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English as a second language (ESL) teacher brain-based learning classroom practices and perceptions in Malaysian schools

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ABSTRACT

The brain is a complex organ and plays a crucial role in the learning process. The aim of this study was to examine English as a Second language (ESL) secondary school teachers' perceptions and actual practices using Brain-Based Learning (BBL) to teach the English literature component among low ability learners. Employing a qualitative design, six teachers from three public schools were observed and later interviewed once over a duration of six weeks. The data analysis revealed that their practices were generally positive; active learner engagement and meaningful learning. However, there were issues related to the learners' limited ESL proficiency.

1. Introduction

Since the 1980's, there has been a growing interest among researchers to explore how the brain functions in an educational setting (Dekker & Jolles, 2015). BBL research is a result from the development of medical imaging technologies such as position emission tomography (PET) scan. These technologies enable scientists to literally see what actually goes on in the brain when someone is thinking. Knowledge gained from this technology laid the foundations for a new field of study called cognitive neuroscience to study a wide range of psychological phenomena, including educational ones (Jensen, 2005). For example, Tagarelli et al. (2019) conclude that additional areas in the brain are activated in L2 processing such as those related to visuals, emotions, feelings, intuition and creative thinking in addition to areas responsible for speech production (Broca) and speech comprehension (Wernicke). This implies that ESL teachers need to create learning conditions that correspond to these additional areas in the brain. Therefore, Jensen (2008) defines BBL as learning that is "aligned with how the brain naturally learns" (p.4).

BBL learning combines cognitive neuroscience, psychology and education theories that is meant to connect and fill the gap between psychological models and the biological models of learning so as to make recommendations about how the brain learns best. According to Howard-Jones et al. (2016) neuroscience can explained biologically whether there are changes in the anatomical brain if there is no change in behavioral occurrence because "neuroimaging data can provide

construct validity to behavioral observations" (p.622). Therefore, the infusion of the various fields and disciplines acts as a foundation for teachers to design effective learning experiences since it is consistent with how the brain is biologically designed to learn (Thomas & Swamy, 2014). These researchers agree that BBL is seen as a way of thinking about learning and not a teaching method or a solution to problem faced by educationists. The focus is to provide and explain the best conditions for learning to occur in relation to how the brain functions. (Genesee, 2000).

Deepa and Gracy (2019) examined these BBL optimum conditions in English Language teaching (ELT) through content analysis. The content analysis analyzed the advancement of knowledge in ELT by penetrating inside its nature of having brain-based strategy in it. Nine BBL components were mapped against fifteen ELT strategies. The nine BBL components were physical activities, prosocial behaviour, stress relief, chunks are more realistic, arts, managing emotional state, preserving memory, healthy brain, and the brain's tendency to rewire, remap and changes its structure. They found that Role Play, Dramatization, Story Telling, Audio Lingual Method, Bilingual Method, Total Physical Response, Cartoons, Teaching through Arts, TPR, Storytelling, Communicative Language Teaching, and Content-Based Instruction were consistent with all the nine BBL components while Grammar Translation Method, Direct Method, Computer-Assisted Language Learning (CALL), and Lexical Approach did not fulfill all the requirements of the nine components and therefore, considered as not compatible to BBL strategy. They concluded that a majority of the ELT

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