The Learning Experiences of Filipino Pre-service Teachers in the Science, Technology, Engineering and Mathematics (STEM) Program of a Thai Elementary School

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Abstract

Internationalization and ASEAN integration have led pre-service teachers to explore the world of teaching abroad where they experienced many learning opportunities and challenges in a foreign country. This study explored the learning experiences of Filipino pre-service teachers in the Science, Technology, Engineering, and Mathematics (STEM) Program of Anubanchonburi School Thailand. The 17 participants ranging from 19-21 years old from Bukidnon State University, Malaybalay City, Bukidnon, Philippines were interviewed, and eight of them attended the focus group discussion. Thematic analysis revealed five major themes of their learning experiences: (1) travel exposures; (2) pedagogical; (3) social and multicultural, (4) personal and professional; and (5) technological learning. The study provides insights to administrators, pre-service teaching supervisors, and educators to increase the opportunities for pre-service teachers to be exposed to a multicultural classroom and become globally competent. It presents avenues to forge stronger collaboration and partnerships with stakeholders in the country and abroad.

Keywords: Internationalization, pre-service teachers, learning experiences, STEM Program

Introduction

The Teacher Education Program in the Philippines is experiencing radical transformations as it gets into the 21st century. These reforms are triggered by the implementation of the K to 12 Curriculum which aims to expand the basic education cycle from 10 years to the global standard of 12 years. It also seeks to adequately respond to local needs while allowing graduates to maximize opportunities beyond its shores. It implies that teacher preparation now involves a fusion of elements of inclusive education, internationalization, globalization and advancement of information and communications technology.

There are diverse skills and composite skills required for a Filipino teacher to ensure employability in our country and abroad. These include adequacy of content knowledge, learning and innovation skills, information, media and technology skills, and life and career skills that are found in the Framework for 21st Century Learning. Thus, the teacher education
program provides learning experiences and opportunities for the pre-service teachers to acquire such skills and competencies. Such experiences are encountered in pre-service teaching also known as student teaching or practice teaching.

Pre-service teaching is the most significant experience in the lives of prospective teachers. It is the total immersion to the real life of becoming a teacher. During this period, pre-service teachers experience the essentials of the teaching-learning process of planning, actual teaching, assessing and evaluating learning. It provides an opportunity to develop and assess the education student's competence, skills, and desirable traits in a real school setting. It is intended to bridge theory and practice.

A successful pre-service teaching experience is the keystone of pre-service preparation. To attain this success, the pre-service teaching program is carefully planned and designed. This stage is critical in the lives of the prospective teachers since this is their initiation to implement the theory, ideas and skills of the teaching craft they have learned from their college classrooms.

There are reforms and relevant programs for practice teaching in response to the above challenges. There is exposure for the pre-service teachers to a variety of cultures and learning environment abroad. They take a course in multicultural education and promote issues of diversity, peace education, and social justice. They become familiar with the cultural roots that immigrants experience in their new country that may develop international knowledge in a way that assists the understanding of their prospective students.

Internationalization in higher education involves the process of integrating an intercultural dimension into teaching, research, and service functions of the institutions. According to Knight (2006), the integration or infusion of the international dimensions can contribute to global sustainability. The World Conference on Higher Education (UNESCO, 1998) emphasized that the international facet of higher education is an inherent part of its quality. Networking, which has emerged as a foremost means of action, should be based on sharing, solidarity, and equality among partners. Priority then is given to training programmes in the developing countries and in centers of excellence to form regional and international networks, with short periods of specialized and intensive study abroad.

Moreover, the integration of the Association of Southeast Asian Nations ASEAN Community brought significant changes in the political, economic, and socio-cultural aspects of the ten member countries. As an association, it envisioned itself to have one-vision, one-identity, and one-community. Through ASEAN integration, students and professionals work collaboratively across Southeast Asia. The Philippines is one of the member-states that creates changes and innovations in embracing and realizing the vision and mission of ASEAN. With this integration, education sectors across the nations came up with the ASEAN Qualification Reference Framework AQRF. The Philippines Qualifications Framework is aligned with the AQRF. Hence, competencies of Filipino graduates are developed and enhanced to meet AQRF, and not just for the AQRF but also for the international and global standards.

As a result, the Commission on Higher Education (CHED) of the Philippines made revisions of the policies, standards, and guidelines (PSGs) on the Student Internship Abroad Program (SIAP). This mandate encourages and promotes student exchange and strong academic linkage with businesses and industries in other countries for cross-cultural training and skills enhancement to make students competitive for employment in the Philippines and abroad. This program aims to provide tertiary students the opportunity to acquire practical knowledge, skills and desirable attitudes in the foreign host organizations in foreign countries. It also enhances the students’ work values, competencies, and discipline
as they relate to others in a multicultural environment. Furthermore, the program is a good avenue for the promotion of students’ global competitiveness through their training, exposure and acculturation in a foreign country (CHED Memorandum No. 22, s. 2013).

In many cases, higher education institutions joining the internship abroad program abound for business, industries, engineering, management and other technical courses. However, only a few academes with teacher education programs have participated in the said program. The participation of Teacher Education Institutions in the internship abroad program is imperative as it enhances the quality of teacher preparations for the K to 12 curriculum. Moreover, Gay and Kirkland (2003) emphasized that developing personal and professional critical consciousness about racial, cultural and ethnic adversity should be a main component of pre-service teacher education.

Consequently, the Bukidnon State University as a teacher education institution signed a Memorandum of Agreement with Anubanchonburi School in Thailand to implement a STEM pre-service teacher clinical exposure program in 2013. The collaboration is aimed to strengthen the pre-service teaching program which provides avenues to immerse the pre-service teachers of Bukidnon State University in the unique teaching-learning processes aligned with international standards. This will help optimize the acquisition of knowledge, attitudes, skills and values of pre-service teachers and their learners in the teaching-learning processes. This will promote sensitivity and appreciation of diverse international cultures among the stakeholders. There were already 17 pre-service teachers who underwent the STEM clinical exposure program, five in 2014, five in 2015, and 7 in 2016. They stayed in the placement site for 2 and one-half months.

The pre-service teachers who experienced practice teaching in an Asian country discovered the Thailand Cultures and Tradition, and the Thailand Basic Education program. They worked with children from different cultural roots and personalities and shared knowledge and skills in teaching to the Thai children, other teachers, and teacher assistants of the school. They developed sensitivity and appreciation of the world’s diverse cultures. They exposed themselves to the implementation of the integrated STEM Program (Science, Technology, Engineering and Math) in basic education. These experiences are very much needed for future teachers in the 21st century that would better prepare them to become globally competitive and skilled.

With these factors, the researchers conducted a qualitative study on the experiences the pre-service teachers have encountered in Thailand. They can get good inputs for future pre-service teachers who will experience teaching abroad. The study will be instrumental in improving and enhancing the pre-service teaching program as the college embarks on the new Teacher Education Curriculum by 2018. This research would be a basis for integrating into the pre-service teaching curriculum the aspects of multicultural education, ASEAN, mentoring and self-reflection.

Framework of the Study

This study is anchored on experiential education. This philosophy is rooted on Dewey’s (1997) principles of learning by doing. Dewey believes that individuals learn by experience. He based his principles on three assumptions. First, people learn best when they are personally involved in the learning experience. Second, knowledge is discovered when individuals find significant meaning to them or it has made a difference in their behavior. Third, the person’s commitment is highest when they are free to set learning objectives on their own and can actively pursue them within the given framework (Dewey, 1997).

Furthermore, the theory of experience of Dewey (2008) and Vygotzky (2001) emphasized
that experience is not the ordinary use referring to the participation in events or activities or having feelings. Experience is relatively a category of thinking, a minimal unit of analysis that includes persons (their intellectual, affective, and practical characteristics), material and social environment, and transactional relations and influences. Experience according to Vygotsky is not something hidden within individuals, but extends in space and time across individuals and setting in the course of temporally unfolding societal relations, which themselves are examined thoroughly with change.

Both Dewey and Vygotsky explained that experience is the integration of physical, intellectual, and affective movements of the human life form that interpenetrate each other. They further argued that there are four aspects of the theory of experience. Firstly, it manifests itself in affect/emotion - all experiences have affective qualities that shade experiences (Dewey, 2008). The affective dimensions of it cannot be reduced minimally yet covers the totality of the individual. It is the manifestation of experience as a whole. Secondly, it integrates over space and time-interconnectedness of all concerns, affairs, pursuits and the (space) environment. Thirdly, it is a moving force which denotes movement and force. Lastly, experience is transformation- “the old itself is put off, and the new self is only forming, and the form it finally takes will depend upon the unforeseeable result of an adventure.”

Experiential learning in higher education according to Kolb (1984) and Linn (1999) takes on many forms: internships, service learning, cooperative education, field experience, practicum, cross-cultural experiences, and apprenticeships. Thus, pre-service teaching is a chief form of experiential learning especially if one is practicing in a school abroad.

The interpretation of the lived experiences of the Filipino pre-service teachers is grounded on the philosophy of phenomenology, the phenomenological theory of Husserl (1970). In his contentions, the reality is something that is subjectively experienced. When dealing with a definite object in the physical world, people do not experience the object itself. Instead, they only experience it as how it appears to them. No one can fully grasp what it is as it is outside them. They can only take it as how it emerges in their consciousness. This is the nature of reality; the reality of the external world that is subjective.

Taking this phenomenological view of reality, it may be thought that objects in the physical world only exist as they appear in one's mind, as persons interpret them, or as they reflect on them. They occur not through their physical elements in the world but through the meaning or interpretation that each of the individuals gives them. This implies that there is no such thing as objective reality in our physical world since objects are real as only when they are mentally experienced. In addition to this, the correctness of the meaning people assign to the objects is context-dependent. That is, they are influenced by the consensus viewpoints of people in their culture in the way they construe meanings to their experiences with the objects. This idea, as one can infer, strengthens the view that a person's experiences, the subjective reality of the world, is nothing but unique to individuals (Husserl, 1970). It is with this key philosophical tenet of phenomenological theory that this study is organized. It is around such a thought that, in the case of the pre-service teachers who experienced practicum abroad, can give meaning to the phenomenon of teaching as it is presented to their consciousness, as they experience it.

Statement of Objectives

This study explored the lived experiences of pre-service teachers on their STEM practice teaching in a Thai elementary school. From these accounts of lived experiences, opportunities and challenges were inferred to holistically come up with a picture of the human condition of these pre-service teachers.
Specifically, this research was grounded on the following objectives:

1. Describe the learning experiences of pre-service teachers (PSTs) in the STEM Program of a Thai elementary school.
2. Provide Suggested Plan of Actions towards redesigning the pre-service teaching program.

Literature Review

Pre-service teaching experiences are varied depending on the field of specialization of PSTs and their exposures. These exposures include deployment in regular classrooms, Special Education (SPED) classrooms, inclusive classrooms, STEM classrooms, and many others. Malagar, Villarba, and Bonotan (2016) conducted a phenomenological study of SPED student teachers assigned to non-SPED classrooms. They highlighted the PSTs’ challenges, adjustments, coping mechanisms and the meaning of these experiences. They found that student teachers find the whole experience worthwhile and beneficial despite the seeming unpreparedness.

Studies on the pre-service teaching experiences provided for significant avenues on professional development which drives teachers towards a more professional stance in their contributions and understandings as future teachers (Sutherland, Howard, & Markauskaite, 2010). These developed the pre-service teachers’ sense of belonging to the professional community (Sim, 2005). Añar, Bicar, Martinez, and Sumbalan (2009) found that these experiences had an immense influence in fostering positive attitude among student teachers, in strengthening smooth interpersonal relationships among student teachers, mentors and pupils, and in enhancing their skills in lesson planning, and teaching.

In the perspective of this study, the researchers looked into the Filipino pre-service teachers’ learning experiences who did practicum in a Thailand public school. They were exposed to STEM classrooms and were in various fields of specializations.

The internationalization of teacher education has paved ways for the implementation of international teacher practicum. UNESCO (2005) stressed that teacher education is not merely preparing the best teachers but also making them accustomed to teacher education innovations in a complex, rapidly changing world. In the advent of globalization and internationalization, teaching has become a global concern, thus providing opportunities for pre-service teachers’ exposures to various learning environments which would lead to more comprehensive views of the teaching profession.

Medina, Hathaway, and Pilonieta (2015) conducted a qualitative study of pre-service teachers study abroad experiences. They found that studying abroad impacts pre-service teachers as individuals and as classroom teachers. According to them the blending of encounters and the use of reflection can allow PSTs to experience otherness and learn from it. The making sense of these experiences has to lead to the transformation of perceptions.

International study programs provided students with experiences designed to increase multicultural and global awareness that were not encountered in their regular coursework. Vatalaro, Szente and Levin (2015) shared the transformative learning of PSTs during their study abroad. The authors found that students’ perceptions and global competence were transformed in three areas: increase content knowledge of the Reggio Emilia Approach, views of cultural differences, and a heightened self-awareness after returning to the United States. McCabe (2001) stated that in order to meet requirements for graduates to have cross-cultural competencies and an international viewpoint on their disciplines, universities in the United States and elsewhere offer study abroad programs.

Moreover, Phillion, Malewski, Sharma, and
Wang (2009) indicated that lived experience of studying abroad provides PSTs the intellectual and critical starting point for multicultural awareness of the educational, social and political relationships between their lives and other cultures. They have found that PSTs begin to develop consciousness, sensitivity, and skills they urgently need to bridge the gap between teachers of different ethnicity and their historically disadvantaged student populations. They were also able to understand the rapidly diversifying classrooms.

In Australia, Chinnapan, McKenzie, and Fitzsimmons (2013) conducted a study on PSTs’ attitudes towards overseas professional experience and its implications for professional practice. They utilized a mixed mode study to better understand the skills and knowledge PSTs need to function in and gain from their overseas professional experiences. They did semi-structured interviews and then used the emerging themes to compare the cohort of PSTs’ perceptions before and after their completed professional experiences. Results indicated that PSTs need to be better prepared locally before attempting an overseas professional experience OSPEX visit.

Pre-service teaching overseas or International Teaching Practicum ITP/student teaching abroad as it is commonly called has been established in the west. In Asia, there is limited literature written about it. One instance is that of the Hongkong Pre-service Teacher Education. Bodycott and Crow (2000) studied the Hongkong Preservice Teachers who had their international teaching practicum experiences in Australia and Canada. Their findings revealed self-report of socio-cultural, language and educational gains. Also, Lee (2009) studied Hongkong PSTs who had taken a six-week language immersion program in New Zealand. The PSTs have gained a higher level of appreciating cultural differences, a better sense of independence and confidence, and a deep understanding of various pedagogical skills.

Ismail (2016) shared the Malaysian experience of enhancing teacher quality through international teaching practicum. He attempted to fill the gap in the literature regarding pre-service teachers from developing countries especially Asian countries and their knowledge of an international teaching practice. He discussed the benefits of ITP and the steps to implement the said program. The benefits that were found to be practical were the pedagogical quality improvement, soft skills improvement, and rich international experiences. The research benefit was the increased opportunity for research collaboration for both visiting and hosting parties. Data related to teaching and learning process, psychological well being of trainees, pedagogical and academic benefits and other variables were very rich. Issues on the implementation of the ITP with regards to content, human resources, technical and external concerns were shared.

In the context of the Philippines, the Philippine Normal University has implemented Pre-service Student Teacher Exchange in Southeast Asia (SEA-Teacher Project). The institution shared the lessons learned in the view of the students and the university. During the four-week exchange program students had several realizations on the role of English Education in the ASEAN community. These insights were more on cultural sharing, collaboration, and development towards a common goal. The university has learned that the exchange heightens the importance of collaboration between institutions to improve the competence of future ASEAN teachers and discover the ASEAN spirit of the teacher education curriculum.

These literature have encouraged the researchers to widen the perspectives of future teachers in Asia on the experiences of PSTs who took the opportunities and courage to teach abroad and learn from their new environments.

Research Methods and Design

This study utilized a qualitative method of research specifically the descriptive-
phenomenological approach. Participants were selected because they have lived the experiences, and were willing to share their thoughts about their experiences and can articulate their conscious experiences. The data were taken from the 17 pre-service teachers who were deployed in Anubanchonburi School SY 2013-2014, 2014-2015, and 2015-2016.

Anubanchonburi School in Chon Buri Thailand is a partner school of Bukidnon State University. This is the biggest government school in the province of Chon Buri with the largest student population. This school implemented three basic education programs’ namely, Regular, Program, and the English Programs. This school was selected for the deployment of pre-service teachers in the English Program because of its unique English Program curriculum in basic education: the Science, Technology, Engineering, Arts and Math (STEAM) and STEM programs. This is implemented for six years. This curriculum characterized the K-to-12 Curriculum that would provide the PSTs direct experiences on how the program of study works.

The data were obtained through individual in-depth interviews and focus group interviews. The written reflections found in their teaching portfolio and their mentors’ feedbacks were utilized to support and validate the statements taken from the interviews. The interpretation of the learning experiences of Filipino STs was based on Husserlian descriptive-phenomenology. Husserl valued the experience of the phenomenon as perceived by human consciousness which should be an object of a scientific study (Lopez & Willis, 2004). It involved bracketing that helped in gaining insights into the general features of any lived experience. These are referred to as universal essences and are considered to represent the true nature of the phenomenon under investigation.

The data collected were organized,

<table>
<thead>
<tr>
<th>Participant No.</th>
<th>Age</th>
<th>Sex</th>
<th>Civil Status</th>
<th>Course</th>
<th>Grade Level Assigned in STEM Program</th>
<th>Year Deployed in Thailand</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>19</td>
<td>Male</td>
<td>Single</td>
<td>BEE</td>
<td>Pratum 4</td>
<td>2014</td>
</tr>
<tr>
<td>2</td>
<td>19</td>
<td>Male</td>
<td>Single</td>
<td>BSE-Biological Science</td>
<td>Pratum 5 &amp; 6</td>
<td>2014</td>
</tr>
<tr>
<td>3</td>
<td>20</td>
<td>Female</td>
<td>Single</td>
<td>BEE</td>
<td>Pratum 3</td>
<td>2014</td>
</tr>
<tr>
<td>4</td>
<td>19</td>
<td>Female</td>
<td>Single</td>
<td>BECE</td>
<td>Kindergarten</td>
<td>2014</td>
</tr>
<tr>
<td>5</td>
<td>20</td>
<td>Female</td>
<td>Single</td>
<td>BEE</td>
<td>Pratum 1</td>
<td>2014</td>
</tr>
<tr>
<td>6</td>
<td>19</td>
<td>Female</td>
<td>Single</td>
<td>BEE</td>
<td>Pratum 3</td>
<td>2015</td>
</tr>
<tr>
<td>7</td>
<td>19</td>
<td>Female</td>
<td>Single</td>
<td>BECE</td>
<td>Pratum 1</td>
<td>2015</td>
</tr>
<tr>
<td>8</td>
<td>19</td>
<td>Female</td>
<td>Single</td>
<td>BEE</td>
<td>Pratum 4</td>
<td>2015</td>
</tr>
<tr>
<td>9</td>
<td>19</td>
<td>Female</td>
<td>Single</td>
<td>BEE</td>
<td>Pratum 5</td>
<td>2015</td>
</tr>
<tr>
<td>10</td>
<td>20</td>
<td>Female</td>
<td>Single</td>
<td>BEE</td>
<td>Pratum 2</td>
<td>2015</td>
</tr>
<tr>
<td>11</td>
<td>18</td>
<td>Female</td>
<td>Single</td>
<td>BEE</td>
<td>Pratum 1</td>
<td>2016</td>
</tr>
<tr>
<td>12</td>
<td>21</td>
<td>Female</td>
<td>Single</td>
<td>BEE</td>
<td>Pratum 3</td>
<td>2016</td>
</tr>
<tr>
<td>14</td>
<td>20</td>
<td>Male</td>
<td>Single</td>
<td>BSE-Mathematics</td>
<td>Pratum 5</td>
<td>2016</td>
</tr>
<tr>
<td>15</td>
<td>19</td>
<td>Female</td>
<td>Single</td>
<td>BSE-English</td>
<td>Pratum 5</td>
<td>2016</td>
</tr>
<tr>
<td>16</td>
<td>20</td>
<td>Female</td>
<td>Single</td>
<td>BSE-English</td>
<td>Pratum 6</td>
<td>2016</td>
</tr>
<tr>
<td>17</td>
<td>19</td>
<td>Female</td>
<td>Single</td>
<td>BEE</td>
<td>Pratum 2</td>
<td>2016</td>
</tr>
</tbody>
</table>

Legend:  BEE-Bachelor of Elementary Education  
BSE-Bachelor of Secondary Education  
Pratum means Grade level
transcribed and coded. Colaizzi’s method for data analysis was utilized. The process involved reviewing, coding, and analyzing. The researchers reflected on the significant statements given by the participants by formulating meanings to the essence of their experiences, categorizing them into clusters of themes, and coming up with the overall description or sense of the experiences shared. The categories were clustered into emerging concepts and shaped the general accounts of the learning experiences.

Results and Discussions

The learning experiences of PSTs were clustered the travel exposures, pedagogical learning, personal and professional, social and multicultural learning, and technological learning. Joyce, Calhoun, and Hopkins (2009) stressed that learning experiences are composed of content, process, and social climate. Teachers with their learners created opportunities that explored and built significant areas of knowledge, developed powerful tools for learning and lived in humanizing social conditions. In the context of this paper, learning experiences enhanced future teachers’ capacity to become effective and efficient.

Theme 1 Travel Exposures

Frame 1 shows the learning experiences of PSTs regarding the joy they felt being able to travel and be in a new learning environment. The PSTs find satisfaction in being able to tour on their own without their family for the first time. Some of them have not been able to take a trip by a plane before. They smiled as they recalled the experience and shared their mixed reactions.

Traveling has created a new insight into the mind of the future teachers as they directly experienced how it was to travel. It is no longer based on the things they had read in books and movies they watched. This travel would make them smarter and creative (Paul, 2014). Leung as cited in Paul (2014) wrote that individuals with more experiences on different cultures can better generate creative ideas and generate unexpected links among concepts.

Although they were able to experience some challenges, the excitement and joy in travelling surpassed them all. The PSTs were

<table>
<thead>
<tr>
<th>Significant Statements</th>
<th>Formulated Meanings</th>
<th>Theme Clusters</th>
</tr>
</thead>
<tbody>
<tr>
<td>“It was an exciting experience being my first time not only to go to foreign soil but also to aboard a plane and travel in the air.”</td>
<td>The PSTs find the pleasure traveling for the first time in another country.</td>
<td></td>
</tr>
<tr>
<td>“I was amazed at the formal ways Thai Teachers and Foreign Teachers in Anubanchonburi welcomed us.”</td>
<td>The PST felt the excitement of experiencing the hospitality of the Thai people.</td>
<td>There is Joy in Travelling and on Being in a New Learning Environment Abroad.</td>
</tr>
<tr>
<td>“It was a formal ceremony; we were called and introduced to the whole student population. Such a happy feeling.”</td>
<td></td>
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</tr>
<tr>
<td>“It was totally a different setting. We felt being warmly welcomed and doing the Y a symbol of respect is new to us.”</td>
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<td></td>
</tr>
<tr>
<td>“We were very glad to see that there are also Filipino teachers who welcomed and took care of us and shared with us the Thai culture and traditions. Such a wonderful feeling to be in new place to learn something new.”</td>
<td>The PSTs felt happy to be with other Filipinos</td>
<td></td>
</tr>
</tbody>
</table>
able to observe how to experience being asked by immigration officers, flight attendants, and other travelers. They were able to stay calm, ask questions for help, and read facts and details about the country they were going to. These experiences have led them to generate smart ideas and insights in traveling abroad.

The pre-service teachers felt the excitement of experiencing the hospitality of the Thai people. They were able to see the kind of culture the host institution showed in welcoming visitors. According to them, they were so formal and respectful. They felt that though they were still pre-service teachers, they were respected and accepted. The pre-service teachers felt the sense of belongingness seeing that there were also Filipinos in school. They found similarities in the cultures and ways of the Thai people and Filipinos. Hospitality and warmth were observed in the ways they treat visitors and friends. The welcoming attitude of the host institution has led to the joy and delight perceived among the PSTs.

**Theme 2: Pedagogical Learning**

Frame 2 reveals the important statements, formulated meanings and cluster theme on pre-service teachers’ learning regarding pedagogical approaches. Since the PSTs were deployed in STEM program, they found this new as a curriculum which is observed in the senior high school of the Philippines’ K-to-12 program. With their exposures, they came to know that STEM program can also be implemented in primary and intermediate education not only in the senior high school. The PSTs appreciated the

### Frame 2. Learning Experiences of PSTs Regarding the Pedagogical Approaches

<table>
<thead>
<tr>
<th>Significant Statements</th>
<th>Formulated Meanings</th>
<th>Theme Clusters</th>
</tr>
</thead>
<tbody>
<tr>
<td>“We were exposed to various activities like the English Fun Day every Friday. We also were part of the English Camp Activities.”</td>
<td>Exposure to English Fun Day and English Camp.</td>
<td>PSTs find Field Trips a superior avenue for teaching and learning.</td>
</tr>
<tr>
<td>“We joined the Field Trips and assisted the children whenever they asked questions about concepts related to the trips. We have not experience field trips in the Philippines even during the times when we were still kids until college. Although we have some outdoor activities but not much.”</td>
<td>PSTs find similarities in the practices one have in their own country, routines</td>
<td>The STEM curriculum explored as the new program in basic education which PSTs have not experienced in the country.</td>
</tr>
<tr>
<td>“We experienced the same things like what we did in the On-Campus Teaching for instance; checking workbooks, assisting our teachers in doing routine works and assisting the learners.”</td>
<td></td>
<td>Learning a variety of Pedagogical Approaches</td>
</tr>
<tr>
<td>“I've got a chance to explore STEM program in which when I teach Science I integrate it with Technology, Engineering, and Math and vice versa. We don't have it in our country.”</td>
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</tr>
<tr>
<td>“I have a meaningful experience teaching using a multidisciplinary and integrative approach. I experienced teaching in the 1st grade, 6-7 years old, English Language Learners, Thai Learners”.</td>
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<tr>
<td>“I now understood what integration is as a concept now that I was able to actualize it. To be able to teach the different fields into one lesson, not necessarily for one session but for an efficient span of time”.</td>
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<tr>
<td>I was deployed in grade 3 where I had worthwhile experiences in developing lessons and applying techniques that bring together STEM disciplines and concepts through hands-on activities and experiments.</td>
<td></td>
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</tr>
<tr>
<td>“My experiences were definitely one of a kind. I’ve got a chance to explore STEM program in which when I teach Science I integrate it with Technology, Engineering, and Math and vice versa”.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching in a STEM program is already a very big opportunity for me and a new learning for me.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I was exposed to teach different subjects which are different from my field English. I taught math, science, physics with an integration of engineering and Technology. These teaching experiences I’ve been through the things I consider big opportunities”</td>
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</tbody>
</table>
application of multidisciplinary and integrative approaches in teaching STEM.

Among the 17 PSTs, 10 of them were Bachelor of Elementary Education graduates, and two were Bachelor of Early Childhood Education graduates. They were surprised to see that the English Program of the placement site in Thailand used the STEM curriculum for initial education. Five of them were Bachelor of Secondary Education graduates majoring in English, Biological Science, and Mathematics. They were less knowledgeable about the STEM content and were not able to practice this when they were in the Philippines. Those who were in the BSE degree were trained to teach in their fields of specialization.

With their pre-service teaching abroad, they were able to integrate and teach other subjects that were not related to their major fields. As they observed and studied how their mentors planned and demonstrated STEM lessons, in return they were able to gain the understanding and insights of the nature of the curriculum. As a result, they successfully utilized the integrative and multidisciplinary approaches to teaching.

The PST experiences supported the findings of Adams et al. (2014) which indicated that experiences with STEM learning and teaching through integrated, place-based activities had a positive impact on the pre-service teachers’ understanding of these approaches, their perceived ability, and projected intent to design and implement STEM learning activities.

Field trips and other outdoor activities were also utilized in the teaching learning process. PSTs experienced facilitating and conducting field trips. Every grade level has scheduled school educational tours once every quarter. They were able to visit many places with their mentors and learners, namely, gardens, museums, planetarium, zoo, Burapha University’s Oceanarium and Marine Laboratory, and Bangplasoi Power Plant. They also conducted outdoor activities. These according to them have strengthened their views about field trips; that these activities provided meaningful learning to learners. They created lasting memories to learners because they have seen reality and were able to do hands-on learning. Field trips when well planned could create strong episodic memories that relate to the desired curriculum. Research shows that there is a positive correlation between field trips and periodic memory which are beneficial to students’ learning and long-term memory (Kennedy, 2014).

With the fieldtrip moratorium of the Commission on Higher Education in the Philippines, pre-service teachers were not able to experience field trips during their college years. With the experiences they had during their pre-service teaching abroad, they cherished this teaching-learning approach, and they found it to be the most treasured and fun moments being able to be with their students learning outside the four corners of the school.

The study confirmed the practical benefits shared by the pre-service teachers with the research of Ismael (2016) where he stressed that the international teaching practicum provides practical benefits that improve pedagogical quality of the interns, enhance their 21st century skills, and develop their soft skills.

Theme 3: Learning for Personal and Professional Growth

Frame 3 reveals that the international experiences of pre-service teachers have led to personal and professional growth. According to them, they have grown so much from the experience as a person and are better prepared as future teachers. International teaching experiences develop personal and professional competencies (Un, 2014). These enhance interns’ knowledge, skills and attitudes to become professional workers. Based on the responses of the pre-service teachers, the seminars, mentoring experiences, doing the Teacher Work sample TWS, and journal writing/reflective writings have developed
## Frame 3. PSTs’ Personal and Professional Growth

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<tr>
<th>Significant Statements</th>
<th>Formulated Meanings</th>
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<tr>
<td>“The most important thing is that I am able to grow not just personally but also professionally by attending professional developments provided by the teachers.”</td>
<td>Participating the CPD Activities have developed PSTs personally and professionally.</td>
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<tr>
<td>I also had developed professionally through the weekly professional development meetings that serve as seminars about various education concepts, theories, and paradigms.</td>
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<td>Our placement site coordinator and mentors help us get acclimated as quickly and efficiently as possible through orientation, regular meetings and updates (once a week, professional development, discussed and shared our ideas about various topics and a lot of observations before we slowly started taking over some daily routines.”</td>
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<td>I was given the opportunity to take and pass examinations that measure my proficiency as an English language teacher, specially, the test of English for International Communication (TOEIC).</td>
<td>The TOIEC test is an opportunity for the PSTs to assess themselves in global standards.</td>
<td>The benefits for personal and professional Growth of the Pre-service Teaching Abroad Experiences</td>
</tr>
<tr>
<td>I was given opportunities for global competitiveness, and I gained maturity in handling personal and relationship problem.</td>
<td>PSTs develop global competence.</td>
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<td>I have become a competitive and global teacher.”</td>
<td>PSTs have enhanced themselves through self-awareness, independence, and reflection.</td>
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<td>“I was able to go out of my comfort zone. I learned to know myself better, and I was able to build my own identity. I learned to self meditate. I gained self-control.”</td>
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<td>“I became reflective since we are required to work genuinely with our TWS using reflective thoughts.”</td>
<td>Mentoring is a helpful way to improve one's knowledge, skills, and values.</td>
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<td>I was able to experience intensive mentoring. I was most of the time being supervised, monitored and evaluated by my mentor.</td>
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<td>“I was aware of my strengths and weaknesses because my mentor always gave me feedback about my performance on a daily and weekly basis.”</td>
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<td>“I consider learning the feeling of being an OFW. I caught a glimpse of what kind of life our fellow countrymen are living in a foreign land away from their families”.</td>
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<tr>
<td>“It is fulfilling to help those kids grow and learn through our hard work. It is very rewarding on our part”.</td>
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<td>everybody passes the beginner stage, and eventually, with enough experiences it will be like a walk in the park. Right now I’m hoping she will pass all my expectations and continuously improve herself in the process”.</td>
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The learning experiences of Filipino pre-service teachers have been enhanced through teaching skills, attitudes, and values. Mentoring is a helpful way to improve one's knowledge, skills, and values. The TOIEC test is an opportunity for the PSTs to assess themselves in global standards. Mentoring is a helpful way to improve one's knowledge, skills, and values. The benefits for personal and professional Growth of the Pre-service Teaching Abroad Experiences.

The placement site coordinator shared that one of their CPD sessions include the open criticism report: each mentor spoke about the good and bad of their student teacher. It was apparently uncomfortable for them and culturally challenging, but she felt it necessary that they begin to understand that being able to take constructive feedback is an essential part of being a professional in any field. She said: “The fact we spoke about this openly perhaps will...”
improve their behavior. I also said that it’s natural to feel overwhelmed and that health issues arise when in a foreign country. But that open communication with their mentor is important. Otherwise we will judge them for their behaviors without knowing what’s really going on in their heads”. This activity has made PSTs more self-aware, open-minded, reflective, and optimistic.

A mentor shared a feedback about one of the PSTs. “He showed his expertise in his field of studies. He helped a lot in our electricity STEM project, where he made electrical wiring connections. He did help in managing the kids as well. In his actual teaching demonstration, he used a variety of instructional strategies to encourage students’ development on critical thinking. He planned and managed his lessons based on knowledge of the subject matter”. This indicated improvement and enhancement in the professional skills of the PSTs.

The PSTs displayed a commitment to learning and self-improvement and were seeking input about the TWS, sequencing, methodology, expected outcomes, and priorities. They learned every day in the class as their students did. They were able to learn and manifest basic professional ethics of being global teachers. They learned to become independent, self-reliant, and empowered individuals. Wang (2001) emphasized that mentoring offer psychological and emotional support to beginning teachers. It gave them autonomy to practice their ideas and develop their ways of teaching.

Darling-Hammond (2010) explained that rigorous, high quality, consistent, and professional teaching placements should enable all student teachers to develop their knowledge base, with educational theories being created, tested and re-created through their practice as well as that of peers and colleagues. These professional teaching placements can only occur where the nature of leadership and the overall quality of teaching and learning is exemplary, where the relationship between teacher educators and teachers is valued and respected, and the prevailing culture demonstrates honest commitment to professional learning and collaboration. If beginning teachers are to see and emulate high-quality practice, it is necessary not only to seek out individual mentors or cooperating teachers but also to develop the quality of the schools so that prospective teachers can learn productively and create settings where advances in knowledge and practice continue to occur (Darling-Hammond, 2010).

Pre-service teachers also gained knowledge and understanding on the kind of life Overseas Filipino Workers (OFWs) have. They have directly experienced how it is like to be away from their families and loved ones. They saw the pains OFWs endured from homesickness, new environment, and adjusting to different kind of people. They gained insights on how resilient, perseverant, and determined Filipinos are.

Another opportunity PSTs had was taking the Test of International English for Communication (TOIEC). They passed this test. They realized that they are competent teachers in the English Language and can be globally proficient.

**Theme 4: Social and Multicultural Learning Experiences**

Frame 4 reveals the learning experiences of PSTs deployed in Thailand regarding social and multicultural learning. PSTs worked collaboratively with Thai teachers, foreign teachers like American, Sri Lankan, Chinese, British, Indian, and Filipino teachers. They experienced interacting and communicating with these teachers, and with Thai learners in the STEM program. These exposures have led to the enhancement of their intrapersonal and interpersonal skills.

Working with different teachers from different races helped them to understand what is happening in the real world. The PSTs learned to exchange ideas with their mentors.
in helping them with classroom routine, checking learners’ paper work, planning the STEM lessons, and carrying them out. They also worked with the Thai teachers who were teaching in their respective classes with Thai lessons. Mentors shared their feedbacks as to how PSTs communicated with them. One American mentor stated: “She asked a lot of appropriate questions. She takes notes whenever I speak—which is a good habit to develop. Angel is catching on quickly to what it means to use inquiry as an ongoing Q&A strategy”.

The responses implied that PSTs are receptive and are trying their best to interact and learn from the experience. One mentor commented; “She has been very receptive to feedback I gave about slowing her speech and asking more questions to students.” The PSTs are asked to speak slowly in English since they are teaching Thai learners. The PSTs learned to adjust their pacing as they converse in English. Thai teachers who are the teacher assistants in the respective classrooms of their mentors, shared the same observations. According to the PSTs, they also communicate with them slowly to be better understood. They even mentioned that Thai teachers helped them. They showed kindness especially when they had a hard time in managing the class. Their presence in class helped them gain confidence in teaching.

The PSTs can become accustomed to Thai cultures. Whenever they meet the administrators, parents and other people, they learned how to greet them, do the Y and interact with them. They learned how to greet in Thai, and they were able to adapt to Thai foods which are spicy, green and leafy. They never thought they could eat so much of green leafy vegetables. They appreciated some Thai delicacies. They were able to go to the market and other stores to buy the things they need on their own.

These experiences have led the PSTs to understand multiculturalism, diversity, and intercultural understanding. These have led them to understand differences. It seems they have developed global competence. This competency is a vital skill for 21st-century teachers who can adapt and become sensitive to other cultures. Although, PSTs experienced some adjustments, they were flexible and adaptable. Exposure to various cultures according to Williams (2011) is the best predictor of intercultural communication

Frame 4. Social and Multicultural Learning Experiences of PSTs

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<td>“I have experienced working with different teachers from different races that helped me understand more what is happening in the real world much more outside of my country.”</td>
<td>PSTs had meaningful experiences working with teachers with diverse cultures.</td>
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<td>I also experienced the generosity of Thai teachers and Thai students; they are very sweet and kind.</td>
<td>PSTs observed the warmth, generosity, and cultures of Thai teachers and students.</td>
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<tr>
<td>“I have developed my interpersonal and intrapersonal skills. With the kind of exposures we have, I learned how to deal with my mentor, Thai teachers, foreign teachers, administrators, and colleagues.”</td>
<td>PSTs developed confidence in dealing with others through the kind of exposures they have.</td>
<td>Social and Multicultural Learning Experiences</td>
</tr>
<tr>
<td>“I was exposed to a multi-cultural school, and I have to communicate and build a harmonious relationship with people having different personalities and nationalities.”</td>
<td>The PSTs realized the meaning of multiculturalism, diversity, and harmony.</td>
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<td>I learned how to adapt to Thai cultures and traditions with the help of many Filipino teachers in the school. We were made to see some tourist spots near the school and into savoring Thai food delicacies which made our overall stay in Thailand worthwhile.</td>
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skills. The PSTs have become open to cultural differences.

PSTs also gained knowledge and understanding on the kind of life OFWs have. They have directly experienced how it is like to be away from their families and loved ones. They saw the pains OFWs endured, from homesickness, new environment, and adjusting to different kinds of people. They gained insights on how resilient, perseverant and determined Filipinos are.

**Theme 5: Technological Learning Experiences**

The **Technological** learning experiences of the pre-service teachers are revealed in Frame 5. The PSTs developed their skills in Information and Communication Technology ICT. One 21st century skills featured in the K-to-12 Program is the information, media and technology skills. The PSTs have maximized their experiences honing these skills while teaching in Thailand.

The PSTs valued the application of various ICT tools in teaching and learning. They were surprised to see the classrooms fully furnished with technological facilities and equipment such as projectors, visualizers, SMART board, lapel, LED television, and many others. They were able to design lessons integrating technology in the classrooms. They exerted much effort in using meaningful multimedia like videos, films, songs that are related to their instruction, and many more.

Mentors feedback expressed how keen the PSTs were while observing Teacher Luke, a British teacher who carried out the lesson in the computer laboratory. They were able to reflect on the kind of activities they will have to do to make the learning tasks more engaging and interactive.

ICT especially the internet provides meaningful resources for pre-service teachers. These resources aid the PSTs in planning a lesson that suits the needs of the 21st-century learners. These have made the teaching-learning processes fun, relevant and up to date. According to the Center for Media and Literacy (n.d.), ICT tools for teaching and learning provide ten benefits and advantages. ICT helps meet emerging educational standards while at the same time, using fresh contemporary media content that students’ love. It increases the ability and proficiency of students to communicate (express) and disseminate their thoughts and ideas in a wide (and growing) range of print and electronic media forms, and even in international venues.

Frame 5. Technological Learning Experiences of Pre-service Teachers

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<tr>
<td>“I experienced the abundance of school facilities and instructional materials.”</td>
<td>PSTs appreciated the school’s resources and facilities.</td>
<td>Technological Learning Develops PSTs ICT skills</td>
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<td>It’s an amazing experience to be using not only the DLP and PowerPoint Presentations but also the use of the Smart board, visualizer, videos and the web. All these materials are ever ready in the classroom.”</td>
<td>PSTs applied ICT tools in teaching and learning.</td>
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<td>“I’ve also tried to teach using modernized facilities such as the smart board.”</td>
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<tr>
<td>“I was given the opportunities to widen my teaching capabilities using ICT tools and other facilities.”</td>
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<td>“The STEM Room has varied instructional materials where we can go and borrow for teaching purposes. It is like a learning resource center; where everything you need is there.”</td>
<td>PSTs find STEM Room as a helpful resource for teaching and learning.</td>
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<td>“Most of our weekly assignments/ tasks are required to be checked daily with our corresponding mentor by sending it through e-mail.”</td>
<td>Learning tasks can be done online.</td>
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Moreover, it transforms teaching and frees the teacher to learn along with students - becoming a “guide on the side” rather than a “sage on the stage.” By focusing on process skills rather than content knowledge, students gain the ability to analyze any message in any medium and thus are empowered for living their lives in a media saturated culture. The PSTs were able to hone and internalize media and literacy skills that effectively led them to understand the global media culture in which they will have to live with.

Suggested Plan of Actions towards Redesigning the Pre-service Teaching Program

The SIAP PSTs suggested for the integration of the following in the Pre-service Teaching Program: TWS Teacher Work Sample, A STEM Unit of Study, and increasing the number of weeks for pre-service teaching. They also stressed that a course on ASEAN Culture and Studies would orient them with intercultural understanding and multiculturalism.

The PSTs find the TWS or Teacher Sample Work a better way of teaching future teachers to be more passionate about teaching. Five PSTs commented that “Personally, the TWS has helped me understand my students and made me resourceful in finding strategies that suit my student needs.”

TWS is anchored on a self-study approach which is found to significantly enhance pre-service teaching. According to Beck, Freese and Kosnik (2004), self-study approach put emphasis on personal, constructivist, and collaborative teaching and learning.

The interns abroad also suggested that a “STEM Unit of Study” or “A Unit of Study” is to be completed and be integrated into the pre-service teaching program. They said that it is not always in our professional careers that we are made to show our best work. The unit of study will allow the pre-service teachers to dig deeper, research more, think more profoundly and impress with creativity and insights”. With the new K-to-12 curriculum in place, it is high time that the STEM curriculum is integrated into the pre-service teaching program. There is a need to start training future teachers in this curriculum. They should undergo training and workshops or seminars, to expose and gain skills in this curriculum. They will then be more prepared and confident to face the field of teaching in the country and abroad. They will become very competent in teaching the new curriculum.

In the current curriculum, ASEAN Culture is only given to the Social Studies Majors. This course needs to be given to all pre-service teachers regardless of majors and focus. This would help PSTs who will be interns abroad to become culture sensitive and multiculturally adaptive.

Conclusions

The themes revealed that the placements of Filipino pre-service teachers in a STEM program abroad have brought very rich learning experiences and opportunities for the enhancement of the PSTs’ personal and professional competencies. The PSTs encountered varied emergent learning experiences. These emergent learning comprised of insights and knowledge in traveling, pedagogical approaches, personal and professional growth, social and multicultural learning, and technology. The PSTs were able to develop intellectual, social and multicultural awareness as they immersed themselves in a learning environment abroad. They were adaptive and socially integrated into the Thai STEM classrooms. They have social competence and cultural consciousness which were observed and demonstrated in specific ways to thrive in a foreign classroom despite academic struggles. All these learning experiences are vital for preparing them to become 21st century teachers who are ASEAN-spirited and globally competitive.

The emergent learning experiences of the PSTs have provided them with insights on the
kind of activities that will enhance the Pre-service Teaching Program. They appreciated the making of their Teacher Work Sample and the STEM Unit of Study. They wanted to extend the number of days for practicum. The appreciation of these hands-on learning experiences signifies manifestation of passion, dynamism, and transformation among PSTs.

**Recommendations**

The Filipino PSTs who were assigned in the Science, Technology, Engineering, and Mathematics Program of a Thai elementary school have enriched the Bukidnon State University’s participation to CHED Student Internship Abroad Program. The university may utilize the PSTs’ inputs and suggestions to enhance the said program and to encourage more students to participate in this opportunity.

The university administration may consider forging stronger collaboration and partnerships with stakeholders in the country and abroad for a possibility of expansion. They may also look for partners that will help provide PSTs with financial support especially in the airfare and other needs.

The College of Education administration through its dean and pre service teaching supervisors may increase the opportunities for PSTs to be exposed to a multicultural classroom and become globally competent through sustained partnerships and linkages. They may integrate into the curriculum special topics on intercultural and multicultural understanding to all teacher education programs. ASEAN Culture and Studies may be included as part of the curriculum to better prepare PSTs to participate in the Student Internship Abroad Program SIAP.

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