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IMPLEMENTING INQUIRY-BASED LEARNING IN SECOND LANGUAGE TEACHER EDUCATION (SLTE): A CASE STUDY OF STUDENT TEACHERS' EXPERIENCES

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Abstract

The aims of this case study are to explore the student teachers' (STs') learning experiences in learning to teach in Second Language Teacher Education (SLTE) programme and to examine how inquiry approach help them to learn to teach. A number of 36 STs doing TESL (Teaching English as a Second Language) programme in a university was selected as participants. The methodology used is mixed-method. This article is a partial report from a whole research which utilizes questionnaire and interview schedule for instrumentations. Descriptive statistics is used to analyse the first and second part of the research questions, using means and standard deviation. Data from interview was analysed using narrative summary and analytical model by Powell, et al. (2003). Inquiry-based learning (IBL) is chosen in this study due to beneficial outcomes from various research. The findings reveal strong influences of IBL in STs' learning experiences especially in their pedagogical content knowledge courses as well as encouraging STs to become reflective problem solvers in examining their own understanding in teaching and learning.

Keywords: *Inquiry-based Learning, constructivism, Second Language Teacher Education.*

INTRODUCTION

Second language teacher education (SLTE) programme is seen to affect many people's lives as English is regarded as international Lingua Franca through the process of globalisation (Richards, 2008). The process of globalisation (economic and communication) has increased the demand for large number of trained English teachers (Wright, 2010). In many countries, the need to learn this language has caused the increase in demand for trained teachers. These changes require a more coherent justification in the L2 curriculum and practices for SLTE to ensure the quality of learning experience of English learners (Wright, 2010). Thus, instead of focusing on teaching and its various methods and techniques in 1985, SLTE had become more concerned with 'learning to teach' by 1998 (Wright, 2010). The increasing demand worldwide for competent English teachers has forced it to respond to several changes (such as implementing effective approaches in teaching and learning and reviewing the knowledge base of the field) in order for a country to participate actively in the global economy (Richards, 2008).

Nevertheless, SLTE programmes are seen as 'lagged behind' the developments of methodological and research in general education (Wright, 2010). Traditional teacher education programmes are said to be a failure in preparing prospective teachers to manage and face the realities in the classrooms using the theories they had learned once they left pre-service teacher education (Korthagen, 2001; Richards & Renandya, 2002). According to Korthagen (2001), teachers

change their attitudes during their first year of teaching to adjust to current practices in schools and not to recent theories of learning and teaching that they had learned. Many studies have shown that the transfer from theory to practice is almost non-existent (Korthagen, 2001).

Therefore, the reform of teacher education is mandatory for the nation to face many challenges in the new century (Alam, 2013). As teaching practice plays a significant role in SLTE programme, the courses for theory and practice should be reorganized. To realize this notion, teacher educators (TEs) in teacher education in colleges and universities should be closely associated with school teachers so that the teaching practice of the STs can be easily monitored and improved. The investment in preparing teachers is essential as the learners' achievement is determined by teacher competence, sensitivity and motivation (Agrawal & Agrawal, 2013).

In Malaysia, the Ministry of Education (MOE) has launched a number of policy initiatives which encouraged creativity, critical, innovative and higher-order thinking skills in teaching and learning (Lian, Yew, & Meng, 2014). All these initiatives have been carried out as approaches in reforming the Malaysian education system, as well as Malaysian teacher education. Instead of emphasizing on conceptual knowledge, procedural knowledge and rote memorization, these initiatives focus more on student-centred learning and constructivist learning approaches in order to produce human capital as desired by the nation (KPM, 2012).

In addition, the Malaysian National Education Blueprint 2013 has focused more on how to upgrade the quality of education. The feedback received by the Ministry of Education (MOE) before the launching of National Education Blueprint 2013 (NEB, 2013) highlighted several shortcomings that need to be considered in envisioning the future of Malaysia's education system (Hussaini, 2012). One of the shortcomings mentioned in this preliminary blueprint is that despite 13 years of learning English subject, there has been a sharp decline of English proficiency among Malaysians, although English is considered as a Second Language in Malaysia. As such, it is not uncommon to find comments in the newspapers about standard of English language teaching in Malaysia and inaccuracies in the use of English language in the classrooms by teachers (Shuib, 2009). Consequently, poorly prepared teachers may affect the accuracy of their teachings.

Four pedagogical implications have been put forward including strong influence of Bahasa Melayu in learning English; the influence of rote-learning towards the mastery of specific language skills; the need to have a language curriculum that encourage more meaningful learning such as learning-by-doing experiences; and the need to develop teacher's knowledge into pedagogical practices of English teaching (Nor Mazidah, *et al.,* 2012). Based on these pedagogical concerns, there is a need to restructure the current SLTE programme which emphasize on meaningful inquiries and learning experience. Thus, it is vital to restructure the SLTE programme in assisting STs' preparation and enhancing their professional development. In order to do this, there is a need to identify the core competencies and kinds of learning experiences that assist STs to translate their knowledge into practice.

Hence, it is vital to construct a comprehensive and robust model on second language teacher education (SLTE) to prepare pre-service teachers in becoming professional teachers who are able to adapt and adopt suitable techniques and methodologies parallel to their classroom contexts. What is required now is to conduct a more contextually-focused research in SLTE, which focus on the STs' experiences of learning to teach in formal sessions. Wright (2012) has emphasized that apart from changing any method or instructional materials, the central focus is to understand STs' cognitive and affective (feelings) conditions. Only then, the real situations would be understood to provide solutions to these problems. Considering to these factors mentioned above, this study is hoped to provide a model which incorporates inquiry approach to improve SLTE programmes. In addressing the needs to understand STs' learning experiences this study seeks to answer the following research questions:

1. What are the learning experiences which assist student teachers (STs) in translating their knowledge into practice?
2. How can the inquiry strategies help STs to learn how to teach?

In this article, two research objectives which are to identify the learning experiences that assist STs in learning to teach and to determine how inquiry strategies can be implemented in the programme will be discussed. Inquiry-based Learning (IBL) is a student-centred approach which enables students to experience the learning stimulated by inquiry and leads to self-directed learning

as an active approach to learning (Spronken-Smith, 2008). If implemented appropriately, IBL provides opportunity for learners to develop research skills and eventually become life-long learners (Spronken-Smith, 2008). A number of research reveal positive outcomes of IBL such as promoting cognitive and analytical thinking development and increase learning satisfaction of learners (Nuangchalerm, 2009), increasing students' self-confidence in scientific abilities (Gormally, *et al.,* 2009) and improving students' learning (Shih, Chuang, & Hwang, 2010). Another study by Peterman (2012) indicates that the Problem-based Learning (PBL) implementation in teacher education

Inquiry-Based Learning as an Approach

The term 'inquiry' is originated from the ideas of Piaget, Dewey and Bruner which is anchored on the constructivist theory (Owu-Ewie, 2008). The backbone of this approach comes from the teaching of Confucius and Socrates. In the 17th Century, philosophers like Spinoza suggested that knowledge is acquired through the 'manipulation of ideas' instead of 'transmission of facts' (Spronken-Smith, 2008). Inquiry-based learning is categorized under the realm of inductive approaches to teaching and learning (Prince & Felder, 2006, cited in Spronken-Smith, 2008). Inductive approach comprises a range of teaching methods consisting "inquiry learning" (or inquiry-based learning), problem-based learning, case-based teaching and discovery learning. Despite many different terms used for these methods, they share several common characteristics which mainly focus more on student learning instead of teaching the content or knowledge of the topics. These methods involve students in active learning (learning by doing) and thus, they take more responsibility in learning. Inductive approach is based on constructivist theory, which proposes learners to construct the knowledge in their own meaning in reality.

METHOD

Participants

The participants consist of 26 female and 10 male student teachers in their final (eight) semester doing TESL (Teaching English as a Second Language) programme in one of the universities in Malaysia. 26 participants had teaching experiences and 10 had no teaching experience before entering this programme. All participants had undergone the experiences in the process of learning to teach since the beginning of the programme and had completed their practical in schools (practicum).

Instruments

The instruments used are questionnaire and interview schedule. The questionnaire consists of 40-questions with 5-point response scales (strongly agree, agree, not sure, disagree and strongly disagree). The questionnaire was developed based on the activities suggested from "A Teacher's Guide to Implementing Inquiry-based Learning" (Focus on Inquiry, 2004, pp. 32-35), recommendations in teacher education models selected and reviewed by the researcher and also based on the course outcomes from the courses that they had taken. The questionnaires were administered at the end of the class. Data were gathered and tabulated and responses were categorized into positive (strongly agree and agree) and negative (not sure, disagree and strongly disagree) responses. Data were gathered and analysed using means and standard deviation.

Interview schedule, which consists of four questions, was also developed by the researcher. Semi-structured interview was conducted with six student teachers after the class sessions. In addition, data from a teacher educator had also been gathered from the interview.

RESULTS

Research Question 1

What are the learning experiences which assist student teachers (STs) in translating their knowledge into practice?

In order to answer the first research question, data from questionnaires are presented in Table 1.

Table 1. Categories of meaningful learning experience.

Category	*Mean*	*Standard Deviation*
Inquiry Experience (8 items)	32.34	2.634
Student Teachers' Identity (4 items)	8.97	0.878
Process of Learning (10 items)	41.78	3.773
Social Context (4 items)	12.64	1.334
Learning Outcomes (14 items)	59.39	4.889

Table 1 shows five categories that assist STs in learning to teach. As displayed, the highest mean score is 'Learning Outcomes' (59.39), followed by category 'Process of Learning' (41.78), 'Inquiry Experience' (32.34), 'Social Context' (12.64) and 'Student Teachers' Identity' (8.97). The highest mean for category 'Learning Outcomes' indicate that STs learn to teach from the courses in their programme. Evidently, the results reveal that STs need to acquire the knowledge in teaching by doing the courses in the programme. These courses are categorised as 'pedagogical content knowledge'. Shulman (1987) emphasized that 'pedagogical content knowledge' is the most prominent category among other competencies. It represents how teachers organize, represent, and adapt particular topics, problems, or issues using the blending of content and pedagogy to teach learners with diverse interests and abilities (Shulman, 1987). Once the STs have endeavoured the knowledge and skills required in these courses, they need to apply the skills learnt by practising to teach. The evidences are shown in Table 2 below.

Table 2. Courses which assisted student teachers in learning to teach.

No	*Item*	*Positive Response*	*Negative Response*
27	Able to design CALL materials in view of the needs of ESL teachers and students in the ESL context (BIP3013)	32	5
28	Able to construct test items for various skills (BIP3023)	35	2
29	Able to develop the test specification table (BIP3033)	28	9
30	Able to prepare appropriate tools and methods to evaluate learning outcomes (BIP3042)	36	1
31	Able to identify problems in lesson plan (KPD3016)	36	1
32	Able to seek for alternative solutions in lesson plan (KPD3016)	36	1
33	Able to justify lesson plan using appropriate technology (KPD3016)	36	1
34	Able to justify lesson plan using appropriate assessment (KPD3016)	35	2
35	Able to design the assessment instruments for lessons (KPD3016)	36	1
36	Able to improve skills in lesson preparation through micro-teaching (KPD3026)	37	0
37	Able to improve skills in preparing lesson through presentation (KPD3026)	37	0
38	Able to conduct Action Research (KPD3026)	37	0
39	Able to evaluate own experience during practicum for improvement (KPR3012)	37	0
40	Able to write reflection on teaching (KPR3012)	35	2

Table 2 shows that most STs were able to apply skills they learned in the courses that they had undertaken in the TESL programme. It is worthy to note that items 36 to 39 involve active learning (micro-teaching, presentation, action research and practical) which all participants had agreed that they were able to conduct successfully. To probe further, their responses in semi-structured interview can be used to validate results from the questionnaire as shown in the excerpts below.

> *I strongly believe these activities help me in learning because my lecture in Seminar on Reflection of Teaching Practice used all these methods. I also gained a lot of input in other courses which are KPD3016 and KPD3026.* (ST1Male, Interview, 26/07/16)

> *…the Material Development course helps me to develop and select suitable materials to be used in classroom…* (ST5Female, Interview, 26/07/16)

> *The micro- and macro-teaching in KPD3026 help me a lot in learning to teach…* (ST5Female, Interview, 26/07/16)

Most student teachers viewed that the courses which assist them in learning to teach were KPD3026 Instruction, Technology and Assessment 1, followed by KPD3016 Instruction, Technology and Assessment 2 and KPR3012 Seminar on Reflection of Teaching Practice. The highest number of students chose KPD3026 as the course which assisted them in learning.

The category 'Process of Learning' (displayed in Table 1) showed the second highest mean score. The details are shown in Table 3 below.

Table 3. The learning process of STs.

No	*Item*	*Positive Response*	*Negative Response*
13	Able to integrate language learning with meaningful academic content	36	1
14	Able to apply strategies of classroom management	33	4
15	Able to use skills in subject matter to design activities which relate to daily life	33	4
16	Able to select resources effectively in content language instruction	32	5
17	Able to use technology effectively in content language instruction	33	4
18	Able to assess students' academic proficiency accurately using a variety assessment techniques	34	3
19	Able to integrate language skills with practical activities in lesson	35	2
20	Able to generate scheme of work based on the syllabus	33	4
21	Able to design lesson plans based on the scheme of work	36	1
22	Learn by reflecting on one's performance	35	2

Table 3 shows the results of learning process of STs in TESL programme. Most of the student teachers gave positive responses that they were able to apply all the skills learned in the courses. The result is further elaborated in detail from one of STs' responses in the interview below.

> *In moulding myself to become a future teacher, I think I learn best when I was instructed to conduct a macro teaching in school and record my teaching…the student teachers need more real life experiences and practices in their learning process.* (ST4 Female, Interview, 26/07/16)

> *Next, project tasks also make learning meaningful because I can apply the theories that I have learnt into practice.* (ST5 Female, Interview, 27/07/16)

Based on these results, most of the STs were able to apply knowledge and skills they gained from the courses. Nevertheless, in order to apply these skills, they need to be given opportunities to solve the problems as in real life experiences. The activities mentioned by STs that really assisted them in applying these skills are micro-/macro-teaching, Problem-based Learning (PBL) and projects. All these activities involve active learning as categorised in IBL.

Research Question 2

How can the inquiry strategies help STs to learn how to teach?

Table 4 shows STs' responses on their inquiry experiences in learning. Based on this table, most of STs viewed that they were able to carry out inquiry activities given to them.

Table 4. Inquiry experience.

No	*Item*	*Positive Response*	*Negative Response*
1	Know how to select specific topics	32	5
2	Know how to select a variety of resources	35	2
3	Know how to evaluate resources to obtain information	35	2
4	Have appropriate skills for reading more complex informational texts	27	10
5	Have appropriate skills in note taking	32	5
6	Know how to create a report	34	3
7	Know how to use technology to present report	35	2
8	Know how to use technology creatively to enhance report	33	4

The results show that STs had the same opinion that inquiry activities could enhance their learning capabilities. In addition, STs had also realized the beneficial outcomes from these activities

including increasing their motivation, satisfaction and self-confidence as well as promoting cognitive and analytical thinking development and critical thinking.

From Table 1, the mean score 32.34 for Inquiry Experience category reveals positive outcomes which relate to the implementation of IBL. Probing further, data from interview had shown that STs were comfortable using inquiry-based activities in the classroom. Data from Table 5 below shows STs' preferences of inquiry activities during the process of learning.

Table 5. Meaningful Inquiry-based activities mentioned by student teachers.

Inquiry-based activities	*Frequency*
1. Discussion	19
2. Experiment	4
3. Presentation	4
4. Problem-based Learning	3
5. Discovery Learning	3
6. Projects	2
7. Investigation	1
8. Action Research	1

In Table 4, the kind of inquiry-based activities with the highest frequency is 'discussion'. Most STs had formed the same view that discussion is the activity which really assisted them in learning to teach. Other inquiry activities that are meaningful for the STs are experiment and problem-based learning, followed by discovery-learning and presentation. The description on how these activities assisted them in learning is included below.

The data from interview was viewed, described and identified for critical events and then transcribed and coded into themes. Table 6 reveals the results in detail.

Table 6. Beneficial outcomes of Inquiry-based Activities mentioned by student teachers.

Theme	*Inquiry activities*
Enhance learning/capabilities	Discussion, Discovery Learning, Presentation, Problem-based Learning
Promote critical thinking	Experiment, Problem-based Learning, Projects
Promote cognitive and analytical thinking development	Discussion, Problem-based Learning, Presentation
Learning is more conducive when sharing knowledge with friends)	Discussion
Increase self-confidence	Presentation
Increase learning satisfaction	Projects

STs viewed that inquiry activities such as discussion, discovery learning, presentation, problem-based learning could enhance their learning capabilities, increase motivation, and promote cognitive and analytical thinking development. Discussion is the activity that is mentioned most rapidly by STs. A student teacher expressed it as a conducive activity to share knowledge/opinions among peers. A male student teacher had used discussion several times in his own class during practicum and was excited to see some positive changes in students' confidence and behaviour in learning English. According to one of STs, he preferred discussion in the class as it motivates him to learn especially in uninteresting topics while another ST expressed discussion enhances her understanding of the material. Further, they expressed that learning occurs rapidly as they share experiences, ideas and opinions. By sharing information, a student teacher stated that she can delve into a deeper context of the learning material as shown in the excerpt below.

> *By sharing information with each other, I get to delve into a deeper context of the learning material…* (ST5Female, Interview, 27/07/16)

Majority of STs viewed that activities such as experiment, presentations and problem-based learning help them in real life experiences and to be well-prepared to face the challenges in becoming future teachers. Furthermore, in order to understand the content better, one has to apply the knowledge and present it in such a way to make others understand as well.

> *During presentation, we understand the content better as I need to be constituted with the knowledge before I can present and explain the content with confidence.* (ST5Female, Interview, 27/07/16)

A student teacher expressed that doing experiment promote critical thinking as it challenges new ways for him to learn. Two STs stated that experiment and project help them to apply knowledge and theories into practice to solve problems that occur in real life.

> *In experiment we will be able to apply the knowledge that we learn theoretically into real life experience.* (ST4Female, Interview, 27/07/16)

> *Project tasks … can apply the theories learnt into practice…brings great satisfaction.* (ST5Female, Interview, 27/07/16)

Next, a student teacher contended that doing activities such as problem-based learning can help her to apply the knowledge in solving real problems even though they were in the classrooms.

> *Problem-based Learning…sometimes, it is not easy to apply the knowledge that we have learnt. Therefore, by implementing the problem for students to handle, the students will still be able to apply their knowledge in to solve the problem even though they are in the classrooms.* (ST4Female, Interview, 27/07/16)

It is worth to note that the students described these activities were conducted in the courses categorised as pedagogical content knowledge which helped them in learning to teach. They had formed the same opinion that inquiry activities which were used in these courses could enhance learning capabilities. STs realized that they had also become motivated to learn as the activities increase their satisfaction and self-confidence.

CONCLUSION

In a nutshell, findings from this study coincide with existing literature (Nuangchalerm, 2009; Gormally, *et al.* 2009; Shih, Chuang, & Hwang, 2010) that inquiry activities enhance learning, increase self-confidence and learning satisfaction. Some information obtained also addresses new issues as well. Themes that emerged from the STs' live experiences are useful for teacher educators and administrators as guidance to include inquiry activities that are meaningful in learning to teach. Information obtained in this study shows valuable information about the importance of conducive environment before inquiry-based learning can be implemented successfully in our educational system. Hence, co-operation among schools, universities and society as a whole is crucial in order to incorporate IBL in the educational system. A person needs to learn from other sources, sharing ideas and opinions with others and apply the knowledge to become skilful and better learner. Inquiry-based learning activities that involve experiential learning can produce more experienced, self-learning learners with high-order thinking skills. In conclusion, this empirical study reveals some positive findings of IBL including to enhance STs' capabilities in learning, promote critical thinking, as well as cognitive and analytical thinking development, and also increase confidence and motivation.

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