

Chapter 10

The Influence of Clickers Use on Metacognition and Learning Outcomes in College English Classroom

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ABSTRACT

Use of Clickers in classroom teaching and learning has become growingly popular in USA. This study aims to identify whether use of Clickers in college English class can improve learners' English proficiency and enhance students' awareness of metacognition compared with traditional multimedia aided pedagogy in Malaysian contexts. By comparing the data obtained from three questionnaires and an IELTS test instructed via Clickers and traditional multimedia at the end of corresponding semesters, it is found that Clickers pedagogy can give rise to better learning outcomes and higher metacognitive levels than traditional multimedia. Limitations of this study are also discussed, coupled with recommendations for future research.

INTRODUCTION

One well-known phenomenon in Malaysia is that when students are required to voluntarily answer questions in class, most of them keep lowering down their heads and few would like to respond. In Malaysian culture, professors tend to be considered pundits in class and students often feel shy to speak. If students are required to answer, they often worry about the silly mistakes they will most likely make. Technologies such as Clickers may be used to address this problem. Clickers, in this study, operationally refers to the technology used in class which focused on interaction between students and teachers. In other words, use of Clickers is considered as a pedagogy which centers on student-teacher interaction in class.

Clickers realize the situation where students can respond to questions anonymously. Anonymity releases students' anxiety and nervousness, which may stimulate students' willingness to answer ques-

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tions and to keep pace with lecturing process. Relaxation, resulting from anonymity, may help students better command what the professor delivers. Use of Clickers can also stimulate peer discussion when students hold disagreements. This may deepen their understandings of knowledge. In this way, learning outcomes will most likely be improved.

The research questions raised in this study are: (1) Can Clickers pedagogy lead to higher meta-cognitive levels than traditional multi-media? (2) Can Clickers pedagogy give rise to better learning outcomes than traditional multi-media? Two hypotheses are raised: (1) Clickers pedagogy leads to higher meta-cognitive levels than traditional multi-media; (2) Clickers pedagogy gives rise to better learning outcomes than traditional multi-media.

LITERATURE REVIEW

Metacognition is referred to as “the ability to reflect upon, understand, and control one’s learning” (Schraw & Dennison, 1994, p. 460) or simply thinking about thinking (Flavell, 1979). Flavell (1979, 1987) argues that metacognition involves metacognitive knowledge and metacognitive experiences or regulation of cognition. Metacognition is also considered as higher rank thinking which can actively control over the cognitive processes engaged in learning. Activities such as planning how to approach a given learning task, monitoring comprehension, and evaluating progress toward the completion of a task are metacognitive in nature (Livingstone, 1997). Learners with higher levels of metacognition tend to apply more cognitive strategies, so they may achieve more favorable learning outcomes.

Metacognition plays an important role in the learning process as it allows learners to become better aware of their level of understanding and comprehension (Brown and Kinshuk, 2016). It is therefore important to cultivate students’ metacognitive level in order to improve students’ learning outcomes. Higher achievements are often achieved by those with more metacognitive awareness (Mayer, 2008). Metacognitively imbedded students tend to possess the ability to self monitor and self regulate the learning process and to use cognitive learning strategies (Wolters, 2010) in order to set up learning goals which lead to desired learning outcomes (Zimmerman, 2000). Studies have indicated that metacognition is one of the strongest predictors of learning in general (Flavell, 1976, 1979; Veenman & Elshout, 1995). In case Clickers can be evidenced by strong facilitation of metacognition, then it is most likely that Clickers will lead to more positive learning achievements than otherwise.

Technologies could be applied in English learning in order to improve learning effectiveness (Yu, 2015). Although there were no plentiful studies on use of technology in English learning and teaching, use of Clickers in education has been widely discussed. The findings of use of Clickers in literature were not in agreement although overall it was supported. It was considered as an effective means to engage students and stimulate their interest. And interactive communication among learners could be facilitated via Clickers in the classroom. (Chen et al., 2010). Some studies revealed that use of Clickers showed large gains in learning outcomes (Beatty et al., 2006; Caldwell, 2007; Duncan, 2006; Mayer et al., 2009; Meltzer & Manivannan, 2002; Van Dijk, Van Der Berg, & Van Keulen, 2001). Several studies showed that the use of Clickers in lecturing improved students performance of exams in the subject of undergraduate science (e.g., Preszler *et al.*, 2007; Crossgrove & Curran, 2008; Reay *et al.*, 2008). There are also some studies finding only moderate gains (Chen et al., 2010; MacGeorge et al., 2008). Additionally, a few scholars claimed no gains (Caldwell, 2007; Lasry, 2008). The growing popularity of use of Clickers mainly lay in the function of engaging students during lecturing, especially in large enrolment classes (Draper & Brown, 2004; Caldwell, 2007; Collins, 2007, 2008; Cain & Robinson, 2008).

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