

Yemeni Pre-Service Teachers Educators' Perceptions of Lesson Study in Pre-service Teachers Preparation Program (an Exploratory Study)

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Abstract: Lesson study (LS), as a model for improving teaching and learning, has tremendous merits for both teachers and students during learning-teaching procedures. Thus, this study can serve in developing an awareness of the pre-service teachers' educators (PSTEs) toward LS as a collaborative professional development model. This study, therefore, aimed to explore the perception of participants who were selected purposively (i.e. using a purposive sample) from the PSTEs at faculty of education-Amran university, Yemen, about LS and its implementation (LSIs). To this end, an open-ended interview was conducted with six interviewees, participants mentioned above, in the second semester of the academic year (2017/2018s). The most important result of this study was that all of the PSTEs participated in this study were not aware about the LS and LSIs, too. Based on the study's results, some recommendations were recommended.

Keywords: Lesson Study, Professional Development, and Pre-Service Teachers.

إدراكات معلمي المعلمين اليمنيين قبل الخدمة في برنامج إعداد المعلمين للدرس المبحوث (دراسة استكشافية)

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الملخص: يتمتع استخدام الدرس المبحوث - كنموذج تدريسي - بمزايا كثيرة لكل من المعلم والمتعلم في تحسين وتطوير عملية التعليم والتعلم. لهذا فإن هذه الدراسة يمكن أن تؤدي إلى تحسين وعي معلمي الطالب معلم المجال حول الدرس المبحوث كنموذج تدريس تعاوني للتطوير المهني للمعلم قبل الخدمة. وعليه فإن هذه الدراسة هدفت إلى استطلاع عينة قصدية من معلمي الطلبة المعلمين بكلية التربية بجامعة عمران حول الدرس المبحوث وتطبيقاته. ولتحقيق هدف الدراسة: استخدم الباحث المنهج الكيفي عن طريق استخدام المقابلة المفتوحة مع ستة من أعضاء هيئة التدريس بكلية التربية في جامعة عمران بالجمهورية اليمنية في الفصل الثاني من العام الدراسي (2017-2018م). ومن أهم ما توصلت إليه الدراسة الحالية أن إدراك مفهوم الدرس المبحوث وتطبيقاته لم يكن لدى كل أفراد عينة الدراسة. وبناء على نتائج الدراسة فقد أوصى الباحث بجملة من التوصيات منها إجراء دراسات مماثلة وعلى مجتمعات مختلفة وبطرق وأدوات متنوعة.

الكلمات المفتاحية: الدرس المبحوث، التطوير المهني، والمعلمين قبل الخدمة.

Background

LS is being started firstly in Japan for over a century (Lewis et al., 2009; Makinae, 2010; Doig & Groves, 2011; Pella, 2011; Saito, 2012; Fujii, 2014; Hubbard, 2018; Coenders & Verhoef, 2018). It is an English translation for the Japanese term of 'Jugyō kenkyū', i.e. professional development (PD), (Hiebert et

al., 2002). Due to the idea of teaching and learning, LS seems as cultural activities that is widely spread (Stigler and Hiebert, 1999). Thus, it has increasingly widespread and taken attention from educators over the world, e.g. USA, UK, South-East Asia, South America, South Africa, Australia, China, etc., (Department for Children, Schools and Families, 2008; White & Lim, 2008; Yang, 2009; Ono, 2010; Doig & Groves, 2011; Xu, & Pedder, 2015; Mynott, 2017; Hubbard, 2018).

It (i.e. LS) defined as a "structured process where teachers work together to formulate solutions to challenges they encounter in relation to teaching and learning." (Maths Development Team, 2017: 3). It is a school-based teaching-learning professional development by which teachers seek to improve teaching and learning in their classrooms; and it relies on collaboration of a group of collaborative teachers (CTs) during practicing a live classroom lessons (Lewis et al., 2006). LS can be also defined as an approach to develop teacher learning and teaching taking into account within an educational context of the country that it belongs to (Bjuland and Mosvold, 2015). It is a collaborative and a methodological teaching-learning approach for improving both students learning and teachers' PD (Johansson, 2018). In LS, teacher collaborates with others (i.e. teachers, students, and parents) in order to provide an implanted and understandable lesson plan for the developing students learning and thinking. In a few words, LS is a process, which helps staff of school, mainly teachers, to develop and improve the quality of teaching and learning via innovating a new practices in teaching and learning.

Reviewing literature that deals with LS indicates that LS effectively plays a vital role in teacher professional development programs and used successfully in pre-service teachers preparation programs (Verhoef et al. 2015; Nami et al. 2016; Cajkler and Wood 2016; Leavy & Hourigan 2016; Zeha & Duygu, 2017; Angelini & Álvarez, 2018). On the other hand, some researchers reported a negative case of LS. For instance, Bjuland and Mosvold (2015) reported that several crucial aspects of LS were missing as a key result of their study. Also Saito et al. (2006) reported that two key issues are needed for LS to be successful: a need to shift emphasizing from teaching to learning processes (1); and involving the entire school in the implementation of LS as a whole (2).

Thus, this study can serve in developing the awareness of the PSTEs toward the LS as a collaborative professional development model (Hubbard, 2018). Moreover, developing PSTEs' awareness on LS can play a vital role in promoting reflective abilities in pre-service teachers preparation via developing and improving the processes of teaching and learning. This, therefor, can be carried out by collaboratively planning a lesson, delivering it, reflecting on its effectiveness, revising it, and then possibly repeating such a process (Myers, 2012).

In addition, LS, therefore, will allow CTs to identify other teachers facing similar challenges; identify other teachers' teaching beliefs and practices; and to learn from other approaches teachers used to do. It helps CTs, as a team, to know where they are and where they want to go. Besides, teachers learn from LS to understand how their students think, behave and learn (Lewis et al., 2009). According to Lewis

(2004: 19), seven ways have been identified by Japanese teachers in order to benefit from LS: increased knowledge about subject matter (1); increased knowledge of teaching (2); improving abilities and skills of observing students' learning (3); developing a strong collegial networks (4); developing a strong connection of daily practice to long-term goals (5); strengthening motivation and sense of efficacy (6); and improving the quality of presented lesson plans (7).

Furthermore, LS has tremendous merits for both teachers and students during learning-teaching procedures (Lewis et al., 2009; Ono and Ferreira, 2010; Ricks, 2011; Chen and Yang, 2013; Lewis & Takahashi, 2013; Lukitasari et al., 2014; Reid and Kleinhenz 2015; Warwick et al., 2016). Concisely, these merits are: while student is the center of learning-teaching based on the lesson study model (LSM), i.e. as illustrated in figure 1, teacher is also the center of the school educational environment (1); it is a well-defined image of effective learning and teaching (2); it makes opportunities available for teachers to develop their knowledge, skills as well as teaching strategies and styles that lead to create better learning opportunities for their students (3); it develops the skills of higher-order thinking for students and teachers (4); it firms up the learning community among teachers (5); and it is a more effective and valuable way of providing PD for teacher preparation training programs (6).

What distinguishes LSM, as a module, in development teachers from other modules is that cooperatively planning of LS considered to address particular problems with learning, rather than focusing on the achievement of an individual teacher (Cajkler, 2015). Moreover, in considering LS's merits for teacher as a researcher, some merits of effective teacher can be obtained if he is prepared based on LSM such merits are: promoting inquiry skills about his teaching; contributing fully in all meetings deal with LS; understanding other CTs' thinking and share them his best ideas and experiences about teaching and learning in a flexible way that keeps an open mind and well willing to change his thinking; obtaining, as CT, skills of cooperation and negotiation as well as taking risks in his team; releasing the strong relationship among instruction and learning (Lukitasari et al., 2014; Warwick, 2016; Shingphachanh; 2018).

In this context, Mynott (2017) stated three themes that can be taken as principles of LS: collaboration, expertise, and professional conflict (PC). Firstly, CTs should collaboratively plan, teach and review lessons together. Secondly, teachers use their expertise to learn collaboratively from each other through sharing their expertise in a mutual way (Lewis, 2009; Alston et al., 2011; Mynott, 2017). Thirdly, PC is a crucial step of teaching and learning by using LSM. Without PC, teachers could not generate new ideas about teaching and learning lesson (Cooper, 2007). PC starts strongly and decreases to lower and lower level till reaching to consensus among CTs' group. Yet, well communication and observation skills are indispensable for the PC; meaning that CTs should be prepared to listen well to each other and have a good ability to give their own ideas during planning, teaching and reviewing their lesson when using the LSM (Dudley, 2013; O'Leary, 2014).

According to Fujii (2014), there are three kinds of LS in Japan: School-based, District-based, and National-level LS. This classification is based on the participants' motivations or interests to involve in the LS producers (Takahashi, 2006). Nevertheless, the difference between these types is in the scope of learners to be taught the lesson considered, hence learners in the first type are taught in the school, while in the second type they are taught in the district; and LS is taught to all students across the country in the third type (Fujii, 2014).

Concerning the number of steps needed to LS's conducting, there is a variety of implementations among researchers. While some researchers suggested three phases to conduct LS (i.e. preparation, implementation and reflection), others researchers conducted it in four cyclical steps, i.e. scheduling and planning, teaching and observing, debriefing and improving and re-teaching and reflecting. (Lukitasari et al., 2014). Moreover, in a LS, Salvador et al. (2018) carried out a study aimed to improve teachers' mathematical knowledge and teaching practice. To achieve their aim, the researchers follow five steps for conducting their LS research.

Most studies in the literature review mentioned that first step of LSM is 'lesson planning' but the researcher agrees with Fujii's perspective that this step should come after 'goals setting step' (Fujii, 2014) and it is initiated by some sub-steps such as selecting the CTs who are interested in participating effectively in the LS activities. Therefore, the first step in LSM is 'goals setting', as it is illustrated by figure 1.

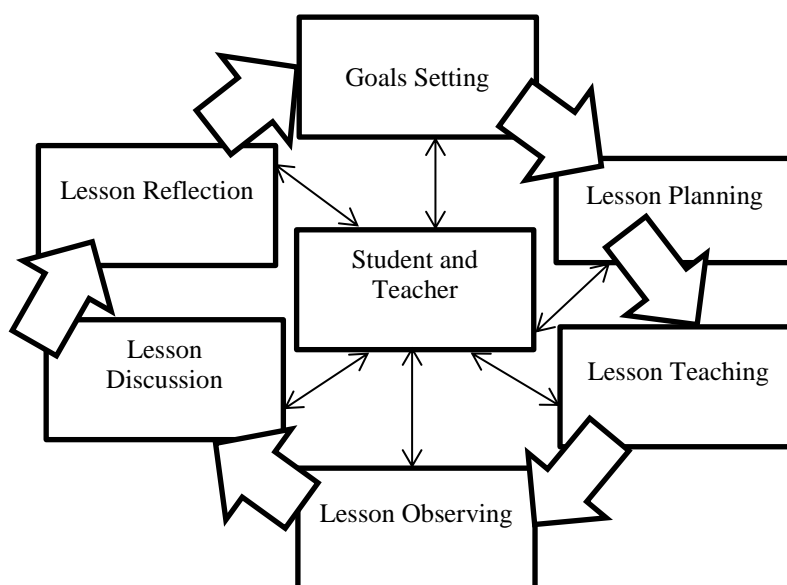


Figure (1) The process of LSM, which was modified from Fujii's model (2014)

Figure. 1, illustrates LS's cycle. It has 6 steps. Obviously, In any case, steps of LS's cycle in LSM are closely related to each other. Concisely, each step can be briefed as follows (Fujii, 2014; Rfllor et al. 2016):

- 1- For the first step (i.e. goals setting), CTs consider long-term goals for student's development; Identify gaps between the long-term goals and current reality and formulate the research theme;

- 2- Teachers Collaboratively write down a comprehensive lesson proposal for the LS that includes: design, aims, research theme, student's out-puts for learning and thinking, data collection method/s, rationale for approach selecting etc.;
- 3- In the 'lesson teaching', one of the CTs of the team teaches the lesson;
- 4- In the 'lesson observation', rest CTs as well as other knowledge from outside observe, as a team, and collect data about the teacher's teaching as well as students' learning and thinking;
- 5- To lighten student's learning and thinking, disciplinary content, design of the lesson, etc. the observers share their collecting data in a wide meeting discussion such as symposium, conference, or some things else;
- 6- Finally, CTs should reflect the document of the LS cycle to consolidate and transfer accelerative learning, new questions for the next cycle/s of LS.

In contrasting with Fujii's 5-steps model (2014), while some steps of Fujii's model were not understandably ordered, the six steps were understandably and logically ordered in the 6-steps model. For example, step of lesson research in Fujii was not connected to the previous step (i.e. lesson teaching) and the next step (i.e. lesson discussion). Obviously, one more thing distinguishes the 6-steps model from the others models is that 6-steps LSM shows that both student and teacher are the center of the teaching-learning and research processes of this model. Hence student is the center of the teaching-learning processes and the educational environment. On the other hand, teacher is the center of the research processes and the educational environment, as well.

Problem Statement and Research questions

LS is indispensable for the teacher preparation professional programs either pre-service or in-service teachers' preparation because of its vital role in developing their effectiveness and efficiency of teaching-learning approaches (Verhoef et al. 2015; Nami et al. 2016; Coenders & Verhoef, 2018). Moreover, it encourages teachers to develop their own communities of inquiry into their own teaching practices. Thus, this study attempts to explore the perceptions of Yemeni PSTEs' educators about LS. Obviously, as it was showed in the literature review on LS that studies on the exploration teachers or students' perceptions on LS has not been studied either in the higher or general education in Yemen. While there are a number of studies published on teacher's PD through LSM (Takahashi, 2014; Fujii, 2014; Takahashi & McDougal, 2015; Dudley, 2015; Xu & Pedder, 2015; Simmons, 2016), there remains a limited overview for exploration the issues deal with such development of Yemeni teachers at universities.

Therefore, this study is particularly important in terms of taking the PSTEs' perceptions about LS and its implementation (LSI). Thus, the aim of this study was to explore the PSTEs' perceptions at factuality of education-Amran university, in Yemen, about LS. In this sense, the problem of this study was to find out the perceptions of PSTEs about LS and LSI at faculty of education in Amran university, Yemen. Therefore,

answering the following research questions can be taken as a guide design, data collection, and analysis in exploring the problem of this study. specifically, this study was attempting to answer the following questions:

1. What are the perception of the PSTEs' at faculty of education-Amran university about LS and LSI?
2. Have PSTEs at faculty of education-Amran university, Yemen used the strategy of LS in their teaching?
3. Do PSTEs at faculty of education-Amran university, Yemen mind to participating in a work shop or symposium that deals with LS and LSI?.

Literature review

Literature review on LS indicates that studies take different areas of educational curricula, e.g. students' learning outcomes, teachers' collaboration and their lessons plans, as well as teaching-learning processes etc. (e.g. Lukitasari et al., 2014; Salvador et al.,2018; Mårtensson and Hansson, 2018; Shingphachanh, 2018), using different methods and instruments (e.g. description, quasi-experiment, and content analysis approaches, and questionnaire, interview, observation method etc.) (Lukitasari et al., 2014; Doig et al., 2016; Balanco et al., 2018; Mårtensson and Hansson, 2018; Shingphachanh, 2018; Alipour, 2018) to collect data. But research on LS in Arabic language texts still generally rare. This is not the case in Arabic language texts only, it is also rarely available in English language texts (Xu and Pedder 2015). Nevertheless, some related studies will be quoted to use beneficially in this study.

In the context of higher education, Balanco, et al. (2018) aimed to explore dilemmas and questions about teaching and learning that stand up during the LS research; to discuss the possibilities of LS for PD in University of Oviedo. To achieve these aims, researchers used qualitative content analysis (QCA) to analyze data collected by some descriptive research techniques (i.e. observation of classroom practices, field notes and diary, interviews with the teacher and CTs' group).

Other study conducted by Bütün (2015), he conducted a LSM on subjects consist of 26 pre-service teachers of Adiyaman University using open-ended questionnaire and QCA of the researcher's notes. Results of this study indicated that problems were experienced in the prediction of learners' thinking styles, bringing solution suggestions, mentor teacher's involvement in the process and in the assessment of the effectiveness of research lessons. In addition, results indicated that "various difficulties unique to planning, research lesson and evaluation stages of the LS cycle are experienced. In the conclusion part, solution suggestions for the problems have been made based on the researcher's field notes and the opinions of the prospective teachers to contribute to further studies on issue".

In same context, Yakar and Turgut (2017:37) also aimed to find out "the effectiveness of microteaching with lesson study in science teaching method course in terms of changes of pre-service science teachers' beliefs about teaching and learning.". Researchers conducted an open-ended interview,

as a qualitative approach, on a purposive sample to achieve their study. they reported that LS approach in such course has a positive influence on the pre-service science teachers attitudes towards the course.

Also, Shingphachanh (2018) use an open-ended questionnaire to explore the implementation of LSM in a teacher training college in order to find out how LSM procedure was understood by 70 participating teachers. Data collected by observations for 11 classrooms, the use of LS's guidelines and reports. Findings of this study revealed that teachers concerned about the LS's time consuming procedures, reports' format, the availability of collaboration time among CTs and the facilitators for implementation's work.

Also, Coenders and Verhoef (2018) conducted a study aimed to find out how LS would contribute to teacher professional growth. To this end researchers worked with two LS teams in order to fulfill a new examination program requirements. They focused in their study on two beginning and two experienced teachers who enacted one of the research lessons. Results of this study showed that two LS teams materialized in which participants shared experiences, thoughts, and ideas related to teaching and learning; LS contributed to both beginning and experienced teachers' PCK development.

Regarding to in-service teachers' perceptions, Matanluk et al. (2013) aimed to find out teachers and students' perceptions about LS implementation in a rural school (i.e. Malaysian Sabah's rural school). To this end, Researchers distributed a questionnaire to 70 respondents after LSI. Results of this study indicated that participates, both teachers and students, have positive perceptions on the LSI. Besides, results of this study showed that LSI provides teachers with a new viewpoint about pedagogy. Simultaneously, LSI improved students' participations in the classroom's learning activities. Similarly, Mon et al., (2016) used QI among multiple data sources to collect data for exploring LSI in the Malaysian education context. Results of this study revealed that collaborating among teachers, respondent to discuss, and share their teaching experiences were improved via LSI.

Another study conducted by Mårtensson and Hansson (2018) aimed to explore the CTs' PD in improving their students' learning outcomes of decimal numbers in math. To this end, researchers used CA method to analyze six lesson observations for teaching and learning's activities of five CTs.

Also, in a case study, Barber (2018) studied how LS group can develop teachers' knowledge about mathematical tasks and teaching and learning practices. Two mathematics teachers of the 4th-grade participated in two repetitions of the LSM. Data collected by different technique (i.e. participants observations in the classroom, audio recorded semi-structured interviews, before and after lessons, CA, field notes and video-recordings). Results of this study pointed out that 'teachers' abilities of analyzing the qualitative differences of mathematical tasks' and 'accompanying instructions methods during teaching' were improved through using LSM.

Methodology

This study is a qualitative research (QR). QR is a study that is set in a qualitative process in a realistic, holistic and special way to present data (i.e. perceptions, ideas, and events etc.) in a natural settings (i.e. local context) for realizing a of social phenomena with emphasizing on their viewpoints, experiences etc. of sample of things (i.e. people, events etc.) to obtain a rich details (Flick, 2009: 21, 410p; Neergaard and Ulhøi, 2007: 4, 407). Yet, case study design, as a QR, was selected to carry out the aim of this study, hence case study is "an exploration of a bounded system or a case (or multiple cases) over time through detailed, in-depth data collection involving multiple sources of information rich in context" (John, 1998: 61). It, case study, enables researcher from a rich and deep understanding about social phenomena (Silverman, 2006).

Method and materials

Since this study focuses on PSTEs' educators perceptions of LS were considered important for this research. Qualitative interview (QI) enables researcher to explore perceptions; allow him to probe and expand the interviewees' responses and, thus, enables him to explore the subject in depth (Rubin & Rubin, 2005: 88; Edwards and Holland, 2013:). The purpose of QI is to capture interviewees' perceptions and experiences (Clarke and Dawson, 1999; Best and Kahn, 2008; Edwards and Holland, 2013). Thus, unstructured QI was conducted to fulfill this study. As an exploration study, case study was carried out with six PSTEs at faculty of education-Amran university, Yemen to explore their perceptions about LS. Participants were allowed to give their own perception using their own thoughts and words that are familiar to them. The interviews occurred in the 1st semester of 2017-2018. The population of the study was PSTEs at faculty of education Amran-university, Yemen (N = 57, n = 6).

As stated by Malik & Hamied (2016), determine the sample in a qualitative study is typically by the reason on "who they are and what they know". In addition, selecting the purposive sample is based on an assumption that the participants chosen have the required data about the target issue/s (Franklen & Wallen, 2003). Therefore, in determining the sample of this study, purposive sampling technique was chosen to conduct as a suitable sample for such study (Edwards and Holland, 2013: 6) and that is why sample of this study was determined to only 6 PSTEs. Moreover, the reason beyond chosen only 6 PSTEs was based on Polkinghorne (1998), as cited in Ashari (2013), who stated that participants in purposive sample can be from 5 to 25 participants.

At the beginning, all interviewees were given some details about the interview (i.e. purpose and processes of the interview); given the instructions for applying the interview; and allowing them to be free in expressing their perceptions about LS and LSIs from their own viewpoints using their own words and meanings (Edwards and Holland, 2013: 30). And then they were asked the 1st question of the interview (i.e. Do you know what LS is all about? If so, please explain what you think it is. Regarding the

implementation of LS, participants were asked the following question 'have you ever used this technique in your teaching? If not, Why?'. In addition, interviewees were asked the 3rd question (i.e. if they do not mind to participate in a work shop or symposium that deals with LS). In order to get feedback, on the spot, sometimes researcher reworded question to the interviewees.

Data Collection

QI is widely employed as a research method for collecting data. Thus, unstructured QI was used to collect data of this study because it is valuable in conceptualizing study's findings. Within the scope of this study, 6 participants, interviewees, were asked to state what they know about LS and its implementation. They were individually interviewed to probe their perceptions about the LS. Every individual interview was recorded and the answers provided by interviewees were coded. Then, QCA was fulfilled to analyze these data.

Based on these coding, similarities/differences have been determined and categorized. These categorized data were used to detail and explore the views of participants. Responses of participants were categorized into three categories: participants' knowledge about LS (PKLS), participants' using LS (PULS) in their teaching-learning activities, and participants' willing in participating activities related to LS (PWLS). The first category was divided into subcategories: LS's definition (LSD), and LS's phases (LSPs).

All interviews were transcribed into verbatim transcripts. Then each transcript was read and read again till it's meanings were clear in reflecting ideas related to the research questions and they were identified in order to be coded. In addition, participants' answers given to the open-ended questions have been coded according to the similarities and dissimilarities of the participants' ideas. Common themes identified have been requested to analyze by another researcher who is expert in the field of education especially in qualitative researches to increase the reliability of study. In this step, the researcher extracted relevant and appropriate quotes or words from each transcript and placed them under major themes (i.e. categories and sub-categories) of the research questions. In the course of transcript action, some irrelevant data were neglected.

Data analysis

Content analysis (CA) has been used to analyze data of this study. To generate codes of content, an inductive coding approach was used in which themes and categories emerge from data that were carefully examined and constantly compared (Zhang & Wildemuth, 2005). Thus context of the interview was listened several times and wrote notes which were transferred into concepts and categories (Thomas, 2006). In data analysis, conceptual and theoretical framework were also comprehensively discussed in order to clarify the drive of the study on the perceptions of the PSTEs in specific contexts.

In terms of qualitative analysis, therefore, interviews were recorded and written down verbatim. The interviewees' answers were qualitatively analyzed using CA as a qualitative technique tool. In doing

so, to generate the codes in this study, researcher used the inductive coding approach in which ideas/themes and categories emerged from the collected data and carefully examined and constant compared, too (Zhang & Wildemuth, 2005). Thus, transcriptions text of the interviews was closely read several times to generate these codes as well as divided them into categories using coding process (Zhang & Wildemuth, 2005; Thomas, 2006). In this regard, transcriptions were coded into three categories (i.e. PKLS, PWLS and PULS). Also every participant was given a code (i.e. P1-P6).

Therefore, the initial task taken to analyze the data was identification the key ideas, based on the transcribed data. Hence, the transcribed data were read several times and synthesized the information to get general ideas that reflect the whole study as suggested by Creswell et al. (2003). To ensure reliability of the CA instrument (i.e. inter-rater reliability), double coding and reanalyzing content of the interviews were used. Then, analyzed data was finalized by another independent inter-rater who analyzed the text of the interviews. Consequently, reliability coefficient was calculated and it found as 0.82.

Results and Discussion

The results from this study were presented and discussed under three main themes, namely: the knowledge of LS and its definition, the LSIs (i.e. goal sitting, planning, teaching, observing, discussion, and reflection) and the willingness of PSTEs to participate in activities that deals with LS. As mentioned in the section of methodology, results of this study obtained via an open-ended interview questions in order to explore the PSTEs' perceptions at faculty of education-Amran university, Yemen, about LS and LSIs. Yet, due to the nature of the qualitative studies, results of this study cannot be generalized (Flick, 2009; Neergaard and Ulhøi, 2007). In addition, as this study was conducted of a limited number of interviewees. So its results are restricted to the interviewees' perceptions and cannot to be generalized beyond these perceptions about LS and some issues deal with.

In general, results of this study explored the lack of participants' perceptions about LS and LSIs. Additionally, all participants showed their willingness of participating in any activities (e.g. work shop, or symposium dealing with LS), if there is a chance. In detail, responses given by the participants to the questions of the study have been presented in the following paragraphs.

Regarding to the 1st question of the study (i.e. What are the PSTEs' perceptions at faculty of education at Amran-university, Yemen, about the LSIs?). Every participants was asked the 1st question of the interview (i.e. Do you know what LS is all about? If so, please explain what you think it is?). Responses of all participants except for the 4th one (i.e. P1, P2, P3, P5 and P6), were ,in Arab language, "laysa ladaya 'ayu fikra", which means in English "I have no idea."

Concerning the P4's response of the question mentioned earlier, he said in Arabic that "aldars almabhuth huwa aldars aldhy tama dirasatahu bitariqatn eilmiatn min qibal ahd almudariseen.", which means in English "LS is the lesson that was scientifically studied by one of the teachers."

Although P4's definition of the LS is a slightly acceptable, it does not exactly what LS means. Hence LS is a complicity of research processes that conducted by a team/ group of CTs and has, LS, a multiple phases that should be followed (Cajkler, 2015). He (i.e. P4) accounted/ gave a reason for his response, when he asked to explain his response, he gave an example; he said: "... if I studied the effectiveness of a teaching method on a students' attitudes toward, for instance, a subject/ topic, then I can ensure that I conducted a LS in my teaching, as a researcher. Yet, from this explanation one can indicate that P4 also like other participants has no idea about LS.

In case of why participants have no idea about LS, participants gave different reasons for having no idea about it. For instance, P5 said (i.e. in Arabic language): "hakikatn ana lastu muhtam bhatha almawdue." what means in English "...in fact, I am not interesting on such topic (i.e. LS)." On the other hand, P6's response to this question showed that he also has no idea about LS because of his explanation was a literal translation, since only the verbal meaning of the LS was mentioned in his explanation, he said: "aldars almabhuth huwa aldars almadrus"; meaning that in English "LS is a studied lesson". Likewise, every of P1, P2 and P3 expressed that he does not interest on LS because it is outside of his major", meaning that in Arabic language "la ahtamu bihi ,bi aldars almabhuth, li'anahu kharij tukhasusi".

Regarding to the LSIs, results indicated that all participants have no experience that deals with LS. Hence their responses of the question of 'have you ever use LS in your teaching' were: no, or never.

As for participants' willingness in participating in any activities deal with LS, all participants showed their willingness of participating in any activities (e.g. work shop, or symposium dealing with LS), if there is a chance.

Conclusion and recommendations

results of this study obtained via an open-ended interview in order to explore the PSTEs' perceptions at faculty of education-Amran university, Yemen, about LS and LSIs. Noticeably, all participants for carrying out this study were belonging to the faculty of education-Amran university, Yemen. Thus, its results could not be generalized beyond the participants perceptions of LS and some ideas deal with. Overall, results of this study offered insights into the perceptions of the PSTEs on the LS. It was revealed by this study that all of the PSTEs participated in this study were not aware about the LS and LSIs.

What have mentioned above leads to the point that they do not have enough knowledge deals with LS and LSIs. And this indicates that paying more attention, as a recommendation, to PSTEs' preparation program towards LS by the researchers, as well as teachers' educators themselves. In addition, incorporating LS into the program of pre-service teacher education preparation is recommended to enable beginning teachers to engage meaningfully with inquiry into teaching (Chassels and Melville, 2009). Moreover, it can be recommended that similar studies can be conducted on such indispensable

pedagogical matter (i.e. LS and issues deal with). Also further studies are therefore required to get more about the LS and LSIs and its effects on different variables.

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