Research paper

Effect of Lesson Study on EFL Learners' Grammatical Knowledge and Teachers' Perception

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Abstract

This study aimed to examine the effect of lesson study on EFL learners' grammatical knowledge and EFL teachers' perception toward lesson study. To collect data, 97 female students from 4 intact classes were selected and assigned to two groups. Two classes were assigned to the experimental group and the other 2 were assigned to the control group. Three teachers participated during the lesson study project. In each cycle of lesson study, one of the teachers taught the lesson, whereas the other teachers were observing the class learning. A post lesson discussion was done among the teachers after the first lesson and necessary revisions were made according to the participants' comments. On the other hand, the control group class was taught by one teacher. An interview was also conducted with the participated teachers at the end of the experiment. The results revealed that the lesson study had a positive effect on the participants' grammatical knowledge. Moreover, the qualitative data analysis showed that the teachers regarded lesson study to be beneficial to help them develop professionally. The results indicate that LS can be used as a powerful tool for teacher development in both initial teacher training and in-service teacher training in EFL contexts. In addition, LS can be done in a single school to increase interaction and knowledge sharing among EFL teachers.

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Introduction

A challenge in promoting teachers' professional development is that lots of them teach individually in separate classes without having the chance to watch other teachers or receive

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feedback on their teaching (Remillard, 2005). Lesson Study (LS) is a professional development approach that has been adopted immensely in Japan for more than a century and is often considered as a tool for teachers to develop professionally (Schipper et al., 2017). LS has supported teachers to survey and move towards reform-based education through an effective professional learning model (Arslan, 2019).

LS promotes teachers' knowledge of content and pedagogy as well as student thinking by training professional teachers and increasing teaching materials (Lewis, Perry, & Hurd, 2009). LS includes cycles of educational advancement in which teachers work jointly to define objectives for long-term improvement of students' learning, arrange a research lesson together to bring these objectives to life and present the lesson in a classroom with one group of teachers to collect records during the learning process (Takahashi & Yoshida, 2004).

An LS group consists of some teachers as a team taught by one member of the team, while others monitor the instruction process. Then, all the members of the team evaluate the teaching/learning process. As a result, teaching may be reviewed for better instruction in other classes (Stigler & Hiebert, 2016). LS requires no special tool or resources, but it requires minimal training. It currently helps improve learning and teaching and raising standards. The beauty of its simplicity is that any small group of teachers can do it (Dudley, 2013).

The concept of LS can be a new model of education which has given the teachers an opportunity to improve their relations with students and other teachers (Stigler & Hiebert, 2016). In addition, LS can encourage teachers to become more aware of their students' educational needs (Schipper et al., 2017). Most research into LS has continued to be conducted in Singapore, Hong Kong, China, Japan, UK, and North America, particularly USA. Fortunately, the interest in LS is also growing in countries in Asia and Africa (Arslan, 2019). A lot of studies have been conducted on the impact of LS on teaching mathematics, whereas few have been done on EFL learning. Moreover, although LS is going to support long-term development in teaching and learning (Dudley, 2013; Lewis, 2015), more information is needed about the way LS can improve L2 pedagogy (Stigler & Hiebert, 2016). The previous studies, however, have paid little attention to the effect of LS on developing EFL learners' knowledge, especially lexical and grammatical knowledge. Moreover, the arrival of LS in Iran is less than a decade and has been only provided for in-service teachers. Therefore, more studies need to be conducted to examine the effect of LS on L2 pedagogy improvement.

The role of grammar and how to implement it into foreign language classroom have been at the heart of EFL learning and teaching (Purpura, 2004). The concept of grammar and whether it should be taught in classroom or what the best method is for grammar instruction have received noticeable debate in L2 research (Lewis, 2015). In this line, LS, in which teachers work together to teach a lesson, has been regarded as a helpful method in teaching L2 grammar (Takahashi & Yoshida, 2004).

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Grammar has mostly been taught in high schools of Iran based on the curriculum, and interviews with teachers have shown that they have little knowledge of what and how to teach grammar (Motallebzadeh et al., 2017). Therefore, this study aimed to, first, examine the effect of LS on improving the Iranian EFL learners' grammatical knowledge. Second, it attempted to investigate the EFL teachers' perception toward the effect of LS on teaching grammar and the practical implementations of LS.

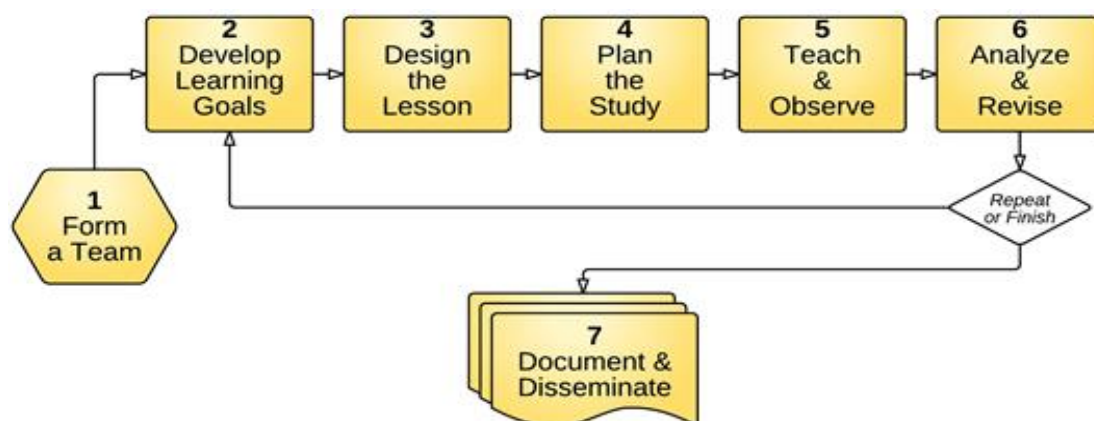## Literature Review

Theoretical Considerations

In LS, teachers are oriented in working together to teach a lesson and finding techniques for promoting student learning by gathering reports while monitoring students during instruction (Takahashi & Yoshida, 2004). During the LS project, observers perform as researchers who gather confirmation of student learning. They also observe and record crucial incidents in the teaching/learning process. The postlesson discussion supplies a guideline for the members of the LS team (Takahashi & Yoshida, 2004). Accordingly, the teacher and the students are not centered in the post discussion, rather it is the teaching and learning process. A cycle of lesson study consists of the following steps illustrated in Figure 1.

Figure 1.

Lesson study cycle (adapted from Lewis et al., 2009)
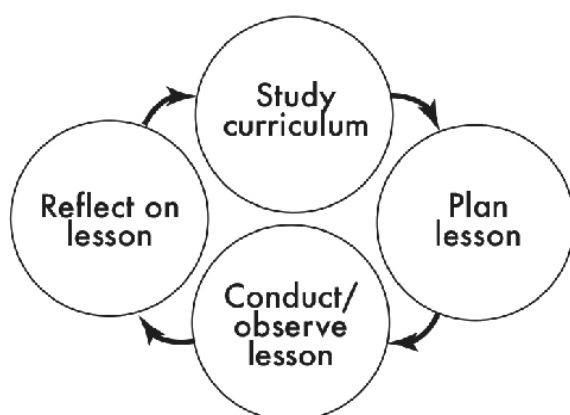
During the first step, teachers design an objective for their teaching in LS. They, then, choose a topic based on the curriculum to teach within the LS cycle and make a lesson plan about specific learning objectives (Lewis et al., 2009). In the second step, they plan content materials for the lesson collaboratively, then one teacher explains the lesson as teaching it to a class, whereas other members of the LS team are present and observe that lesson. Monitoring the research lesson is a significant factor in the LS cycle which distinguishes this form of observation from other types of teacher observation because all teachers have decided on the planning/observing collaboratively. Teachers then reflect on the post discussion and if desired, change and reteach it; if not, they follow the next cycle of LS (Fernandez et al., 2003). Cerbin and Kopp (2011) also explained the process of LS as follows (see Figure 2):

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Figure 2.

Steps of lesson study (adapted from Cerbin & Kopp, 2011)

(1) Form a team: an LS group usually includes three to six teachers who are concerned with working together to promote their students' learning; (2) develop learning goals: this step explains the reason for instruction and observation. In this step the teams agree on special subject to work together; (3) design the lesson: team members usually share the techniques they have used for teaching the lessons and discuss different types of class activities. In this step, the team designs a lesson plan collaboratively; (4) plan the study: the team provides observation instructions that show how to view the lesson, who to view, and what to focus on; (5) teach and observe: one member is ready to teach the lesson, and other group members are present for monitoring and gathering reports from teaching and learning process; (6) analyze and revise: in post teaching, while the lesson is still fresh in everyone's mind, all the members of the team hold a meeting for discussing and analyzing the lesson to improve it; and (7) document and disseminate: by documenting LS work, it makes a chance to share pedagogical knowledge among teachers in that field.

Empirical Studies

A few studies have been done on the effect of LS on teachers' professional development. However, there is a dearth of research on the effect of LS on EFL/ESL learners' language development. Lee (2008), for instance, conducted a case study in Hong Kong to teach WH question form through the LS model. The number of participants was nine, of which five of them were English teachers in secondary school. There were three research lessons done by three different teachers for 97 students in three classes. One teacher taught one research lesson and the other research team observed the lesson. Although LS had benefits, it had some difficulties such as extra workload, free time for meetings, designing the lesson plan, and observing the instruction. Therefore, Lee (2008) concluded that LS is needed to be supported by school heads and government to be successful and an interesting experience for teachers.

Another study was done by Bocala (2015) who recruited 21 educators from one school. The objective of her study was to compare teachers who were new to LS with experienced practitioners who had more experience with the model. Bocala (2015) found that the first group

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(LS novices) did not change their thinking and teaching right after they began LS. They rather started as novices and progressed over time by taking part and interacting with the second group. On the other hand, the second group (LS experienced practitioners) were at ease with the procedures.

Lindström (2017) examined the effect of LS on Swedish 6th grade students' English grammatical knowledge, the progressive aspect. Four EFL teachers collaborated to plan, teach, evaluate and analyze a series of six research lessons. Empirical data consisted of interview transcripts, pre and post lesson assessments, and video recordings of the lessons. Improved learning was observed when the progressive aspect was treated from the perspective of wholeness, simultaneity and complexity. The findings challenge conventional ways of teaching EFL grammar.

Another study was done by Coskun (2017) in Turkey. The purpose of his study was to use LS in teaching EFL. He followed the model which Cerbin and Kopp (2011) designed, including the steps of forming a team, developing learning goals, designing the lesson, teaching and observing, analyzing and revising, and documenting. The team members of LS in his study were three EFL teachers and the level of students was A2. Eighteen students were divided into two groups: eight received the first lesson research and 10 received the revised lesson. The research lesson was the instruction of passive voice. The data collection followed a qualitative design including open-ended surveys, a checklist of observing the students, and the discussion among teachers after the lesson. He attempted to analyze the effect of LS on learning an EFL lesson and the teachers' perceptions about the practicality and benefit of LS. The results revealed that LS led to the improvement of the research lesson. In addition, LS was considered beneficial by the teachers as a means of professional development.

Another study that aimed to analyze the impact of LS on the professional development of EFL teachers was done by Arslan (2019) in Turkey. There were eight EFL preservice teachers, one faculty member of the university, and two school coteachers as instructors in the LS team. Three research lessons were prepared by three groups of student teachers. The data collection included videos of teaching lessons, group sessions, post-lesson reflections, researcher's designs, and the student teachers' reflections. Based on the results, professional growth was divided into three subcategories including teaching-centered, learning-centered, and content-centered professional growth. Moreover, the reflection of the student teachers on the teaching methods of their colleagues increased their awareness of teaching and self-confidence. They concentrated on student learning and the relationship between teaching and learning. It was also found that the observation and post reflections on the lesson were useful for the teachers in developing professional growth. This study was the first one examining the effects of LS in an ELF context. While most of the research was done in the subjects of math and science, she found LS helpful for both preservice and inservice teachers in EFL contexts.

Yazdanifar and Khazaeenezhad (2020) conducted a study to examine Iranian EFL teachers' perceptions of the practical implementation of LS. To this end, four novice and three

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experienced language teachers were selected. The data collection was done through triangulation of teachers' reflective notes, an unstructured interview, observation, and field notes. The results revealed that EFL teachers had positive attitude toward LS as a means of professional development. Furthermore, the novice and experienced EFL teachers had different attitudes concerning lesson planning, reflective teaching, and collaborating with other colleagues.

In a recent study, Mahmoodi et al. (2021) recruited 15 primary school teachers to study the experiences of teachers regarding LS. The participants had more than ten years of teaching experience at primary schools. Additionally, they had participated in the conferences in the field twice and in-service LS courses. A semistructured interview was used to collect the data. The results show that teachers are not necessarily well prepared for LS, but they suggest several strategies to improve the quality of this technique in classrooms. Moreover, teachers are not satisfied with the way LS is implemented in schools as the educational system has not paid serious attention to it.

The findings of the previous above-mentioned studies support the impacts of LS on teachers' professional development and enhancing the quality of the teaching/learning process. However, most studies done thus far have paid little attention to the effect of LS on EFL learners' L2 development, especially lexical and grammatical knowledge. Moreover, LS arrival in Iran is less than a decade and it has been only provided for in-service teachers. Therefore, this study attempted to measure the effect of LS model on developing EFL learners' grammatical knowledge as well as the EFL teachers' perception toward LS. To this end, the following research questions were raised:

1. Does lesson study significantly improve junior high school EFL learners' grammatical knowledge?
2. What is EFL teachers' perception of the effectiveness of lesson study?

Methods

Participants

Ninety-seven junior high school students in grade nine from four classes were selected from one high school in Ahvaz, Iran. Because the classes were intact, their language proficiency was controlled by Oxford Quick Placement Test (OQPT). All participants were female whose age ranged from 14 to 16 (M = 14.5, SD = 2.6). Two classes were assigned to the experimental group and were taught through the LS model, and two other classes were regarded as the control group and received the same teaching point without the LS team. The LS team members were four EFL teachers from different high schools. As LS studies are time-consuming, a number of EFL teachers refused to participate, and these four teachers volunteered to participate in this study. The EFL teachers had different teaching experiences: One had 28 years of teaching experience, one had 20 years of teaching experience, and the other two had 8 years of teaching experience. Moreover, all teachers were teaching in the ninth grade.

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All data collected were non-identifiable, and the participants were assured that the collected data would be confidential. Written consents were provided by the participants' parents on behalf of the participants. Moreover, this consent procedure was approved by the Education Department of Ahvaz as well as its Institutional Review Board (IRB).

Instruments

Pretest and Posttest

The second instrument for collecting data was a researcher-made English grammar pretest designed according to the participants' coursebook, Prospect 3 (Alavi Moghadam et al., 2015). It included 20 multiple-choice items to be answered in 15 minutes (see Appendix). The researchers designed the test based on the grammatical points of lessons two and three of the workbook of Prospect 3 (Alavi Moghadam et al., 2015). The test was piloted on a representative group of 20 high school students at the same level in another high school. The reliability of the test was 0.91. The item analysis was also done on the pilot group to make sure that item facility and item discrimination were appropriate. Moreover, the content validity of the test was confirmed by three well-experienced EFL teachers. As the scoring was objective, it was graded by only one scorer. The modified version of the pretest was used as the posttest, that is, the items were counterbalanced and the order of the choices was changed in order to prevent the students to recall the answers. It was administered after the end of the treatment.

Interview

To answer the second research question, a semistructured interview was applied. It included four open-ended questions about teachers' attitudes and perceptions regarding the benefits and challenges of the LS program. The questions were selected from Haghighifard and Marzban (2016) with some modifications. They examined teachers' point of view on the implementation of LS in their classrooms. The items of the interview were also validated by three English language teaching professors.

Materials

The materials were the grammar sections of the participants' course book, Prospect 3 (Alavi Moghadam et al., 2015) lessons two and three, and three video clips downloaded from YouTube. Among lots of videos for the present continuous tense on YouTube, these videos were selected because they were funny for students. Moreover, three PowerPoint slides made by the LS team were used. These three files consisted of 14, 16 and 12 slides including tables, pictures, gifs, examples and exercises on present continuous and simple present tenses.

Data Collection Procedure

First, the OQPT was given to 105 students, and eight were excluded from the study. Two classes were considered as the experimental group and received instruction through the LS process and the other two classes considered as the control group and received routine instruction by the individual teacher. Afterward, a grammar test was administered to the participants as the pretest on October 7, 2019. All groups received the same grammar points including present continuous tense and simple present tense. Each session was held once a

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week for each group based on the school schedule for 75 minutes. The procedure of this study is depicted in Figure 3.

Figure 3.

Procedures of the study
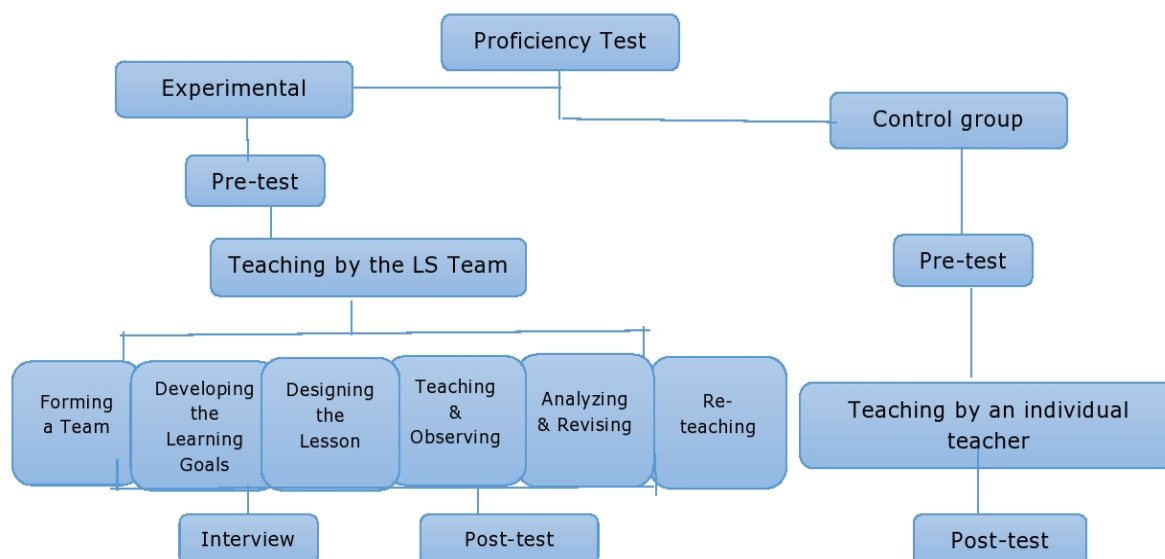
Frist Cycle of Lesson Study

The first step to teach the experimental group through the LS model was the collaboration between the teachers as a team. The researchers explained the LS steps to eight EFL teachers, and four of them concurred to join the investigation. In order to familiarize the teachers with LS, two meetings were held and the teachers were debriefed about the LS model of teaching and its steps in September, 2019. After managing the members of the LS team, the members jointly drew up the detailed plan on objectives of teaching grammar for the LS on October 17, 2019. The teachers discussed the problems students have in grammar points and they agreed on teaching present continuous tense first. The next step was to design a lesson plan in teaching the grammar section of lesson two of Prospect 3 (Alavi Moghadam et al., 2015). The teachers designed a lesson plan as follows.

Preteaching activities included activating students' background knowledge by presenting a video clip on the present continuous tense and asking them to brainstorm about the topic. While teaching activities included presenting situations that could help students use the language structure correctly and write one or two sentences in the present continuous tense. For example, the teacher said to them, "Guess what your family members are doing now." In the end, the teacher asked each group to make a sentence with different cards on the table. This activity was guided practice. The students tried to make a correct sentence and the teacher walked into the classroom and checked their sentences and helped them make the correct sentence. The teacher asked each group of students to do communicative practice and read their sentences then changed them into question/negative form and asked them to correct any errors. Postteaching activities included PowerPoint slideshows to review affirmative, question, and negative forms

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of the present continuous tense. Then, the teacher asked students to do the exercises of their workbooks. After designing the lesson plan, one member of the team taught one class of the experimental group on October 22, 2019, and other members of the team came into the classroom and were introduced to the students. Two EFL teachers sat behind the class and observed the instruction. One of them checked teaching based on the lesson plan and the other considered the students' activities and learning. The fourth member of the team recorded the video of the teaching and learning process which lasted for about 45 minutes.

After the implementation and observation, the members of the team made a meeting and discussed the observations and revisions of the lesson. Audio and video-taped recordings of interactions were gathered. The LS meetings were focused on developing students' learning goals, planning and/or revising the research lesson, and analyzing the students' work. First, the teacher who taught the lesson talked about teaching for approximately five minutes, reflecting on the lesson implementation, noting what went well, and reflecting on any problems because of the presence of other teachers in the classroom. Next, other members of the team gave their comments for approximately 25 minutes and reflected on the goals for the students and the design of the research lesson, comparing what was planned and what was observed. As the lesson plan belonged to the team, the members of the team focused on the students' learning rather than judging the teacher who taught the research lesson. At the end of this step, which lasted for 30 minutes and was recorded by the fourth member of the team, the team agreed on revising some points in the lesson plan. In the following session, it was suggested that more time should be allotted to the students' individual work on negative and question forms before giving them cards to make sentences.

The lesson plan was revised and taught by another member of LS team in the second experimental group on October 29, 2019. Furthermore, implementation, observation, meeting, analyzing, and recording were done. These processes of the LS program were conducted for teaching each grammar point separately. As the teachers agreed on teaching present continuous tense and simple presents tense, these steps were repeated to teach both structures. The processes of the LS program are explained below.

Second Cycle of Lesson Study
The second cycle of LS started on November 20, 2019, on designing the lesson plan in teaching an affirmative and negative form of simple present tense. The teachers designed the lesson plan which all agreed on, and one of them taught it to one of the experimental groups on November 27, 2019. Again, the other members of the team came and sat behind the classroom and the steps of teaching, observation, analyzing and revising were repeated for teaching this grammar point. The discussion and analyzing teaching and learning were done on the same day after teaching. The members of the team gave their comments and they agreed on revising some changes such as presenting more enjoyable video clips for activating students' background knowledge in the lesson plan instead of the old one. The reteaching step of this cycle was done on Tuesday on November 28, 2019, by another member of the team in another class of the experimental group, and the discussion session related to this step was done on the same day

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after the implementation and the team agreed on what was planned with what was observed and the second cycle ended.

Third Cycle of Lesson Study

The third cycle started on designing a lesson plan to teach question form of simple present tense on November 29, 2019, and the steps of teaching, observation, analyzing, revising, and reteaching the question form of simple present tense were followed to the experimental groups on December 4 and 5, 2019. In other words, there were three cycles of LS. The researchers and the LS team members observed at least three LS series, and they implemented six-lesson research and post reflections.

The control group was taught by one teacher. The same grammar points and instruction (present continuous tense and simple present tense) were taught to two classes of the control group by an individual teacher. The lesson plan of this group was written by an individual teacher including both mechanical and meaningful drills without any observing, reporting, or discussing other teachers. To compare the effect of LS on improving grammatical knowledge of EFL learners, at the end of the experiment, a posttest was administered to both experimental and control groups on December 12, 2019. Finally, the researchers conducted an interview with the LS team to answer four open-ended questions.

Results

The Shapiro-Wilk test and QQ plots were used to check the normality of data. The distribution of the scores was found to be normal. Table 1 shows the descriptive statistics of the pretest.

Table 1

Descriptive statistics of the pretest

Groups	N	Mean	SD	SEM
Control	48	7.35	2.70	0.39
Experimental	49	7.65	2.37	0.33

The mean score of the control group score was 7.35 and that of the experimental group score was 7.65. This implies that both groups were almost the same before the treatment. To detect differences between the groups, independent samples *t* test was done (Table 2).

Table 2

Independent samples t test on pretest scores

	Levene's Test		t-test for Equality of Means					95% Confidence Interval of the Difference	
	F	*Sig.*	*t*	*df*	*Sig.*	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	.09	.76	-.57	95	.56	-.30	.51	-1.32	.72
Equal variances not assumed			-.57	92.88	.56	-.30	.51	-1.32	.72

Table 2 shows that the groups had no significant differences in the pretest ($p = 0.565$). The descriptive statistics of both groups on the posttest are displayed in Table 3.

Table 3.
Descriptive statistics of the posttest

Groups	*N*	Mean	*SD*	SEM
Control	48	12.68	3.13	0.45
Experimental	49	14.28	3.32	0.47

The mean score of the control group score was 12.68 and that of the experimental group was 14.28. To determine the difference between the posttest scores, independent *t* test was used (Table 4).

Table 4.
Independent samples t test on posttest scores

	Levene's Test		t-test for Equality of Means					95% Confidence Interval of the Difference	
	F	*Sig.*	*t*	*df*	*Sig.*	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	.76	.38	-2.43	95	.017	-1.60	.65	-2.90	-.29
Equal variances not assumed			-2.43	94.85	.017	-1.60	.65	-2.90	-.29

As we can see in Table 4, the $p = .017 < .05$; therefore, it can be concluded that there were significant differences between the groups on the posttest. In other words, the experimental group outperformed the control group after receiving the treatment. Moreover, the performance of each group in the pretest and posttest was compared through paired samples *t* tests (Table 5). Table 5 shows that both groups improved significantly at the end of the study ($p = .000$).

Table 5.
Paired samples t test

		Paired Differences					t	df	Sig.
		Mean	SD	SEM	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Control pre – Control post	-5.33	2.33	.33	-6.01	-4.65	-15.81	47	.000
Pair 2	Experimental pre– Experimental post	-6.63	2.52	.36	-7.35	-5.90	-18.40	48	.000

Results of Interview

On the interview part, the EFL teachers of the LS team answered the following four open-ended questions:

1. How can LS improve teaching methodology in different school language subjects?

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2. How can LS improve students' learning and bring changes to students' learning activities?

3. How can LS be helpful for less-experienced teachers?

4. Will the LS program be practical in Iran? If so, how?

The responses of four EFL teachers in the LS team are mentioned in detail. The responses to the first question are as follows:

Teacher A: *I think LS is a good opportunity for teachers' learning, especially when most teachers talk little about teaching methods or problems. Through LS, teachers can talk about students' weaknesses and problems.*

Teacher B: *LS is a chance for cooperation and peer observation and causes revision of teaching methods and more emphasis on group teaching and learning methods. Especially, traditional teachers learn how to use modern materials.*

Teacher C: *Colleagues should trust each other and observe each other's class to benefit from each other's experiences. LS gives them a chance to be familiar with different issues such as the techniques of using materials and the method of teaching strategies.*

Teacher D: *For example, what topics are always difficult for students to learn or what topics challenge the teacher in teaching, or reaction between teacher and student are considered carefully.*

In response to the first question, the respondents said that teachers can learn how to use such devices properly through LS, and traditional teachers can use such materials less in their classrooms due to their lack of mastery and lack of knowledge about how to use them. Furthermore, LS can provide teachers with an approach to solve problems with difficult lessons or methodologies. They believed that the LS project gave them opportunities to get familiar with different issues such as the techniques of using the materials, the method of teaching strategies, interaction with the students, students' responses and their cooperation. The responses to the second question are as follows:

Teacher A: *In LS, the teachers who observe teaching have responsibilities; in fact, their observation is purposeful, and they observe the learning and activity of students and the teacher-student interaction.*

Teacher B: *One of the steps of LS is observing the instruction to examine the students' learning process. So, definitely LS can improve students' learning.*

Teacher C: *Team of LS talked about teaching/learning process; for example, were the questions and teaching materials useful for achieving a lesson goal? Was the course content appropriate for the students' understanding? Should the lesson plan be changed based on students' learning? These questions are answered through cooperation in the LS team.*

Teacher D: *By observation, the needs and problems of students are detected and can be solved through revision of teaching.*

In response to the second question, the teachers unanimously stated that LS can help EFL students learn much better. Because during the LS process, the needs and problems of students are identified and solved by revising the instruction. The teachers should observe how and how

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much the students learn. Lesson study helps teachers search, develop, and practice lessons and techniques in line with students' needs. The responses to the third question are as follows:

Teacher A: *Surely, it's helpful for less-experienced teachers, following questions, LS creates a situation of learning for all teachers.*

Teacher B: *Definitely, it helps less-experienced teachers to improve their teaching.*

Teacher C: *LS can help less-experienced teachers revise and enrich our [their] own teaching. Actually, I knew [find out about] some problems in my own teaching and learnt to solve it [them].*

Teacher D: *LS is an opportunity for all teachers, especially less-experienced, to get more familiar with different issues and methods in case the teachers participate willingly.*

In response to the third question, they expressed teachers really need to know how to observe and talk about one's instruction. By working together, teachers can learn from each other. Experienced people need new information and inexperienced people need to use the experiences of others, which can be easily solved through LS. They all believed that LS can help less-experienced teachers revise and enrich their own teaching and it was a good opportunity for them to become familiar with different methods. The responses to the fourth question are as follows:

Teacher A: *LS is a time-consuming project. Teachers have less opportunity for such long-term projects outside their teaching time. Moreover, some teachers think observation in LS project is a judgment and they do not like to be judged.*

Teacher B: *I think it is limited in Iran, because it takes a lot of time and energy and teachers do not like additional work. By the way, some teachers feel shy to teach before others or do not like to be judged.*

Teacher C: *I believe LS must be created as a culture; some projects have been done at elementary schools at the moment, but this culture has not been established at secondary schools and there are many teachers who do not know [about] LS yet.*

Teacher D: *I hope it will be practical in [Iran] and the door of the classrooms will be opened to the colleagues.*

In response to the fourth question, they mentioned some hurdles for implementing the LS project in Iran. Unfortunately, applying this program in Iran is limited. There are several reasons for it; some of the teachers are not aware of LS and some others do not have a desire to share their knowledge with others. Moreover, some teachers do not like to be judged by others. First, the culture of using LS should be developed in Iran. The main objective of LS is learning by both teachers and students and not judging the teachers, and this should become clarified for both novice and experienced teachers. Moreover, the most important limitation of LS is its time-consuming procedure, and generally, teachers do not have much time for this program. Cooperation and practical participation in schools take too much time and energy.

Discussion

The findings showed that implementing LS had positive effects on Iranian EFL learners' grammatical knowledge and LS can improve EFL teachers' professional knowledge. These

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findings are in line with those of Coskun (2017) and Schipper et al. (2017) who concluded the positive effect of LS on EFL students' learning. Moreover, the present findings seem to be consistent with other research by Lindström (2017) who found improving the students' English grammatical structure through the cycles of LS. However, in that study, LS was not a variable and it was determined as a method to do the research, while in the present study LS was considered as an independent variable and its effect on the students' grammatical knowledge was determined.

There can be some reasons for the participants' outperformance in the LS group. First, teachers improve their teaching strategies and find ways to develop students' learning during the LS process by observing the students' learning (Takahashi & Yoshida, 2004), and the postlesson discussions provide guidelines for them to analyze students' learning (Watanabe, 2002). Second, observation is an important factor in the success of LS (Fernandez et al., 2003) and LS team observes students' learning rather than the teacher's way of teaching (Dudley, 2013). Therefore, the teachers and the students are not centered in LS but the development of both teachers' and students' learning is the key purpose of LS (Dudley, 2013). Third, traditionally, supervisors or principals used to watch teachers' instruction and judgment on their teaching and observation may be carried out in a threatening and non-mutual atmosphere. Fourth, teachers can get a reflection on their teaching, become familiar with their weaknesses, and think based on their observations (Gutierez, 2016).

The results obtained through the interview indicated that the teachers presented positive perceptions toward lesson study. They believed that LS could improve their professional knowledge. In addition, they stated that LS makes them familiar with different issues including the way they use the materials, the needed teaching method, the suitable strategies, and interaction with the students. Generally, the teachers had positive attitudes toward LS. They considered the LS model as a tool to improve their professional growth. They believed that if teachers improve their knowledge and practice through lesson study and become aware of their strengths and weaknesses, then their students will have greater opportunities to increase their understanding and improve their efficiency. These findings are in line with the findings of some studies (e.g., Arslan, 2019; Bocala, 2015) which examined teachers' perceptions and concluded professional development. In addition, this study is in line with Yazdanifar and Khazaeenezhad (2020) and Mahmoodi et al. (2021) who concluded that LS helped EFL teachers learn to think more deeply about learning objectives. As teacher plays a key role in educational development, they should be supported with professional development opportunities (Lee, 2008).

Conclusion

Regarding the importance and the effectiveness of LS for teachers and students, it is recommended that great attention need to be paid to this issue in EFL contexts. The results have certainly some pedagogical implications. The findings of the present study can be constructive for principals of schools and head of the teacher training departments. LS can be done in a single school among colleagues to increase interaction and knowledge sharing. LS gives teachers the opportunity to reconsider their teaching that they may not have learned

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before (Lewis & Tsuchida, 1998). Moreover, LS has some features which are also useful for pre-service teachers and gives them a chance to attend several classes and enhance their educational experience (Hiebert et al., 2007). In addition, LS can create a culture of learning from peers in a real educational context. LS can provide opportunities for teachers at school to experience learning as a student.

This study had some limitations. First, it was limited to one school, the sample size was small and the results may not be generalized to a larger group. Thus, future research can be done across different schools. Second, the format of the pre and posttests was multiple choice; therefore, it is suggested that other test formats be used in future studies. Third, the number of research lesson cycles and teachers and students participating can be increased in future studies. Moreover, explaining how to implement LS may be helpful for people who want to be involved with LS. More studies are also needed to document the direct effects of LS teachers' learning on their students' learning.

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Appendix: Grammar Test

1. Mom ---------- the room now.
a. clean   b. cleans   c. is cleaning
2. It's 11 now. Smith and I ---------- doing our homework.
  a. am   b. are   c. were
3. What are you doing? I ----------- the book.
a. am reading   b. read   c. was reading
4. Ali is ---------- to the airport.

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a.   a. go   b. goes   c. going

5.   He goes to school at 7 every day but he ---------- to the park now.

a.   is going   b. goes   c. was going

6.   My father --------- his car on Fridays.

   a. wash   b. washes   c. is washing

7.   Mr. and Mrs. Alavi ---------TV in the afternoon.

      a. watch   b. watches   c. watching

8.   When ----------- your father go to work?

      a. is   b. do   c. does

9.   Does your brother -------- his book at school?

      a. read   b. reads   c. reading

10. I like ping- pong but my brother ---------- ping - pong.

      a. likes   b. don't like   c. doesn't like

11. My sister ----------- Spanish.

a.   learn   b. is learning   c. learning

12. I -----------reading an English book.

        a. am not   b. do not   c. have not

13. I guess my mother -----------lunch now.

        a. cooks   b. cook   c. is cooking

14. When do you ----------- there?

        a. go   b. going   c. to go

15.   Anna and Hanna ------------- tennis on Sundays.

   a. play   b. plays   c. are playing

16. I ------------- the dentist every six months.

      a. visit   b. visits   c. am visiting

17. It ------------- a lot in Rasht.

      a. rain   b. rains   c. raining

18. Where -------------- your brother play football?

      a. do   b. is   c. does

19. The people in Brazil -------------- speak Spanish. They speak Portuguese.

      a. aren't   b. doesn't   c. don't

20. They ----------- English on Mondays, but we ----------- it now.

   a. study / study b. are studying / are studying   c. study / are studying