The CNC Simulator As Teaching And Training Aid Of CNC Programming

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Abstract

CNC machine tools is the most important practical means of teaching and training of CNC Programming in Vocational High School. Its relatively-high price causes the incapability of the school for getting it, so the teaching of CNC programming in Vocational High School mostly doesn’t use CNC machine. The effect is many students can’t reach the standard competence of applied CNC programming.

The unavailability of CNC machine tools in teaching of CNC programming in Vocational High School is treated by using CNC Simulator. The CNC Simulator consist Virtual CNC, and CNC Machine Simulator. It’s a media to simulate of NC Part Program execution. The simulation of NC Part Program execution are displayed tool path a machining process at monitor, NC Part Program has been simulated can be sent to unit control of CNC Machine Simulator.

Implementation of CNC Simulator in teaching and training of CNC programming begins from building CNC Virtual. The CNC Virtual is a software which provides a visual effect of environment of CNC machine in the monitor. The building uses Research and Development (R&D) method. Implementation of CNC Simulator in teaching of CNC programming shows; (1) the students are very interested and excited to use the virtual CNC which provides a visual effect of environment of CNC machine in the monitor, actively trying the simulation of numpad virtual in the monitor, inputting data on the panel virtual, and making simulation or execution of the CNC program at CNC Machine Simulator, (2) the students practice to make and execute the CNC programming individually in the classroom or outdoor class. (3) CNC Virtual can be used as teaching and training media classically (in classroom), individually learning, even e-learning.

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