The effect of epistemological beliefs on academic motivation in science performance

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ABSTRACT: The present study is to explore the effects of epistemological beliefs on academic motivation and performance of upper secondary school students in Science. The academic motivation constructs include science self-efficacy and achievement goal orientations. Quantitative analysis will be used in the research. The path analysis is used to determine the effects on academic motivations and achievement of students in science. The study will provide a set of principles for providing a set of meaningful learning experiences in learning Science. It will also help to enhance the students' development of sophisticated epistemological beliefs.

1 INTRODUCTIONS

Today, tertiary education systems around the world are trying to help develop mental abilities and logical reasoning power in their learners. Educator had included Science in their curriculum and also aid them to be synchronized with scientific advances, technology developments and future life (Loo et al. 1997). Academic pressure among teenagers is a universal problem and occurs in different ways. Dozens of students kill themselves every year due to academic stress. Teenagers go through a confusing period and having suicidal thoughts while this age is common. In this period of transition, adolescents also face extreme levels of stress in adapting and adjusting to circumstances and environments in life to establish their personality and identity. From an early age, they face tremendous pressure from others to perform well.

As educators, teachers and researchers need to face the reality that some students have difficulty using their declarative knowledge to solve problems. In this sense, educators had to know how a student perceives the things happening. Both in his environment and the learning atmosphere and what kind of belief he she develops. For this present important clue for the education service that he she is offered. The way to fix the indifference of the learner to any lesson, his her learned desperation or academical failure lies within the determination of what kind of epistemological belief underlying this failure.

As we know, epistemological beliefs affect not only the students' but also the teachers' educational and instructional activities in the classroom. So, this research will help teachers to determine their view of reality and what knowledge is and how this knowledge is learned, taught and produced. Investigation of students' epistemological beliefs is important for understanding how knowledge is constructed. If they view learning as involving problem-solving, they will apply a constructive approach and engage in deeper processing. If they believe that learning involves reproduction of knowledge and completion of routine activities, they will tend to employ a surface approach. Despite considerable interest given to the study of epistemological beliefs, thus far, research has been conducted primarily with university and high school students.

Some researches has studied the relation between epistemological beliefs and using behavioristic and motivational strategies, and indicates that there is a relation between these components and the academic achievement (Paulsen and Feldman, 2007). Despite the importance of epistemological beliefs and using motivational strategies in academic achievement, no research has been studied the relationship between components of epistemological beliefs and goal orientations with academic achievement simultaneously in Malaysian context. The present study intends to determine the predicting role of each aspect of epistemological beliefs and goal orientations on Science achievement.

2 LITERATURE REVIEWS

According to Billelt (2009), students' beliefs about learning arise from their "capacities, earlier experiences and ongoing negotiations" (p. 211) with the world. Many believe that learners' beliefs about their capabilities often preconscious and often inaccurate can be more important drivers of behavior than their actual capability. However, research indicates that these ideas evolve over time, meaning that school can influence students' personal epistemologies as they develop (Baxter Magolda, 1992). Teachers recognize students' personal epistemologies as part of their prior