive response of teachers in the Malang district and constructive suggestions are the goals of the need to introduce the application of IT in learning. This is to close the gap between IT development in universities and schools in the Malan Regency area, for example the Ngantang area, Kasembon which is directly adjacent to the Kediri Regency still uses conventional media. This suburban Malang district actually has adequate access to the development of learning innovations, this was found when the service team conducted field studies in the area, almost 70% of students held smartphones with qualifications suitable for Animation Learning Visual Communication Platform (VCP) and media. Another interactive, school also has computer lab facilities and internet network.

Such conditions are very interesting for the service team to be able to socialize and conduct mentoring workshops on VCP Learning Animation technology which can 100% be developed in district schools. This service activity is carried out to help educators apply technology in learning, the application aims to increase the scale of the smaller difference in the use of technology between district schools in urban areas and in remote areas The PKM service proposal team in 2019 has carried out service to students in the related Malang Regency the use of Mixed Media Animation (MMA) in learning, and the remarks were extraordinary for educators in the district of Malang, almost 100% of the participants attended even though they were from far enough areas, turen, ngantang and kasembon areas to upgrade learning which had positive implications for students. The following in Figure 1 and Figure 2 are the service carried out by the service team in 2021.

2. METHOD

The method of activities carried out in this PKM service proposal is a description in the introduction and solutions to the problems that have been discussed, that the condition of the Malang district school partners needs to be improved, so several stages in this activity need to be implemented. Broadly speaking, there are 5 stages of the process method for implementing the proposed activities of PKM administrators, namely starting from the stages of 1) preparation, 2) Development of VCP Learning Animation Materials, 3) socialization, 4) evaluation, and 5) reporting. The flow of this PKM service activity is shown by the flow chart in Figure 1.

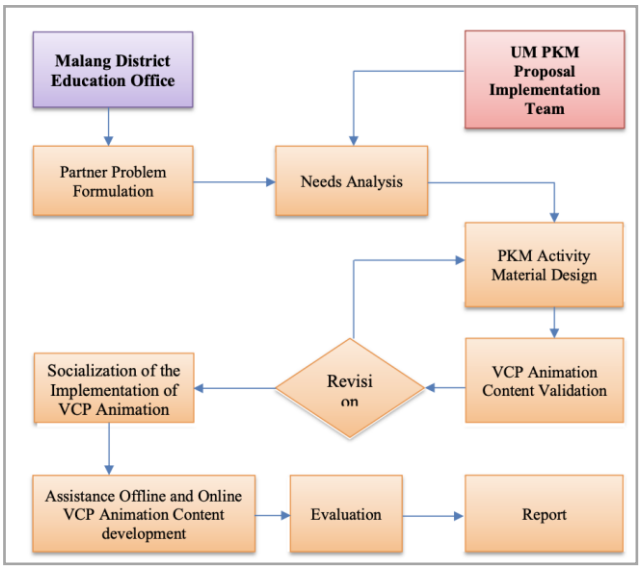

Figure 1. PKM Activity Implementation Flowchart

2.1. Preparation Stage (Problem Analysis and Needs Analysis)

The preparation stage was carried out through 2 conditions, namely the formulation of partner problems carried out by field observations by meeting directly with the head of the Malang Regency Education Office (Mr. M.Hidayat) and then preparing an analysis of partner needs, in this case the Malang Regency School. At this stage, all needs are identified in the form of problems proposed by the Malang Regency Education Office to design activities. All important information that is available will be recorded and used as consideration in carrying out PKM service. At this stage, partners have an important role in providing important information related to the needs of educators in the Malang district and media content needed by educators. After the coordination has been completed, the PKM proposer can conduct a needs analysis and design material for the Visual Communication Platform (VCP) learning animation content.

2.2. Stages of Creating VCP Animation Content Materials

The activities of making VCP Animation Content Materials are carried out sequentially in stages, starting from planning to material revision. Each activity is carried out with an estimated implementation time of approximately 1-2 months. Each activity consists of several stages of making materials, namely (1) designing the material framework and material variables in accordance with the lesson plans and syllabus (2) material development (3) validation tests and materials, and (4) system revision if necessary. The stages of design, development, and revision are carried out at the State University of Malang, while the implementation stages of activities in this case are socialization and mentoring are carried out at the Malang Regency School location (the school appointed by the Malang Regency Education Office to carry out the socialization).

2.3 Stages of Socialization and Training of VCP Animation Content

The Socialization and Training stage is carried out by cooperating with one of the district schools (based on the recommendation of the Malang District Education Office) to organize socialization and training of VCP animation content, in this case the designated school must have several requirements, including: 1). District schools that have easy access to other schools in the district; 2). Have a stable Internet Connection; 3). Having a building that can accommodate 50 participants with the Health protocol, if the 3 requirements have not been met, the socialization activities will be directed to the Malang Regency Office Building or Malang State University.

2.4 Stages of Evaluation and Monitoring

The evaluation and monitoring stages here are the evaluation and monitoring of the results of product training in the form of VCP Learning Animation Content that has been implemented in Malang Regency Schools. The evaluation was conducted to review the success of the application of VCP Learning Animation Content in the learning and teaching process. Monitoring is the observation of the implementation of the VCP Animation Content as a track record of the success of this PKM activity. The results of the evaluation and monitoring data will be very useful in the next stage. In addition, this evaluation and monitoring is also useful for Malang Regency Schools in managing the process of learning activities in schools.

2.5 Stages of Reporting PKM PDM Activities

The preparation of PKM activity reports is carried out at this stage. The writing of the final report begins five months before the final deadline for planning PKM activities. The finalization of the PKM activity reporting takes an estimated time of implementation for approximately one month. The result is that the Implementing Team can complete the PKM report properly and on time along with the achievement of the promised outputs.

3. RESULT AND DISCUSSION

The result of this service activity is the Visual Communication Platform (VCP) animation learning content which was developed as a learning supplement that can improve learning through the creative content of educators in the Malang district. VCP content overcomes the weakness of the diversity of learning content contained in it, even though animation, video and embedded AR and VR mechanisms can already be done in online learning, departing from these problems the concept of Visual Communication Platform (VCP) learning animation which helps teachers to explain efficiently and effectively. details can be done easily. Through VCP learning animation, teachers can visualize 3D Modeling, Machine Parts, and Objects that cannot be seen directly. VCP learning animation has an important role in the world of education because it holds the main key to the attractiveness and efficiency of learning content, this cannot be achieved by conventional modules. Learning animations allow students to interact with Learning Animation Avatars directly, this is a plus in learning because it has feedback and interaction with the user. Researchers want to develop learning animations that are in accordance with learning content in vocational schools, with the hope that VCP learning animations will be a good role model for the diversity of content in online learning. The following in Figure 2 shows an example of the application of VCP learning animation in learning content.

Figure 2. Application of VCP content in Learning

This VCP Content Development also has standardization in the application of learning supplements, one of which is the specification of system requirements that are expected in the development of learning

content, this will be closely related to the specification of software, hardware and user requirements in implementing the VCP properly. VCP content developed using VCP powtoon which is considered the most convenient in the application of animation, through this specification the content can run optimally, as follows in Table 1, the specifications for the requirements for implementing VCP content are shown.

Table 1. VCP Requirements Specification

Type	No	Spesification
Software	1	Powtoon
	2	Media Player
	3	Windows 8 or Higher
	4	Browser (Chrome, Mozilla or Etc)
	5	Encoder Audio Plugin
Hardware	1	Personal Computer (Motherboard,
		CPU, VGA Card, LAN Card, HDD,
	2	Power Supply, USB slot, Monitor,
	3	Keyboard, dan Mouse).
		Smartphone Android/IOS
		Tablet PC
User	1	Teacher
	2	User Student

These specifications are associated with the application of the Visual Communication Platform (VCP) for educators to facilitate the learning process through the concept of learning animation combined with interesting learning content so that it can be actualized into fun, interesting and easy learning content for educators, especially educators in the district. Malang, which incidentally has problems with school infrastructure. The following in Figure 3 shows VCP content tutorials that can be utilized by teachers as a supplement to the teaching and learning process.

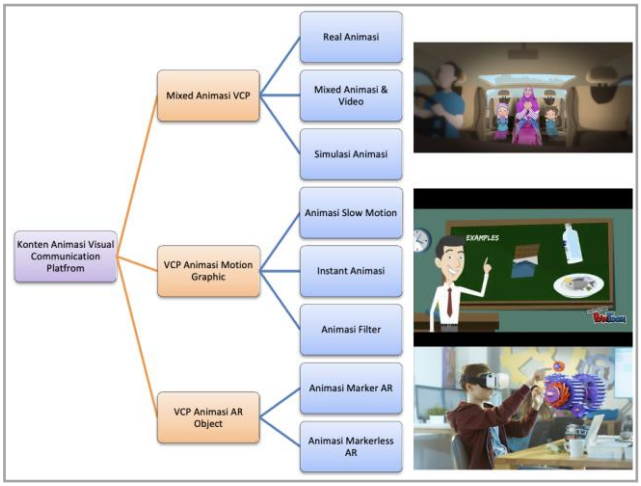

Figure 3. VCP Content

The use of VCP learning animation content is also carried out through 3 main tests, namely (usability test, user friendly test and effectivity test) to determine the level of usability for educators, usability tests function as markers of the extent to which the product is used which ultimately creates user satisfaction, then a user friendly test is carried out this refers to the level of ease for users to use VCP content, and finally an effectiveness test is carried out to see how effective the VCP content users are. The results of the Usability test with 35 respondents showed quite satisfactory results, with a valid test category, indicating user satisfaction, in this case educators reaching 91% which is quite high for the learning supplement category. Then the user friendly test also shows that 82% in the valid category, educators feel the ease when used. In

the effectiveness test, the test also shows the same thing even though it is not as big as the usability test and the user friendly test is 78%, this is indeed related to the condition of school infrastructure suggestions which sometimes the internet is down or the availability of devices that support the development of VCP learning content, but the average is still in the good category, below in Table 2 will be shown the Test Test on the Implementation of VCP for educators in Malang district.

Tabel 2. Test on VCP Contens

Test	Number of Responden	Result	Success(%)
Usability Test	35	Valid	91%
User Friendly Test	35	Valid	82%
Efectivity Test	35	Valid	78%
Total Average			83,66%

4. CONCLUSION

The development of the Learning Animation Visual Communication Platform (VCP) can improve learning through the creative content of educators in the Malang district. VCP content overcomes the weakness of the diversity of learning content contained in it, even though animation, video and embedded AR and VR mechanisms can already be done in online learning, departing from these problems the concept of Visual Communication Platform (VCP) learning animation which helps teachers to explain efficiently and effectively. details can be done easily. Through VCP learning animation, teachers can visualize 3D Modeling, Machine Parts, and Objects that cannot be seen directly. VCP learning animation has an important role in the world of education because it holds the main key to the attractiveness and efficiency of learning content. The results of the Usability test with 35 respondents showed quite satisfactory results, with a valid test category, indicating user satisfaction, in this case educators reaching 91% which is quite high for the learning supplement category. Then the user friendly test also shows that 82% in the valid category, educators feel the ease when used. In the effectiveness test, the test also shows the same thing even though it is not as big as the usability test and the user friendly test is 78%, this is indeed related to the condition of school infrastructure suggestions which sometimes the internet is down or the availability of devices that support the development of VCP learning content, but the average is still in the good category, below in Table 2 will be shown the Test Test on the Implementation of VCP for educators in Malang district.

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