

Development of the VIRANTY-SMK (Virtual Reality from Industry for SMK) Model to Support Online Learning during the Covid-19 Pandemic

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ABSTRACT

The Ministry of Education, Culture, Research and Higher Education is currently paying more attention to the development of online learning after the Covid-19 pandemic, so that the chain of spread of the virus can be immediately broken. The government through the 2020 to 2021 policy directions gives priority to handling the Covid-19 Pandemic where one of them is the development of teaching models and materials that can be implemented online without reducing the quality of learning, including using Virtual and Augmented Reality media. One aspect of the review that is the focus of the government is learning at the unit level of vocational secondary education (SMK) as well as in the Vocational sector, where the main goal is to produce graduates who have a high level of employment according to industry needs. Virtual and Augmented Reality teaching materials will help visualize teaching materials in cyberspace as a reflection of real products that have been adapted to industry needs and of course strongly support the current Government policy, namely learning from home (online). The objectives of this research for three years are 1) to develop online-based teaching materials through Virtual/Augmented Reality; 2) developing the VIRANTY SMK (Virtual Reality from Industry for SMK) model to support online learning during the Covid-19 pandemic; 3) Producing appropriate products in the form of online-based learning materials at VOCATIONAL SCHOOLS through VIRANTY-SMK that have been adapted to the needs of the industry. This research is a mixed study where the focus in the first year (2021) is the need assessment and development of the first stage of Virtual/Augmented Reality for the VIRANTY-SMK model, stage II in the 2nd year (2022) is the development of the VIRANTY-SMK model, and stage III in the 3rd year (2023) is the VIRANTY-SMK model dissemination. This product will be developed and implemented in the areas of expertise of Engineering and Technology Vocational Schools, Tourism, and Arts and Crafts which are included in the focus of Vocational Revitalization. The approach used in this research is the System Development Life Cycle (SDLC) which is described by the V-model, starting with the stages of needs analysis, requirements specifications, design specifications, and program specifications. This model ends with testing including acceptance testing, system testing, integration testing, and unit testing. Meanwhile, product testing will include aspects of functional suitability, performance efficiency, compatibility, and usability. The outputs achieved in the first year were: (1) Virtual Reality-based online teaching materials for wooden roof construction; (2) IPR (Intellectual Property Rights) for the development of Virtual Reality-based online teaching material products on wooden roof construction. The outputs that have been achieved in the second year are: (1) virtual reality-based online teaching material products on cleaning simple building architectures; (2) IPR (Intellectual Property Rights) for Virtual Reality-based online teaching material products in the view of simple building architects; (3) Scopus indexed publications in Q3 journals (iJIM). The planned outputs for the third year are: (1) development of the VIRANTY-SMK (Virtual Reality from Industry for SMK) module; (2) the results of the VIRANTY-SMK model (Virtual Reality from Industry for Vocational Schools); (2) Scopus indexed international journal (Q3). The output of this research is targeted at TKT Level 6, where the feasibility of the VIRANTY-SMK (Virtual Reality from Industry for SMK) Model will be implemented and integrated into online learning in Vocational Education to support Distance Learning policies.

Kata Kunci: *Digital Media, VR, VHS, Viranty*