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Siew Chee Choy  
*Tunku Abdul Rahman University College, Malaysia*

Judith Dinham  
*Curtin University, Australia*

Joanne Sau-Ching Yim  
*Tunku Abdul Rahman University College, Malaysia*

Paul Williams  
*mme moe Pty Ltd, Australia*

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## **Reflective Thinking Practices Among Pre-Service Teachers: Comparison Between Malaysia and Australia**

S. Chee Choy

Tunku Abdul Rahman University College, Malaysia

Judith Dinham

Curtin University

Joanne Sau-Ching Yim

Tunku Abdul Rahman University College, Malaysia

Paul Williams

mme moe Pty Ltd

*Abstract: Reflective practices are considered an important part of a pre-service teachers' (PSTs) professional learning experiences. However, there has been much criticisms on its efficacy as a learning tool for teacher professional development. This paper will relate a study that was designed to compare reflective teaching practices in two culturally different countries, namely Malaysia and Australia. These two countries were chosen as they offered an opportunity to study differences in reflective thinking practices from an Asian and a Western cultural perspective among PSTs. The study used a framework using five constructs: lifelong learning skills, self-assessment, self-belief, teaching awareness, and reflective thinking. The sample consisted of 387 Malaysian PSTs and 378 Australian PSTs who are enrolled in Bachelor level programmes. The results clearly indicate that while reflective thinking is emphasised in the teacher education programmes, the conceptualisation of the process of reflective thinking between the two cohorts of PSTs are very different. Limitations and implications for practice are discussed.*

### **Introduction**

Reflective practice is considered a desirable activity of teaching and has become part of professional teacher development (Zembylas, 2014). However, it has been criticised by researchers as being sterile and unemotional (Fook, 2010) and a mechanism for professional confession (Fendler, 2003) which reinforces current beliefs rather than questions assumptions. Further to this Myers, Smith and Tesar (2017) argue that requiring reflective practices within sanctioned frameworks is inherently problematic as it may lead to standardisation rather than critical and innovative teaching practices. Fendler (2003) further states that reflective practices intended to provide relevant, effective and responsive insights for improving the quality of teaching can have complex consequences. Although much has been written about reflective practices, these studies have not addressed the influence of cultural backgrounds on such practices. It is important to note that the prior experiences of teachers and their interpretation of those experiences, and the activities they engage in, are most important (Turner 2013) to explaining why teachers do what they do. Undoing existing beliefs of pre-service teachers (PSTs) in formal training courses has been relatively unsuccessful (Bigelow & Ranney, 2005) as there is no correlation between the teacher

education courses, in terms of the social and cultural conditions of schools, the values of teacher educators and the needs of PSTs.

This paper will relate a study that was designed to compare reflective teaching practices in two culturally different countries, namely Malaysia and Australia. These two countries were chosen as they offered an opportunity to study differences in reflective thinking practices from an Asian and a Western cultural perspective among PSTs. In Malaysia, all PSTs have to keep reflective journals during their practicum, accounting for twenty percent of their grade, which is then discontinued once the practicum is completed (Malaysian Ministry of Education, 2014). Studies have suggested that these PSTs are only able to reflect on their teaching techniques rather than in terms of the impact they have on their students and their own professional development (Tee & Moses, 2017; Wong et al., 2016). In contrast, Australia had embedded reflective practice into its teacher advancement processes and recently introduced the Teacher Performance Assessment which require PSTs to show summative evidence of professional capabilities during their final practicum experience. Australian teachers need to show ongoing evidence of reflective thinking that sustains a high level of personal development, as part of the criteria for career advancement (AITSL, 2013; Department of Education, 2018). Hence, Australian PSTs have a vested interest in being more involved with reflective thinking practices in comparison to Malaysian PSTs, though the degree to which this is appreciated by PSTs is not clear.

#### Definition of Reflective Thinking Practice

In order to present a comprehensive operational definition of reflective thinking practice for this study, we considered the four points highlighted by Rodgers (2002). Firstly, reflective thinking is not clearly differentiated from systematic thinking. Secondly, assessment of it as a skill is vague. Thirdly, as reflective thinking cannot be clearly seen, it has begun to lose its value and lastly it is difficult to research its effects on self-development and student learning. It is also a cyclical and recursive process, which according to Lee (2005) will begin only when there is a problem that cannot be resolved, or a need to reconsider a situation.

Reflective thinking has been defined as the mindful association of professional actions and critical assessment of behaviours (Choy, Yim & Tan, 2017). Cox (2005) further notes that reflective thinking practice eventually leads to the formation of a bridge between a course of study and personal experience, creating a highly individualised and motivating learning activity. Hence for this study, reflective thinking practice is defined as the ability to reflect on actions so as to be able to engage in a process of continuous learning and self-development using practical values and theories that can inform these practices.

#### Reflective Thinking Practice among Teachers in Malaysia

The Malaysian government introduced a signatory education transformation initiative, the Malaysian Education Blueprint 2013-2025 to propel the country's education to be in sync with the needs of 21st Century knowledge and skills. The Blueprint acknowledges that teacher quality is one of the most pertinent factors in determining successful transformation and positive student outcomes, and recommends that teacher competency evaluation tools be more reflective to improve classroom instruction (Malaysian Ministry of Education, 2013). In this vein, reflective practices are emphasised in teacher education, to bridge the gap between theoretical knowledge and practices. Reflective thinking practices are emphasised during teaching practicums by having PSTs keep a log of their teaching experiences so as to be able to reflect on their actions and strategies in the classroom. Such practices on the whole are still in its infancy in the Malaysian teacher education curriculum.

Some Malaysian PSTs find reflective thinking was given the least attention by mentor teachers during their internship (Mustapha, 2013; Zanzali & Lim, 2011). Two qualitative studies by Subramanian (2012) and Wong et al. (2016) found that Malaysian PSTs did not

critically reflect on their teaching experiences and were not able to suggest ways to improve their teaching pedagogies and techniques as they had not been provided with appropriate scaffolding to aid the process. Many of these pre-service teachers were expected to ‘learn by observing’ and ‘do what I am doing’ as their mentors were not able to effectively describe professional practices (Goh & Matthews, 2011). This then discouraged PSTs from carrying out self-reflection that can potentially lead to lifelong and self-directed learning.

Choy et al. (2017) found that reflective thinking among Malaysian PSTs is significantly influenced by self-belief, teaching awareness, and self-assessment ability. The same study also found that lifelong learning skills did not have a significant relationship with reflective thinking, suggesting that these teachers were not adept in reflecting on their own teaching skills. Goh and Blake (2015) suggested that PSTs are not provided the necessary support to carry out critical thinking about their teaching practice. Hence this finding raises the question of whether teacher education in Malaysia has been adequately adapted for the needs of the teachers. The framework adopted for teacher education in Malaysia is grounded on a western framework with a blending of local practices and epistemologies (Karubi et al., 2013). Beginning teachers in Malaysia have also reported that teacher education had not adequately prepared them for the classroom as there is a lack of integration between practice and theory (Goh & Blake, 2015). Goh and Wong (2014) highlighted the plight of Malaysian teachers who are subjected to a standards form of evaluation which can potentially eliminate some forms of effective teaching while endorsing other forms resulting in a uniformed way of teaching without giving teachers an opportunity to talk about their teaching work and experiences to serve students.

### **Reflective Thinking Practice among Teachers in Australia**

In Australia, it has long been standard practice for PSTs on teaching practicums to write reflections after delivering lessons. However, the construction of the teacher as a reflective practitioner is a more recent development based on a confluence of circumstances including the shift to a learning-outcomes model of education; a strengthening ‘accountability’ climate; sustained research in educational assessment and evaluation (Wyatt-Smith, 2018); and associated practices such as bench-marking, criteria-based assessment and evidence-based claims for the efficacy of initial teacher education programs. As part of policy-driven reforms in education, the Australian Institute of Teaching and School Leadership (AITSL) was given responsibility for strengthening the assessment of PSTs’ preparedness for teaching “in comparable and transparent ways across universities” (Garrett, 2011, p.5). This led to the development of the Teacher Performance Assessment (TPA) which was introduced into pre-service teacher education courses in 2019. The TPA is completed by PSTs during their culminating practicum experience in schools. While different TPA instruments have been endorsed, all are designed to elicit summative evidence of a PST’s professional capabilities demonstrated during the final practicum placement. This involves decision-making in a real-life and dynamic learning environment, and requires PSTs to articulate “how they plan; the choices they make in collecting evidence; how they infer meaning from the evidence, drawing on theory and research, and how they take action in their practice to progress learning” (Wyatt-Smith, 2018, p.69). By engaging PSTs in critical analysis and responsive pedagogical decision-making, in a specific context with reference to theoretical and philosophical positions, the TPA underscores the requirement for PSTs to be reflective practitioners.

While there is a clear endorsement of reflective practice within the Australian education sector, evidenced in documents, procedures, career frameworks and resources,

there is little indication - beyond the general idea that it prompts the practitioner to plan and implement actions for improvement of their performance for student learning outcomes - that the efficacy of these practices has been tested. Additionally, there is little research evidence of the degree to which reflective practice is an internalised, self-motivated process - as distinct from a procedural requirement to fulfil employment needs – and whether it is a distinguishing feature of ‘good teachers’. The same can be said of the Malaysian education sector, where there is clearly an emphasis on the delivery of high quality education however, evidence of such quality among teachers is rather thin. Hence the context of this study will be to make a comparison of the reflective thinking practices of Malaysian and Australian PSTs, in order to fill the knowledge gap on the influence education policies can have on such practices. Reflective practices in Malaysia is only formally required during the final teaching practicum and thereafter no longer plays a part in the evaluation of practicing teachers or their career advancement in teaching. In contrast, Australia requires teachers from pre-service to practicing, to use self-reflection as a tool for self-improvement throughout their teaching career.

### **Aim of the Study**

This study specifically addresses the knowledge gap in terms of differences in reflective thinking practice among PSTs in different countries, in this case Malaysia and Australia. A tested model for reflective thinking practices developed by Choy et al. (2017) consisting of five constructs will be used: lifelong learning skills, self-assessment ability, self-belief, teaching awareness and reflective thinking. The results of this study will throw some light on possible differences in reflective thinking practices between Malaysia and Australia, and how it influences behaviours of teachers. The following research questions are formulated for this study:

- What are the contributions of the constructs: lifelong learning skills, self-assessment ability, self-belief, and teaching awareness and reflective thinking in explaining differences in reflective thinking among PSTs of the two countries?
- What are the significant relationships among the constructs that predict reflective thinking in the two groups of PSTs?

### **Theoretical Underpinnings**

A reflective approach to teaching has gained wide acceptance in many countries (Hall, 2013). Added to this, teachers who used reflective thinking to interpret their students’ actions and behaviours are likely to adopt the role of facilitators rather than an all knowing expert. Reflective thinking consists of three elements: a cognitive component, critical thinking and narrative inquiry (Sparks-Langer & Colton, 1991). The first element: cognitive component, the use of reflection to enhance knowledge on how to plan and make decisions, consists of six parts: content knowledge, pedagogical knowledge, curriculum, learner character, teaching contexts, and life-long learning. Life-long learning experiences for teachers are the life experiences acquired while they were students in the classroom (Buehl & Fives, 2009) and can also be in the form of self-study where it serves a dual purpose of promoting reflective thinking and personal growth (Dinkleman, 1999). The second element: critical thinking requires a teacher to make analysis of a situation in a classroom and make inferences to help with sound decision-making (Choy, Lee & Sedhu, 2019). The third element: narrative inquiry is the process of allowing the ‘voice of the teacher’ to be heard so

as to share the context of their decision-making. This process is part of self-determination and can influence students' participation in class (Ferguson, Hanreddy & Draxton, 2011).

A study by Choy, Yim and Tan (2017) of 1070 PSTs, found that reflective thinking leads to self-efficacy, self-assessment and teaching awareness suggesting that the development of reflective thinking practices was crucial for self-confidence and competence among teachers. However, life-long learning skills did not have a significant relationship with reflective thinking implying that PSTs were not likely to carry out reflective thinking on their teaching skills (Choy et al, 2017). The results of the study showed that lifelong learning skills, self-assessment ability, self-belief and teaching awareness explained 33.3% of its variance with reflective thinking. Choy et al.'s (2017) study only used PSTs from Malaysia, hence the generalizability of the findings is questionable. The current study will have the potential to give greater clarity about the reflective practices of teachers by carrying out a comparative study, using the same conceptual framework proposed by Choy et al. (2017) with PSTs from two populations with very different cultures using five constructs: lifelong learning skills, self-assessment, self-belief, teaching awareness, and reflective thinking (Figure 1).

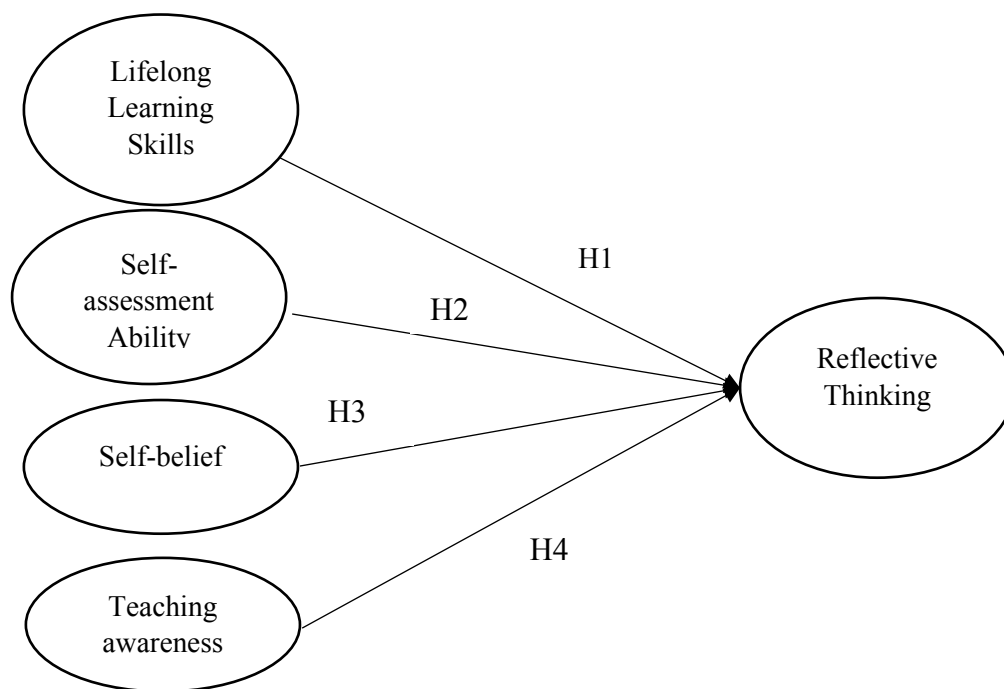


Figure 1. Conceptual Framework

### Operational Definitions

The operational definitions for the constructs used in the conceptual framework are in Table 1.

Construct	Definition	Literature
Reflective thinking	The ability to reflect on actions so as to be able to engage in a process of continuous learning and self-development using practical values and theories that can inform these practices.	Choy et al. (2017); Cox (2005)
Lifelong learning skills	The ongoing, voluntary and self-motivated pursuit of knowledge for either personal or professional reasons which can result in willingness to learn from mistakes hence the development of reflective thinking skills	Quendler and Lamb (2016); Buehl and Fives (2009)
Self-assessment ability	Process of analysing an experience that promotes self-reflection, in the process identifying standards and making judgements about the experience,	Rodgers (2002); Clara (2014)
Self-belief	Perception of ability to teach and relationship with students which can enhance motivation and drive to improve skills	Williams and Burden ((1997); Crosswell and Beutel (2017)
Teaching awareness	This is the ability of PSTs to realise the influence of their actions on students which can stimulate the process of self-assessment and self-evaluation	Lee (2005); Farrell (2015)

**Table 1. Operational Definitions**

### Rationale for the Hypotheses

Lifelong learning skills, the voluntary and self-motivated pursuit of knowledge is, according to Quendler and Lamb (2016), the methodical relation of life experiences which can represent the lifelong learning process. Buehl and Fives (2009) in a study on self-beliefs of PSTs found continued lifelong learning contributes to the reflection on an individual’s shortcomings and learning from the experience. Hence the hypothesis:

(H<sub>1</sub>): Lifelong-learning will have a significant influence on reflective thinking.

Self-assessment ability, the process of analysing experiences that leads to self-reflection can result in new ways of doing and seeing things (Clara, 2014). Rodgers (2002) further adds that self-assessment requires a certain amount of thought and must be based on knowledge and awareness of one’s own teaching approaches and styles (Bourke, 2015). Therefore, based on the above research the following hypothesis:

(H<sub>2</sub>): Self-assessment ability will have a significant influence on reflective thinking.

Self-belief, the perception of teaching abilities and relationship with students, will influence the way the educator teaches in the classroom. (Williams& Burden, 1997) and can predict resilience in their work (Crosswell & Beutel, 2017). Travers (2015) found that teachers who self-reflected to enhance their awareness of what they were doing were able to enhance their self-belief. The following hypothesis was formulated:

(H<sub>3</sub>): Self-belief ability will have a significant influence on reflective thinking.

Teaching awareness is the realisation of the influence actions can have on students. According to Lee (2005), the process of reflective thinking should not only indicate progress towards a solution but rather the degree of awareness about a situation. Farrell (2015) in a meta-analysis of reflective thinking practice studies for teachers found that such practices benefitted teachers as it furthered opportunities and motivated teachers to explore and challenge their approaches to teaching, resulting in self-assessment and changing beliefs. Based on the research the following hypothesis was formulated:

(H<sub>4</sub>): Teaching awareness will have a significant influence on reflective thinking.

**Research Methods**

**Participants and Data Collection**

The authors obtained permissions to conduct research from their respective universities, and also the universities where data were collected. Respondents consisted of PSTs from a Malaysian university and an Australian university. These PSTs were informed about their rights of withdrawal from the study at any time, and also assured the anonymity of their identity. Data from both countries were subjected to screening where outliers and straight-lined responses were deleted. The final sample consisted of 387 Malaysian PSTs and 378 Australian PSTs who are enrolled in Bachelor level programmes, which satisfy the statistical power of 90% at an  $\alpha$  level of 0.05 according to G\*Power 3.1.2 software. Table 2 summarises the profile of the respondents.

Demographic factors	Malaysian		Australian	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Gender				
Female	302	78.0	325	85.8
Male	85	22.0	53	14.0
Year of Study				
Year 1	125	32.3	117	30.9
Year 2	128	33.1	116	30.6
Year 3	30	7.8	81	21.4
Year 4	104	26.9	64	16.9
Practicum experience?				
Yes	230	59.4	260	68.8
No	157	40.6	118	31.2
	<b>Mean</b>	<b>Standard Deviation</b>	<b>Mean</b>	<b>Standard Deviation</b>
Age (years)	22.22	1.458	32.15	9.766

Note: Malaysian n = 387; Australian n = 378

**Table 2. Respondents' Profile**

**Measures**

The scale items were from Reflective Thinking for Teachers Questionnaire (RTTQ) (Choy et al, 2017). The questionnaire, consisting of 28 items, was directly adopted to measure the constructs of the study: Life-long learning skills (8 items), self-assessment ability (7 items), self-belief (4 items), teaching awareness (4 items), and reflective thinking (5 items). As the RTTQ was designed using a Malaysian pre-service teacher sample, some of the items were rephrased for the Australian sample to enable better understanding of the items.

**Assessment of Measurement Model**

Reliability of the constructs was evaluated with composite reliability (CR), while convergent validity was established with average variance extracted (AVE), and discriminant validity was assessed with heterotrait–monotrait (HTMT) criterion. The items in the scales were also assessed, where indicators which did not meet the loading threshold of .70 were removed. As shown in Table 3 and Table 4, constructs' CR satisfied the criteria of > 0.70, while AVE indices were > 0.50 (Hair et al. 2017). Discriminant validity was established with



all HTMT ratios below HTMT .85 demonstrating that the constructs were distinctively different from one another (Hensler et al. 2015).

No	Constructs	AVE	CR	Heterotrait-monotrait (HTMT) Ratio				
				1	2	3	4	5
1	LLS	0.582	0.874					
2	Reflective thinking	0.667	0.888	0.278				
3	Self-assessment	0.535	0.873	0.881	0.246			
4	Teaching awareness	0.712	0.831	0.119	0.282	0.134		
5	Self-belief	0.614	0.760	0.569	0.468	0.54	0.204	

Note: LLS = Life-long learning skills

**Table 3. Internal consistency, convergent validity, and discriminant validity of (Malaysian sample)**

No	Constructs	AVE	CR	Heterotrait-monotrait (HTMT) Ratio				
				1	2	3	4	5
1	LLS	0.573	0.889					
2	Reflective thinking	0.599	0.817	0.299				
3	Self-assessment	0.621	0.891	0.825	0.288			
4	Teaching awareness	0.778	0.875	0.436	0.506	0.566		
5	Self-belief	0.724	0.840	0.755	0.203	0.855	0.521	

Note: LLS = Life-long learning skills

**Table 4. Internal consistency, convergent validity, and discriminant validity of (Australian sample)**

**Assessment of Structural Model**

To assess multicollinearity in the model, the variance inflation factor (VIF) was evaluated. The highest VIF for the Malaysian sample was 2.251, while the Australian sample recorded a value of 2.595, suggesting collinearity is not a concern as it is lower than the recommended threshold of 3.3 (Hair et al. 2017). Table 5 shows the results of the hypotheses tested on both samples. Significance of path coefficients is determined with t-values and p-values, and also 95% confidence intervals.

Hypotheses	Country	B	Stand Error	t-value (t)	p-values	95% CI		Support ?
						0.025	0.975	
H1. LLS -> RT	Aus	-0.130	0.091	1.438	0.151	-0.284	0.096	No
	Mal	-0.142**	0.058	2.460	0.014	-0.254	-0.029	Yes
H2. Self-assessment -> RT	Aus	-0.038	0.097	0.387	0.699	-0.215	0.162	No
	Mal	0.009	0.064	0.147	0.883	-0.108	0.140	No
H3. Self-belief -> RT	Aus	-0.317**	0.093	3.416	0.001	-0.476	-0.124	Yes
	Mal	0.171**	0.048	3.521	0.000	0.070	0.257	Yes
H4. Teaching Awareness -> RT	Aus	0.072	0.068	1.073	0.284	-0.054	0.204	No
	Mal	0.288**	0.055	5.189	0.000	0.173	0.389	Yes

Note: \*\* t-value > 1.96, p-value < 0.05. LLS = Life-long learning skills RT = Reflective thinking

**Table 5. Results for Hypothesis Testing**

As shown in Table 5, all hypotheses with the exception of H2 were not supported for the Malaysian sample, while only H3 was supported by the Australian sample. Interestingly, self-belief significantly affects reflective thinking for both samples (H3), but in opposite directions. The positive effect of the Malaysian sample suggested that higher self-belief can bring about higher reflective thinking, while the negative effect of the Australian sample indicated that higher self-belief may give rise to lower reflective thinking.

## Discussion

Reflective thinking - defined as the ability of PSTs to engage in a process of continuous learning and self-development using practical values and theories - is influenced by the four factors outlined above. This study examined how those four factors have influenced the reflective thinking practices of Malaysian and Australian PSTs. The results showed interesting differences between Malaysian and Australian PSTs. Three of the four hypotheses were significant for Malaysian PSTs while only one of the four hypotheses was significant for Australian PSTs.

Lifelong learning skills, defined as the self-motivated pursuit of knowledge, for either personal or professional reasons, had a significant relationship with reflective thinking for Malaysian PSTs but not for Australian PSTs. This finding is contrary to other studies on reflective thinking among Malaysian PSTs which found that they were not ready to carry out reflection on their own teaching (Choy et al., 2017; Goh & Blake, 2015). This could indicate that the recent introduction of student-centred teaching and outcome-based learning in Malaysian universities is impacting the thinking skills of these PSTs as they seem more confident about carrying out reflective thinking on their own. Further evidence of this is from the highest factor loading for Malaysian PSTs in the lifelong learning scale on their reflections on lessons taught to determine the effectiveness of the teacher. The Australian result shows no significant relationship between lifelong learning and reflective thinking. Although there is an emphasis on developing PSTs' critical analysis capacity, evidenced in the way their assessments have been written, and the recent governmental requirement for additional summative evidence of professional capabilities demonstrated through the completion of the Teacher Performance Assessment, this behaviour is not reflected in the participants' responses in this study. It must also be noted that the highest factor loading in the lifelong learning scale for Australian PSTs is the item on reflecting on lessons by talking to colleagues from other fields. This reinforces the finding that there is little evidence of reflective thinking as an internalised and self-motivated process (Myers, Smith, & Tesar, 2017).

Self-assessment, the process of analysing an experience that promotes self-reflection, had no significant relationship with reflective thinking for Malaysian and Australian PSTs. This implies that most PSTs may be more familiar with an assessment process where the mentor teacher and university supervisor provide the primary or sole source of feedback. Snead and Freiberg (2017) further noted that although self-reflection strategies exist in teacher education programmes, emphasis generally lies on external explanations. Interestingly, this need for external feedback is also reflected in the highest factor loading in the self-assessment scale for both Malaysian and Australian PSTs with the former wanting students' feedback to indicate their strengths and weaknesses and the latter referring to students' feedback to help their understanding. Civitillo, Juang, Badra, and Schachner (2019) pointed out that teachers who do not engage in self-assessment are less likely to think reflectively about their teaching practices. Previous studies (Subramanian, 2012; Wong et al., 2016) have also found that Malaysian PSTs are not able to self-assess and did not critically

reflect on their teaching experiences. Research evidence for Australian PSTs on their self-assessment ability is rather thin and most of the research is centred on assessment of PSTs during their practicum using a set of inherent requirements to show quality teaching practices (Sharplin, Peden, & Marais, 2016). Goldman and Gimbeek's (2015) study found Australian PSTs were only able to reflect and assess their teaching ability at the lowest levels. This is similar to findings by Subramanian (2012) and Wong et al. (2016) for Malaysian PSTs.

Self-belief, the perception of a teacher's ability to teach, which can motivate and drive improvement in teaching skills, had a significant relationship with reflective thinking for both Malaysian and Australian PSTs. However, the relationship was negative for the Australian PSTs indicating that the greater the self-belief the less reflective thinking is carried out. This seems to correspond to research by Lee (2005) that found teachers will reflect on their teaching only when there is a need to reconsider a situation. Australian PSTs with more self-belief may not tend to be reflective because they believe there is no need to change or improve their teaching situation. In contrast, the relationship for the Malaysian PSTs was positive, indicating that greater self-belief resulted in more reflective thinking. This finding may be explained by taking into account the cultural differences of the two groups of PSTs. As Brewer and Chen (2007) have argued, the failure to provide a satisfactory explanation for many conflicting findings in research literature may be as a result of failing to consider the role of cultural differences.

Research about national cultures by Hofstede, Hofstede and Minkov (2010) classifies Malaysia as a collectivist culture where individualism, (the degree of independence a society maintains among its members), is low and power distance, (the degree of dependence of individuals on their leaders), is high. Australia by contrast is ranked highly as an individualist culture. Using national culture as a lens, it could be argued that collectivistic tendencies among Malaysian PSTs can be seen by the item with the highest factor loading for self-belief. This item relates to how the mistakes a teacher makes can influence a student's life. This means Malaysian teachers will be more likely to follow instructions of their supervisors and only those with a high level of self-belief will have the confidence to carry out reflective thinking independently. In an interdependent society which also values personal responsibility in order to make valuable contributions to their social group (Markus & Kitayama, 1991), strong self-belief can be viewed as an achievement motive. In Australia's individualistic national culture, the independent self is more valued than the collective whole; and each person in a social group is seen as an equal (Hofstede et al., 2010). The item with the highest factor loading for self-belief for Australian PSTs which was on how they connected, and how and what they taught with their life experiences, accords with this cultural characteristic.

Teaching awareness, the ability of PSTs to realise the influence of their actions on students stimulating them to self-assess and self-evaluate, had a significant relationship for Malaysian PSTs but not for Australian PSTs. The highest factor loading in teaching awareness for Malaysian PSTs is about the influence of beliefs on students and the way they teach. For the Australian PSTs the highest factor loading for this scale was on having an established set of teaching practices they were comfortable with that could be improved with continuous feedback from students and supervisors. The results again seem to show the influence of the collectivist culture with Malaysian teachers being more concerned about the influence of their actions on their students. The influence of national cultural tendencies is a qualified finding as the construal of self and reflection in different contexts requires more in-depth study. Another influence to be considered is the degree to which certain terms may evoke different emotional expressions in the Malaysian and Australian context (Markus & Kitayama, 1991).

Interestingly with the extensive policies that encourage and mandate the authentic application of reflective thinking during practicums (Garrett, 2011) there was no significant relationship with teaching awareness for the Australian PSTs, implying that there may be little assessment of dynamic and situational thinking being carried out. This seems similar to findings by Hollingsworth and Clarke (2017) that the ability of teachers to self-reflect is dependent on their ability to carry out substantive analysis of their teaching practice. It also raises the question about whether the formulation of reflection, seen in the way it is embedded as a procedural requirement in the Australian education sector, and tied to teacher assessment and career advancement, prescribes 'reflection' and dampens self-initiated and responsive reflective practices (Myers, Smith & Tesar, 2017).

### **Implications for Practice**

The findings of this study have several implications for administrators and supervisors of teacher education programmes in Malaysia and Australia. Although there is some evidence to indicate that Malaysian PSTs may be carrying out some form of self-reflection independently, the PSTs from both countries seemed more comfortable reflecting on their teaching practices using feedback from their supervisors and mentor teachers. Further to this, despite concerted efforts to stimulate and encourage the practice of reflective thinking among Australian and Malaysian PSTs, evidence from this study indicates that it may still be at a very surface and technical level (Grushka, McLeod, & Reynolds, 2005) as opposed to one where reflection is carried out in-depth with the intention of improving the self as well as the practice.

While reflective thinking is emphasised in the teacher education programmes in both countries, the results clearly indicate that the conceptualisation of the process of reflective thinking between the two cohorts of PSTs is very different. The degree to which this is influenced by national cultural tendencies, the emotional expressions attached to terms and phrases, or the degree to which the concept is prescribed by systemic practices, is still to be determined. However, the influence of culture can be inferred in the data where it is most pronounced in the area of self-belief. Therefore, where the national culture is collectivist in nature, PSTs may need more encouragement to develop the self-belief needed to confidently think reflectively without external feedback. In contrast, where the national culture is more individualist, PSTs may need to be guided toward self-exploration and critical analysis of their teaching practices; and to develop more awareness of the impact of their actions on students. These are the observed differences in the two cohorts, therefore the degree to which culture is a factor to account for these differences need to be addressed in future studies.

### **Limitations of the Study**

Data for the study were collected from only one university in Malaysia and one in Australia. Further to this, self-reported instruments were used, therefore the truthfulness of the respondents cannot be assured. It is expected that the participants' context may influence their perceptions and interpretations of the questions posed. We have tried to ensure that these perceptions are not seen as permanent traits of the individual.

## Conclusion

The results of this study showed some interesting new findings. It would be expected that with the increased efforts directed toward the development of reflective thinking among PSTs there would be more evidence to show the efficacy of such efforts. The model based on the five constructs could adequately explain some of the differences between the two groups of PSTs. Although there is evidence to show that lifelong learning skills, self-belief, and teaching awareness have a significant relationship with reflective thinking for Malaysian PSTs, only self-belief was found to have a negative relationship with reflective thinking for Australian PSTs. The findings imply a need for different support systems to be implemented in the different settings to encourage more independent and self-directed reflective thinking. The assumption that reflective thinking will take place given the right tools and inducements may not hold true, and there needs to be more study into how to better guide the process. In the case of Australia, the expected reflective practices embedded within school leadership and career advancement procedures may not be particularly effective in supporting the development of internalised reflective thinking practices by PSTs. For Malaysia, given its strong collectivist culture, more may need to be done to build confidence among its teachers and encourage more sharing of thoughts and ideas. Future studies will need to consider how reflective thinking influences and impacts these PSTs when they become fully practising teachers. Further to this, the findings in this study may only be applicable to the two countries involved in the study. Broadening these findings to other situations may require more in-depth study before further conclusions can be drawn.

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