THE EFFECT OF SELF-EFFICACY MEDIATORS ON THE PROFESSIONAL LEARNING COMMUNITY IN MALAYSIA AND THE TEACHING OF ISLAMIC EDUCATION THAT INTEGRATE HIGHER-ORDER THINKING SKILLS

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ABSTRACT

The lack of integration of Higher-Order Thinking Skills (HOTS) elements in the teaching practises of primary school Islamic Education teachers has pushed towards understanding the factors that influence HOTS integration in Islamic Education teaching. Therefore, the objective of this study is to investigate the relationship between the professional learning community, self-efficacy, and Islamic teaching practices that integrates higher-order thinking skills. A total of 642 Islamic Education teachers from 112 schools in Malaysia participated in this survey. A multi-level analysis was carried out to explore how group-level variables (professional learning community) impact individual-level variables (self-efficacy and Islamic Education teaching practices integrate higher-order thinking skills). Whereas, the mediator test uses the Monte Carlo bootstrapping method. The findings showed that the professional learning community and self-efficacy are positively and significantly related to the Islamic Education teaching practices that integrate higher-order thinking skills. The findings also indicated that self-efficacy act as a mediator in the relationship Therefore, the findings suggest that teacher self-efficacy has the greatest influence on the HOTS-integrated Islamic Education teaching. It is hoped that the findings foster a culture of learning for Islamic education teachers and help improve their teaching practices.

Keywords: Professional Learning Community, Self-Efficacy, Higher-Order Thinking Skills

INTRODUCTION

A professional learning community is considered a necessity to change the paradigm and practice of teachers (Tam, 2015) in the face of curriculum changes and the challenges of globalisation today. Over the past three decades, scholars have agreed on professional learning communities' importance in improving teaching quality and student achievement (Dogan et al., 2016; Othman et al., 2020) through a culture of collaboration and practice-sharing. One of the challenges that teachers in Malaysia need to face is the integration of elements of thinking skills in classroom teaching (Ministry of Education Malaysia, 2013).

It is undeniable that teaching higher-order thinking skills across the curriculum are now the goal of most educational policies around the world (Zohar & Alboher Agmon, 2017) due to its importance in helping students to innovate, think rationally and openly, make wise decisions and be able to apply knowledge and skills learned in various situations (Saifer, 2018). Students who cannot master higher-order thinking skills are less likely to succeed in the rapid economic changes that characterise a globalised society today (Ministry of Education Malaysia, 2013).

Although the integration of higher-order thinking skills in teaching practice has been emphasised in Malaysian curricula since 2013 (Ministry of Education Malaysia, 2018), the aspect of its application is still low and moderate (Dzul, 2017; Nor et al., 2016; Zainal Abidin & Osman, 2017) as well as feared to be less able to meet the expected quality of education, especially in Islamic Education subject (Mohd Zeki et al., 2021). This weakness is due to the knowledge and skills of Islamic Education teachers to plan and apply minimal higher-order thinking skills teaching strategies (Che Seman et al., 2017; Mohd Zhaffar, 2017; Zubairi, 2015). There is also a lack of teacher confidence in integrating higher-order thinking skills in the classroom (Abdullah & Darusalam, 2018; Mustafa et al., 2018).

However, sustaining a professional learning community in schools is quite complex and requires determined effort (Gray et al., 2016; Hipp et al., 2008). Therefore, self-efficacy is a personal factor that can significantly influence human actions (Bandura, 2002). Sukserm and Takahashi (2012), Xanthopoulou et al. (2007), and Yin et al. (2013) also provide evidence that self-efficacy can play a mediating role and should not be neglected in professional development. However, research on self-efficacy as a mediator of the relationship between the professional learning community and teaching integrated higher-order thinking skills is still limited.

Past studies have shown the professional learning community to be an environmental factor that helps in improving teachers' knowledge and skills (Prenger et al., 2018; Vescio et al., 2008) as well as changing teachers' attitudes to be more confident (Abu Bakar & Hamzah, 2019; Voelkel & Chrispeels, 2017). Thus, this study focuses on the factors that may have an effect on influencing the practice of teaching integrated high order thinking skills. In particular, this study examines the association between professional learning communities and teaching practices that integrate higher-order thinking skills.

This is based on previous studies that found the impact of professional learning communities on effectiveness is rarely explored (Zheng et al., 2019) nor is its impact on teachers' teaching practices often examined (De Neve et al., 2015; Liang et al., 2020; Valckx et al., 2020). Even a 12-year teacher effectiveness survey study by Klassen et al. (2011) showed that studies on the sources of self-efficacy and its relationship with educational practices are still given less attention, especially in Islamic Education in Malaysia (Abu Bakar & Hamzah, 2019).

Given this situation, the current study examines how professional learning communities relate to teaching practices that integrate higher-order thinking skills and how self-efficacy serves as a mediator between these variables. An in-depth understanding of the interaction of these variables can assist teachers in identifying key factors that can support the integrated teaching of higher-order thinking skills. This study also fills the gaps related to Malaysia's professional learning community, mainly by using a single-level approach.

Higher Order Thinking Skills

The concept of higher-order thinking skills from an Islamic perspective for the teaching of Islamic Education can be explained based on the characteristics of *Ulul Albab* cited in the Quran. The first feature is *tafakkur,* which means remembering Allah and thinking about the majesty of His creation (Surah Ali Imran 3:190-191). The second is *tadzakkur*, meaning to take lessons from the evidence of Allah without prejudice (Surah Ali Imran 3:7; al-Baqarah 2:269), and the third is *tadabbur,* meaning to appreciate and understand the contents of the Quran (Surah Sad 38:29). This concept explains that the goal of thinking in Islam is fundamentally to know and approach Allah (Wan Abdullah & Zhaffar, 2018) and deepen one's faith (Wan Abdullah et al., 2020).

While from the perspective of foreign researchers, higher-order thinking skills at the level of applying, analysing, evaluating, and creating commonly refer to Bloom's Taxonomy of Cognition, which was revised by Anderson et al. (2001). Higher-order thinking skills also refer to the ability to use knowledge, skills, and values in making reasoning and reflecting to solve new problems (Anderson et al., 2001), decision-making, innovating, and creating things (Curriculum Development Division, 2014); as well as engaging in cognitive activities such as developing arguments, asking research questions, making comparisons, planning, and addressing conflicts (Zohar, 2004). Critical thinking (Mohd Zhaffar, 2017; Zohar & Resnick, 2021) and creativity (Saifer, 2018) are also part of the elements inherent in today's concept of higher-order thinking skills.

Professional Learning Community

Researchers define the professional learning community as a group of individual teachers who regularly interact by creating an environment that fosters emotional support and collaboration, shares practices, reflects and collaborates to improve knowledge and skills in order to achieve educational goals and improve teaching and learning (Bryk et al., 1999; Desimone, 2009; Dufour & Eaker, 1998; Hord, 1997; Stoll et al., 2006). The concept of a professional learning community from Islamic perceptiveness is based on *ta'awun* described in *Surah al-Maidah* Verse 2, which means mutual assistance, initiative or cooperation (Abdul Karim Amrullah, 1990). This verse serves as a solid reason for Muslims to form groups for kindness, mutual help, and good deeds based on piety.

Self-Efficacy

Western researchers have primarily carried out research on self-efficacy. Albert Bandura (1986) was the initial researcher to study self-efficacy. Self-efficacy is the teacher's beliefs, perceptions, and confidence in the ability and self-sufficiency to organise and implement appropriate actions to succeed in teaching and face challenging situations, failures, and stress (Bandura, 1977; Goddard & Goddard, 2001; Tschannen-Moran, 1998). Based on Social Cognitive Theory, the actions performed by individuals are influenced by the power of efficacy (Bandura, 1997). Therefore, any decisions made by teachers regarding classroom practices are influenced by their level of teaching efficacy (Goddard et al., 2004).

Based on the Islamic perspective, the concept of self-efficacy is related to internal factors, namely faith, which is the driver towards the formation and change of conduct of a Muslim (Jaafar, 2014). Self-efficacy needs to be based on faith to guide them to be confident, and the belief that every practice conducted must have value in the eyes of Allah. Good faith will create high sincerity. Sincere people do not feel burdened but are more responsible and willing to sacrifice for the good of themselves and others. As the Prophet (PBUH) decreed, "Indeed, Allah does not look at your looks and possessions, but Allah looks to your hearts and deeds" (Narrated by Muslims: 2564). Sincerity is, therefore, the main driving factor for teachers in imparting knowledge and carrying out their tasks more effectively.

METHODOLOGY

The design of this study is a cross-sectional survey that uses quantitative approaches to collect and analyse data. The design of this survey study is the best method of obtaining data to describe the attitudes, opinions, behaviors, or characteristics of a large population (Babbie, 2016; Creswell, 2012). Data were collected from a randomly selected sample at one point in time, statistically analysed to test the study hypotheses, then the meaning of the data was interpreted.

Population and Sampling

The population in this study was the primary school Islamic Education teachers in national schools under the Ministry of Education Malaysia which amounts to a total of 39,323 teachers. Since this study involved a large population and a large geographic area, multistage cluster sampling was used to determine the study samples (Cohen et al., 2018; Creswell, 2012). First, the population was grouped into five zones which were Central Zone, Southern Zone, Eastern Zone, Northern Zone, and East Malaysia Zone. Then, a state was selected from each zone using simple random sampling. Next, schools in the five states were selected using simple random sampling as the study samples. Because the number of samples in each zone cluster is different, then sampling based on the ratio of the number of Islamic Education teachers is used as suggested by Kothari (2004); Sekaran and Bougie (2016). A total of 112 schools were selected randomly as a sample of 25% from the Central Zone, 23.2% from the Southern Zone, 21.4% from the Eastern Zone, 16.1% from the Northern Zone, and 14.3% from the East Malaysia Zone. Since this study uses a multi-level approach, the minimum number for group of 30 units (Kreft, 1996) with the number of individuals of five samples in one unit is sufficient (Maas & Hox, 2005). Hence, in this study, a total of 642 Islamic Education teachers were involved with five to seven samples randomly selected per school.

Research Instruments

The instrument used was a questionnaire distributed through Google Form links. Researchers first applied for permission to conduct the study from the Planning and Research Division of Education Policy and the State Education Department for the states involved. The respondent's participation was voluntary and documented by signing the consent document. To maintain the confidentiality of the survey respondents, the respondents did not have to disclose their identity in the survey form, nor was the identification of the respondent collected by any means.

Professional learning community was measured using the Teachers' Professional Community (Wahlstrom & Louis, 2008) questionnaire, which was translated into Malay by experts using the back-translation method (Brislin, 1970). The original instrument in English consisted of four factors. The Malay version of the instrument consisted of three factors after using Exploratory Factor Analysis. The three factors were extracted to explain the variant of 72.5%, which was above 60%, as recommended by Hair et al. (2019). The three dimensions, namely collective responsibility (7 items), derivatised practice (4 items), and reflective dialogue (5 items) were measured by a five-point Likert scale. On the other hand, the results of the Confirmatory Factor Analysis on the modified models showed a good fitness index (RMSEA = 0.73; GFI = 0.91; CFI = 0.95; TLI = 0.94). The Alpha Cronbach coefficient values for all three dimensions were 0.92, 0.84, and 0.91, above the 0.70 proposed by DeVellis (2017).

The self-efficacy variables in this study were measured using the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001) questionnaire translated into Malay by experts using the back-translation method (Brislin, 1970). The original instrument in English consisted of three factors. Meanwhile, the Malay version of the instrument retained three factors after Exploratory Factor Analysis was carried out. The three factors that consist of 11-items were extracted with the explanation of the variant of 79.7%, which were above 60%, as recommended by Hair et al. (2019). The three dimensions, namely student engagement (4 items), classroom management (4 items), and instructional strategies (3 items) were measured using a five-point Likert scale. The analysis of the Confirmatory Factors of the three constructs of self-efficacy variables showed a good fitness index *(*RMSEA = 0.77; GFI = 0.94; CFI = 0.97; TLI =

0.96). The Alpha Cronbach coefficient values for all three dimensions were 0.88, 0.86, and 0.93, which were above the 0.70 threshold proposed by DeVellis (2017).

In this study, Islamic Education Teaching Instruments integrated higher-order thinking skills were adapted from the four previous survey questionnaires which were Abdul Aziz@Ahmad et al. (2017); Othman (2019); Saad et al. (2012); and Wan Ismail et al. (2016). The original instrument consisted of three factors. After Exploratory Factor Analysis was carried out, four factors were extracted based on the explanation of the 69.7% variant, which was more than 60% as recommended by Hair et al. (2019). Confirmatory Factor Analysis was carried out on the modified models and the results indicated a good fitness index (RMSEA = 0.60; GFI = 0.90; CFI = 0.95; TLI = 0.94). A total of 23 items with a five-point Likert scale were utilised to measure the dimensions of teaching planning (6 items), teaching delivery (4 items), teaching development (9 items), and teaching assessment (4 items). The four-dimensional Alpha Cronbach coefficient values were 0.90, 0.90, 0.92, and 0.85, which were above 0.70, as recommended by DeVellis (2017).

DATA ANALYSIS

The data obtained from this study were analysed using multi-level modelling because the variables of the professional learning community were multi-levelled and nested at the school level (Chen et al., 2016; Louis & Lee, 2016). The two-level version of the hierarchical linear modelling (HLM) version 8.0 was used to explain how a variable affects the relationship of another variable in or between levels (Raudenbush & Bryk, 2002). Subsequently, to confirm the existence of the mediator effect as illustrated in Figure 1, the researchers used the Monte Carlo method of bootstrapping (Preacher & Selig, 2010) at a 95% confidence interval with 20,000 repetitions. The analysis of the study was carried out to test the null hypotheses as follows:

H01: There is no significant relationship between self-efficacy and Islamic Education teaching integrating higher-order thinking skills.

H02: There is no significant relationship between the practices of the professional learning community and the teaching of Islamic Education that integrates higher-order thinking skills.

H03: There is no significant relationship between the practice of the professional learning community and the self-efficacy of Islamic Education teachers.

H04: Self-efficacy does not mediate in the relationship between the professional learning community practices and the Islamic Education teaching that integrates higher-order thinking skills.
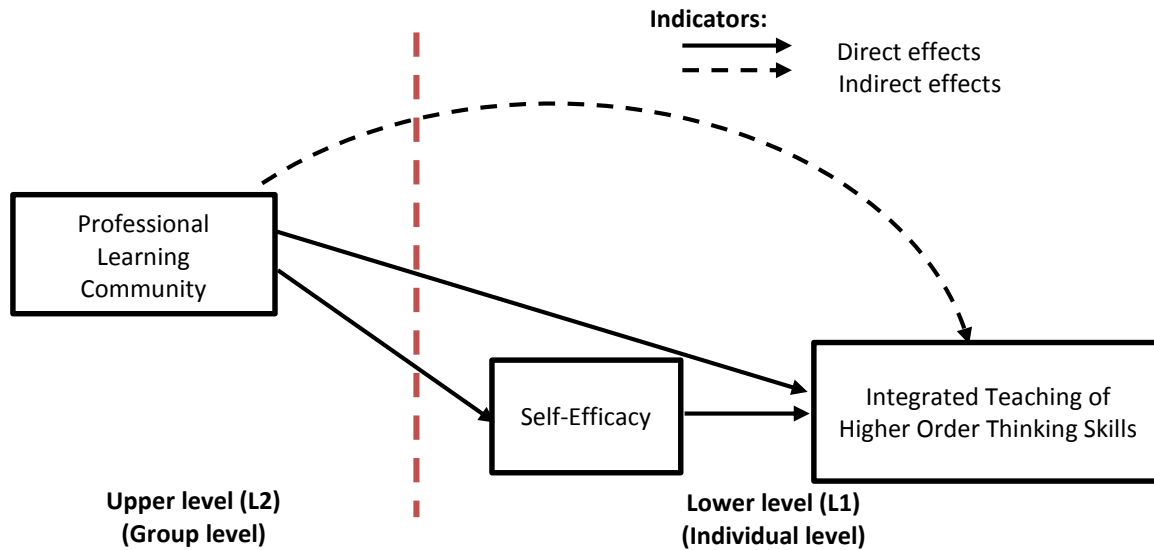
Indicators:

Direct effects
Indirect effects

Professional Learning Community

Self-Efficacy

Integrated Teaching of Higher Order Thinking Skills

Upper level (L2)
(Group level)

Lower level (L1)
(Individual level)

Figure 1. Mediator Effects of Self-Efficacy

Findings

In order to determine the justification for conducting Multi-level Modelling analysis, several procedures were carried out based on the recommendations of Mathieu and Taylor (2007). The mean value, standard deviation, correlation, mean rwg, FIII, and ICC (1) are summarised in Table 1.

Table 1
Descriptive and Correlation Analysis

	Variable	M	S. P	1	2	3	Mean rwg	FIII	ICC (1)
1.	Professional Learning Community	4.29	.454	1			.98	1.34*	.05
2.	Self-Efficacy	4.16	.487	.651**	1				
3.	Integrated Teaching of Higher Order Thinking Skills	4.10	.476	.674**	.735**	1			

Note: N = 642 individuals, 112 groups
  *p < .05, **p < .01, ***p < .001

The bivariate Pearson correlation analysis results show a significant correlation between the individual-level variables (self-efficacy and teaching integrating higher-order thinking skills) r = .735, p < .01. The mean value of rwg for the professional learning community variable = .98. A score of above .70 indicates an adequate level of consent for aggregation (Chen et al., 2004). The FIII value of the professional learning community variable = 1.34, *p* < .05 is significant. Next, the ICC (1) value of the professional learning community variable =.05, A score of between .05 to .20 is accepted for aggregate procedures (Bliese, 2000; Peugh, 2010).

For lower-level analysis, self-efficacy was incorporated into the HLM analysis model to establish its impact on the teaching of Islamic Education integrated with higher-order thinking skills. As shown by Model 1 in Table 2, the results show the relationship of self-efficacy in the teaching of Islamic education that integrates higher-order thinking skills

is significant (β = 0.73, SE = 0.02, p < .001). H01 is therefore rejected.

Table 2
Lower-Level HLM Analysis

Effects	Integrated Teaching of Higher Order Thinking Skills
Model	1
Lower-level effects	
Self-Efficacy	0.73(0.02) ***

Note: *N = 642 individuals, 112 groups*
              p < .001
              The first value is an approximate parameter, and the value in parentheses is the standard deviation.

Next, the cross-level analysis aims to examine the impact of the highest group level of the professional learning community on the impact of the variables at the individual level. For example, the analysis of Model 2 in Table 3 shows the professional learning community's relationship with the integrated Islamic Education that teaches higher-order thinking skills is significant (γ = 0.27, SE = 0.03, *p* < .001). Hence, H02 is falsified. Meanwhile, Model 3 analysis shows that the professional learning community's relationship with self-efficacy is significant (γ = .27, SE = .02, p < .001), and then H03 was rejected.

Table 3
Cross-Level HLM Analysis

Effects	Integrated Teaching of Higher Order Thinking Skills	Self-Efficacy	Integrated Teaching of Higher Order Thinking Skills
Model	2	3	4
Lower-level effects			
Self-Efficacy			0.71(0.02) ***
Cross-level effect			
Professional Learning Community	0.27(0.03) ***	0.27(0.02) ***	0.08(0.03) *

Note: N = 642 individuals, 112 groups
              *p < .05, ***p <.001
              The first value is an approximate parameter, and the value in parentheses is the standard deviation.

Baron & Kenny (1986) outlined the three conditions that need to be met to test the mediator's effects. The first requirement is based on Model 2. The professional learning community at the group level connects positively and significantly with the teaching of Islamic Education that integrates higher-order thinking skills at the individual level (γ = .27, SE = .03, *p* < .001). While the second condition, Model 3, shows the professional learning community at the group level connects positively and significantly with self-efficacy at the individual level (γ = .27, SE = .02, *p* < .001). For the third condition, Model 4 shows self-efficacy at the individual level is positively and significantly related to the teaching of Islamic Education that integrates higher order thinking skills at the same level (γ = .71, SE = .02, p < .001).

Based on the findings from Monte Carlo bootstrapping test (Preacher & Selig, 2010), it was found that the lower level = 0.16 and upper level = 0.22 are positive and do not contain zero values (MacKinnon et al., 2004), as illustrated in Figure 2.

Distribution of Indirect Effect

95 % Confidence Interval LL 0.1625   UL 0.2219
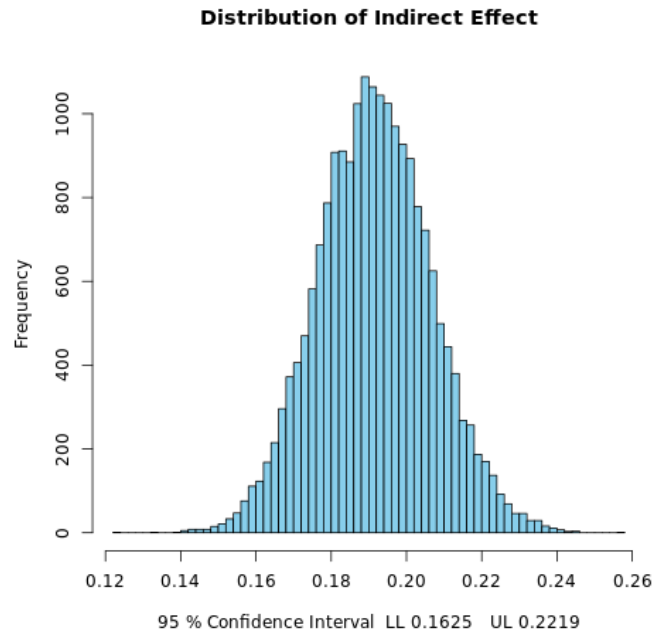
This result demonstrates that the self-efficacy variables serve as mediators in the relationship between the variables of the professional learning community at the group level and the teaching of Islamic Education that integrates higher order thinking skills at the individual level. To confirm the existence of the mediator effect, the values of the lower levels (LL) and upper levels (UL) do not contain zero values (MacKinnon et al., 2004). Therefore, H04 is rejected.

DISCUSSION AND IMPLICATIONS OF THE STUDY

The professional learning community has been a long-established trend to enhance teachers' professionalism in developed countries. The Teacher Education Division has also mobilised the professional learning community in the education system in Malaysia since 2011 (Teacher Professionalism Division, 2019). The findings from this study provided empirical evidence that the knowledge and skills of teachers can be improved through the practices of the professional learning community. Furthermore, the findings supported past studies that the professional learning community is an important factor in changing teachers' teaching practices (Dogan et al., 2016; Long et al., 2019).

This study has proven an upper-level effect of variable influence on variables at a lower level when tested simultaneously using a multi-level modelling approach. In addition, this study has also proven that professional learning communities at the group level influence teaching practices by integrating higher-order thinking skills at the individual level. Although it is clear that the professional learning community is multi-level, empirical studies on the professional learning community and its results are limited (Liu & Hallinger, 2018; Zheng et al., 2020), especially in Malaysia. Thus, the findings of this study have succeeded in empirically proving the impact of the professional learning community's influence and the results on a multi-level basis.

Besides influencing teachers' instructional practices, the professional learning community also influences teachers' self-efficacy. Bandura (1997) explained that self-efficacy can be formed through appropriate environments, thus producing appropriate behaviours. The findings are in line with Abu Bakar & Hamzah (2019), Willems & Van den Bossche (2019), Zheng et al. (2019), which showed that the implementation of a professional learning community could contribute to the improvement of the teachers' levels of self-efficacy. Furthermore, the findings provide

empirical evidence that the professional learning community can be an environmental factor that can be a resource to improve teachers' self-efficacy.

Environmental factors can improve self-efficacy through all four sources: mastery experience, vicarious experiences, verbal persuasion, and psychological and emotional arousal. Teachers can plan and implement teaching (mastery experiences), observe the teaching of fellow committee members (vicarious experiences), receive feedback and reflection from friends (verbal persuasion), and also experience feelings of nervousness when observed by a friend (psychological and emotional arousal) (Liang et al., 2020; Zonoubi et al., 2017).

Besides knowledge and skills, a teacher's confidence also plays an important role in integrating higher-order thinking skills in the classroom (Mustafa et al., 2018). The findings prove that self-efficacy is a personal factor influencing Islamic Education teaching practices to integrate higher-order thinking skills. The findings supported the results of previous studies that teachers who have a higher level of self-efficacy behaves more positively about themselves, their pupils, and new teaching practice (Zheng et al., 2020), reducing teacher pressure in the face of curriculum changes (Putwain & Embse, 2018). There is a need to have a high level of confidence in changing teaching and assessment strategies to suit pupils and a tendency to adopt teaching practices that focus on improving pupils' performance (Wolters & Daugherty, 2007).

Furthermore, the findings of this study have proven that the professional learning community's relationship with Islamic Education teaching integrates higher-order thinking skills linked to personal factors, i.e. self-efficacy, by acting as mediators. The findings support Social Cognitive Theory (Bandura, 1986) by emphasising that human action operates within an interdependent structure and involves a triad of reciprocal relationships consisting of personal factors, behaviours, and environmental factors. In this study, the professional learning community acts as an environmental factor influencing personal factors, i.e., self-efficacy. This, in turn, influences the teacher's behaviour, i.e., Islamic Education teaching practices that integrate higher-order thinking skills.

When self-efficacy serves as a mediator, self-efficacy becomes more dominant by influencing the strength of relationships between the professional learning community and Islamic Education teaching practices that integrates higher-order thinking skills. This means that Islamic Education teachers with high integration of higher-order thinking skills teaching practices also have high self-efficacy. Thus, the professional learning community is an influential environmental factor in improving self-efficacy. Based on this explanation, the findings of this study contribute to the development of the existing theory of Social Cognitive Theory to explain the factors that contribute to behaviour.

Furthermore, the findings also illustrate that Islamic education teachers have an internal factor: a strong soul. A soul guided by the Quran and al-Sunnah and adorned with good deeds and admirable deeds will shape good behaviour (al-Ghazali, 1988). The life guided by both the Quran and al-Sunnah will not lead them astray, but instead, it will give them the ability and strength to face all trials in various areas (Mohd Tahir et al., 2018). Al- Ghazali (1988) also explained that the formation of good morals requires a high level of control over the aspect that influences morality, i.e., the strength of knowledge. The power of knowledge allows man to distinguish between truth and falsehood. In summary, it can be seen that knowledge (professional learning community) plays an important role in building the strength of the soul (self-efficacy), thus, shaping good morals and behaviour (Islamic teaching practices integrate higher-order thinking skills).

Limitations and Advanced Study Recommendations

This study is a cross-sectional survey study, and biases such as Common Method Variance (CMV) can only occur because the data of this study were collected from the same respondent or only one source and involving self-rated assessment. Thus, researchers tried to control CMV based on approaches proposed by Podsakoff et al. (2003, 2012), such as maintaining respondents' confidentiality, reducing the difficulty of responders answering questions, and improving items in the scale. To obtain a clearer explanation of the study's variables, longitudinal studies are

encouraged for further research. Subsequently, Islamic Education teaching practices integrate higher-order thinking skills in this study, not by actual behaviour, but based on the teachers' perception of their behaviour. Therefore, qualitative studies are recommended to obtain more accurate data to observe the actual teaching practices and to better reveal how teachers make sense of their behaviour and experience while teaching and learning.

CONCLUSION

Scholars argue that success in the transformation of education at the school level depends heavily on changes at the teacher's level. These changes need to be designed to improve teacher knowledge, skills, and understanding. This, in turn, will lead to changes in attitudes, beliefs, thoughts, and behaviours of teachers in the classroom (Andrews & Richmond, 2019; Fullan, 1985). Therefore, this study provides empirical evidence that professional learning community practices and self-efficacy are important in changing teaching practices.

The findings are expected to assist administrators in empowering the professional learning community in schools. The support from administrators in providing physical facilities, allocation of time to implement a professional learning community, teaching aids, and periodic monitoring are essential to preserving the professional learning community in schools and indirectly help improve teachers' self-efficacy. The study's results also have positive implications for teaching that integrates higher-order thinking skills in the classroom.

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