

Dr. Mohamed Ibrahim
Arkansas Tech University
Curriculum and Instruction
College of Education

Re. Final report for paper presented at the World Conference on Educational Media and Technology (Ed-Media 2016) in Vancouver, Canada, June 27-30, 2016

A. Research paper entitled: *“Assessing Preservice Teachers’ Metacognitive Skills in a Flipped Classroom Environment”*.

B. Research problem:

Recent empirical evidence indicates that encouraging students to utilize self-regulation activities may lead to improving their academic performance. Many studies found that learners with better self-regulation skills are not only better prepared to engage in the learning process but also learn more efficiently (Butler & Winne, 1995; Carver & Scheier, 2001; Schunk, 1996). Learners with better self-regulated processes tend to deploy a number of cognitive, motivational, and metacognitive methods that seem to not only support but improve their learning (Schraw, Crippen, & Hartley, 2006). Consequently, it is essential for instructors to be able to evaluate students’ metacognition to develop means to assist and improve their overall learning potential.

During the last four decades, many studies investigated students’ metacognitive activities during learning in traditional and online settings and highlighted factors associate with these activates. For example, some studies examined students’ metacognitive strategies and its implications on their learning (e.g., Schraw, 2001; Veenman & Spaans, 2005; Zaromb, Karpicke, & Roediger, 2010). Other studies examined students’ use of metacognitive strategies in different learning environments and their influence on students’ academic achievement (e.g., Cornford, 2002; Prins, Veenman, & Elshout, 2006; Stewart, Cooper, & Moulding, 2007; van der Stel & Veenman, 2010). While other studies examined ways to measure students’ metacognition skills in general (e.g., Nietfeld, Cao, & Osborne, 2005; Schraw & Dennison, 1994).

The majority of studies during the last four decades were focused on examining students’ metacognitive skills in face-to-face and online learning environments. However, studies of regarding college students’ use of metacognition in flipped class settings were underrepresented in the literature. Therefore the purpose of this study was to investigate the correlation between preservice teachers’ metacognitive skills, self-efficacy, gender and academic achievement in a flipped class.

C. Research procedure

At the beginning of the course, all students completed a demographic survey, a pre-self-efficacy survey, and the Metacognitive Awareness Inventory. Next, instructors used the flipped-

based method to teach several topics in four consecutive weeks. At the end of each week students completed a quiz related to the week's topic and at the end of the fifth week, students completed another self-efficacy survey (post). All surveys and learning activities were presented and submitted through Blackboard.

D. Summary of findings

The results of the present study indicated that students' metacognitive skills do not correlate with students' test scores. The results also found significant and positive relationship between students' GPA in flipped class and their overall GPA in non-flipped classes. While the results showed that students' metacognitive skills do not correlate with their gender or self-efficacy, the data analysis revealed significant and positive correlation between students' metacognitive planning and self-efficacy as well as their information management strategies and the number of enrolled credit hours. The findings and its implications were discussed..

E. Conclusions and recommendations

The results of the present study indicated that self-regulated students are aware not only of task requirements but also of ways to optimize their learning experiences through avoiding behaviors and cognitions detrimental to academic success, applying strategies necessary for learning and understand when and how to utilize strategies that increase performance.

Finally, according to these results, it is possible to conclude that students' metacognitive regulation is more dominate than their metacognitive knowledge as significant factor in their academic success. Taking the findings of these two sets of questions, the results of the present study supports Schraw' (1994) findings that adult learners tend to differ with regards to the use of metacognitive regulation skills and not so with regard to metacognitive knowledge skills.