

Teacher Efficacy: Are They Effective in Implementing HOTS?

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Abstract: In today's information age, higher order thinking skills or HOTS is considered as an essential competency to deal with a rapidly changing world. HOTS is important to shape the way students learn and think. Teachers are the pivotal agents of improving the educational quality, especially in the context of student learning outcomes. The purpose of the paper is to propose a theoretical framework to examine the relationship between teacher efficacy and teacher effectiveness. To promote critical thinking society, educational approaches need to emphasize higher cognitive level in HOTS such as analysis, synthesis and evaluation, not the lower cognitive level such as memorizing, remembering and understanding facts. Learning and understanding basic facts and skills is no longer enough for high school graduates and HOTS is important for student's academic and future success. Highly efficacious teachers are able to contribute enormously to the success of HOTS teaching and learning and to shape present-day student's occupational outlook in preparation for the 21st century workforce. The present study focused on the concept of teacher efficacy and related literature review on teacher efficacy and effectiveness. The study also discussed on factors that hindered teachers from implementing HOTS.

Key words: Teacher, self- efficacy, effectiveness, HOTS, occupational

INTRODUCTION

Countries worldwide have implemented major reforms of curriculum, instruction and assessments with the aim to better prepare students for the higher educational demands of life and work in the 21st century (Allamnakhrah, 2013; Bernhardt, 2015). In Malaysia, curriculum development initiative such as Higher Order Thinking Skills (HOTS) has been given the main priority to train students how to learn and how to think critically, to create a thinking culture in the society to enable them to be the next generation of innovators, lifelong learners, resilient and ready for the future workforce and competent to thrive in complex global landscape. Without HOTS, students will remain poor in their job skills and putting their future employers at risks in productivity and innovation (Arslan *et al.*, 2014). HOT concept is derived from Bloom's Taxonomy that partly consists of the three higher cognitive levels: analysis, synthesis and evaluation while knowledge, comprehension and application are categorized as the first three low levels or known as Lower Order Thinking (LOT) (Azizan and Ibrahim, 2012; Tee *et al.*, 2012). Le and Lindsey (2013) postulated that when considering the educational context and expectations of our present day teachers, their abilities to promote HOTS in the classroom is more

important than ever. Teacher's roles is to utilize effective teaching strategies to enhance student's cognitive thinking to analyze, synthesize and evaluate (Shukla and Dungsungnoen, 2016). In fact, the education policy document constantly outlines the goals of the HOTS curriculum but the problem is that teacher's deeper understandings on the implementation of HOTS is found lacking (Stapleton, 2011).

Hawes (2005) reminded that contemporary education craves much more than the simple recall of information, rote-learning of facts and figures or just perform simple learning techniques. Noor (2008) claimed that most teachers perceived that HOTS culture is difficult to implement. Teachers tried to apply HOTS in their classroom practices but students were more familiar with rote learning; a traditional method of teaching (Asgharheidari and Tahriri, 2015). Previous studies by researches (Othman and Mohamad, 2014; Saad and Law, 2014) showed that many teachers were unable to integrate HOTS effectively in their teaching strategies. They utilized low questioning techniques, practiced teacher-centered that emphasize memory-based learning that students felt discouraged from asking questions, shun from self-reflection. Inactive students would be even more passive during classroom interactions and questions

would only be answered by a specific group of students or the teachers themselves (Sardareh *et al.*, 2014). According to Syarifah (2012), even though elements of HOTS are visible but more emphasis is given to the inclusion of lower order thinking elements. This is supported by other researchers in their separate studies (Ganapathy and Kaur, 2014; Alzubi, 2014) who found that students do demonstrate an inclination towards critical thinking but only to the first three sub-categories that is knowledge, comprehension and application.

The above pivotal evidence showed that teacher efficacy is important to teacher effectiveness. Highly efficacious teachers are more prepared to practice new teaching strategies that may be risky or difficult to implement, group students together, allow students to explore and guide their own learning than those with lower sense of self- efficacy (Bitto and Butler, 2010).

The concept of teacher efficacy: Social cognitive theory was developed by Bandura (1997) describes efficacy as a belief in one's capacity to organize and execute the courses of action required to produce given attainments. Teacher self-efficacy is the most powerful and influential human agency factor to determine an individual's choice, their effort, perseverance to face all the challenges, the degree of anxieties or confidence of handling the task at hand (Jie, 2011). In short, self-efficacy can be considered as a useful concept to explain teacher behaviours (Parivash *et al.*, 2012) that predicts teacher effectiveness (Wangeri and Otanga, 2014).

Related literature review on teacher efficacy and teacher effectiveness: Efficacy has been a subject of broad research for approximately four decades (Sharma and Nasa, 2014; Gavora, 2011). Several previous studies suggested that teacher efficacy is positively related to teacher effectiveness (Adeyemo and Kola Chukwudi, 2014). Bitto and Butler (2010) and Amosa *et al.* (2015) highlighted that teacher self-efficacy is directly correlate to teacher effectiveness in using various instructional strategies. Butt *et al.* (2012) indicated that teacher efficacy plays a vital role on student's academic achievement. Teachers with high self-efficacy beliefs are better at managing their student's behaviour they can influence motivated or unmotivated students whilst teachers with low self-efficacy will not have the ability to influence even motivated students. Cheng (2014) claimed that based on previous studies, researchers found many teachers had difficulties in managing their student's disciplinary and behavioural problems in schools. Even if teachers were to

use their favourite classroom management strategies it does not necessarily change student's negative attitudes. The author conducted a cross-regional study to compare students in two countries; Singapore and the different regions of China from big modern city, a medium size city and a remote mountain area. His results revealed that students from these two countries, Singapore and different regions of China displayed negative attitude towards one of teacher's favourite management strategies such as behavioural management strategies. He concluded that student's negative attitudes do not mean teachers cannot use behavioural management strategies. Instead, teachers should consider using possible alternative strategies before simply using behavioural management strategies to foster student's positive attitude. Teachers with high self- efficacy beliefs will not remain rigid in their approach with discipline (Rimm and Sawyer, 2004). They will not discipline students whenever they make mistakes, use corporal or other types of punishments (Moalosi, 2012). Teachers with high self-efficacy beliefs interact effectively with students to ensure maximum interaction between teacher and student to enhance student learning in the classroom (Siti, 2012). They are more active, motivated and able to develop more ideal classroom for students (Ebrahimi and Jahanian, 2014).

Block *et al.* (2012) posited that teachers sometimes can be ineffective at engaging students when their self-efficacy is low; lacked of enthusiasm to solicit student attention to affect student engagement in the classroom. Student's learning outcomes will not improve if students were not actively involved and guided to carry out the responsibility in learning (Moalosi, 2013). Teacher efficacy in student engagement is about teacher's conviction to assist students to stay engaged and motivate them to learn (Wolters and Daughtery, 2007). Teachers with high sense of self-efficacy often engage their students in small groups, encourage them to explore ideas and guide their own learning (Bitto and Butler, 2010) contrasting to teachers with low self-efficacy who tend to impart knowledge using traditional methods, focusing more on student's attentiveness and keeping them on task, listen watch and imitate (Bitto and Butler, 2010).

Educators acknowledged that HOTS teaching practices were influenced by variety of teaching methods (Wolters and Daughtery, 2007). Previous researchers (Mohd, 1994; Ely *et al.*, 2014) suggested that technology-enriched classroom environment can enhance student's learning in HOTS. Wreikat and Abdullah (2011) opined that students at present are different compared to

students in the past twenty years due to technology rich upbringing they desire other needs, intentions and learning preferences. They prefer lessons to be filled with varied learning tasks; not constantly listening to teacher delivering lessons or note taking. Instructional strategies can influence teacher's activities, efforts and endurances with students (Ashton and Webb, 1986). Teacher's methods of instruction are mostly in rote learning makes passive affair for students that they do not feel engaged in the learning process (Wekesa, 2013). For instance, teacher's instructional practices in teaching literature emphasize more on question and answer comprehension activities that they are more seen as examiners and assignment givers, providing little opportunities for students to engage themselves in classroom or group discussion to discuss issues raised in texts (Sidhu *et al.*, 2010). Alhassan confirmed, based on his case study in Saudi Arabia on the perception of learning critical thinking in secondary pre-service teacher education programs of student teachers. Student teachers were dissatisfied with the prevalent methods of instruction using rote-learning and memorization. They complained that the methods of instruction is traditional, uninteresting, unexciting, rigid and unchallenging with lecturers seen as a transmitter of knowledge, rather than a facilitator.

Research gap: The literature reviewed reflected that there were numerous researchers local and abroad conducted on teacher efficacy in different education settings but the relationship between teacher efficacy and teacher effectiveness that relates to HOTS on the three sub-constructs (i.e., efficacy in classroom management, efficacy in student engagement and efficacy in instructional strategy) in this study is still limited. Previous research only investigated on teacher efficacy and classroom quality relationship (Jennings, 2014), Math teacher self-efficacy and its relationship to teacher effectiveness (Bitto and Butler, 2010). Therefore, it is necessary to conduct this study to examine teacher efficacy and teacher effectiveness relationship in relating to HOTS in Malaysian context.

Expected significance contribution

Theoretical contribution: The establishment of an empirical based framework hopefully can provide significant beneficence to the existing body of knowledge in the field of public management and to other researchers whom are interested in measuring the relationship between teacher's efficacy beliefs and teacher

effectiveness. The findings of the study can be used to either refute or strengthened the conceptual framework that will be adopted.

Practical contribution: This study hopes to contribute towards teacher's professional competencies in their teaching practices in relating to HOTS that can improve the school management and education services. Through the results obtained from this study, it shall provide data to the policy makers, curriculum designers, responsible officers, researchers and stakeholders to plan and implement effective training courses to enhance teacher efficacy. The study will also serve as useful guidelines to measure teacher's efficacy in HOTS. Also the valuable feedback and intuitions of this study can help to gauge schools and administrators to reorganize HOTS training programs for the excellence of the teachers to facilitate student's achievement.

Methodological contribution: The instrument developed in this study will reflect a different research setting focusing on teacher efficacy and teacher's effectiveness relationship to assist academics and researchers to use it as reference sources of research and writing.

MATERIALS AND METHODS

This study is purely quantitative method to investigate teacher's efficacy beliefs among secondary school teachers in the states of northern region in Malaysia. This study employed a cross-sectional design to examine the relationships between two variables-teacher efficacy and teacher effectiveness.

Participants: To accomplish the research purpose, all secondary school teachers teaching at regular and fully residential schools in the Northern region of Kedah, Penang, Perlis and Perak were selected to take part in this research. The sample will compose of 380 secondary school teachers who teach a variety of subjects.

Instruments: The instrument uses questionnaire of 18 items to access respondent's efficacy on instructional strategies, efficacy on classroom management and efficacy on student engagement. Seven Likert type scales were adopted for the respondents to rate the measurement items with (1 = strongly disagree and 7 = strongly agree). The teacher's effectiveness scale is based on Virgilio teacher behavior instrument (original scale) on the work of Virgilio (Teddie *et al.*, 1990) with slight modifications to

fit the context of this study. This study examines the perceptions of the responsibility of teachers in organizing their classroom to assist student's learning outcomes. This study identifies whether teachers have always played their role of a good facilitator to their students. Survey respondents are requested to rate the level of agreement relate to the statements provided in the questionnaire. Likert scales were adopted for the respondents to rate the measurement items with (1 = strongly disagree and 7 = strongly agree).

RESULTS AND DISCUSSION

Factors that hindered from implementing HOTS:

Examining self-efficacy beliefs along with factors associated with them is essential to interpret teacher's classroom performance to bring significant effects on student's learning outcomes (Baleghizadeh and Shakouri, 2014). However, there were several factors that hindered teachers from implementing HOTS as stated below.

Teacher-centered: Sardareh *et al.* (2014) conducted a study in selected government primary schools in Selangor, Malaysia on English teacher's questioning technique in an assessment for student learning found teacher-centered strategy focus only at the surface level and used conventional concept of questioning. This method did not used high level questioning techniques and failed to foster student's autonomies. According to Mathew (2010) student-centered approach incorporates varied learning styles to produce students with broader knowledge base, aid them in their progression to become well-adjusted and productive students. Student-centered approach is more comprehensive, efficient that can help to facilitate students to achieve deeper understandings in HOTS (Mathew, 2010). Studies have shown student-centered based learning can boost student's HOTS. They can grasp information better and adaptable to real life situations (Sayre, 2013). Oliveras (2014) agreed that student-centered has depth, complexity and positive impact on student outcomes. This strategy produced higher average scores, incorporates many learning styles such as cooperative activities and technology to enhance HOTS.

Work demands: Local researches (Mohd, 1994; Juraifa and Mahfuzah, 2013) found most Malaysian teachers experienced emotional fallouts due to work demands and this phenomena existed for two decades. Previous studies have consistently found that Malaysian school teachers have shown high levels of teacher

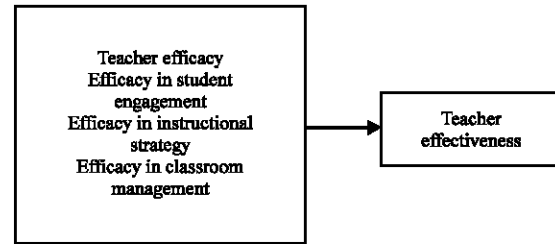


Fig. 1: Proposed framework

burnout, over-burdened secondary tasks and demands from the administrators, colleagues, parents, students and lack of recognition for performance accomplishments resulting to stress that reduced their abilities to improve on teaching and learning (Mukundan and Khandehroo, 2010). Excessive stress demonstrates that teachers could not master the necessary skills in carrying out their job successfully (Bhatia, 2012). Their emotional states may be influenced in a negative manner and decreased their self-efficacy levels which hinders them from creating an enjoyable and reinforcing situation for students learning (Dobbins *et al.*, 2010). It is necessary to measure teacher self-efficacy considering that teacher self-efficacy has an effect on student success, attitude and behaviours and in addition to teacher's performance (Savas *et al.*, 2014).

Training: There are numerous teachers training activities at national and local levels but sometimes these activities are found to be ineffective, fail to contribute to teacher's learning (Bayrakci, 2009). Buckley and Caple (2009) and Paslawski *et al.* (2014) opined that in-service training programs that is not properly organized can negatively influenced the effectiveness of in-service training programs. The in-service training programs would not be sufficient, irrelevant to a particular classroom practice (Bayrakci, 2009) if it is delivered by instructors who are not well trained and obviously have less information in the field to look into teacher's needs (Altun and Gok, 2010). Adequate and appropriate training for teacher's is important to ensure that they are confident enough to handle the needs of the program and to make this program successful (Sidhu *et al.*, 2010).

Figure 1 proposed the theoretical framework of the relationship between teacher efficacy and teacher effectiveness in secondary schools. This research framework clearly suggests that teacher efficacy have direct correlation with teacher effectiveness.

Although, literature reviewed suggest there is relationship between teacher efficacy and teacher effectiveness there is still limited empirical support in the

aspect of student engagement, instructional strategies and classroom management with specific reference to HOTS. Clearly there is a need to provide such empirical support as suggested. This is supported by Bitto and Butler (2010) who recommended that more research on teacher self-efficacy as it relates to teacher effectiveness should occur. The importance of this construct is evident to the success of teachers because their effective practices are impacted by their level of efficacies (Bitto and Butler, 2010).

CONCLUSION

Teachers are the pivotal agents of improving the educational quality, especially in the context of student learning outcomes (Jamil, 2014). They act as facilitators to foster student's minds to apply the knowledge through various ways of thinking such as creative thinking, critical thinking and innovative thinking (Alghafri and Ismail, 2014) to face the competitive international environment. Evidence from previous studies found teachers were not highly skilled in imparting HOTS knowledge to students (Othman and Mohamad, 2014; Mahyuddin *et al.*, 2004; Choy and Cheah, 2009). Thus, this research is necessary to comprehensively examine the relationship between the two constructs; teacher efficacy and teacher effectiveness.

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