DESIGNING LOW-COST INTERACTIVE TEACHING STATION

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ABSTRACT

Technology utilization marks the progress of education, especially in Indonesia. Learning system nowadays experiencing significant changes from teacher-centered learning to student-centered learning. The implementation of student-centered learning must be supported by the changes in school infrastructure. Therefore, it is necessary to develop the hardware and software, so that the learning process becomes more interactive and pleasant. There have been a variety of hardware devices that can be applied for teaching and learning process, such as touch screen, wireless mouse, wireless keyboard, electronic whiteboard, and remote control devices. However, most of these devices come up with relatively high price, so that most of schools in Indonesia still not capable to utilize them.

The aim of this study is designing a low cost, interactive, and portable teaching station based on ubiquitous technology. This teaching station is easy to be assembled and duplicated as well. The method used in this study is the integration of Quality Function Deployment (QFD) and Teoriya Resheniya Izobretatelskikh Zadatch (TRIZ) method, which has been widely applied in the innovation process of technology products. One of the benefits of QFD is the design of new products focused on customer requirement and desire, while the superiority of TRIZ lies in its ability in organizing and structuring the stages in innovation process, so it can minimize the time and cost needed compared to trial and error method.

The teaching station that has been designed with the integration of QFD, TRIZ, and based on ubiquitous technology equiped with 2 teaching technology inside, interactive whiteboard and visualizer. With the sale price which is under the competitor’s products and the application of 2 additional teaching technology, this teaching station is expected to be able to support the teachers in teaching-learning process in the classroom.

Key words: computer technology, interactive learning, teaching station, QFD, TRIZ, innovation
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