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CULTIVATING ACADEMIC SELF-EFFICACY THROUGH SUPPORTIVE SOCIAL AND SELF-REGULATED LEARNING STRATEGIES FOR STUDENTS IN HIGHER EDUCATION

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ABSTRACT

This research set out to enhance engagement in computer programming, a known difficult subject area for 1st year BSc in IT students. Programming lecturing staff had strong reservations about introducing group work in their classes, claiming group work was a counter-productive learning approach. The study was framed on a mixed methods action research approach, and a number of interventions, centred on reflective learning and social learning, were introduced. The findings indicated a strong preference by participants in two of the action research studies, participants who were provided with reflective learning journals, to continue with the learning intervention in the future.

RESEARCH PARADIGM

The empirical research studies were based on an interpretative approach, which allowed for greater freedom to include personal views and interpretations, and to form knowledge inductively from views and experiences of participants. The diagram below characterises the research paradigm for this study, which can be described as a loose collection of logically related assumptions, concepts, or propositions that orient thinking and research (Bogdan and Biklen, 1998).

RESEARCH QUESTIONS

The four questions below represent the core focus of the entire study:

Q.1. Is a Reflective Learning Journal a useful and effective tool for engaging students in computer programming?
Q.2. Can the use of social learning strategies enhance student engagement?
Q.3. Are social learning strategies, such as Problem Based Learning and Peer Assisted Learning, effective tools in engaging students in computer programming?
Q.4. Can the use of social learning strategies enhance self-efficacy in computer programming?

CONCEPTUAL FRAMEWORK

The conceptual framework, below developed from Bandura’s (1986) Reciprocal Determinism model, in which Behaviour, Environmental Factors and Personal Factors were replaced with Self-Efficacy, Social Learning and Reflection, which became the basis for developing implementation strategies to enhance student engagement.

CONCEPTUAL FRAMEWORK

Develop Self-Efficacy (Behavior)

Encourage Reflection (Personal Factors)

Encouraging Student Engagement (Reciprocal Determinism)

Social Learning Strategies (Environmental Factors)

FINDINGS

REFLECTIVE LEARNING

A reflective learning approach was provided to student participants in two of the action research studies, participants were asked to complete this journal on a weekly basis over the course of a semester. Students were not convinced of the benefits of using the journal over a long period of time, and found the activity a burden in some cases. Some viewed it as a piece of additional assessment that had no grade, furthering most to question the benefits. While some positive benefits were noticed, careful consideration is required if using such a tool for a class cohort, some individuals seemed to adapt better to this type of journaling activity than others.

SOCIAL LEARNING (PBL and PAL activities)

Problem Based Learning (PBL) and Peer Assisted Learning (PAL) were introduced to a treatment group over the course of a semester. The quotes below represent a small sample of the overall positive feedback the participants expressed in terms of their enjoyment in participating in groups when solving programming problems:

“I learned I can work in a group. Although I most of the times would rather work alone, working in a group does make problem solving a lot easier”.

“I enjoy programming but I’m 100% aware that my planning skills are way better than my programming skills. I wish we had more opportunities like this one to practice”.

“Really enjoyable as I am better working with people. (I’m a really nervous person and individual evaluations makes me so nervous that I cannot concentrate)”.

“These activities really makes more interaction among friends and for a given problem, we can solve it with many the best ways. And need to be continued in the coming weeks”.

REFERENCES