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Needs Analysis of The Traffic Safety Training Hyper Content Module at The Ministry of Transportation

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ABSTRACT

Traffic safety training whose material needed a concrete visualization aspect. To accommodate this, teaching materials were needed to support the learning process. This study aims to describe the results of needs analysis which is the first step of the Research & Development process conducted with a qualitative approach. Data collection techniques are done by conducting research through documentation, observation, and interviews. The results of the needs analysis have been found several problems, that is the heterogeneous characteristics from training participants, limited experience of training participants, limited training time, lack of teaching materials, and training implementation locations throughout Indonesia. Hyper content-based printing modules are a great alternative because they can bring related factual aspects of traffic safety to training participants. In the next research, it is expected to develop a hyper content-based traffic safety training module.

1. Introduction

Traffic safety is a major concern for both the public and the government. The dominant cause of traffic accidents is the human factor. This should certainly be a concern for the Ministry of Transportation as an agency who responsible for transportation safety in Indonesia. Based on data from the National Committee on Transportation (KNKT), the human factor is the most dominant factor in road traffic accidents. Things have been identified as the influence of why humans are the most dominant factor according to research conducted by (Dwi, 2017), one of them was due to a lack of training for drivers. (Guritnaningsih; Tri, Tjahjono; Dewi, 2018) stated that the difficulty in recognizing the situation and negligence in making decisions when acting in driving became the dominant factor in human error. Therefore, one of the efforts that can be made by the government is to improve traffic safety programs Knowledge of traffic safety can be gained through personal experience as well as others in the form of literature. One of the way is to implement traffic safety training.

Politeknik Transportasi Darat Indonesia (PTDI STTD) as the agency appointed by the Ministry of Transportation to carry out traffic safety training in collaboration with the official of District/City Transportation parties throughout Indonesia to carry out the training. The training participants consisted of official District/City Transportation Employees, society and vocational high school students.

Should be in the implementation of traffic safety training, not only the knowledge aspect needs to be conveyed, but the skill and attitude aspects are also important. (Assailly, 2017) stated that road safety education will have a positive effect if good practices have been adopted by participants as a lifelong learning process. In fact, in the implementation of traffic safety training, the instructor focuses on delivering all theoretical material because the time they have is very limited. With the allocation of training time held for 3 days to convey all the materials both theory and practice with the demands of conveying aspects of knowledge, skills, and attitude, then it is still felt that the lack of training time given.

To support the success in the implementation of traffic safety training, one of the things to note is the availability of teaching materials or modules. Modules as teaching materials are one of the main factors besides instructors, participants, and infrastructure facilities that support the implementation of training. With the module it will be able to solve problems in traffic safety training which are caused by the lack of available training time to deliver all material both theory and practice

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When planning to develop traffic safety training modules, this relates to the need for concrete examples as effective learning materials. To present this, it is necessary to visualize as a model that will be seen by participants, which aspect of visualization is not only given through photos or images, but also requires video as a more concrete learning material. To display a video, the print module cannot accommodate it. Therefore according to (Prawiradilaga et al., 2017) there is another alternative option, namely a hyper content-based print module. Which aspects of digital technology as one of the characteristics of learning in the 21st century is applied to empower the virtual world into modules. Later in the hyper content module, concrete videos can be linked later related to traffic safety. Based on research conducted by (Howell et al., 2019) it is said that when trying to persuade to practice safer driving behavior, then the video is the most effective message design to improve the emotional and attract the attention of participants.

In order to develop a hyper content-based module of traffic safety training organized by Politeknik Transportasi Darat Indonesia – STTD, researchers will conduct documentation, observations, and interviews for this research. The goal is to know what issues are the focus in the implementation of traffic safety training as well as what teaching materials are suitable to be developed to convey traffic safety training that if in accordance with the characteristics and needs of the training participants. The results of this research are expected to provide preliminary information on teaching materials that need to be developed. After that, the results of this study are used as preliminary research in developing hyper content modules in the ministry of transportation. The focus of this research is on the analysis of the needs contained in the initial steps of the Instructional Development Model (MPI).

2. Methods

The type of research used is qualitative research using Research & Development (R&D) methods. Researchers combined the research stages using the Instructional Development Model (MPI) and the development stage using the Derek Rowntree model. MPI in this research is not as a model of instructional development, but as a methodology in the Research phase conducted.

MPI activities conducted in the research phase are: (1) identifying all instructional needs and writing general instructional objectives (TIU); (2) perform instructional analysis; (3) identify the behavior and initial characteristics of participants; (4) write Special Instructional Purposes (ICT); (5) develop a learning outcome assessment tool; and (6) arrange instructional strategies. Derek Rowntree's model is used in the development phase, that is phase 2 on preparing for writing, and phase 3 writing and re-writing.

In this research, which should be restricted to the analysis of needs in the field. Analysis of this need will be the basis for continuing the implementation of the research that will be carried out. Data collection techniques are carried out by conducting documentation, observations, and interviews for this research to parties directly involved with the implementation of traffic safety training, in this case the organizers of the Community Empowerment Training (PTDI-STTD Bekasi) and traffic safety training instructors. The data that has been obtained, will then be analyzed in a qualitative way.

3. Result and Discussion

Results

As a result of the documentation and observation from the research that have been conducted, it is known that the number of participants who have participated in traffic safety training organized by PTDI – STTD is as stated in table 1.

Table 1. Amount of Traffic Safety Training participants

Year	Amount
2018	1080
2019	1250
2020	540
Total	**2870**

This amount consists of all traffic safety training participants spread across various regions of Indonesia. This is certainly an obstacle when the training will be held, especially the background is very

diverse, the distribution of background categories of traffic safety training participants in 2019 is described as below.

Table 2. Distribution of Categories on Participant Backgrounds in Traffic Safety Training in 2019

No	Training Program	Background Category					
		Community		SMK		ASN	
		L	P	L	P	L	P
1	Traffic Safety	300	200	-	-	450	300

From the table above, it can be known that the characteristics of participants based on the category of background owned by participants are very heterogeneous, because of that, by looking at the characteristics of participants that are so heterogeneous and the limited experience that participants have that certainly varies, then it is one of the supporting factors of the need for teaching media / teaching materials in the training.

Discussion

The traffic safety training curriculum consists of 7 educational and training subjects that do not have a syllabus yet, so until now it is still difficult to measure the achievement of expected competencies. In fact, the ultimate goal of the implementation of this training is to improve the competency of the training participants. Other than that, the teaching materials given to participants are still in the form of printed handout, handouts consist of many images and few explanations, so it is lack to stimulate participants' learning interests and does not allow participants to learn independently.

As a result of the interview, it has been known that the obstacles that often occur during the implementation of traffic safety training, that is the lack of time given to deliver the entire subjects, to convey the 7 subjects, the instructor is only given time for 30 Hours of Lessons (JP) which must be delivered for 3 days. According to the schedule, the training process takes place from 08:00 AM to 08:30 PM. From the schedule, it can be known that the activity of the training participants is so busy, this will have an impact on the boredom of the training participants. If the training participants feel bored, then the implementation of the training will certainly not run effectively.

Other than lack of training time, the location of traffic safety training is also one of the obstacles. The location of this training is carried out throughout Indonesia, where each location has different characteristics and community habits. Not all regions in Indonesia have good internet quality, as well as the habits of people who are not all used to spending internet quota for learning.

Based on Kominfo data in 2020 shows the 4G infrastructure that has been built has reached 9,622 villages from 11,228 villages in 3T areas that already have 4G network, this means that already 85.7% of the area already has infrastructure to utilize the internet network. But, what needs to be paid attention is that even though the quality of the internet network has entered most areas in Indonesia, but the habit and culture of society for the use of the internet is still very lacking. This was supported by research conducted by (Nurvitasari & Poerwandar Asmaningrum, 2018) which stated that there is still a lack of skills in the utilization of TIK for learning in remote areas. This is in line with that stated by (Siahaan, 2018), that is the utilization of the implementation of ICT integrated learning models conducted in remote areas is not optimal, because the ability to utilize ICT in learning is still limited

One of the teaching materials that training participants can use for self-study is modules. According to (Smaldino et al., 2012) the teaching module is a complete learning unit designed for use by a learner or a small group of learners without a teacher's presence. Since the overall purpose of this module is to facilitate regular unattended learning, all elements of the subjects provided by the teacher should usually be formed into a set of printed, audiovisual, or computer-based materials.

Print modules will be effective to improve training participant's learning outcomes when used in remote areas (Siang et al., 2017), electronic modules are able to improve the effectiveness and efficiency of learning, increase motivation, retention and learning achievement of training participants, as well as improve the effectiveness of learning processes for teachers when used in locations that have good internet quality (Koderi, 2017). Some of these studies means that each type of module will be effective and efficient if developed based on the needs and characteristics of the user who will use the module as well as the location where the module will be used.

Along with the development of technology and in order to support the era of industrial revolution 4.0, (Aziz Hussin, 2018) stated that it is the time for classroom instructors to consider and integrate more current technologies in their teaching methodology. One of the module developments that is trending for

now is online or network-based modules, but because of the location of the implementation of traffic safety training is located in districts / cities throughout Indonesia. So not all locations have the quality of internet network, as well as the culture of the local community that is not all accustomed to spending a lot of internet quota for learning, then the use of print modules can be used as an alternative option that is appropriate to convey traffic safety training subjects.

With various considerations and still referring to changes and shifts in the way of learning from digital generation, according to previous research conducted by (Prawiradilaga et al., 2017), stated that there are many developments in the field of educational technology in line with the development of TIK that can be used as a handle in formulating the principles of module development, one of which is hyper content. The following links that can be used for the delivery of information on hyper content-based print modules are described at below:

Wikipedia

Wikipedia is the largest repository of knowledge on the Web, consisting of 300 million words and has nearly 1 million articles (Gabrilovich & Markovitch, 2006). He has done research to improve learning in text assistance with links in the form of Wikipedia, which the results confirm that Wikipedia is a source of concept knowledge that can be used automatically.

Quick Respons Code/QR Code

QR code can be accessed through gadgets using QR code reader program. This QR code can be used to connect a virtual (link) to text that associates the text with information from a particular website page. Since this is a print module, it does not include hypertexts in it and is replaced with QR codes with the aim of making it easier for participants to search for information.

There has been a lot of research related to the use of QR codes in the world of education. Some related research, one of them was done by Yahya, Abas, & Yussof, (2018) who stated that the combination of paper-based learning materials with digital in a mobile learning environment in the form of QR code has had good potential to be an effective learning method, Ali, Santos, & Areepattamannil (2017) stated that QR code is an easy and useful application to support learning activities, Lisa Shustack, EdD (2018) stated that QR code can encourage students to explore additional learning resources on topics through multimedia materials, and Chicioreanu, Bilal, & Butnariu (2015) stated that students using QR codes to improve their learning process, productivity, and creativity. Some research has confirmed the use of QR codes in education that have proven effective in improving learning material.

YouTube video channels

YouTube videos can be used to attract students' interest and discussion, as well as help to explain a content. What to note is the critical selection of YouTube videos to ensure their usefulness (Riley, 2017). Other than that, Frongia et al (2016) stated that many videos uploaded to YouTube can help in the implementation of learning, but still require a video filter process with good educational quality.

From both opinions, it can be concluded that many videos on YouTube can be used for learning, but a critical selection process is required for videos that are actually related to the material to be delivered.

Cloud computing

Cloud computing is storing and accessing data and programs over the internet from a remote location or using a computer from our computer's hard drive (Giap et al., 2020). Other than that, Aljawarneh (2013) stated that:

"Cloud computing definition as a high performance computing infrastructure based on system virtual machines to provide on-demand resource provision according to the service level agreements established between a consumer and a resource provider."

By implementing cloud computing it will increase the role of students in using new technologies. Other than that, it also helps educational institutions to develop an interactive environment for students to be better and dynamic with minimal cost (Olaloye et al., 2019). Cloud computing offers reliable services for students and staff, making learning methodologies effective and qualitative (Desai et al., 2016).

Some of the opinions from above, it can be known that cloud computing is one of the technologies that is very useful for education, with cloud computing the data can be stored in the machine and virtually linked into the hyper content module so that it can be accessed by participants.

What is the relationship between hyper content and traffic safety? When it comes to traffic safety, it is closely related to concrete examples as effective learning materials, so that in the future it can be

imitated by training participants, because one of the objectives of this training is to change the mindset of the importance of traffic safety.

This is in line with the cone of Edgar Dale's experience (Kovalchick & Dawson, 2004), stated that the learning experience gained through more concrete media will be better than abstract media. In this case, more concrete media will be linked by researchers into the print module with the help of technology in the form of hyper content.

Based on the rationalization stipulated earlier and considering the existing problems, the preparation of hyper content modules is the right thing to do to improve the quality of traffic safety training, which hopefully for the future can have a positive impact to create a learning process effectively, efficiently, factually and interestingly so that the training participants obtain the maximum knowledge, skills, and attitudes.

4. Conclusion

Based on the results of the needs analysis that has been implemented, it can be concluded that there are several problems related to the implementation of education and traffic safety training, that is the characteristics of heterogeneous training participants, limited experience of training participants, limited training time, lack of teaching materials and training implementation locations throughout Indonesia. Where not all regions in Indonesia have good internet quality, as well as the habits of people who are not all accustomed to spending internet quota for learning. Because of that, Politeknik Transportasi Darat Indonesia-PTDI STTD needs a solution to solve the problem, that is by the preparation of hyper content-based printing modules because it can present a related factual aspect of traffic safety with concrete videos related to traffic safety.

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