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Think-aloud Technique in Assessing Practical Experience: A Pilot Study

Abstract

The learning domains such as cognitive, affective and psychomotor for Engineering Technology programs should be identified and valued. The acquisition of hands-on experience in workplace settings and laboratory classes is just as important as explicit technical knowledge, and should be measured in psychomotor domain. However, the explicit knowledge is valued in engineering technology education. Furthermore, practically all assessments measure cognitive value. This implicit devaluation of hands-on experience could significantly impair engineering technology students' ability to acquire and value practical skills. Therefore, developing a new model to include effective assessment in psychomotor domain could be one way to overcome this problem. Thus, the aim of this project is to find ways to measure changes in hands-on experience in engineering laboratory classes. The second aim is to test the relationship between hands-on experiences acquired in laboratory classes with the ability to diagnose simple experiment faults in laboratory arrangements. The method of think-aloud is used in the research where the finding of students' attainment is compared to experts' acquisition. The results show that the value of psychomotor domain in laboratory classes via hands-on experience can be assessed and valued between two groups of students which is experiment and control group. Methodologies and detail results for this research are described in this project.