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## **The reality of school-based professional development (lesson study) in education from the female teachers' point of view<sup>(\*)</sup>**

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### Abstract

This study aimed to explore the perception of participants towards the reality of lesson study (LS) according to some variables (i.e. classroom practices, professional development (PD), assessment, and school support). Also it aimed to find out the differences between the mean scores of these participants in light of the foregoing variables. To this end, a questionnaire consist of 37 items on LS was conducted to a sample consists (198) who were selected from the Sharia sciences' female teachers in public schools affiliated to the Education Department in Al-Kharj Governorate. Results of the study revealed that females of the participants Agreed that LS is key issue for the education mainly in the fields of classroom practices (CPF), professional development (PDF), and school support (SSF) and they somewhat agreed to the assessment field (AF). In addition, results indicated that there were no statistically significant differences at the level (0.05) about CPF, and AF according to (TEV), and there were statistically significant differences at the ( $\alpha=0.05$ ) about PDF and SSF according to the TEV. Also it revealed that there were no statistically significant differences at the same level on CPF, PDF, AS, and SSF according to the variable of the educational stage (ESV).

**Keywords:** Professional Development, Lesson Study, Education, Female Teachers.

## واقع التطوير المهني القائم على المدرسة (بحث الدرس) في التعليم من وجهة نظر المعلمات

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### الملخص

هدفت الدراسة إلى التعرف على واقع التطوير المهني القائم على بحث الدرس (Lesson Study) في التعليم من وجهة نظر معلمات العلوم الشرعية بمديرية الخرج نحو الممارسات الصفية، والتطوير المهني، والتقييم، والدعم المدرسي، وهدفت أيضا إلى الكشف عن الفروق الإحصائية بين متوسط دراجات أفراد العينة على استبيان الدرس المبحوث وفقا لمتغير الخبرة التدريسية، والمرحلة التعليمية. لتحقيق هدفي الدراسة، استخدم استبيان الدرس المبحوث لاستطلاع آراء عينة تألفت من (١٩٨) معلمة من معلمات العلوم الشرعية في المدارس الحكومية التابعة لإدارة التعليم بمحافظة الخرج. تكون الاستبيان من (٣٧) فقرة تدور حول الدرس المبحوث. وقد أظهرت نتائج الدراسة موافقات أفراد عينة الدراسة على أهمية الأخذ بنموذج الدرس المبحوث في عملية التطوير المهني بالنسبة للممارسات الصفية، ومجال التطوير المهني، ومجال الدعم المدرسي، كما كانت موافقاتهن إلى حد ما بالنسبة لمجال التقييم. وأظهرت الدراسة أيضا عدم وجود فروق ذات دلالة إحصائية تعزى لمتغير الخبرة التدريسية عند مستوى (0.05) بالنسبة لمجال الممارسات الصفية، ومجال التقييم؛ بينما أظهرت فروقا ذات دلالة إحصائية عند نفس المستوى بالنسبة لكل من مجال التطوير المهني، ومجال الدعم المدرسي، وعدم وجود فروق ذات دلالة إحصائية عند نفس المستوى بالنسبة لمجال الممارسات الصفية، ومجال التطوير المهني، ومجال التقييم، ومجال الدعم المدرسي فيما يتعلق بمتغير المرحلة التعليمية. وبناء على النتائج المتوصل إليها؛ فقد خرجت الدراسة ببعض التوصيات والمقترحات.

الكلمات المفتاحية: التطوير المهني، بحث الدرس، التعليم، المعلمات

## Introduction:

World Countries have witnessed tremendous progress and a rapid scientific and technical revolution in the twenty-first century, requiring the education to keep pace with this progress in order to improve its quality. This requires continuous efforts made by educational systems to improve its operations and outputs, the most important of which is focusing on real investment in preparing teachers and developing them professionally, developing their positive attitudes towards specialization, and developing their performance skills and teaching practices.

In fact, this is due to the fact that the success of the educational process depends primarily on the teacher as the main incentive for it, therefore, his knowledge and educational skills must be developed (Aslan, 2019, 3). Because of the importance of the teacher's role, many international, Arab, and local conferences recommended the need for the PD of teachers and preparing them in a way that suits their future roles according to modern trends (Al-Namassi, 2017, 3). in addition, a consensus between researchers, educational decision-makers, and educational program designers on the vital role that PD programmes contribute to improving the level of knowledge, skills, and attitudes of teachers to help satisfy the educational needs of learners (Wondem, 2015, 38-39).

The approaches and models of PD for teachers have varied in their ideas, tools, and means of implementation in line with the nature and philosophy of teaching and learning (Abdul Jawad, 2019). Out of these models, LS was emerged, which allows the teacher to participate with his peers in lessons' planning, train on its implementation, and obtain feedback from the peers, then re-teach again to improve the teaching strategies, and methods as well as modify them.

LS began in Japan (Fujii, 2014; Hubbard, 2015; Coenders & Verhoef, 2018). and underwent several improvements until it settled in its current form, although its application varied from school to school in some simple procedures. Japan has adopted this trend because it is similar to the philosophy of "Total Quality Management" for its pioneer Deming, as the level of teaching in Japanese classes appears significantly higher than the level of teaching in other countries (Ministry of Education, 2017, p. 4). In other words, the direction of PD based on "LS" that was used in Japan and in many North American countries has actually succeeded in encouraging

teachers to reflect on their teaching practices, which would positively reflect on the educational quality (Arslan, 2019, 1).

Al-Hessan, (2017) indicated that the aim of the LS is not to master the lesson plans so that they are exemplary, rather than the primary aim is developing a learning system that enables teachers to learn effectively and qualitatively within a team of colleagues, exchange experiences, and enrich them in the framework of sustainable and distinct learning societies. The ultimate goal of the development of teachers professionally is to improve learning and teaching processes, to prepare teachers to face the current challenges and future developments in their work, improve the tools and methods used in their practices for teaching and learning processes in planning, implementation, and evaluation, exerting great efforts, energies, and potentials in this process, and working with team spirit through mutual experience among them in order for teachers to take responsibility for their own PD (p.12).

The importance of LS is highlighted through its role in achieving teacher interaction, as Willson (2013) indicated that teachers need to monitor and observe the classroom performance plan, observe students' work, and participate in peer groups so that they perform writing and presentation activities. This requires PD for teachers to provide active learning opportunities through participation in teaching and learning analysis, monitoring expert teachers, reviewing students' work or way of thinking, evaluating the assessment, and guiding discussions that support actions to improve teaching practices. LS provides a context for examining content by deepening teachers' own understanding of the extent of correlations between subjects in the lessons and the extent of knowledge between them (Ono and Ferreira, 2010; Ricks, 2011; Chen and Yang, 2013; Warwick et al., 2016).

Fender Arak et al. (2012) explained that applying LS approach requires observing a number of requirements, such as the availability of sufficient data for students for teachers to rely on, organizing data according to each teacher, not disclosing the identity of students who receive poor results, and identifying teachers whose students get results above-average results to take advantage of these teachers. Al-Shammari (2015, p. 22) added that when conducting a LS, we should consider the determination of the needs, justifications, and objectives in carrying out the research, the continuity and discipline in order to introduce gradual improvements to teaching processes, focus on

processes and reflections to examine the lesson in order to improve and develop all processes, the suitability of the study application method with the real situation of the school conditions, and the consideration of the cultural and social context and the country background.

Perhaps one of the most common forms of LS is to use what is known as school-based PD (Arslan, 2018, 2). The school-based PD trend has emerged as one of the reliable strategies in designing professional growth programs based on the actual needs of teachers because such programs are designed and managed by the teachers themselves (Harnett, 2007, 35). The direction of the school-based PD of teachers is one of the latest educational trends in the developed world that seeks to develop its schools to create an appropriate environment for the continuing PD of teachers and to transform the school from a teaching environment to a learning environment for all its human inputs. This trend is based on the set of activities that take place in educational conferences and school lectures that take place for this purpose and is limited to activities that have a systemic shape and specific goals, like training, are carried out within the school (Al-Khuraibi, 2017, 14-15).

Hence, we can say that the strongest and most lasting effect when teachers are enabled within the school is on organized workaroud shared lessons rather than being independent.

### Problem Statement

Modern education programs are concerned with preparing the teacher and qualifying him pre- and during the service. The teacher is prepared in educational colleges that qualify him to practice the profession, but this is not enough even if the teacher is of a large amount of knowledge because the current development is fast and the practical reality of the teaching profession is constantly changing and developing (Al-Luka, 2019, 41).

Hence, it was necessary to emphasize the teachers' need for professional preparation, qualification, and training during the service in order to improve the teaching-learning process, especially in light of the research results and the tangible scientific reality of the poor performance of some teachers and the low level of academic achievement of students (Abu Shamla and Abu Shamala, 118, 2017). Although there are many forms and practices of PD that are provided to teachers at the global level, many of them still suffer from

deficiencies, especially at the level of meeting the needs of teachers in classroom learning environments (Uştuk & Çomoğlu, 2019, 41).

The Ministry of Education in the Kingdom of Saudi Arabia believes in the great importance confirmed by the educational studies of the role of the teacher in improving the teaching and learning processes. It has set the second strategic objective in the national transformation program “attracting, preparing, qualifying, and developing teachers” due to the Ministry’s trust in the teacher's ability to build an independent personality and his ability to provide them with the required skills and knowledge (Al-Thaqafi, 2019, 131). The approaches and models of PD for teachers have varied in their ideas, tools, means, and methods of implementation in line with the nature and philosophy of teaching and learning. LS emerged from these models, which is an effective tool in PD within the school because of its impact on improving teaching and raising student achievement. The Ministry of Education in the Kingdom of Saudi Arabia was not isolated from this global trend. Therefore, the National Center for Educational PD adopted the School Based PD Project (LS) (National Center for Educational PD, 2017, 8).

At the level of the Kingdom of Saudi Arabia, the main problem was that the common model of teacher PD is still dependent on the traditional model (Alshumaimeri & Almohaisen, 2017, 188). This is in addition to the urgent need to implement the school-based continuing PD programmes in the Kingdom of Saudi Arabia, especially knowing that there are many shortcomings directed to the traditional PD programmes for the Saudi teacher in relation to their suitability to their professional needs (Mansour, EL-Deghaidy, Alshamrani & Aldahmash, 2014, 21). In agreement with the aforementioned, it can be said that there is a real gap between the PD programmes directed at teachers and the actual needs of them in the Kingdom, which led to the low level of competence and effectiveness of such programs (El-Deghaidy, Mansour & Alshamrani, 2014, 1539). This is in addition to what was indicated by the results of the study of Al-Zahrani (2019), which confirmed that (43%) of the study sample teachers did not participate in any form of school-based PD in the Kingdom of Saudi Arabia during the past two years.

The results of many studies mentioned in the previous literature have confirmed the effectiveness of the role of examining the lesson in improving teaching practices and skills for teachers as well as in

their PD. Among those studies was what Abu Sardanah (2017) referred to, which emphasized the role of the school-based continuing PD programmer in improving classroom practices for teachers. The results of the Coenders & Verhoef (2018) study also confirmed the effectiveness of using the LS model in the PD of teachers, especially at the level of enriching knowledge of educational content, whether at the level of junior teachers or experienced teachers. Consistent with the viewpoint previously presented, the results of the Sheailleabháin (2015) study confirmed that school-based PD (LS) would enhance knowledge of the educational content of teachers, which would positively reflect on their classroom practices.

In light of the foregoing, the results of previous studies and field literature from the results, and based on the advantages enjoyed by the LS. Taking into consideration the scarcity of local studies -to the extent of the researcher's knowledge- that aimed to identify the reality of the application of school-based PD in public schools, the need to conduct this study came and thus the study tries to answer the following questions:

- 1- What is the reality of LS from the female teachers' perception in the CPF?
- 2- What is the reality of LS from the female teachers' perception in the PDF?
- 3- What is the reality of LS from the female teachers' perception in the AF?
- 4- What is the reality of LS from the female teachers' perception in the SSF?
- 5- Are there any statistically significant differences between the mean scores of the participants on the LS's questionnaire can be referred to the study's variables?

### **Aims of the study**

This study aimed to:

- 1- Identify the reality of LS from the female teachers' perception in the CPF.
- 2- Identify the reality of LS from the female teachers' perception in the PDF.
- 3- Identify the reality of LS from the female teachers' perception in the AS.
- 4- Identify the reality of LS from the female teachers' perception in the SSF.



- 5- Identify statistically significant differences between the mean scores of the participants on the LS's questionnaire can be referred to the study's variables.

### Significance of the Study

**This is so important, hence it can:**

- 1- contribute to monitoring the actual reality of LS from the participants' point of view which may provide an honest picture of the reality of LS application that can be oriented to the PD programs presented in Saudi schools;
- 2- Enrich the Arab Library with a reliable reference framework for identifying the reality of LS in the PD of Saudi teachers;
- 3- Open the way for more future studies to know about the impact of LS on improving teaching practices for teachers at different academic levels;
- 4- Encourage teachers to carry out self-development processes on an ongoing basis as they are able to identify strengths and weaknesses in their teaching performance.
- 5- Provide educational supervisors and those responsible for designing PD programs for teachers with a new strategy that can better meet the professional needs of teachers;
- 6- Emphasize the importance of teachers' participation and cooperation among themselves in order to provide feedback to each other and to suggest new ideas that would enrich the educational situation.

### Limitations of the Study

**Spatial Limits:** The application of the study was restricted to female teachers of Sharia sciences in Al-Kharj Governorate.

- **Human Limits:** The application of the study was restricted to female teachers of Sharia sciences at the primary, middle, and secondary stages.
- **Time Limits:** The application of the study was during the first semester of the academic year 2019/2010AD.
- **Objectives Limits:** Knowing the reality of school-based LS from the point of view of Sharia sciences female teachers.

### The study terminologies:

#### Professional Development (PD)

Al-Alyan and Al-Mazrouei (2010) defined **PD** as "the continuous and organized practices that the teacher performs ly or collectively

and they target his productive capacity and the development of his knowledge, attitudes, and teaching skill" (p. 15). While Ibrahim (2009) defined it as "continuous processes and activities designed to increase the professional knowledge, skills, and attitudes of teachers in order to enable them to improve their teaching for good learning" (p. 286). Operationally, for this study, PD can be defined as a procedurally as "the continuous change in the level of female teachers' performance while their teaching for the best using appropriate scientific methods and modern strategies".

### Lesson Study

Al-Shammari, (2015) defined LS as "a PPD, in which teachers participate in the form of learning teams inside or outside the school in order to improve the lesson plan and its implementation and note the reflection of that plan on students' learning by collecting data about their learning and using it to improve the lesson again. It is an ongoing process within the school and requires teachers to develop action plans within the short and long-term school to achieve major goals such as improving the teaching and learning of teachers through their involvement in learning about more effective practices that lead to improving students' learning outcomes. Procedurally, for this, LS is "the teachers' participation with each other to improve professional practices within the school, by analyzing and criticizing daily lessons and providing proposals and solutions to develop them continuously by interacting and benefiting from the experiences of teachers in specialized professional learning communities.

### Previous Studies

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; Al-hadabi, 2019), 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; Al-hadabi, 2019) 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.

Al-Thaqafi's study (2019) aimed at identifying the extent of the effectiveness of the training program in LS's strategy skills and investigating the existence of statistically significant differences between the average scores of the sample LS's strategy skills attributed to the study variables. To accomplish his study, Al-Thaqafi conducted a quasi-experimental approach to a sample consisted of (33) female teachers and used the list of strategic skills of the LS as an instrument for the study. Results of the study revealed that the effectiveness of the training program was achieved and it had the same effects on the various disciplines, and there were no statistically significant differences between the average scores of the study sample in the skills of the LS strategy due to the variable of specialization.

Another study conducted by Coenders & Verhoef (2019). this study aimed to identify the PD of beginners and experienced teachers by participating in teams related to the LS. The study sample included (4) teachers and the study used the qualitative case study approach. The study reached that PD process is based on, through LS, the stage of development which teachers exchange and discuss modern educational methods from the perspective of student learning and the design of the LS plans and its preparation to be used in classrooms.

The study of Al-Dossari and Al-Gabr (2019) identified the nature of the attitudes of female teachers of natural science towards PD based on the LS strategy in teaching natural sciences at the secondary stage. The sample included (110) female teachers. The two researchers used the survey descriptive method as the study method and adopted the questionnaire as the study tool. They reached several results, the most important of which were the attitudes of natural science female teachers towards PD based on the LS strategy in teaching natural sciences at the secondary stage came with an "agree" response.

Abu Al-Hadid's study (2019) investigated the effectiveness of the proposed program based on the LS and the methods of the Egyptian Knowledge Bank in developing analytical thinking skills for pre-service mathematics teachers at the Faculty of Education in Port Said. The study sample included (8) students from the fourth level students and the researcher used the experimental method as the study method and adopted the analytical thinking test and tendency towards teamwork as the study tool. The researcher reached many results,

including that the lesson model is effective in improving the performance of pre-service maths teachers, developing different their types of thinking, and improving their efficiency and self-skills.

Abu Sardanah's study (2017) aimed at identifying the degree of effectiveness of the school-based continuing PD program in improving classroom practices for teachers from the viewpoint of school principals. The study sample included (144) educational principals and supervisors. The researcher adopted the survey descriptive approach as the study method and used the questionnaire as the study tool. The researcher reached many results, including that all axes of the school-based continuing PD program in improving classroom practices for teachers came with a high degree from the point of view of the principles.

Widjaja et al. (2017) study examined the professional learning experiences of teachers participating in a LS project in Australian schools. The study sample included (10) teachers. The study used a qualitative approach based on interviews and video-based field notes for meetings of the LS project in the PD of teachers. The study found that the LS project was effective on the PD of teachers through the growth of cooperative planning skills, the increased focus on mathematical thinking for students, the use of coordinated class discussions based on expected student solutions, and the promotion of collaborative study practices related to teachers.

Nauerth (2015) study examined the impact of PD through LS on self-efficacy and predicting results among teachers. The study sample included (13) teachers. The study used the qualitative-quantitative case study approach based on the pre- and post-scale of the teaching competence in mathematics and the expected results as well as observations during PD through the LS. The study found a positive impact of PD through the LS on self-efficacy and predicting the results among teachers.

Verhoef & Tall (2011) examined the effect of the LS on the PD of teachers in secondary schools in the Netherlands. The study sample included (3) secondary school teachers, and the study used the exploratory approach based on pre- and post-test related to mathematics and mathematical concepts through questions related to the goals of teaching mathematics and elements related to teaching mathematical concepts. The researcher also conducted interviews with teachers about students' understanding of mathematical topics and the

study found that the LS method enhances the self-cognitive basis on the teaching of mathematics teachers.

## Methodology

A descriptive approach of research was used in achievement this study using a survey method.

## Sampling

A random sample of (198) participants were randomly selected from the population of Sharia science female teachers to participate in this study during the first semester of the academic year 2019/2020AD. Table (1,2) illustrates the characteristics of the study's sample.

TEV	Frequency	Percentage
Less than 5 years	24	12.1
From 5 to 10 years	72	36.4
From 10 to 20 years	42	21.2
More than 20 years	60	30.3
Total	198	100%

Table (1) Distribution of the sample according to the participants' experience

ESV	Frequency	Percentage
Primary Stage	57	28.8
Middle Stage	81	40.9
Secondary Stage	60	30.3
Total	198	100%

Table (2) Distribution of the Sample According to the Educational Stage

## Interment of the Study

After reviewing the literature and previous studies related to the subject of the current study and in light of the data and questions of the study and its objectives, the tool (the questionnaire) was built and it consisted of two parts. The following is a presentation of how it was constructed and the procedures used to verify its validity and reliability:

- 1- The first part: contained the primary data of the participants which was represented by TEV, and ESV.
- 2- The second part: consisted of (37) item distributed on a basic axis and Table (3) clarifies the number of items of the questionnaire and how they are distributed over the fields.

Area	Dimension	No of items	Total
The reality of LS in education from the female teachers' point of view	CPF	11	37
	PDF	10	
	AF	7	
	SSF	9	
Questionnaire			37

Table (3) area of the questionnaire and its items.

The Three-Point Likert Scale was used to obtain responses from the participants according to the following degrees of agreement: (agree- somewhat agree - disagree) and then express this measure quantitatively, by giving each of the above items a score, according to the following: agree (3) scores, somewhat agree (2) two scores, disagree (1) one score. To determine the length of the Three-Point Likert Scales categories, the range was calculated by subtracting the highest limit from the lowest limit ( $1-3 = 2$ ), then divided by the largest value in the scale ( $2/3 = 0.67$ ), after which this value was added to the lowest value in Scale (1) to determine the highest limit for this category. The length of the range was used to obtain an objective judgment on the means of responses of the study sample after they were statistically treated.

### Validity of the Instrument

The researcher confirmed the validity of the study's instrument through face validity as well as the internal consistency validity. For the face validity, Instrument (i.e. questionnaire) of this study was exposed to (11) of panel of experts who were asked to assess the quality of the questionnaire in terms of its ability to measure what was prepared to measure it and to judge its suitability for the study objectives, by determining the clarity of its items, their affiliation to the axis, their importance, and their linguistic integrity and then they express what they see of modification, deletion, or addition to the items. After taking panel of experts' opinions and looking at their notes, and their consensus on the questionnaire items the questionnaire was finalized. On the other hand, for the **internal Consistency Validity**, Pearson's Correlation Coefficient was calculated to identify the degree of correlation of each item of the questionnaire items to the total degree of the area which they belong to as it is illustrated in Table (4).

The reality of LS in education from the participates' perceptions				
Dimension	Item no.	Correlation Coefficient	item no.	Correlation Coefficient
PF	1	0.769**	7	0.899**
	2	0.846**	8	0.871**
	3	0.919**	9	0.885**
	4	0.807**	10	0.864**
	5	0.861**	11	0.838**
	6	0.887**	-	-
DF	12	0.844**	17	0.904**
	13	0.768**	18	0.880**
	14	0.816**	19	0.919**
	15	0.775**	20	0.885**
	16	0.893**	21	0.898**
AF	22	0.671**	26	0.854**
	23	0.855**	27	0.894**
	24	0.881**	28	0.892**
	25	0.856**	-	-
SSF	29	0.788**	34	0.904**
	30	0.895**	35	0.908**
	31	0.827**	36	0.907**
	32	0.899**	37	0.870**
	33	0.877**	-	-

1-Table (4) Pearson correlation coefficients of the questionnaire items with the total score of the area

\*\*Significant at the significance level 0.01 or less.

It is clear from Table (4) that the values of the correlation coefficient of each of the items with their axis were positive and statistically significant at the level of significance (0.01) or less, which indicates the validity of the internal consistency between the items of the first axis and their suitability to measure what it was prepared to measure it.

### Instrument reliability

The reliability of the study instrument was confirmed by using the reliability coefficient Cronbach's Alpha ( $\alpha$ ) and Table (5) shows the values of reliability coefficients of each of the questionnaire axes.

Questionnaire area	Dimension	Items No.	Reliability
The reality of LS in education from the female teachers' point of view	CPF	11	0.9643
	PDF	10	0.9605
	AF	7	0.9319
	SSF	9	0.9614
General Reliability		37	0.9855

**Table (5) Cronbach's Alpha coefficient the study's instrument**

It is clear from Table (5) that the general reliability coefficient was high as it reached (0.9855) and this indicates that the questionnaire has a high degree of reliability that can be relied upon in the field application of the study.

### Statistical Analysis

The researcher used several suitable statistical methods using the SPSS program and then the following statistical measures were calculated: Frequencies, Percentages, Weighted Mean, Arithmetic Mean, and Standard Deviation.

### Results and Discussion of the Study

The answer of the 1<sup>st</sup> question: "What is the reality of LS from the female teachers' perception in the CPF?". To answer this question, percentages, means, standard deviations, and ranks were figured out, as it is illustrated in table (6).

N	Items	Frequency	Agreement Degree			Arithmetic Mean	Standard Deviations	Ranks
		Percentage %	Agree	Somewhat agree	Disagree			
3	It increases the introduction of various activities to take into account the individual differences between female students	F	144	30	24	2.61	0.695	1
		%	72.7	15.2	12.1			
6	It increases the opportunity to provide female students with ongoing feedback skills about their learning progress	F	135	45	18	2.59	0.652	2
		%	68.2	18	9.1			
7	It allows the diversity of positive reinforcement methods for female students	F	138	39	21	2.59	0.675	3
		%	69.7	19.7	10.6			
5	It contributes to employing different methods (pre, structural, and post) evaluation during the implementation of the lesson	F	132	45	21	2.56	0.679	4
		%	66.7	22.7	10.6			
2	It can employ	F	12	54	18	2.55	0.657	5



N	Items	Frequency	Agreement Degree			Arithmetic Mean	Standard Deviations	Ranks
		Percentage %	Agree	Somewhat agree	Disagree			
	different active learning strategies while implementing the lesson (collaborative learning, role-playing, presentation, etc.)	%	63.6	27.3	9.1			
10	It focuses on documenting and transcribing ideas and notes for female students during the implementation of the lesson.	F	129	45	24	2.53	0.703	6
		%	65.2	22.7	12.1			
8	It increase the effective ability to organize the classroom according to the aim and implementation of the lesson	F	129	45	24	2.53	0.703	7
		%	65.2	22.7	12.1			
9	It provides an opportunity to use the available environmental resources to implement the lesson	F	120	60	18	2.52	0.659	8
		%	60.6	30.3	9.1			
4	It encourages experimenting with interactive creative activities in class	F	114	60	24	2.45	0.702	9
		%	57.6	30.3	12.1			
1	It helps presenting a meaningful logical presentation of the lesson	F	102	78	18	2.42	0.654	10
		%	51.5	39.4	9.1			
11	It increases the opportunity to apply a meaningful learning approach while implementing the lesson	F	102	72	24	2.39	0.695	11
		%	51.5	36.4	12.1			
General Mean						2.49	0.592	

**Table (6) participants' responses and ranking on the LS's questionnaire according to the CPF**

It is clear from Table (6) that mean of the participants' responses CPF is (2.52 from 3.00), as the means of this area ranged between (2.61- 2.39), which indicates that they agree on positive reliability of

LS according to CPF variable. Also it was found that the means of this field items ranged between (2.61- 2.39) in the "agree" degree, as the item (3) "It increases the introduction of various activities to take into account the individual differences between female students" was in the first rank in terms of the participants' agree with a mean of (2.61), the item (11) "It increases the opportunity to apply a meaningful learning approach while implementing the lesson" was the 11<sup>th</sup> rank in terms of the participants' agree with a mean of (2.39).

This result explained that the practicing LS of female teachers teaching is useful to provide various activities enables them to deal with their female students comprehensively according to their individual differences, as the various activities provide different images of the concept that the teacher wishes to provide for and present to the students in several aspects, which makes all students able to absorb it. It also enhances the ability of female teachers to use effective learning methods, which supports female teachers' increased opportunity to apply a meaningful learning approach during the implementation of the lesson. Obviously, this result is consistent with the results of (Mon et al. 2016; Yangco et al. 2016; Sickie, 2011; Abu Sardanah, 2017; Al-Khuraibi, 2017) studies.

To answer the 2<sup>nd</sup> question "What is the reality of LS from the female teachers' perception in the PDF?". Likewise, percentages, means, standard deviations, and ranks were figured out, as it is illustrated in table (7).

N	Items	Frequency	Agreement Degree			Arithmetic Mean	Standard Deviations	Ranks
		Percentage %	Agree	Somewhat agree	Disagree			
21	It increases the progress of the female teachers according to the PD standards	F	135	39	24	2.56	0.701	1
		%	68.2	19.7	21.1			
13	It cares for employing information technology in teaching	F	126	51	21	2.53	0.681	2
		%	63.6	25.8	10.6			
16	It increases various creative ideas and their indicators	F	126	51	21	2.53	0.681	3
		%	63.6	25.8	10.6			
17	It contributes to the development of the professional performance of teaching	F	132	39	27	2.53	0.724	4
		%	66.7	19.7	13.6			

N	Items	Frequency	Agreement Degree			Arithmetic Mean	Standard Deviations	Ranks
		Percentage %	Agree	Somewhat agree	Disagree			
18	It focuses on identifying learning outcomes to further professional development	F	114	63	21	2.47	0.681	5
		%	57.6	31.8	10.6			
14	It contributes to engaging in a community of professional practices between female teachers inside and outside the school as a learning community	F	114	63	21	2.47	0.681	6
		%	57.6	31.8	10.6			
19	It increases the use of effective communication in the teaching-learning process	F	114	60	24	2.45	0.702	7
		%	57.6	30.3	12.1			
20	It provides an opportunity to choose meaningful educational practices in planning and teaching	F	117	54	27	2.45	0.723	8
		%	59.1	27.3	13.6			
15	It cares for activating the relationship between the school and community institutions	F	102	81	15	2.44	0.632	9
		%	51.5	40.9	7.6			
12	It develops self-reflection practices in the implementation of the lesson	F	108	69	21	2.44	0.679	10
		%	54.6	34.8	10.6			
General Mean						2.49	0.592	

**Table (7) participants' responses and ranking on the LS's questionnaire according to the PDF.**

Table (7) showed that mean of the participants' responses PDF is (2.49), as the means of this area ranged between (2.49- 3.00), which indicates that they agree on positive reliability of LS according to PDF variable. Also it was found that the means of this field items ranged between (2.44- 2.56) in the "agree" degree, as the item (21) " It increases the progress of the female teachers according to the PD standards" was in the first rank in terms of the participants' agree with a mean of (2.56), the item (10) "It increases the opportunity to apply a meaningful learning approach while implementing the lesson" was the 10th rank in terms of the participants' agree with a mean of (2.44).

Result related to the 2<sup>nd</sup> question explained that the practice of female teachers LS in teaching is useful to develop the skills of teachers in accordance with the standards of professional performance and this is through established development programs, which work to address the weaknesses of teachers, enhance strengths, and work to benefit as much as possible from the teachers' experiences and skills in order to benefit students and enhance their contribution to the advancement of female teachers according to PD standards. It also improves the personal and professional skills of female teachers, which enhances their contribution to developing self-reflection practices in the implementation of the lesson. Result of this study is in line with the results of (Punzalan, and Espinosa, Mon et al., 2016 2016; Lucenario et al. 2016; Yangco et al. 2016; Sickie, 2011; Abu Sardanah, 2017; Al-Khuraibi, 2017; Abu Shamla and Abu Shamala, 2018) studies.

As regard to the 3<sup>rd</sup> question "What is the reality of LS from the female teachers' perception in the AF?". Also, percentages, means, standard deviations, and ranks were figured out, as it is illustrated in table (8).

N	Items	Frequency	Agreement Degree			Arithmetic Mean	Standard Deviations	Ranks
		Percentage %	Agree	Somewhat agree	Disagree			
25	Continuing assessment sessions provide more feedback on the progress of the implementation of the lesson	F	120	54	24	2.48	0.703	1
		%	60.6	27.3	12.1			
26	The final evaluation sessions enable a full visualization of the implementation of LS effectively.	F	114	60	24	2.45	0.702	2
		%	57.6	30.3	12.1			
24	Classroom observations increase supporting classroom practices during the lesson	F	108	66	24	2.42	0.699	3
		%	54.6	33.3	12.1			
27	Continuing assessment sessions contribute to monitoring and documenting achievements on the progress of learning	F	102	75	21	2.41	0.675	4
		%	51.5	37.9	10.6			

	accurately.							
23	Classroom observations help self-reflection in thoughts	F	105	69	24	2.41	0.698	5
		%	53.0	34.8	12.1			
28	Different assessment sessions allow participation in learning communities to apply new styles of strategic learning	F	105	69	24	2.41	0.698	6
		%	53.1	34.8	12.1			
General Mean						2.38	0.588	

**Table (8) participants' responses and ranking on the LS's questionnaire according to the AF**

Results of the 3<sup>rd</sup> question explained that the participants' perceptions on the reality of LS according to the AF. Table (8) showed that mean of the participants' responses in terms of AF is (2.38), as the means of this area ranged between (2.48- 2.08), which indicates that the reliability of LS according to AF variable is acceptable. Also it was found that the means of this field items was ranged between (2.48- 2.08) In addition, it was found that the greatest rank was for the item (25), Continuing assessment sessions provide more feedback on the progress of the of the LS' s implementation, it was (2.48), while the lowermost was the item (28), Different assessment sessions allow participation in learning communities to apply new styles of strategic learning, it was (2.41).

This result explained that LS aims to enhance the progress of female teachers in their teaching, hence it enhanced its contribution to increasing the ability of participants to increase continuing assessment sessions in providing feedback on the progress of the implementation of the lesson. This result also explained that the different evaluation sessions enable the teachers to share ideas and suggestions and exchange experiences, provide them with sufficient awareness of the degree of student progress in the lesson and the extent of their assimilation to it, clarify which points the students were unable to absorb, which provides them with the ability to modify the methods and strategies used in implementing the lesson, and allow participation in the learning communities to apply new styles of strategic learning.

Result of this study is in line with the results of (Punzalan, and Espinosa, Mon et al., 2016 2016; Lucenario et al. 2016; Yangco et al.

2016; Sickle, 2011; Abu Sardanah, 2017; Al-Khuraibi, 2017; Abu Shamla and Abu Shamala, 2018) studies.

With regards to the 4th question (i.e. What is the reality of LS from the female teachers' perception in the SSF), Table (9) showed the results related to this question.

N	Item	Frequency	Agreement Degree			Arithmetic Mean	Standard Deviations	Ranks
		Percentage %	Agree	Somewhat agree	Disagree			
37	External meeting sessions with the educational female supervisor encourage constructive discussions among the female teachers, present their opinions and defend them positively.	F	126	48	24	2.52	0.703	1
		%	63.7	24.2	12.1			
30	The internal meeting sessions with the school female leader increase the exchange of educational experiences among the single specialty teachers in the school	F	126	45	27	2.50	0.725	2
		%	63.7	22.7	13.6			
32	Internal meeting sessions with the school female leader help to acquire teamwork skills in getting things done	F	123	48	27	2.48	0.725	3
		%	62.2	24.2	13.6			
36	The meeting sessions with the educational female supervisor contribute to developing the culture of dialogue among the female teachers	F	120	51	27	2.47	0.724	4
		%	60.6	25.8	13.6			
35	The evolution of the external meeting sessions with the educational female supervisor in	F	120	48	30	2.45	0.744	5
		%	60.6	24.2	15.2			

N	Item	Frequency	Agreement Degree			Arithmetic Mean	Standard Deviations	Ranks
		Percentage %	Agree	Somewhat agree	Disagree			
	motivational methods to celebrate the achievements of the female teachers and their successes							
29	Internal meeting sessions with the school female leader support the implementation of lessons	F	111	60	27	2.42	0.721	6
		%	56.1	30.3	13.6			
34	External meeting sessions with the educational female supervisor enable the exchange of educational experiences between female teachers in different schools	F	114	54	30	2.42	0.742	7
		%	57.5	27.3	15.2			
33	External meeting sessions with the educational female supervisor support the improvement of teaching performance	F	108	60	30	2.39	0.738	8
		%	59.1	27.3	13.6			
31	Internal meeting sessions with the school female leader enable the LS to be meaningfully applied	F	114	45	39	2.38	0.795	9
		%	57.6	22.7	19.7			
General Mean						2.45	0.643	

**Table (9) participants' responses and ranking on the LS's questionnaire according to the SSF.**

As it is illustrated in table (9), Results of the 4<sup>th</sup> question explained that the participants' perceptions on the reality of LS according to the SSF is (2.52). The means of this area ranged between (2.52-2.38), which indicates that the reliability of LS according to SSF variable is acceptable. Also it was found that the means of this field items was ranged between (2.52- 2.38) In addition, it was found that the greatest rank was for the item (37), External meeting sessions with the educational female supervisor encourage constructive discussions

among the female teachers, present their opinions and defend them positively, it was (2.52), while the lowermost was the item (31), Internal meeting sessions with the school female leader make LS to be meaningfully applied, it was (2.38). These results also explained that the internal meeting sessions with the school female leader allow directing the female teachers to achieve the desired objectives, as the female leader explains to them all the desired objectives and she may give them some advice in the methods of their application, which contributes to supporting the application of the LS meaningfully.

Likewise, Result of this study is in line with the results of (Hamzeh, (2014; Punzalan, and Espinosa, Mon et al., 2016 2016; Yangco et al. 2016; Al-Yahya, 2017; Abu) studies.

As for the 5<sup>th</sup> question, are there any statistically significant differences between the mean scores of the participants on the LS's questionnaire can be referred to the study's variables, according to the TEV, One Way ANOVA was used analysis the participants' responses on the LS questionnaire to find out alpha significance of their scores' mean on the questionnaire. The results were as showed in table 10.

Area	Variance Source	Sum of squares	df	Squares Mean	F-Test	Statistical Sig.	Comment
CPF	Between groups	1.085	3	0.362	1.062	0.366	Insignificant
	Within groups	66.022	194	0.340			
	Total	67.106	197	-			
PDF	Between groups	3.535	3	1.178	3.494	0.017*	Significant
	Within groups	65.436	194	0.337			
	Total	68.971	197	-			
AF	Between groups	1.474	3	0.491	1.432	0.235	Insignificant
	Within groups	66.526	194	0.343			
	Total	68.000	197	-			
SSF	Between groups	3.536	3	1.179	2.935	0.035*	Significant
	Within groups	77.903	194	0.402			
	Total	81.439	197	-			
All LS's items	Between groups	2.049	3	0.683	2.164	0.094	Insignificant
	Within groups	61.248	194	0.316			
	Total	63.297	197	-			



**Table (10) Results of "One Way ANOVA" for the differences of the participants' perceptions in terms of TEV**

**\* Significant at the level of 0.05 or less.**

As it is shown in Table (10) there were no a statistically significant differences at the level (0.05) between the participants' mean scores on LS questionnaire in terms of TEV, whereas, there is a statistically significant differences according at the same level (i.e. 0.05). It can be indicated from this result that PD program is proceeding according to a plan and specific rules to bring the female teachers to the desired professional degree, so all the female teachers apply those steps of LS in the classroom practices and evaluation, regardless of the TEV. Results also revealed that there were statistically significant differences at the level (0.05) between the participants' scores mean of those who had a teaching experience of (5-10) years and those who had an experience of (10-20) years on PDF in contrast with those who had a teaching experience of (10-20) years. The differences ware favor of those who had (10-20) years.

On the another hand, results revealed that, as it is showed table (10), there were statistically significant differences at the level of (0.05) between the participants' scores mean those who had a teaching experience less than 10 years and the those who had a teaching experience of 10 years or more on the SSF and the differences were in favor of the participants who have teaching experience of 10 years or more.

Similarly, ANOVA-one way was used to find out the significant differences of the participants' scores mean according to ESV. Table (11) shows results of ANOVA- ANOVA about this significance.

Area	Variance Source	Sum of squares	df	Squares Mean	F-Test	Statistical Sig.	Comment
CPF	Between groups	0.266	2	0.133	0.388	0.679	Insignificant
	Within groups	66.840	195	0.343			
	Total	67.106	197	-			
PDF	Between groups	1.739	2	0.869	2.522	0.083	Insignificant
	Within groups	67.232	195	0.345			
	Total	68.971	197	-			
AF	Between groups	0.819	2	0.410	1.189	0.307	Insignificant
	Within groups	67.181	195	0.345			
	Total	68.000	197	-			
SSF	Between groups	0.107	2	0.054	0.129	0.879	Insignificant
	Within groups	81.332	195	0.417			
	Total	81.439	197	-			
All LS's items	Between groups	0.371	2	0.186	0.575	0.564	Insignificant
	Within groups	62.926	195	0.323			
	Total	63.297	197	-			

Table (11) Results of "One Way ANOVA" for the differences of the participants' perceptions in terms of ESV

\* Significant at the level of 0.05 or less.

It is clear from the results shown in Table (11) that there were no statistically significant differences at ( $\alpha=0.05$ ) in the differences of the participants' scores mean according to ESV.

This can be explained by the fact that the PD program, a comprehensive program for all female teachers, works to their advancement and progress to the degree that provides the best level of performance in the educational process and provides the best educational level for students. Therefore, ESV has no effect on the CPF, or AF, etc.

## Conclusion and recommendations

This study aimed to explore the perception of participants, towards the reality of lesson study (LS) according to some variables (i.e. CPF, PDF, AF, and SSF. Also it aimed to find out the differences between the mean scores of these participants in light of the TEV and ESV.

Results of this study obtained via the questionnaire of LS in order to find out the perceptions of a random sample that selected from the Sharia sciences' female teachers in public schools affiliated to the Education Department in Al-Kharj Governorate. Results of the study revealed that females of the participants Agreed that LS is key issue for the education mainly in the fields of CPF, PDF, SSF and they somewhat agreed to AF. In addition, results indicated that there were no statistically significant differences at the level (0.05) on CPF, and AF according to (TEV), and there were statistically significant differences at the level (0.05) PDF and SSF according to the TEV. Also it revealed that there were no statistically significant differences at the same level on CPF, PDF, AS, SSF according to ESV.

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 teacher 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. Moreover, it can be recommended that similar studies can be conducted on such indispensable educational issue (i.e. LS).

### References:

- Abdul Jawad, Al-Shaimaa Al-Sayed Mohamed Mohamed. (2019). Lesson Study-based program to train general diploma students - Arabic Language Division on their brain-compatible teaching strategies and develop their collective effectiveness. Journal of the Faculty of Education - Port Said University, (26), 397-456.
- Abu Al-Hadid, Fatima Abdel Salam. (2019). A program based on the Lesson study and the methods of the Egyptian Knowledge Bank to develop analytical thinking skills and tendency towards team work amon pre-service mathematics teachers. Arab Studies in Education and Psychology, (114), 115-168.
- Abu Sardana, Imad Ahmed Ibrahim. (2017). The effectiveness of the school-based teacher continuing professional development program in improving classroom practices for teachers in UNRWA schools in Jordan. (Unpublished Master Thesis), Middle East University, Jordan.
- Abu Shamla, Kamel; and Abu Shamala, Faraj. (2018). The extent of the implementation of primary school teachers in UNRWA

schools in Gaza governorates for the activities of the training courses for the school-based continuing professional development programme (SBTD). Journal of Al-Quds Open University for Educational and Psychological Research and Studies, 7 (21), 117-130.

- Al-Alyan, Fahd; Al- Al-Mazrouei, Hafeez. (2010). A suggested scenario for the professional development of intermediate-level mathematics teachers from the point of view of specialists and practitioners (unpublished doctoral thesis), Umm Al-Qura University, Mecca.
- Al-Assaf, Saleh Hamad. (2010). Introduction to research in behavioral sciences. Riyadh, Dar Al-Zahra.
- Al-Dossari, Noura bint Farraj; Al-Jabr, Jabr bin Muhammad. (2019). The nature of attitudes of natural science teachers towards professional development based on the lesson study strategy in teaching natural sciences at the secondary level in light of some variables. Journal of Scientific Research in Education, 10 (20), 226-250.
- Al-hadabi, A. S. S. D (2019). Yemeni Pre-Service Teachers Educators' Perceptions of Lesson Study in Pre-service Teachers Preparation Program (an Exploratory Study). Journal of and Psychological Sciences, 3 (25), 156-171.
- Al-Hessan, Amani. (2017). Culture of professional learning societies and lesson study. A roadmap for sustaining the professional development of the teacher and what the modern vision of the Promising Development Project (NEOM) requires. Educational-Psychological Horizons, Saudi Society for Educational and Psychological Sciences, King Saud University, (53), 10-12.
- Al-Khuraibi, Muhammad Mahmoud Ahmad. (2017). The effectiveness of the SBTDI-based teacher continuing professional development program and its relationship to time management skill for primary school teachers in UNRWA schools in Gaza Governorates (unpublished Master Thesis), Islamic University - Gaza.
- Al-Luka, Nazirah Khalil. (2019). The degree of effectiveness of implementing the school-based teacher development program SBTD 2 from the viewpoint of teachers in the southern

governorates of Palestine (unpublished Master Thesis), Al-Aqsa University, Gaza.

- Al-Shammari, Mashi Muhammad. (2015). School Based Professional Development through Lesson Study - The Japanese Model (1st Edition). Riyadh: Al-Homaidhi Press.
- Al-Thaqafi, Mahdia bint Saleh bin Khalaf. (2019). The effectiveness of a training program to develop Lesson Study skills for primary school teachers in Al-Baha in light of the directions of the Ministry of Education in the Kingdom of Saudi Arabia. *Shaqra University Journal*, (12), 127-163.
- Al-Yahya, Ibrahim Abdullah. (2017). The reality of professional development for secondary school teachers from the viewpoint of teachers and supervisors in the city of Dawadmi. *Journal of the Faculty of Education, Assiut University, Faculty of Education*, 33 (1), 57-101.
- Arslan, F. Y. (2019). The role of lesson study in teacher learning and professional development of EFL teachers in Turkey: A case study. *TESOL Journal*, 2019, 1-13.
- Aslan, Omar Muhammad Ali. (2019). The effect of training courses held by the Ministry of Education in developing teaching skills from the teachers' point of view. *International Journal of Humanities and Social Sciences*, 9 (2019), 1-40.
- Chen, X., & Yang, F. (2013). Chinese Teachers' Reconstruction of the Curriculum Reform Through Lesson Study. *International Journal for Lesson and Learning Studies*, 2(3), 218–236.
- Coenders, F, and Verhoef, N. (2018). Lesson Study: professional development (PD) for beginning and experienced teachers. *Professional Development in Education*, 1-14.
- El-Deghaidy, H., Mansour, N., & Alshamrani, S. (2014). Science Teachers' Typology Of Cpd Activities: A Socio-Constructivist Perspective. *International Journal of Science and Mathematics Education*, 13(2015), 1539-1566.
- Fujii, T. (2014). Designing and Adapting Tasks In Lesson Planning: a Critical Process of Lesson Study. *ZDM Mathematics Education*, 48:411–423.
- Hamzeh, F. (2014). *Lesson Study-Building Communities of Learning Among Pre Service Science Teachers* (Unpublished

Master Dissertation), University of Windsor, Windsor, Ontario, Canada.

- Harnett, J. A. (2007). *Changing learning conversations: An action research model of reflective professional development* (Unpublished Doctor Dissertation), Massey University, New Zealand.
- Hubbard, J. D. (2015). Teachers Collaborate Using Lesson Study: Implications for Early Childhood Social Studies Students. *Social Studies Research and Practice*, 10(3): 1-17, [www.socstrp.org](http://www.socstrp.org) (12 July 2018).
- Ibrahim, Magdy Aziz. (2009). A glossary of teaching and learning terms and concepts. A'alam Al-Kotob: Cairo
- Mansour, N., EL-Deghaidy, H., Alshamrani, S., & Aldahmash, A. (2014). Rethinking the Theory and Practice of Continuing Professional Development: Science Teachers' Perspectives. *Res Sci Educ.*, DOI 10.1007/s11165-014-9409-y.
- Ministry of education. (2017). Lesson Study examined a training bag within the school-based professional development project. The National Center for Educational Professional Development: Riyadh.
- Mon, C. Dali, M, & Sam, L. (2016). Issues Relating to the Implementation of Lesson Study in the Malaysian Education Context. *IOSR Journal of Research & Method in Education*, 6(3.1), 77-85.
- Nauerth, D. A. (2015). The impact of lesson study professional development on teacher self-efficacy and outcome expectancy. Doctoral dissertation, Kansas State University, Manhattan, Kansas.
- Ono, Y. & Ferreira, J. (2010). A Case Study of Continuing Teacher Professional Development Through Lesson Study in South Africa. *South African Journal Of Education*, 30(1), 59–74.
- Ricks, T. (2011). Process Reflection During Japanese Lesson Study Experiences by Prospective Secondary Mathematics Teachers. *Journal of Mathematics Teacher Education*, 14(4), 251–267.
- Sickel, J. (2011). *Lesson Study's Impacts On Teacher Perception Of Efficacy in Teaching* (Unpublished Master Dissertation), Faculty of Humboldt State University, California.

- The National Center for Educational Professional Development. (2017). School Based Professional Development (Lesson Study). Ministry of Education, Kingdom of Saudi Arabia.
- Uştuk, Ö., & Çomoğlu, İ. (2019). Lesson Study for Professional Development of English Language Teachers: Key Takeaways from International Practices. *Journal on Efficiency and Responsibility in Education and Science*, 12(2), 41-50.
- Verhoef, N. C., & Tall, D. O. (10 to 15 July 2011). Lesson study: the effect on teachers' professional development. In 35th Conference of the International Group for the Psychology of Mathematics Education (PME), Ankara-Turkey.
- Warwick, P. Vrikki, M., Vermunt, J. D., Mercer, N. and Halem, N. v. (2016). Connecting Observations of Student and Teacher Learning: An Examination of Dialogic Processes in Lesson Study Discussions in Mathematics. *ZDM Mathematics Education*, 48:555–569.
- Widjaja, W., Vale, C., Groves, S., & Doig, B. (2017). Teachers' professional growth through engagement with lesson study. *Journal of Mathematics Teacher Education*, 20(4), 357-383.
- Wilson, Suzanne M. (2013). Professional Development for Science Teachers. *Science Magazine*, 340(613), 310-313
- Wondem, D. T., (2015). School Based Continuous Professional Development Practices at a Selected General Secondary and Preparatory School in Bahir Dar Town. *Bahir Dar j educ.*, 15(2), 38-57.
- Yangco, R., Lucenario, J., Punzalan, A., & Espinosa, A. (2016). Pedagogical Content Knowledge-Guided Lesson Study Effects on Teacher Competence and Students' Achievement in Chemistry. *Education Research International*, 1-9.