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Title	Integrated Metacognitive Instruction: Effects on Students Learning Strategies, Volition, and Achievement in Biology
Year	2014
Program	Doctor of Philosophy In Education (Biology Education)

ABSTRACT

TANTIADO, REY GOMEZ, University of the Philippines Open University, May 2014. Integrated metacognitive instruction: effects on student learning strategies, volition, and achievement in biology.

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The study investigated the effects of integrated metacognitive instruction (IMI) to student learning strategies, volition, and achievement in Biology. Using a quasi-experimental design, it utilized both quantitative and qualitative methods of data analysis to (1) determine the change in the learning strategies of students in the control and experimental groups; (2) analyze IMI effect on students' volition; (3) identify the improvement in students' achievement using IMI compared to the conventional approach; (4) correlate students' achievement with their learning strategies and volition in IMI; and (5) identify the IMI strategies that students prefer after its implementation. The sample consisted of two intact classes each with 36 freshmen Bachelor of Science in Biology students enrolled at a state university in central Philippines taking up five-unit General Biology I in the first semester of the Academic Year 2013-2014. The control group was taught using the usual chalk-and-board method and provided with varied visual teaching aids through power point presentations, video clips, and charts. On the other hand, aside from this usual method, the experimental group was exposed to reflective questions, collaborative group discussions, writing journals, and concept mapping. Semi-structured interviews on students' learning perceptions through open-ended questions, student's written reflections, questionnaires, journal notes, and interviews with key informants, and the teacher's observation of action in the natural setting were analyzed qualitatively. Statistical tools used in the study employed both descriptive and inferential statistics. Based on frequency and percent age, there is a difference between the most and least preferred learning strategies between the experimental and control groups. The experimental group ranked high the rehearsal, critical thinking, and peer learning while they ranked low the organization, and time and study environment management after exposing them to IMI. IMI approach has significantly changed students' volition after its implementation as indicated in Wilcoxon Signed Rank Test ($Z=2.134$, $p=0.033$). However, the Mann-Whitney U test for independent samples shows no significant difference in the volition mean scores between the control and IM groups after the intervention ($p > 0.05$). Both groups performed well in the achievement tests, however, the IMI group performed significantly better than the control group

after the intervention ($p < 0.05$). A significant correlation between critical thinking learning strategy in the experimental group and emotional control in the volition strategy of the control group and students' academic achievement in Biology were observed using Spearman correlation coefficient ($p < 0.05$). Based on the content analysis of students' responses on interview and excerpts from their journal notes, the students in the experimental group liked some of the IMI components such as student collaboration, conceptual learning, and active student involvement while some students indicated some issues with IMI implementation such as the lack of time, lack of cooperation, and lack of self-confidence. Though IMI has potentially improved students' achievement, its implementation should consider these issues. If mitigated, students may respond differently, and would find learning more fun and easy.