Measuring user experience on personalized online training system to support online learning

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Abstract. There is a paradigm shift in curriculum development and learning in 21-st century universities. The curriculum is no longer organized in a separate but in integrated manner or commonly referred to as transdisciplinary approach. Several transdisciplinary learning strategies need to be considered, to be studied and developed as learning innovations. One strategy initiated through this paper is the Personalized Online Training System (POTS). POTS provided opportunities for students to search, process, analyze, interpret, and communicate data and information obtained on POTS media. POTS developed based on Generation Z characteristics that are very familiar with technology, have a good self-confidence, high initiative, creative and innovative. The research instrument used questionnaire with a Likert scale using the UEQ framework to 118 students. The result showed that user experience score, usability score, learning design validation score, and students' response from the interview session indicate that the system is good; yet an improvement is needed.

1. Introduction

Organizing online learning as a form of development of Internet technology has become an opportunity to improve the quality of learning in this disruptive era. A new learning system based on a digital system that supports online learning processes, supported by the latest technology, which is expected to add value in improving student capabilities. This relates to the phenomenon of a shift in the paradigm of higher education that changes strategy, which is expected to: (1) change from achieving competencies to achieving abilities and (2) from learning and learning "monodisciplinary" towards learning and learning "interdisciplinary, multidisciplinary, and transdisciplinary". This paradigm shift has encouraged educational institutions to immediately develop and change their learning systems.

Generation Z is also called digital generation or internet generation, has characteristics that are very familiar with and familiar with digital technology, one example is gadgets or smartphones. Also, Generation Z features prominent self-confidence, high initiative, and is more creative and innovative to create new opportunities [1]. Generation Z is equipped with multitasking capabilities that are better and more productive than previous generations [2-4]. This is demonstrated by their very easy access to information and social media from an early age, so generation Z has a good ability to process a lot of information collected [2].

The description of the facts causes the paradigm or mindset of generation Z which tends to be fast or instantaneous by utilizing the development of information and communication technology (ICT) at this time. Thus, optimal use of ICT in learning activities is needed to touch the side of habits that are close

to digital life [5]. Therefore online learning with the concept of Online Training System (OTS) which is upskilling and reskilling following the characteristics of generation Z students.

OTS with the transdisciplinary approach can stimulate and optimize the ability to think (data literacy), communication (human literacy), and the use of ICT (technology literacy) through material sharing activities (courses). All of these capabilities are needed in the 21st century and can be optimized by utilizing the internet in learning that is packaged through online learning [6,7]. Therefore, the implementation of OTS has been appropriate to support learning towards improving 21st-century skills, including digital literacy skills as demonstrated by students' cognitive abilities.

Personalized began to be widely researched by researchers. Personalized Online Training System (POTS) provides opportunities for students to search, process, analyze, interpret, and communicate data and information obtained on POTS media. The floating method used is 4D with four stages of development, namely define, design, develop, and disseminate. POTS build as a part of online learning.

This research aimed to describe test result for the UI/ UX user experience on personal online training system developed by State University of Malang. POTS can be accessed on pots.um.ac.id. Through this paper, the researcher got result from user, which is student who used the system whether acceptable for the generation Z characteristic, or not.

2. Methods

The research used descriptive quantitative research to determine POTS user experience design. Data collection is done by distributing questionnaires to the research subject. The research subject was 118 students. The research instrument used small User Experience Question (UEQ). The instrument consisted of 8 statements.

3. Result and discussion

The research instrument scaled using 0-7 ranged. The research aspect consisted of 2 variables with 5 aspects that showed on Figure 1. The result of the 8 statements questionnaire can be seen on Table 1.
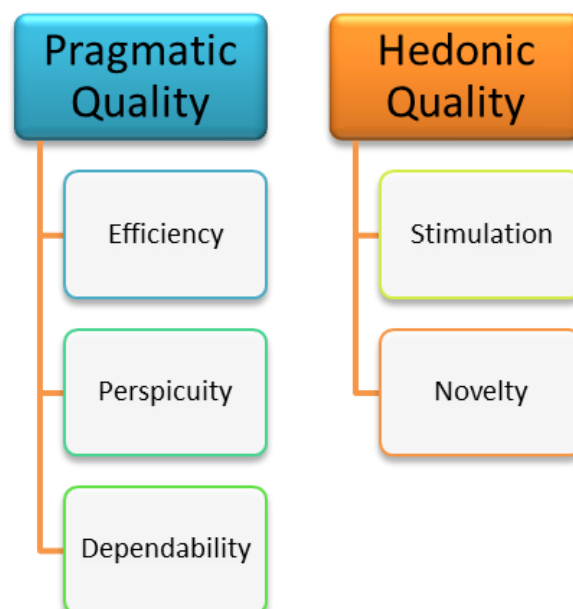

**Figure 1**. Research aspect consisted 2 variables with 5 aspects.

From the Table 1, POTS got good criteria on pragmatic aspect. While on the hedonic quality, POTS on excellent criteria.

Table 1. Research aspect consisted 2 variables with 5 aspects.

Item	Mean	Variance	Std. Dev.	Negative	Positive	Scale	Criterion
1	1.9	1.2	1.1	obstructive	supportive	Pragmatic Quality	Good
2	1.5	1.6	1.3	complicated	easy	Pragmatic Quality	
3	1.5	1.4	1.2	inefficient	efficient	Pragmatic Quality	
4	1.4	1.7	1.3	confusing	clear	Pragmatic Quality	
5	1.5	1.7	1.3	boring	exciting	Hedonic Quality	
6	1.8	1.5	1.2	not interesting	interesting	Hedonic Quality	Excelent
7	1.8	1.2	1.1	conventional	inventive	Hedonic Quality	
8	1.7	1.2	1.1	usual	leading edge	Hedonic Quality	
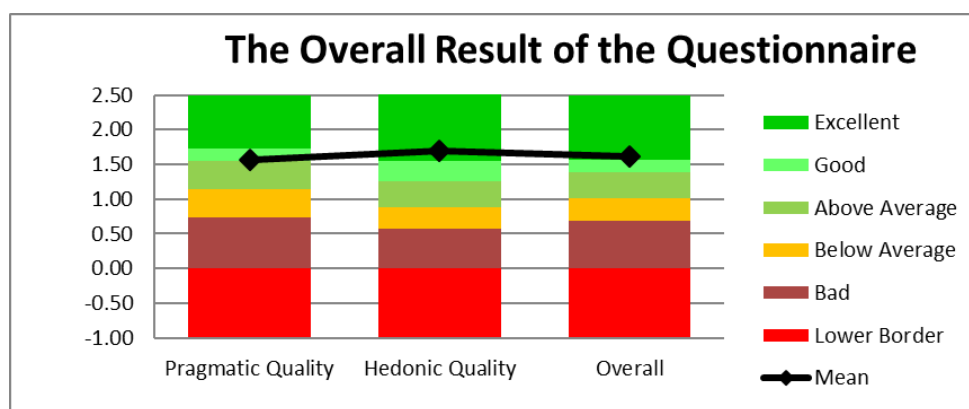
Figure 2. The overall result of the Questionnaire

The overall result of the questionnaire, POTS got excellent criteria. It means that UI LMS POTS is already user friendly and in accordance with the user's character. There are some feedbacks from users, such as chat and forum communication features need to be added, quiz display needs to be enlarged so it's not like a pop up, the appearance of the mobile web still needs to be improved.
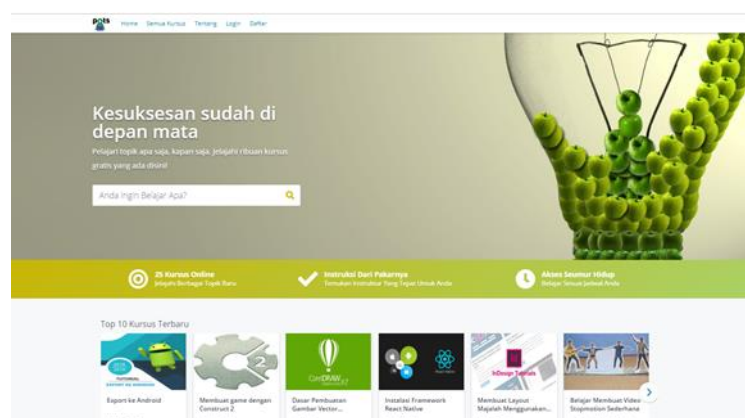
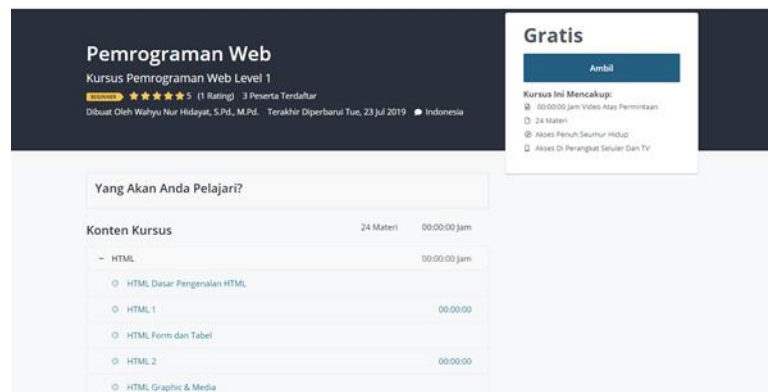**Figure 3**. POTS web home page.
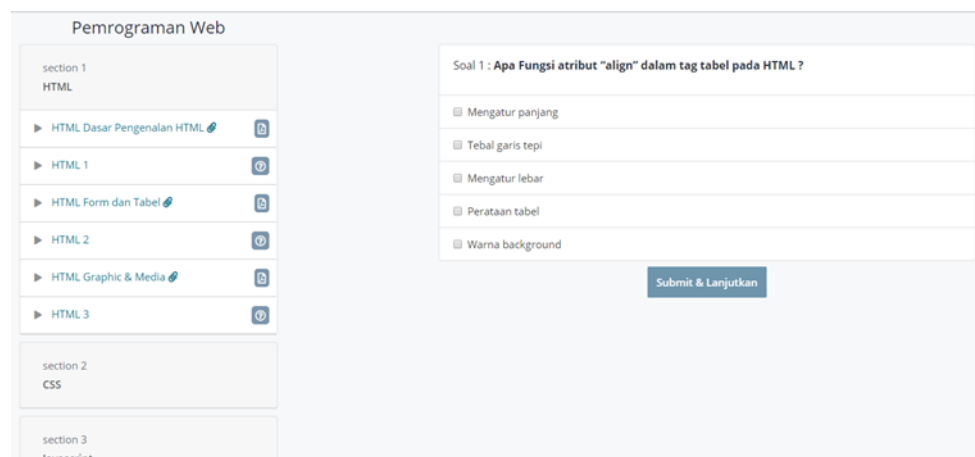
Figure 4. POTS course page.

Figure 5. POTS quiz page.

4. Conclusion

Personalized Online Training System provided opportunities for students to search, process, analyze, interpret, and communicate data and information obtained on POTS media. The system match with Generation Z characteristics that are very familiar with technology, have a good self-confidence, high initiative, creative and innovative. The result of measuring UI/UX of the system got good on pragmatic criteria while got excellent on hedonic criteria based on questionnaire to 118 students who used the system. Some feature need to added such us chat. The quiz section needs to be enlarged so it will not look like a pop up and the mobile version need to be improved.

For future work, we proposed POTS as a Learning Management System needs to be developed to be more powerful with recommended learning model features and teaching materials that are appropriate for each user. POTS can be equipped with special features for each material / field such as live coding for programming, business coaching for entrepreneurship.

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