



Participatory Educational Research (PER)
Vol. 6(1), pp. 36-53, June, 2019
Available online at <http://www.perjournal.com>
ISSN: 2148-6123
<http://dx.doi.org/10.17275/per.19.4.6.1>

Implementation of the Lesson Study as a Tool to Improve Students' Learning and Professional Development of Teachers*

Soner Mehmet ÖZDEMİR¹

Mersin University, Education Faculty, Department of Primary Education, Mersin, Turkey

Article history

Received:
20.04.2019

Received in revised form:
07.05.2019

Accepted:
10.05.2019

Key words:

Lesson study, continuous professional development, primary school teachers, student learning

Continuous professional development is a process that requires constant and active learning for a teacher throughout his/her professional life. In this process, teachers are expected to perform activities aiming at increasing both their professional development and the quality of teaching within the classroom. One of these is lesson study. This study examined the effect of the lesson study as a tool to improve professional development of teachers, as well as student learning. Case study, one of the qualitative research methods, was used. Participants were two primary school teachers. Data were obtained from observations and field notes taken during the teaching of the course alongside data coming from teachers' reflective diaries and interviews held with the teachers. The findings of the study showed that the lesson study activity contributed considerably both to the professional development of the teachers and the students' learning. Thanks to the student-centered activities (narration, picturizing and drama) which were carried out within the scope of the applied research lesson, almost all students in the class were actively involved in the lesson, especially those who had relatively worse reading comprehension skills and who had difficulty in self-expression started to give better answers and also expressed what they read in a better manner. In addition, teachers stated that lesson study contributed to their professional development by helping them solve the problem they faced paving the way for the application of different teaching methods and activities, collaboration with each other, exchanging of opinions about the problem, and recognizing different methods, techniques and practices pertaining to the profession.

Introduction

Continuing professional development of teachers has been one of the most focused and researched topics all over the world in recent years. In company with the developments and changes happening in science and technology, individual and social lives are altering. Varying methods of accessing information as well as varied learning styles, learning opportunities and environments, led to shifts in teaching methods and ways. Thusly it is necessary that teachers continuously improve themselves professionally. Teaching is a

* This study was supported by Mersin University Scientific Research Projects Fund with project number 2017-1-AP2-2276.

¹ Correspondence: ozdemir.soner@gmail.com

dynamic profession requiring constant improvement starting from pre-service teacher education till retirement. As Özcan (2011) highlighted, teachers primarily should be individuals striving for learning to learn beginning from the early teaching training processes until the end of their professional life since information age challenges teaching profession and urges it to change as is the case for all the other traditional institutions and professions. For this reason, it is mandatory that each teacher should improve themselves professionally along with developing their pedagogical and world knowledge, renewing their knowledge of the field and also skills hence performing their profession with a continuous desire and excitement to learn. This indeed is valid as long as they continue their profession-starting from the first steps of teaching training periods (pre-service training) into the very profession (Özdemir, 2016).

Professional development of teachers is mainly entitled as Continuous Professional Development (CPD) in the international literature. Continuous Professional Development is broadly a process depending on the teacher's constant learning (As cited in Wan & Lam, 2010), requiring the teacher to acquire knowledge, skills and values in their field or to expand them (Bolam, 2000) and thus resulting in the professional and personal changes (Fullan, 2001). In this sense, continuous professional development of teachers is a process entailing continuity and intentness. In this process, there are various opportunities provided and events that take place in formal/informal fashion and also at individual or institutional levels targeting teachers' professional development. Some of these are activities carried out in the form of traditionally organized short-term events. The most known of those are courses, seminars, workshops and conferences. They are usually executed through in-service training events and inherently hold a fair number of disadvantages with the potential benefits they carry.

In some studies conducted on this subject, several issues and shortcomings of the professional development events implemented in the form of in-service training in Turkey have been highlighted. These issues and shortcomings are below (Akdemir, 2012; Seferoğlu, 2001; Sıcak ve Parmaksız, 2016; Uçar ve İpek, 2006; Uştu, Taş ve Sever, 2016, as cited in Özdemir, 2016):

“In-service training activities are carried out in the form of seminars and courses in the classical sense, they contain more theoretical information, teachers are passive and their participation is low, these courses are short term courses and are not based on practical activities, the acquired knowledge or skills are not reflected in the in-class teaching practices; participants are generally reluctant to participate in activities and do not care much about such in-service training.”

In this regard, it is necessary to implement longer-term, practice-oriented, and school-based events or programs requiring teachers' active participation with a view to enhancing the overall professional development of teachers. Examples of such events include: “Action research, lesson study, observation visits to other schools, individual and collaborative research, professional development network, mentoring or peer observation and coaching, reading from the professional literature, informal dialogues to improve teaching, collaborative curriculum development, examining student works, community/service organizations, online professional development programs, professional portfolios, regional professional development consortia” (OECD, 2013; The Alberta Teachers' Association, 2016).

To that end "lesson study" has been one of the methods of concern to educators, academicians

and teachers who want to develop themselves professionally, to ensure better student learning and to reduce student-failure in recent years in Turkey and also in many countries around the world. When the studies about the Lesson study (LS) are examined, it would be fair to state that it is mostly performed by academicians in the form of academic studies (articles, theses, projects, etc.) yet is also applied by teachers in schools or classes where they work for educational / instructional purposes.

What is Lesson Study?

LS is a popular approach to the professional development of teachers and it is widely resorted to in Japan since the 1870s. In fact LS is a special form of class action research that focuses on the development of teacher practice knowledge. It would not be wrong to say that LS is the first application of action research we know in the West for 70 years (Dudley, 2014; Murphy, Weinhardt, Wyness & Rolfe, 2017). Kenkyuu jugyou means a research course (or course research) and refers to the lessons that teachers jointly plan, observe and discuss. Jugyou kenkyuu - using the same two words in reverse order - refers to course research (or study) and refers to the instructional improvement process where the research course is the core (Lee, 2008: 1116).

When introduced for the first time in the United States in the late 1990s, the attention of US educators was quickly gathered on course research. It was considered to be an adoptable and effective innovation. Ten years later, more than 400 schools in the United States began to participate in school studies (Murata, 2011). Today, lesson study is used in East Asia, Singapore, Hong Kong and China besides Japan, where it originated from. On the other hand, it is being implemented in many countries in the West such as the United States, England, Sweden and Canada (Dudley, 2014). LS started to become popular in the West at the end of the 20th century, following US researchers' references to the Japanese teachers' success in improving their both pedagogical knowledge and subject area knowledge. This approach allows Japanese students to achieve higher educational attainment compared to similar student groups in the United States (Stigler and Hiebert, 1999; TIMSS, 1999, as cited in Dudley, 2014).

LS is a teacher professional development approach which includes teacher observations and feedback giving channels (Murphy et al., 2017), typically referring to teachers' class-based collaborative learning (Arani, Fukaya & Lassegard, 2010), and means structuring their teaching process with a collective understanding by acting together (Takahashi & Yoshida, 2004). It has a long-term and continuous focus on student learning (Stigler & Hiebert, 1999). According to Hiebert, Gallimore and Stigler (2002), LS is a process of developing teaching and teacher-ship and creating knowledge. Zeichner and Noffke (2001) view LS as a form of practitioner research in which teachers study teaching and learning problems in their classrooms. In fact, the lesson is a teacher-led, broad-based system to improve study, teaching and learning (Cerbin & Kopp, 2006).

LS includes a process in which a group of teachers plan a series of lessons based on the common goal of the pupils, where a teacher leads the jointly designed lesson and invites colleagues to observe their students' learning in the course. The team then develops their applications based on the feedback given (Murphy et al., 2017). In other words, the lesson study involves a group of teachers' planning, teaching, observing and analyzing learning and teaching processes of a course called "research lesson" (Dudley, 2014). LS puts teachers at the centre of the relevant professional activity according to their interests, and presents their



wishes to better understand the learning process of the students based on their own learning experiences. The goal is simple: teachers get together around a shared question about students' learning, plan a lesson to make student learning visible and discuss what they observe (Murata, 2011).

The Importance of Lesson Study and Its Effect on Teachers' Professional Development

LS has played an important role in the professional development of Japanese teachers for more than a century in Japan. Possible reasons for this success and the gained popularity are the fact that it gives Japanese teachers the opportunity to understand educational ideas in their practice; change perspectives on teaching and learning; allowing for learning to see from each other's point of view and enjoying collaborative support of colleagues (Takahashi & Yoshida, 2004).

There are other professional development programs (*viz.* action research, teacher research, peer observation) that include most of the characteristics of the lesson study. However, it is a live research course that distinguishes course research from these activities. Live research course provides a unique learning opportunity for teachers. Shared classroom experiences reveal professional knowledge of the participant teachers, if this is not the case, then teachers recognize merely certain aspects of related teaching and learning process. However, this highly implicit and holistic awareness does not occur in artificially repeated professional development environments (Murata, 2011).

LS aids several types of knowledge in becoming more tangible, such as teachers' opinions or ideas on pedagogy and mathematical thinking of students, and therefore enabling teachers to meet new or different ideas and in the end improving their knowledge (Lewis, Perry & Hurd, 2009: 286). LS has also been seen by Lewis and Tsuchida (1998) as an important way of disseminating ideas about new content and approaches - especially when there are changes in the national curriculum. It is also important for teachers as they not only have the opportunity to teach new content but also discuss the reasons behind the changes (Doig & Groves, 2011). LS provides teachers with many opportunities to reflect, analyze, form and evaluate action steps with other teachers while working throughout the course (Rock & Wilson, 2005).

Moreover, it can be mentioned that there are many effects of the lesson study implementation in the learning and teaching processes at a specific or a more general level. These are (Lewis, 2000: 13-19): 1. To provide individual professional development, 2. To learn to see and to recognize children, 3. To disseminate new content and approaches / methods, 4. To connect individual practices of teachers to school goals and larger goals, 5. To compete with teachers' teaching opinions against each other, 6. To create demand for improvement / development.

As mentioned above, it can be said that lesson study activities contribute to the professional development of teachers by stimulating collaboration, helping and sharing with each other also assisting students in learning better via planning, implementing and revising instructional activities of teachers in a collective way and help teaching environment be of more quality. While in most countries teachers are separated from each other in schools so doing their work in isolation, as Fernandez & Yoshida (2004) emphasize in primary schools in Japan though it is not compulsory and extra fees are not paid, lesson study activities are carried out by volunteer teachers. According to Lewis & Tsuchida (1997) many Japanese teachers undertake these educational activities, which require labor and time, with great devotion and voluntary commitment.

Stages of the Lesson Study and Its Implementation

LS includes a series of systematic planning, implementation and evaluation processes based on the observations and reflections of a course. In the literature, the implementation stages of LS appear in differing numbers. Dudley (2014) presented these stages in four steps and three cycles. Before starting the first step of the first cycle, a meeting should be held to determine what the research group wants to develop. After the meeting, the first step is the joint planning of the first lesson study, the second is the teaching and monitoring of the first lesson study, the third step is communicating with the students to learn about their views, and the fourth and last step of the first cycle is the evaluation of the lesson study and the planning of the next course. These steps continue in the next two cycles and the process is completed by discussing the findings and agreeing on these. After this study, it is recommended that researchers report and present what they have discovered or found, and conduct a public lesson study.

According to Stigler and Hiebert (1999), an LS process consists of two cycles and eight steps. These are: 1. Defining and investigating a problem, 2. Planning the course, 3. Teaching and observing the course, 4. Reflecting on the evaluation and effect of the course, 5. Review of the course, 6. Teaching and observing the revised course, 7. The evaluation of the second lesson and reflection, and 8. Sharing the results.

The LS provides a structure where teachers can learn more from each other or gain more concurrency (Murphy et al., 2017). Teachers in Japan, the country where this model was born, contribute to their own professional development and educational planning by increasing their cooperation and sharings-based applications with the help of LS. Almost all Japanese teachers are involved in at least one lesson study team during a school year (Cerbin and Kopp, 2006). Lewis and Tsuchida (1998) emphasized how lesson study is important and how it is perceived in Japan, by quoting a Japanese teacher's words: "*We would not be teachers if we had not conducted lesson studies.*" In this way, it is seen that the lesson study model provides a transformation and development within the teaching process (Gero, 2015: 10).

Even if so far no ontological saturation has been witnessed in the relevant literature in terms of academic research or applied studies based on teacher participation about lesson study, the concept has been recognized and implemented in many European countries and others, especially in the USA, towards the end of the 20th century, and such studies have first been observed in Turkey in the last decade. Yet the majority of these studies are carried out by academicians in universities and the ratio of the recognition of this method amongst teachers is very low. The studies on this subject in Turkey are seemingly concentrating on elementary level, and taking place mostly in the fields of math and science (Akbaba Dağ, 2014; Baki, 2012; Baki, Erkan & Demir, 2012; Temel Doğan & Özgeldi, 2018; Erbilgin, 2013; Gözel, 2017; Güner & Akyüz 2017; Pektaş, 2014). While most of these studies have been conducted on pre-service teachers (Akbaba Dağ, 2014; Baki, 2012; Bütün, 2015; Temel Doğan & Özgeldi, 2018; Erbilgin, 2013; Güner & Akyüz, 2017; Pektaş, 2014), the number of studies with the participation of teachers is quite low (Boran & Tarım, 2016; Gözel, 2017; Kıncal & Beypınar, 2015; Özen, 2015).

Within the scope of the study, lesson study method was used as a tool to solve educational problems encountered by teachers (i.e. issues with reading comprehension skills in Turkish) and to improve their professional development. One of the important problems faced by primary school teachers is that some students have reading comprehension skills at not-yet-desirable levels. This also negatively affects their performance and levels of success in other



courses. In this respect, the lesson study was selected for this problem to be eliminated or at least to be minimized. The rationale of the study is both to address a gap in the relevant literature apparently calling for more academic research that may demonstrate the effects of increasing the professional development of teachers also to increase the recognition of the method and consequently to help its realization by teachers in Turkey.

Method

Research Model

The study was mainly designed according to qualitative research model and it aims to shed light on the notion of professional development as well as to solve an educational problem faced by the participant teachers through the implementation of the lesson study method. Case study, one of the qualitative research methods, was used in the present study. According to Creswell (2007), case study is a qualitative research approach, in which one or more situations of the researcher is limited in time and where the case is examined in depth with multiple data collection tools such as observations, interviews, visual-work, documents, reports and so on and where situations and contextual themes are defined. In this study, the case was two-fold: some students' problems with reading comprehension and increasing the chances for professional development for the teachers.

Participants

Two teachers who were willing to participate in the study voluntarily were selected. In the beginning, four volunteer teachers who wanted to participate in the study were determined, but two of them gave up due to workload and for some other personal reasons. Therefore, both willingness and the consistency of participation in the planned study played an active role here. Two teachers performed the research lessons. While one teacher was teaching the lesson, the other one observed him and besides him the researcher played a role of the observer. Both of the participants teach the second grade of primary school and they are male. Their ages are 35 and 39, and their seniority is 13 and 17 years respectively. There are 31 and 33 students in their classrooms and the school is located in a lower socio-economic district of the city that the study takes place. Actually the school where the teachers work is a primary school with a lower socio-economic level in a city in the Mediterranean region located in the south of Turkey. Teachers had already participated in some other projects at institutional level previously, but they did not have any knowledge about lesson study.

Role of the Researcher

The researcher took an active role in the planning, implementation and evaluation of the study. During this process, the researcher held meetings with the teachers, observed the lessons taught, video-recorded these lessons, arranged the evaluation and reflection sessions with the teachers after the taught class. He also advised teachers to prepare a research lesson plan, apply it, and prepare a research report at the end of the LS process. The researcher was not involved or intervened in any way during the teaching of research courses.

Data Collection

The data of the study were collected in the spring semester of the 2017-2018 Academic Year. Prior to the practice, firstly, the teachers were asked about the lesson study through an interview form. In this way, it was aimed to determine what the participants know

about the lesson study. In addition, interviews were conducted with the aim of evaluating and reflecting the lessons taught at the end of the first and second cycles of the lesson study. These interviews were recorded with the permission of the teachers. One of the data collection tools in the study is the observation form. It was aimed to observe the teaching process: students' reactions, learning situations and participation in the course etc. and help the teachers to plan a new course according to the problems and shortcomings emerged and also to teach the new course accordingly. During the observation, the researcher also took some field notes.

At the end of the LS, teachers were asked to express their opinions about the method. Through a form consisting of closed and open-ended questions, the possible contribution of the lesson study to the professional development of the teachers, the effect of their learning in the classroom as well as the learning of their own students, and the difficulties / problems they experienced during the implementation were determined. After the end of the study, the teachers were asked to prepare a report including the purpose of the lesson study, the implementation process and the findings obtained.

The Implementation Process

First, a meeting was held with the teachers who agreed to participate in the practice. In this meeting, the teachers were given some information about the following: what the lesson study is, what to do basically and how to apply the method. For the next meeting, teachers were asked to identify an educational problem they encountered in their classrooms and that they wanted to solve. The meeting, which was held a week later, focused on some problems that teachers complained about and they were discussed. Teachers emphasized that some students had problems in reading comprehension and that this had a negative effect on students' overall performance and achievement in the course. It was decided to investigate this problem and to plan the lesson study course for that.

Teachers then were asked to gather data from the literature and their colleagues in the school about the problem identified, one week after the meeting. At the meeting, the teachers presented the data (articles, theses, internet documents, etc.) they obtained and the applications and findings of the studies related to the subject were taken into consideration so as to be able to prepare the lesson study plan and the teaching of the lesson.

The relevant lesson study consists of two cycles and three steps. These are: 1. Planning the research lesson, 2. Application and observation, and 3. Evaluation and reflection. First, teachers were asked to plan a lesson study. Teachers prepared a lesson study plan together for the course to be taught and the plan prepared was discussed with the participation of the researcher and it was finalized. In the second step, the teachers applied the prepared plan. During the teaching of the course, other teachers and researchers made observations and the lesson was video-recorded. In the third step, the research course was evaluated at a meeting with teachers and academicians. In the evaluation, the students' interest in the course and their participation, especially the responses of the students who had problems in reading comprehension were emphasized. In the evaluation, which students had difficulty in learning during the course activities were touched upon, what prevented the achievement of determined learning outcomes and the emerging problems in the course were analyzed, what to change in the second lesson plan, what the teachers should pay attention to and what issues they should develop were also underlined. According to the findings obtained from the evaluation and reflection, the planning, implementation and observation, evaluation and



reflection of the second research lesson were repeated. The teacher who was the teacher in the first lesson became the observer while the other teacher, the observer in the first lesson study, took the role of the teacher in the second lesson study. The researcher followed the second lesson study as an observer and video recorded it.

In the first lesson, “narration” method was used in order to improve students' reading comprehension skills in Turkish and painting and drama activities were also referred to in the second lesson. These methods and activities were prepared and implemented by the teachers under the supervision of the researcher. The activities conducted during the research lessons were supported by the textbook as well as various materials, worksheets and reading texts provided by teachers. Lesson study was carried out for a total of 4 weeks, including 1 week of preparation, 2 weeks of application and 1 week of evaluation. The research lessons continued for 1 week and the lessons were taught in 2 sessions lasting 40 minutes.

Data Analysis

One piece of data obtained from the participant teachers in the study is the opinions of the teachers about the lesson study. These data were obtained from the teachers at the first meeting before the practicum. Another piece of collected data was obtained at the end of the lessons taught and at the end of the evaluation and reflection meetings. In addition, teachers were asked to prepare a research report at the end of the lesson study. Finally, the opinions of the teachers on their professional development and the impact of this on their teaching in the classroom were taken. For this, a semi-structured interview form which included 3 questions about the LS study implementation was used to collect data and descriptive analysis technique was used in the analysis of the answers and opinions of the teachers. The data obtained in the descriptive analysis are summarized and interpreted according to the previously determined themes as has been suggested by Yıldırım and Şimşek (2018: 239).

In addition to these, the research lessons taught were recorded for evaluation purposes. The data obtained were analyzed through content analysis technique. Content analysis is one of the data analysis techniques frequently used in social sciences. Content analysis is used not only on texts, but also on images such as student images and television programs and video shootings (Büyüköztürk et al., 2017). As a result of the analysis of the data obtained, the findings of the study were formed and interpreted.

The descriptive analysis process was carried out with 2 main codes according to the data obtained from the answers to the questions of the semi-structured interview form prepared in advance. One of the codes is “the contribution of LS implementation to teachers' professional development” and the other is “its effect on students' learning”. Themes were derived from the answers given to the questions in the interview form. According to the teachers' answers, the themes that emerged in the context of the contribution of this method to the professional development of teachers were: “to help teachers solve the problem they face by applying lesson study, to cooperate with each other, to exchange opinions about the problem and to be aware of different methods, techniques and practices”. Observations and field notes as well as teachers' answers were used for the code “the effect of LS on students' learning”. As a result of the analysis, the themes emerged as “to help the students to solve the problem of reading comprehension problem, to increase their interest and participation in the lesson and to help them express themselves better”.

For the validity of the data collection tools used in the study, content validity and triangulation were used. Expert opinion received from two faculty members for content

validity. The experts considered that the questions in the interview form were generally appropriate, however, some changes were made to the interview questions and the interview form took its final shape for the implementation and this version was used in the interviews. In addition to the responses of the teachers to the interview forms, data were collected through observations of the research course and the teacher's reflections. In this way, it was intended to increase the persuasiveness and validity of the data through triangulation. As Yıldırım and Şimşek (2018: 279) stated using the data obtained with different methods (such as interviews, observations and document analysis) to confirm each other, increases the validity and reliability of the findings. Furthermore to ensure the validity of the data obtained, the researcher tried to act objectively during the observation of the research lesson and data analysis process.

For the reliability of the questions included in the interview form, two teachers who were non-participants were asked the questions in the form and these teachers declared the questions were clear and understandable. Moreover one of the important issues for reliability is the clear and detailed reporting of the stages followed by the researcher during the data collection and analysis processes. The lesson study conducted in the present study was explained in detail with the preparation, planning, implementation, evaluation, and reflection stages.

Findings and Interpretation

1. The Effect of Lesson Study on Students' Learning

In the sessions held before the lesson study with teachers who participated in the study, the subjects in which some of the primary school second grade students had difficulty in learning were discussed and one of the most challenging ones was determined as reading comprehension. In order to solve this problem, the teachers planned a research lesson under the supervision of the researcher and one of the teachers (T1) taught this lesson during a 40 + 40 minute-class. During the course, both the video recordings and the field notes were collected by the researcher. In the lesson taught, the teacher used the "narration" method.

When the observation and field notes taken in the first research course were examined, it was observed that more than half of the students participated actively in the activities in the lesson and their reading speed and fluency were close to the desired level; however, it was seen that some students did not participate in the activity as much as the other students and their reading speed and fluency levels were lower than the rest of the class. During the activities, T1 concentrated on the students especially the ones who were experiencing problems-without being noticed by the other students-and read the reading text to them more than he did for the others. In the reading text, the topic was simply that a boy had weak bones due to not consuming dairy products and, as a result he had a broken leg. After the reading text was read, the students were asked questions about it. Particularly students who had difficulty understanding and expressing what they read were focused upon. Through different questions and clues, these students were asked to express what they understood from the reading text in their own words. Some students, who had lower self-confidence, were timid and did not want to talk, yet started to answer the questions with the encouragement of T1. In this way, they became more interested in the lesson and participated more.

Immediately after the first research lesson, the researcher, the teacher teaching the lesson and the teacher who was the observer met and evaluated the lesson. In the evaluation, it was focused on how the lesson was in general, how the students, in particular the ones who had



problems in reading comprehension were, how they responded to the questions, which of the students were performing better and which were not, and which issues need to be developed in order for the second research lesson to be more effective. The second research lesson was planned in line with this evaluation and reflection process.

A week later, the second research lesson which was planned by T1 and T2 were taught. This lesson was taught in the class of T2 and delineation / narrating with pictures and animation methods were used. The attention of the students was drawn into the lesson by showing them visuals about the subject of the lesson on the interactive board. Students were asked questions about the visuals. Then the reading text was given to the students. The students were asked to read the text silently first, and then each student was asked to read a sentence from the given reading text. The students were then given a blank paper and asked to draw a picture describing / expressing the text they just read. All the students in the class participated actively in this event. Among the students wanting to talk about their pictures, those who were randomly selected described their pictures respectively. Later, the teacher asked 6 students who were lower achievers in reading comprehension skills to describe their paintings. Students who did not want to describe their paintings from this group attended the class with the encouragement and support of the teacher. All 6 students showed what they understood from the reading text by drawing pictures. It was observed that these students actively participated in the lesson and gave satisfactory answers to the questions asked about the reading text. Moreover, it was seen that a student with low interest and showing lower levels of participation in the lesson compared to the previous lessons (according to the teacher's own statements after this lesson) was better at grasping the text by painting the subject and participated more actively in the lesson. However, 4 students were somewhat timid during the picture-description. Later, the teacher asked comprehension questions about the reading text. While 4 of the 6 students aforementioned answered the question without difficulty, the other 2 gave the correct answer with the teacher's tips. What is striking here is that two students seemed to have improved their reading comprehension skills when compared to the previous lessons. After this activity, in the last part of the lesson, the teacher had a mini drama activity on the subject. All 6 students participated in the event and were asked to animate an entity (e.g. cloud, land, ant etc.) in the reading text. With these activities, it was observed that the lesson was full of fun and excitement.

Evaluation and reflection meeting was held immediately after the second research lesson. In the evaluation, issues such as how the students in the class participated in the activities, especially the reactions and interest levels of the students who had problems in reading comprehension and the development of reading comprehension skills were discussed. In general, it was determined that most of the students were actively involved in the activities done in the lesson and that there was a significant improvement in taking part in the activities specifically bearing in mind the students who had lower reading comprehension skills. In addition, teachers discussed what they had to do in order to improve the reading comprehension skills of the student who still had problems in reading comprehension. In this respect, the teachers suggested some alternative approaches like enforcing some individualized programs with these students, prioritizing their involvement of in-class activities, implementing different student-centered methods and activities and collaborating with their parents.

The teachers were asked to prepare a report on the lesson study, which they conducted for 3 weeks. Teachers were provided with a report draft as a model and they prepared their reports according to this draft. The report included the problem statement, the content and causes of

the problem, the hypotheses, the purpose and importance of the study, the planning and implementation of the research lesson, the findings obtained, the more effective teaching of the course and the necessary issues to be developed to better / further support student learning.

The answer of T1 regarding the application of the LS in the classroom and its impact on student learning is as follows:

"In the first research lesson, nearly 60-70% of the class was addressed considering learning and active participation. Nearly all of the class participated in the class thanks to the methods (visualization and drama activities) that we used in the second one. Also, working with sample sentences on unknown words was effective in terms of having the students understand the text."

The answer of T2 is as follows:

"We carried out the second lesson method in our class. Compared to the first one, we observed the improvements-as expected-in students. With the new methods and techniques that we used in the second research lesson, we were able to get clearer feedback from the students. We observed that the student reactions and comprehension problems that we had had in the first lesson decreased to a lesser level in the second one. During this study, I experienced difficulties with regard to heterogeneous student levels and the application of the method to foreign students. In order to overcome this difficulty, I applied activities that would involve all students and hence enable them to participate in the class. This study helped me to use different methods and techniques in the lesson."

When the answers given by T1 and T2 were examined in general, the teachers reported that the level of participation of students in the course of the lesson study increased, the students developed their reading comprehension skills compared to the previous lessons and they started to express themselves better through the student-centered activities.

2. The Effect of Lesson Study on Teachers' Professional Development

The findings of this study were obtained from the interviews with the teachers at the end of the first and second research lessons and the responses of the teachers in the reflection forms. According to the answers given, it was understood that the lesson study had contributed to the professional development of the participant teachers in different ways. Teachers noted that the lesson study they were doing is particularly useful in meeting with the group teacher in the process of solving the problems of their students, in collaborating and cooperating with each other, in exchanging views about the problem and in finding out different new methods, techniques and practices.

For example, the opinion of T1 is as follows:

"We had a lack of consultation between us, so we noticed it more in this project. We noticed that we should together discuss more on what we can do in the lesson and how we can improve it in the group meetings as we, the teachers, lack communication between us. Lesson study enlightened us, for example, in Life Science lesson, I explained the topic in one way, and asked the other teacher how he explained it or how I could teach it effectively. In addition, we have recalled that different methods

and techniques should be used in this method. There's such a thing as an out of routine. We have become accustomed to doing the same things all the time, different methods and different techniques are over there, we just need to notice them, this project has enabled us to notice that." (T1)

Here, the expression of T1, "With this method, we remembered again that different methods and techniques should be used in the lesson process" is of crucial importance. Considering that this teacher's professional seniority is 17 years, it is quite low for such teachers to participate in any professional development program or activity, apart from compulsory in-service training, in order to improve themselves. In this respect, it is seen how the methods or approaches that contribute to the professional development of teachers like lesson study are important for such teachers.

According to the findings, teachers also stated lesson study had positive effects on their professional development as it enabled them to see the educational problems they face, to collect data from the literature on these, to try to solve the problems in different ways, to apply novel / different teaching methods and techniques and to evaluate themselves about the teaching practices.

T2's response is exactly as follows:

"I believe that I have developed the methods we use in this study using my daily lesson work. We discussed the educational problem we encountered and the ways to solve it. For this, we prepared a course plan and applied it after conducting a literature review. Succeeding the application, we evaluated whether the plan worked. After our evaluation, we designed a new plan and taught the second lesson. In this process, we applied methods and activities that would enable students to participate more in the lesson. Of course, Syrian (refugee) children in the classroom had difficulty in comprehending and describing the text since their knowledge of Turkish language and therefore skills (reading, listening and speaking) are not at desired level. However, during the implementation of the narrative and drama activities, these students expressed their feelings and thoughts about the subject better and showed more participation. Besides, for an effective use of this method, teachers must establish a strong co-operation and then share the problems encountered in schools and spare time for such studies. This method can be applied to many lessons and problems. It can be applied by teacher groups addressing issues that are valid for other classes or issues pertinent to learning difficulties." (T2)

T2 emphasized that the problem experienced in reading comprehension was minimized with the lesson study and the expected progress was observed in the students. In addition, T2 highlighted, just like T1, that lesson study was useful in the implementation of different methods and techniques and provided him with the opportunity to develop professionally using the methods and techniques in the lessons of all subjects. Furthermore, T2 stated that some of the students who had problems in reading comprehension were Syrian refugees and that these students had various problems with reading, listening, reading comprehension and with expressing themselves in Turkish. T2 also stated that this situation prevented the lesson study application to be fully successful but T2 somewhat overcame this problem by having these students participate in the narration and drama activities. T2 also suggested that the lesson study could be applied as a set or group study on the problems encountered in all subjects and especially on the subjects that are relatively more difficult to learn. For this, T2

pointed out the importance of sharing teachers' problems with learning-teaching processes and also the role and place of cooperating with colleagues.

To sum up, the lesson study, which was applied in this study, has clearly contributed significantly to the better learning of the students and to the professional development of teachers. As Dudley (2014) puts lesson study can be a very useful and effective approach to see student learning in detail as it happens, to observe the gaps between what teachers have assumed to occur when students learn and what really occurs in the classroom, to create a supportive teaching and learning community that is committed to helping students learn and to improve the professional development and learning of group members and lastly to change the teaching approaches of the teachers to better support learning.

Discussion and Conclusion

Continuous professional development (CPD) is a process which requires constant and active learning of a teacher throughout their professional life. CPD includes studies or activities aiming to increase the knowledge and skills of teachers, attempting to give them new insights at the same time helping their students learn more qualitatively and thus keeping their professional development dynamic (Özdemir, 2016). However traditional professional development activities are widely used and these activities are often criticized because they are ineffective in supplying necessary activities and content needed to foster classroom practices and inefficient in improving teachers' knowledge significantly (Loucks-Horsley, Hewson, Love & Stiles, 1998, as cited in Garet, Porter, Desimone, Birman, & Yoon, 2001). Henceforth to increase the professional development levels of teachers, instead of traditional in-service training which are short-term, of out of class context nature, making teachers passive for the aim is to give theoretical information, more practical and hands on activities requiring teachers' active participation should be provided for all. One of the latter is surely the lesson study approach or method.

In many countries of the world, especially in Japan, lesson study is used to target the major problems encountered at all levels and in each class-from primary school to tertiary level-to improve the learning of students and to increase the professional development of teachers. In this regard, this method which has been used in Turkey for the last decade in higher education institutions and for academic purposes, was considered as a tool to improve the professional development of the teachers and to contribute to the development of reading comprehension and expression skills of the students at the 2nd grade, some of whom had problems with developing both.

The findings of this study showed that the practice of the lesson study had contributed to the professional development of teachers in various ways. Participant teachers stated that they were able to meet their colleagues to cooperate with them, especially with the help of this method; they collaborated, exchanged ideas and had the opportunity to observe different practices and activities other than their own. There are many studies supporting these findings in the related literature (Bayram & Bıkmaz, 2018; Boran & Tarım, 2016; Coenders & Verhoef, 2018; Coşkun, 2017; DeLucia, 2006; Pang, 2016; Songül, Delialioğlu & Özköse Bıyık, 2018; Özdemir-Baki & Işık, 2018; Suhaili, Shahrill & Khalid, 2014). For example, Bayram and Bıkmaz (2018) found in their study that the lesson study contributed to the professional development of lecturers in terms of planning a lesson with others, adopting student-centered teaching, focusing on students, and developing time management skills. Pand (2016) found that the teachers became aware of the necessity of the detailed lesson



planning and the complexity of teaching practices and understood how to use the ideas of the students with the help of the lesson study. According to the findings of Kıncal and Beypınar (2015), the lesson study contributed to the professional development of mathematics teachers pedagogically. Particularly, positive results were obtained in the development of pedagogical infrastructure of the participants: mastering the instructional strategies, goal setting, planning, content creation, material selection and development. Somma (2016) highlighted the fact that lesson study is an integral way to develop professionally for teachers. Additionally, she also pinpoints that the achievement of the students increases after the teachers take part in the Lesson Study process.

In addition to these, the participating teachers of this study stated that they realized the professional disunity and isolation among the teachers thanks to this method. Eraslan (2008) underlined that teachers in Turkey have the tendency of working alone and thus they miss the opportunity to observe each other. Among teachers there is a common belief that one's classroom is their personal space and nobody can interrupt it. In fact, one of the most important contributions of professional development activities and specifically of the lesson study approach is that teachers come together and work together on educational problems, support each other professionally and increase their professional development process. The findings of the studies on Lesson Study support this. For example, according to the findings of a study by Cajkler, Wood, Norton, Pedder & Xu (2015), it was found that collaborating with colleagues on the scope of the lesson study reduces professional isolation. Also, DeLucia (2006) found that collaboration via the Lesson Study created a forum where the teachers share ideas, be exposed to various perspectives and develop activities related to the content.

In this study, it was found that teaching and the activities done in class within the scope of the lesson study had positive effects on students' learning and teaching in the classroom. Thanks to the Lesson Study, it was observed that students developed their reading comprehension and expression skills and that they were more interested in the course than ever before, and that they articulated more accurate answers to the questions asked about the reading text and they started to express themselves better. For example, the 2 students, who were reluctant to participate in the lesson activities, answered the questions asked, explained the drawing about the topic in detail and gave more accurate answers to the questions asked in the second research lesson. When the related literature is examined (Baki et al., 2012; Bayram & Bıkmaz, 2018; Boran & Tarım, 2016; Cajkler, Wood, Norton, Pedder & Xu 2015; Coşkun, 2017; Erbilgin, 2013; Gözel, 2017; Somma, 2016; Yüzbaşıoğlu, 2016), lesson study method has been found to be a main contributor of the teaching practices in the classroom.

As a result, as supported by the findings of the present study, lesson study can be used both as an effective tool to improve classroom practice and therefore student learning as well as supporting teachers' professional development, which is also confirmed by the results of national or international studies on this topic (Bayram & Bıkmaz, 2018; Boran & Tarım, 2016; Coenders & Verhoef, 2018; Coşkun, 2017; DeLucia, 2006; Kıncal & Beypınar, 2015; Pang, 2016; Songül, Delialioğlu & Özköse Bıyık, 2018; Suhaili, Shahrill & Khalid, 2014; Yüzbaşıoğlu, 2016). However, teachers who apply this approach should be supported by school administrators and they should be motivated to use this professional development approach frequently and continuously. Otherwise, this approach, which requires a lot of time and effort, is unlikely to be successful covering a full cycle. In order to do this, first of all, it is necessary to introduce the lesson study to the teachers and also to present the relevant work of others, to have the teachers conduct mini-lesson study activities and to encourage teachers to apply this method in their lessons confidently.

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