

# Mathematics Pre-service

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## **Mathematics Pre-service Teachers' Learning Experiences of International Teaching Practicum in Indonesia**

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### **ABSTRACT**

This study aimed to examine the pre-service teachers' (PSTs) learning experiences of international teaching practicum (ITP) in Indonesia. The researchers employed a case study research design and the participants comprised three female PSTs majoring in Mathematics from a Malaysian public university who undertook the ITP in a public junior high school in Indonesia for eight weeks. The data were collected from the PSTs' reflective journals and face-to-face interviews which were analysed using the Interpretative Phenomenological Analysis. The findings revealed four major themes of their learning experiences of ITP, namely mathematics lesson planning, mathematics teaching and learning, guidance from mentor teacher and contributions to the school. The study indicates that ITP could be an alternative platform for PSTs to gain positive learning experiences and prepare them for the challenging teaching environment in the times of globalization.

*Keywords:* Indonesia, international teaching practicum, mathematics, pre-service teachers

### **INTRODUCTION**

Teaching practice or teaching practicum, as argued by Barton et al. (2015), is an extremely important phase for PSTs where they get to apply and practise all the content knowledge, pedagogical knowledge, and didactical knowledge that they have learned in their teacher education programmes in the actual school context. Although teaching practicum varies in intent and approach, it has always been integral to

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teacher education programmes at tertiary educational institutions (Vick, 2006) because it provides opportunities for PSTs to integrate theory and practice in the real school environment (Allen & Wright, 2014). In addition, teaching practicum represents the time during which PSTs are ideally provided with the opportunities to grow professionally and personally in a transition process from a student to a teacher, culminating in the development of their self-image as a teacher with their own professional identity (Sutherland et al., 2010).

Conventionally, PSTs undertake their teaching practicum in schools that are located in their home country. Nevertheless, in view of preparing PSTs to face the challenges of the 21<sup>st</sup> century and the push for globalization (Kabilan, 2013; Kabilan et al., 2017; Larsen, 2016; Mwebi & Bringham, 2009) as well as borderless education (Middlehurst, 2006), several tertiary educational institutions are beginning to initiate an ITP with tertiary educational institutions from other countries to provide opportunities for their PSTs to experience cross-cultural teaching and learning in foreign schools (Cushner & Mahon, 2002; Kabilan et al., 2017). As a result, a number of ITP projects has been initiated in several countries around the world (Velliari & Coleman-George, 2016), such as in Turkey (Sahin, 2008), Hong Kong (Lee, 2009), Malaysia (Kabilan, 2013; Kabilan et al., 2017), Philippines (Anar et al., 2017), Korea (Kim & Choi, 2018), Australia (Jin et al., 2019) and China (Zhu et al., 2019).

Sahin (2008) investigated Turkish PSTs' learning experiences during a two-month ITP in the United States of America using questionnaires and reflective journals. The findings revealed that the ITP strengthened the PSTs' beliefs about their educational system. As a result, they became more optimistic and positive about their educational system which helped them to develop professionally and personally. Lee's (2009) study involved Hong Kong PSTs who participated in a six-week language immersion programme in Auckland, New Zealand. The study found that the PSTs had a deep understanding of various pedagogical skills, a greater sense of independence and confidence, and gained a higher level of appreciating cultural differences. Kim and Choi (2018) investigated the perceptions and experiences of Korean social studies PSTs who participated in an ITP in the United States of America. Although the PSTs faced difficulties in speaking a foreign language and adjusting to a different culture, they also gained confidence and self-efficacy by negotiating and actively participating in the teaching and learning process. It also helped them to understand multiculturalism and the different perspectives of the teachers' roles, teaching pedagogies, and local education systems. Using a case study design, Jin et al. (2019) investigated how the PSTs from Australia and China perceived the benefits and challenges associated with their ITP in Anshan, China. Although the findings revealed that the ITP was a mutually beneficial and valuable experience for all participants, there were challenges

and tensions in terms of the meeting of Australian and Chinese educational systems because of their very different social and cultural contexts.

Apart from the ITP studies that focused on foreign language, Anar et al. (2017) explored the learning experiences of Filipino PSTs in the Science, Technology, Engineering and Mathematics Program in Thailand through interviews and focus group discussions. The findings revealed five major themes of the PSTs' learning experiences: pedagogical learning, personal and professional learning, social and multicultural learning, technological learning, and travel exposures.

Zhu et al. (2019) reviewed the current research on ITPs associated with teachers' professional development and they found that: (a) most of the studies were conducted in English-speaking countries (e.g., Cushner, 2007; Cushner & Mahon, 2002) in which the researchers typically examined how the English native speaking PSTs developed their educational beliefs, knowledge, and professional identities; (b) the main aims of the studies were varied such as to improve language proficiency (e.g., Nguyen, 2017), promote heightened intercultural awareness (e.g., Lang et al., 2017), experience various educational philosophies (e.g., Trent, 2011), shape new perceptions on self-identities (e.g., Malewski & Phillion, 2009) and facilitate the development of teachers' affective domain (e.g., Lee, 2009); (c) the studies adopted different theoretical frameworks such as cross-cultural psychology (e.g., Deardorff,

2006), consonance, critical dissonance, and collaborative consonance (e.g., Roger et al., 2009), professional identity reconciliation (e.g., Fox, 2017) and transformative learning theory (e.g., Trilokekar & Kukar, 2011); and (d) the studies used different methods of data collection such as semi-structured interviews (e.g., Spooner-Lane et al., 2009), narrative inquiry (e.g., Craig et al., 2017), reflective journal writing (e.g., Craig et al., 2015), and pre- and post-questionnaires (e.g., Willard-Holt, 2001) to examine the multiple influence of ITP on PSTs' professional development.

In Malaysia, Kabilan (2013) investigated six PSTs' experience of professional development during their ITP in the Maldives for six weeks. The participants comprised four female and two male PSTs specialising in Teaching English to Speakers of Other languages (TESOL). The data were collected from an open-ended questionnaire, reflective journals and face-to-face interviews and were analyzed using the Interpretative Phenomenological Analysis (IPA). The study found that the PSTs experienced beneficial and meaningful professional development in terms of gaining confidence in speaking and using the English language to communicate, enhancing their skills and confidence level in teaching, developing useful interpersonal skills, and gamering the understanding and the ability to adapt to new working cultures and the different approaches to teaching and learning that are used in the Maldivian school. In a subsequent study, Kabilan et al. (2017) examined two PSTs' experience of

professional development during their ITP in Bangladesh for six weeks. The participants comprised two female PSTs specialising in TESOL. The data were collected from the PST's observations, reflective journals and face-to-face interviews and were analyzed using IPA. The findings indicated that the PSTs had enhanced specific and related teaching skills, gained confidence in teaching and using the English language, developed useful interpersonal skills, and experienced and internalized new perspectives on education and culture.

In general, previous research has shown that the ITP studies are on the rise due to the increase of collaborations and networking initiated by the tertiary educational institutions globally (Azizah, 2016) which enabled PSTs to experience the diversity of culture in a foreign setting and facilitated them to gain invaluable insights of the host country, its educational system as well as the people and surrounding communities (Dunn et al., 2014; Grierson & Denton, 2013; Kabilan, 2013; Kabilan et al., 2017). Despite the growing interest and importance of PSTs' cross-cultural experiences, to date there is no documented research on the ITP learning experiences of Malaysian mathematics PSTs. Hence, the present study attempted to fill the gap by examining Malaysian mathematics PSTs' learning experiences of ITP in Indonesia. It is hoped that the findings of this study will contribute to developing a body of research and scholarship on ITPs from Malaysian contexts that have, to date, been largely underexplored.

## **METHOD**

The participants comprised 3 Malay female PSTs, aged 23 years old and majoring in Mathematics who had completed seven weeks of local teaching practicum in Malaysia. They were in their final year of the four-year Bachelor of Science with Education programme in a Malaysian public university and they volunteered for the ITP in Indonesia. After the teaching practicum, the three PSTs went for their ITP in Indonesia for eight weeks. During the ITP, they taught mathematics in junior high school (Grade 8) classes. Each class had seven Mathematics periods per week and each period consisted of 30 minutes. Besides teaching mathematics, they were also involved in extra-curricular activities such as club activities and sports. The participants were also assigned a mentor teacher who guided, advised and facilitated their learning and adjustment to teaching in the school. The mentor teachers also supervised and monitored the participants' lessons through observations. Apart from the mentor teachers, a mathematics education lecturer from the Indonesian university and a mathematics education lecturer from the Malaysian university was assigned to supervise and observe the participants' lesson at least once during the ITP. The Malaysian university lecturer held a discussion and meeting with the participants and the mentor teachers at the end of the visitation to acquire detailed information on the participants' overall performance and learning experiences throughout the ITP.

### **Methods of Data Collection and Analysis**

The data were collected through reflective journals (RJs) that were written by the participants on a daily basis about their learning experiences of ITP in Indonesia and an interview session with the participants that focused on their learning experiences of ITP in Indonesia. For the purposes of identification and data analysis, the first participant is referred to as A while the second and third participants are referred to as B and C, respectively. The RJs of A, B, and C were labelled as RJA, RJB, and RJC, respectively. For the interview, the responses of A, B, and C were labelled as IA, IB, and IC, respectively.

Prior to the ITP, the participants were given a briefing on how to write their RJs. They were encouraged to make as many entries as possible on their learning experiences of ITP in Indonesia. After the ITP, an individual interview session was carried out with each of the participants in the Malaysian university. Each interview session took approximately one hour and the participants were asked to respond to their learning experiences during the ITP in Indonesia with further explanations and examples. The interviews helped to provide a sufficient amount of information in supporting the data from the participants' RJs. The data from the RJs and interviews were analysed using IPA to ensure the accuracy, reliability and trustworthiness of the information obtained from both the sources of data of the study (Kabilan et al., 2017).

According to Pietkiewicz and Smith (2014), IPA draws upon the fundamental principles of phenomenology, hermeneutics and idiography to investigate how individuals make sense of their experiences through in-depth analysis of single cases and examining individual perspectives of study participants in their unique contexts. IPA comprises three main stages of analysis: (1) multiple reading and making notes; (2) transforming notes into emergent themes; and (3) seeking relationships and clustering themes. The initial stage involved a close reading of the participants' RJs and interview transcripts several times and making notes. The next stage involved transforming the notes into emergent themes. The final stage involved seeking relationships between emergent themes, grouping them according to conceptual similarities and providing each cluster with a descriptive label. An example of the analysis for the Mathematics Lesson Planning theme is shown in Appendix 1.

### **FINDINGS**

Based on IPA, four major themes of the mathematics PSTs' learning experiences of ITP in Indonesia emerged: mathematics lesson planning, mathematics teaching, and learning, guidance from mentor teacher and contributions to the school.

#### **Mathematics Lesson Planning**

A wrote in her reflective journal that the learning objectives of the lesson plans in the Indonesian school were quite similar to those in the Malaysian school because the two syllabi were quite similar. But in the

interview, she clarified that the two syllabi differed in terms of the topic arrangement. B and C, noted that the Indonesian learning objectives were more focused on the noble values (Core Competencies) as compared to the Malaysian learning objectives and they were being emphasized throughout the teaching process. B explained in the interview that there were four types of Core Competencies:

*The objectives used in the lesson plans in Indonesia are not much different from Malaysia because the syllabus used is almost the same, only the topic arrangement is different (RJA). For example, the topic of Function in Mathematics in Indonesia is the fourth topic but in Malaysia it is the first topic (IA). The objectives are more on noble values which are applied throughout the process of teaching which is labelled as Core Competencies (RJB). They are divided into 4 types; K1, K2, K3 and K4. K1 relates to religion, K2 relates to noble values concerning self which is applied through group work, while K3 relates to students' own attitudes and efforts about knowledge, and lastly K4 relates to students' ability to apply in school and out-of-school learning (IB). Appreciate the teachings of religion, honesty, discipline, responsibility, caring, tolerance, and mutual cooperation. Be polite, and confident in interacting effectively with the social and natural environment (RJC).*

Both A and B wrote that the steps and activities of the lesson plans in the

Indonesian school were still teacher-centred and the teachers were still less exposed to the 21<sup>st</sup>-century learning environment as compared to the Malaysian school. A explained that the teachers mainly teach mathematics in the classroom based on the textbooks provided by the school. In addition, C noted that the steps and activities comprised five parts and she provided an example for each of the parts - observation, asking questions, gathering information, reasoning, and communication:

*The steps and activities used in the classroom in Indonesia are still 'teacher-centred' which focused only on teachers. Teachers are still less exposed to the 21st Century Learning used in Malaysia (RJA). In the classroom, teachers mainly teach based on the textbooks given by the school (IA). The steps and activities used in the classroom in Indonesia are still more teacher-centered (RJB). In the lesson plans, the steps and activities are divided into five parts: 1. Observation - students observe the picture of the net of a cylinder shown on the LCD. Students write down their observations. 2. Asking questions - students are encouraged to ask questions based on their observations. E.g., What is the formula of the surface area of the cylinder? 3. Gathering information - students discuss the formula of the surface area of the cylinder and write down their discussion in the worksheet. 4. Reasoning – students deduce the formula of the surface area of the cylinder. 5. Communication – students*

*present the results of group discussion and reasoning (RJC).*

Both A and B mentioned that Mathematics textbooks and exercise books were common sources of teaching aids for Indonesian teachers. Additionally, the teachers also prepared worksheets for students to work on in the classroom. B also highlighted that the Mathematics Laboratory was also used by the teachers and C gave examples of ICT being the other source of teaching aids in the interview:

*Teaching aids used mostly are Mathematics textbooks and exercise books. Teachers also prepare student worksheets that have questions for students to do in the classroom (RJA). Teaching aids used are Mathematics textbooks and exercise books. Teachers also create their own questions for use in the classroom labeled as student worksheets. Another source of teaching aids is the Mathematics lab (RJB). The teaching aids are Mathematics textbooks, exercise books, computers, laptops, and Internet (IC).*

### **Mathematics Teaching and Learning**

A explained that the induction set used by the Indonesian teachers focused on the religious aspects and the importance of learning a mathematical topic by relating it with everyday life so that students could understand what they were learning. B added that the set induction comprised six steps but C gave a different and more detailed example of the induction set used

by the teachers which also comprised six steps as evidenced in the excerpts:

*Teachers begin their lesson with a focus on aspects of religion and also the importance of learning the topic. Teachers also relate the topic to be learned with everyday life so students are more clear about what they are learning (RJA). The induction set consists of 6 steps: 1. Students respond to teacher's greeting; 2. The students pray before the study (increase religious values); 3. The teacher checks student attendance; 4. The teacher reviews the previous topic and relates to today's topic; 5. The teacher introduces the learning outcomes that should be achieved at the end of the lesson; 6. The teacher motivates students by relating the topic to everyday life (RJB). Example of set induction which consists of 6 steps: 1. The teacher greets the students and asks one of the students to lead the singing of the Indonesia Raya song by standing up. Then they were invited to sit down and pray. Next, the teacher checks the attendance and ask about students' health; 2. The teacher asks students to take out their books, tools and materials to take part in fun learning; 3. The teacher revises the previous lesson; 4. Students listen to the teacher's explanation about the benefits of learning the surface area of the cylinder in everyday life; 5. Students write down the teacher's explanation of the learning activities that will be carried out by forming groups of 4-5*



students; 6. Students write down the teacher's explanation of the assessment techniques that will be used in the lesson (RJC).

B noted that time management is particularly emphasized where teachers had to efficiently adhere to the allocation of time for the teaching and learning activities so that students could learn effectively. C and A elaborated that time management was very effective because the students could understand the lesson well and thus students could practise more questions:

*Time management is particularly emphasized in an Indonesian school, where teachers have to adhere to time during teaching. When the bell rings the teacher should immediately enter the class and continue the teaching and learning session and have to wait until the bell rings then the teacher is allowed to leave the class. The time division for the activities is reasonable with the efficient use of time (RJB). Time management is very effective because students can understand the topics learned and save time for the teacher (IC). The activities provided also correspond to the time given by the teacher. The students usually get the questions given quickly, so the teacher can give the students more questions as practice (IA).*

Both B and A mentioned that the teachers delivered lessons in a clear and organized manner that were integrated with effective teaching and learning activities according

to the syllabus stipulated in the 2013 Mathematics Curriculum. Interestingly, C explained that the teachers delivered the lessons using the 5M technique:

*Teachers deliver the lesson in a clear and organized way with teaching and learning activities that focus on the learning topics (RJB). The contents of the lesson are also clearly presented by the teachers according to the syllabus that was set out in the 2013 Curriculum (RJA). The teaching of the contents of the lesson is by using the 5M Technique: Mengamati (Observing), Menanya (Asking), Mengumpulkan maklumat (Collecting Information), Menalar (Reasoning) and Mengkomunikasikan (Communicating) (IC).*

A wrote that the teaching techniques used were more teacher-centred that was the teachers only taught in front of the class while the students listened and took notes of important contents. After the teaching, students were provided with a worksheet to assess their understanding of the lesson. For B, the selection and effective implementation of traditional teaching techniques were aligned with the lesson objectives. Notably, C highlighted that cooperative learning based on the constructivist theory was sometimes used by the teachers to facilitate students' learning and solved problems together:

*Techniques used are more teacher-centered. The teachers only teach in front and students listen and record important contents. Once the contents*

*of the lesson are completed, students are provided with a worksheet to test their understanding of the topic (RJA). The selection and application of the technique are in line with the objectives of the lesson and the effective implementation of traditional techniques (IB). Sometimes, teachers use cooperative learning based on constructivism to allow students to work together in the form of groups to solve problems. In the constructivist approach the teacher is only as a mentor and facilitator in learning activities (IC).*

All the participants highlighted that the teachers used existing educational resources such as textbooks and exercise books efficiently to enhance their teaching and students' learning. They also provided questions from reference and exercise books for the students to practise:

*Teachers use existing educational resources such as textbooks and exercise books. Teachers also provide questions from reference books and exercise books for practice (RJA). Teachers use educational resources efficiently which can strengthen the contents of the lesson (RJB). Teachers use educational resources as much as possible to ensure that students can master the topics (RJC).*

In terms of classroom climate, both A and B wrote that it was less conducive for learning when the teaching process was teacher-centered with one-way communication between the teacher and

students. Nevertheless, C suggested that the classroom climate could be improved during the teaching and learning process by questioning students or asking students to give their opinions:

*The classroom climate is less active when the teacher uses teacher-centered approach because only one-way communication occurs during class (RJA). The classroom climate is not so active because the teacher did not use the student-centered learning approach as a whole (RJB). The classroom climate can be improved by involving students during the teaching process by asking questions or asking students to give their opinions (IC).*

A explained that the teachers assessed their students' understanding of each topic by giving them a test at the end of the topic. They also gave exercises to the students for them to practise at the end of each topic. As a result the students were proficient in mathematics because they had done a lot of exercises that further enhanced their understanding of the topic. Additionally, B mentioned that the students were required to answer questions in front of the classroom or to do the exercises given in the exercise books and then followed by whole-class discussion. C noted that the teachers usually held quizzes at the end of the lesson to assess students' understanding of the lesson:

*Teachers assess students by giving a test after each topic ends. This is to test students' understanding of the topic. Teachers also give exercises after the*

*teaching of the topic. So students are proficient in mathematics because they have done a lot of exercises that reinforce their understanding of the topic (RJA). Students are required to answer questions in front of the classroom or to answer the exercises given in the exercise books and discussions are made afterward (IB). Teachers usually give quizzes at the end of the lesson to test students' understanding of the topic (RJC).*

A highlighted that the teachers could easily manage their classes because the students were very well-disciplined, very well-mannered and very respectful of teachers. B further explained that the students paid full attention to the lesson without interrupting the teacher's teaching. C emphasised that the teachers were very much concerned with classroom management and thus the classroom management was very organized so that it was conducive for students to learn:

*Teachers here can easily manage classes because their students have high discipline. They also have good manners and very respect their teachers (RJA). Pupils focus completely without any interruption given to teachers during teaching (RJB). Very organized class management and teachers are very much concerned with class management so students can learn in a very comfortable and calm situation (RJC).*

Lastly, A mentioned that at the end of the lesson the teachers usually explained

the importance of the topic taught and the students were also guided to summarize what they had learned about the topic. B noted that the teachers wrote several important things at the closure in their lesson plan and implemented them during classroom teaching and learning, such as guiding students to summarize the lesson, informing students about the next topic, and ending the lesson with greetings and prayers. C specifically explained that at closure she guided the students to summarize the lesson on the topic of the surface area of the cylinder, conducted a quiz to assess the students' understanding of the lesson, informed the students about the next lesson on the volume of a cylinder, and gave homework to the students to reinforce their understanding of the lesson:

*Teachers usually at the end of teaching tell the importance of the topic so that the students are more clear about the topic. Students are also guided to summarize the lesson (RJA). There are some important things that should be written in the lesson plan and implemented in the class: Teachers help students summarize the lesson, Teachers tell about the next learning topic, and Teachers end the learning with greetings and prayers (RJB).*

*The teacher helps students to summarize the contents of the lesson that is about the surface area of the cylinder. Next, the teacher gives a quiz to test students' knowledge of the topic. Then, the teacher tells students about the upcoming topic is about the volume of the cylinder and the teacher gives homework (RJC).*

### Guidance from Mentor Teacher

Both A and B described that their mentor teacher was very helpful both inside and outside of the school. For example, the mentor teacher provided guidance on how to write the lesson plans, what teaching techniques to use, and how to select questioning techniques that were appropriate to the students' ability in the Indonesian classroom. The mentor teacher also kept in touch with them outside the school. According to C, her mentor teacher was a very committed teacher and her students liked her very much. As depicted in one of her reflective journals she learnt a lot from her mentor teacher in terms of how to write the daily lesson plans, how to communicate with students, how to manage and teach mathematics in the classroom, and how to ask questions that were suitable for the students' level of achievement. She also helped her to understand the Indonesian mathematics syllabus and mathematical terms, school timetable and semester system:

*The mentor teacher is very helpful in various matters whether in school or outside of school. She gives guidance on how to write lesson plans in Indonesia and the teaching techniques used here. She also keeps in touch with us outside the school (RJA). The Mentor teacher is very helpful in a lot of affairs in and out of school. She guides me to write lesson plans in Indonesia, and use suitable teaching and questioning techniques according to the level of students (RJB). I learned a lot with the mentor teacher*

*as she is very committed and very much liked by her students. She helps me to write daily lesson plans in Indonesian, helped me in communication with Indonesian students, helped me in mathematical teaching while in the classroom, helped me in asking questions that are well suited to the level of student achievement, and helped me in organizing the class. She also helps me understand the mathematics syllabus, mathematics terms, school timetable and semester system (RJC).*

### Contributions to the School

The three participants elaborated that they had contributed to the school by organizing a community engagement project called the Race Challenge which involved two schools namely SMP Negeri 5 and SMA Negeri 9 as well as students and lecturers of the Indonesian university. This project provided new opportunities for the students to explore and learn more about mathematics and science outside the classroom. Since the project was new and exciting to the students, the school planned to have it again next year:

*We contributed to the school by having a community engagement project called Race Challenge. This project involves two schools, our own SMP Negeri 5 and SMA Negeri 9, students from UNIKAMA and USM trainee teachers (RJA). My contribution is we organized a community project of Race Challenge which involves students and lecturers of UNIKAMA and students of two schools in Indonesia. For them in Indonesia,*

*such a project is very exciting and new and they will be having such a project again next year (RJB). Our contribution to the school is we have organized a community engagement project called Race Challenge which involves students of our school and students from another school in Malang and students and lecturers of UNIKAMA. This outdoor project is new and very interesting so the school will organise it again next year (RJC).*

## DISCUSSION

The findings of this study generally concur with Sahin's (2008) findings that the PSTs expanded their knowledge of a new culture and adapted to a new working environment through cross-cultural exchanges with their mentor teachers along with other students as a result of the learning experiences during the ITP. It also strengthened the PSTs' beliefs about their educational system and became more optimistic and positive about their educational system. In addition, it helped the PSTs develop professionally and personally. The findings of this study are also in agreement with Lee's (2009) findings that the PSTs had gained a higher level of appreciating cultural differences, a greater sense of independence and confidence, and a deep understanding of various pedagogical skills. The findings of this study also support the findings of Anar et al. (2017) that revealed five major themes of the PSTs' learning experiences:

travel exposures, pedagogical learning, social and multicultural learning, personal and professional learning, and technological learning. More importantly, the findings of this study provide another perspective of PSTs' learning experiences during their ITP in a foreign country which generally supports the meaningful and beneficial professional development experiences as reported by Kabilan (2013) and Kabilan et al. (2017).

However, the findings of this study seem to disagree with the findings of some studies in the literature. For example, Mahan and Stachowski (1990) found that the US teachers placed in the United Kingdom were not well prepared in many aspects, and thus did not perform well enough during the ITP. Sahin's (2008) findings revealed how Turkish student teachers faced organizational problems whereby they shouldered many responsibilities, and their mentor teachers lacked commitment and did not have a clear expectation of the entire ITP programme. Pence and Macgillivray's (2008) study reported unnecessary parental pressure at school, and PSTs' negative perceptions of the curriculum of the host school. Willard-Holt (2001) found that PSTs' excess enthusiasm and idealism might lead to a negative understanding of local culture. Malewski and Phillion (2009) reported that the culture of the host community and the worldviews of the pre-service teachers might influence and pressure each other negatively.

## CONCLUSION

ITP is often seen as a means to broaden the world views and enhance the personal and professional development of future teachers (Kabilan et al., 2017). ITP in different countries will offer different kinds of learning experiences and challenges, where teachers and learners will get to learn from and about each other (Walters et al., 2009) and facilitates PSTs to learn new things and gain new experiences (Kabilan, 2013). Even though there are a growing interest and benefits of PSTs' learning experiences of ITP in another country, to date there is no documented research on the ITP learning experiences of Malaysian mathematics PSTs. Therefore, the findings of this study contribute to developing a body of research and scholarship on ITPs from Malaysian contexts that have yet to be explored fully. The findings of this study will also enrich the literature on ITPs and assist tertiary educational institutions in planning a successful and meaningful ITP for their PSTs. More importantly, the findings of this study provide insights to administrators, lecturers and mentor teachers to increase the opportunities of PSTs to be exposed to a multicultural classroom and become globally competent. This will provide avenues to forge stronger collaboration and partnerships with stakeholders in the country and abroad.

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## APPENDIX 1

### IPA based on Pietkiewicz and Smith (2014): An Example for Mathematics Lesson Planning

#### Theme

#### Multiple reading and making notes

PST	Reflective Journal and Interview Transcript	Notes
A	RJ: <i>The objectives used in the lesson plans in Indonesia are not much different from Malaysia because the syllabus used is almost the same, only the topic arrangement is different.</i>	Identify the similarities and differences of the lesson objectives written in the lesson plans of Indonesia and Malaysia.
	Interviewer: Can you explain further what you have written in your reflective journal? A: <i>For example, the topic of Function in Mathematics in Indonesia is the fourth topic but in Malaysia it is the first topic.</i>	Explain the difference in the arrangement of topics between Indonesia and Malaysia syllabi.
	RJ: <i>The steps and activities used in the classroom in Indonesia are still 'teacher-centred' which focused only on teachers. Teachers are still less exposed to the 21st Century Learning used in Malaysia.</i>	Compare the teaching steps and activities written in the lesson plans between Indonesia and Malaysia.
	Interviewer: Can you explain further what you have written in your reflective journal? A: <i>In the classroom, teachers mainly teach based on the textbooks given by the school.</i>	Explain the meaning of teacher-centred approach in the Indonesian school.
	RJ: <i>Teaching aids used mostly are Mathematics textbooks and exercise books. Teachers also prepare student worksheets that have questions for students to do in the classroom.</i>	Identify the teaching aids usually written in the lesson plans of the Indonesian school.
	Interviewer: Can you explain further what you have written in your reflective journal? A: <i>Mathematics textbooks, exercise books and student worksheets.</i>	Repeat the teaching aids usually written in the lesson plans of the Indonesian school.
B	RJ: <i>The objectives are more on noble values which are applied throughout the process of teaching which is labelled as Core Competencies.</i>	Identify the lesson objectives written in the lesson plans of the Indonesian school.
	Interviewer: Can you explain further what you have written in your reflective journal? B: <i>They are divided into 4 types; K1, K2, K3 and K4. K1 relates to religion, K2 relates to noble values concerning self which is applied through group work, while K3 relates to students' own attitudes and efforts about knowledge, and lastly K4 relates to students' ability to apply in school and out-of-school learning.</i>	Explain the Core Competencies written in the lesson plans of the Indonesian school.
	RJ: <i>The steps and activities used in the classroom in Indonesia are still more teacher-centered.</i>	Identify the teaching steps and activities written in the lesson plans of the Indonesian school.

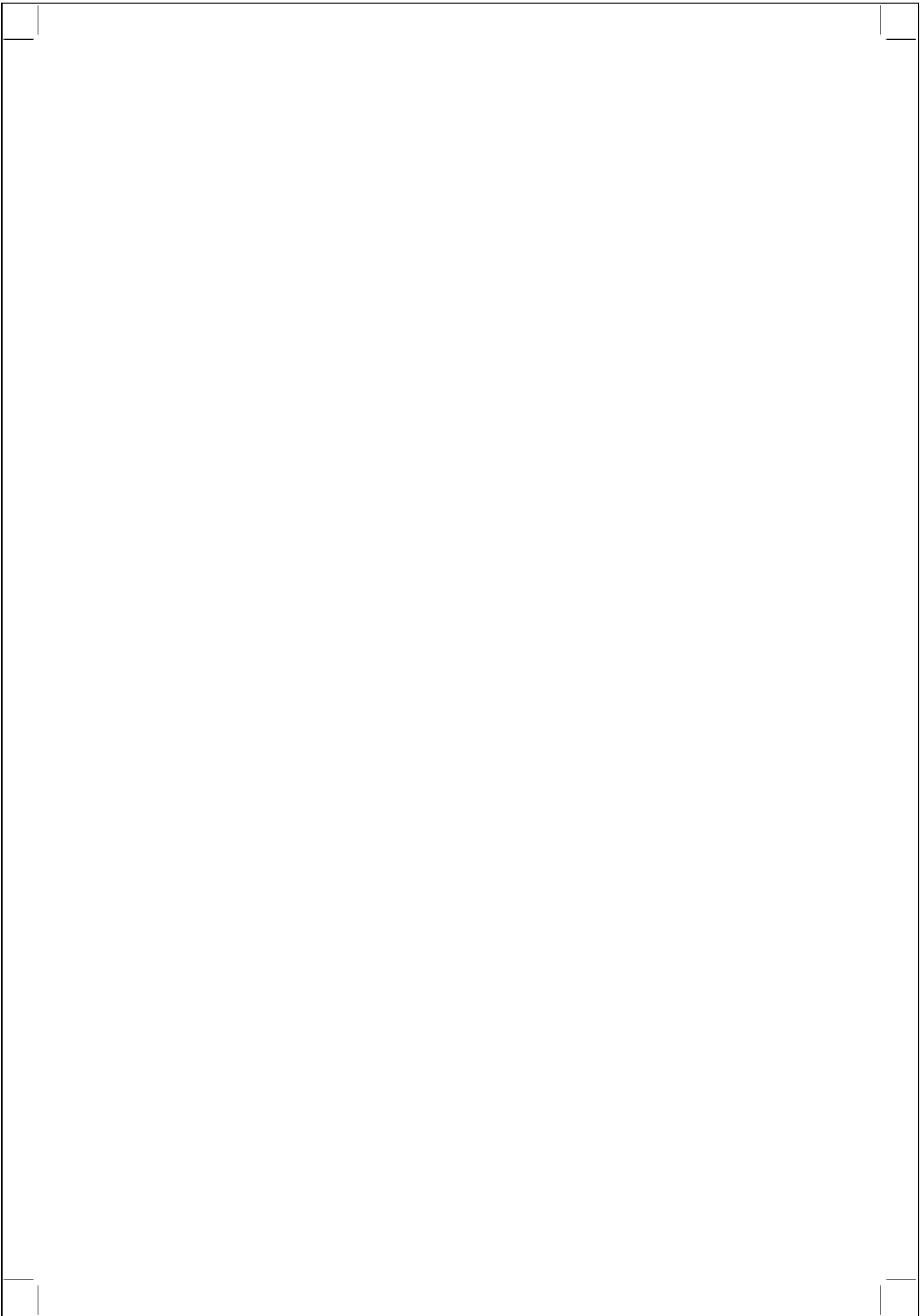
<p>Interviewer: Can you explain further what you have written in your reflective journal?                  B: <i>The steps and activities are more teacher-centered.</i></p> <p>RJ: <i>Teaching aids used are Mathematics textbooks and exercise books. Teachers also create their own questions for use in the classroom labeled as student worksheets. Other source of teaching aids is the Mathematics lab.</i></p> <p>Interviewer: Can you explain further what you have written in your reflective journal?                  B: <i>Teaching aids used are Mathematics textbooks, exercise books, student worksheets and the Mathematics lab.</i></p>	<p>Repeat the teacher-centred teaching steps and activities written in the lesson plans of the Indonesian school.</p> <p>Identify the teaching aids usually written in the lesson plans of the Indonesian school.</p> <p>Repeat the teaching aids usually written in the lesson plans of the Indonesian school.</p>
<p>C RJ: <i>Appreciate the teachings of the religion, honesty, discipline, responsibility, caring, tolerance, and mutual cooperation. Be polite, and confident in interacting effectively with the social and natural environment.</i></p> <p>Interviewer: Can you explain further what you have written in your reflective journal?                  C: <i>Same as in my journal.</i></p> <p>RJ: <i>In the lesson plans, the steps and activities are divided into five parts: 1. Observation - students observe the picture of the net of a cylinder shown on the LCD. Students write down their observation. 2. Asking questions - students are encouraged to ask questions based on their observations. For e.g., What is the formula of the surface area of the cylinder? 3. Gathering information - students discuss about the formula of the surface area of the cylinder and write down their discussion in the worksheet. 4. Reasoning - students deduce the formula of the surface area of the cylinder. 5. Communication - students present the results of group discussion and reasoning.</i></p> <p>Interviewer: Can you explain further what you have written in your reflective journal?                  C: <i>Same as in my journal.</i></p> <p>RJ: -</p> <p>Interviewer: Can you explain why you did not write in your reflective journal?                  C: <i>The teaching aids are Mathematics textbooks, exercise books, computer, laptop, and Internet.</i></p>	<p>Explain the lesson objectives written in the lesson plans of the Indonesian school.</p> <p>Referring to the same explanation in the reflective journal.</p> <p>Explain the teaching steps and activities written in the lesson plans of the Indonesian school.</p> <p>Referring to the same explanation in the reflective journal.</p> <p>Did not identify the teaching aids written in the lesson plans of the Indonesian school.</p> <p>Explain the teaching aids usually written in the lesson plans of the Indonesian school.</p>

## 1. Transforming notes into emergent themes

PST	Notes	Emergent themes
A	RJ: Identify the similarities and differences of the lesson objectives written in the lesson plans of Indonesia and Malaysia.	Understand and write the learning objectives of the Indonesian school lesson plans.
	I: Explain the difference in the arrangement of topics between Indonesia and Malaysia syllabi.	
	RJ: Compare the teaching steps and activities written in the lesson plans between Indonesia and Malaysia. I: Explain the meaning of teacher-centred approach in the Indonesian school.	Understand and write the steps and activities of the Indonesian school lesson plans.
B	RJ: Identify the teaching aids usually written in the lesson plans of the Indonesian school.	Understand and write the teaching aids of the Indonesian school lesson plans.
	I: Repeat the teaching aids usually written in the lesson plans of the Indonesian school.	
	RJ: Identify the lesson objectives written in the lesson plans of the Indonesian school. I: Explain the Core Competencies written in the lesson plans of the Indonesian school.	Understand and write the learning objectives of the Indonesian school lesson plans.
C	RJ: Identify the teaching steps and activities written in the lesson plans of the Indonesian school. I: Repeat the teacher-centred teaching steps and activities written in the lesson plans of the Indonesian school.	Understand and write the steps and activities of the Indonesian school lesson plans.
	RJ: Identify the teaching aids usually written in the lesson plans of the Indonesian school. I: Repeat the teaching aids usually written in the lesson plans of the Indonesian school.	Understand and write the teaching aids of the Indonesian school lesson plans.
	RJ: Explain the lesson objectives written in the lesson plans of the Indonesian school. I: Referring to the same explanation in the reflective journal.	Understand and write the learning objectives of the Indonesian school lesson plans.
	RJ: Explain the teaching steps and activities written in the lesson plans of the Indonesian school. I: Referring to the same explanation in the reflective journal.	Understand and write the steps and activities of the Indonesian school lesson plans.
	RJ: Did not identify the teaching aids written in the lesson plans of the Indonesian school. I: Explain the teaching aids usually written in the lesson plans of the Indonesian school.	Understand and write the teaching aids of the Indonesian school lesson plans.

2. Seeking relationships and clustering themes

PST	Emergent themes	Clustered theme
A	Understand and write the learning objectives of the Indonesian school lesson plans. Understand and write the steps and activities of the Indonesian school lesson plans. Understand and write the teaching aids of the Indonesian school lesson plans.	Mathematics lesson planning
B	Understand and write the learning objectives of the Indonesian school lesson plans. Understand and write the steps and activities of the Indonesian school lesson plans. Understand and write the teaching aids of the Indonesian school lesson plans.	Mathematics lesson planning
C	Understand and write the learning objectives of the Indonesian school lesson plans. Understand and write the steps and activities of the Indonesian school lesson plans. Understand and write the teaching aids of the Indonesian school lesson plans.	Mathematics lesson planning



# Mathematics Pre-service

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