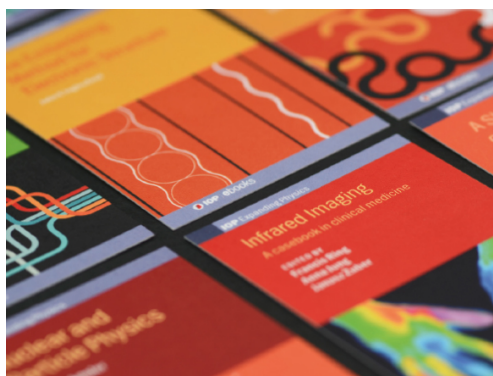


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To cite this article: Marsigit *et al* 2019 *J. Phys.: Conf. Ser.* **1320** 012079

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# Teachers' Readiness in Implementing Lesson Study

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**Abstract.** Improving educational quality by improving learning quality might be afforded through several initiatives and one of the initiatives is benefitting lesson study. With regards to the statement, the present study would like to describe the junior high school teachers' readiness in implementing the lesson study in order to improve the learning quality of Mathematics. The study was a qualitative research that involved phenomenological approach. The data were gathered using open questionnaire and involving 12 junior high school teachers of Mathematics from the low, the moderate, and the high category in both the private and the public schools as the participants. The results of the study show that the teachers' understanding toward the lesson study has still been partial. Most of the Mathematics teachers have theoretically understood the activities of the lesson study and some of these teachers have implemented the activities of the lesson study. Several obstacles that appear within the implementation of the lesson study are related to the teachers, the participants, and the availability of the facilities. Despite these obstacles, basically the teachers seek to implement the lesson study as one of the efforts for improving the learning quality and the learning results of Mathematics in the school Start your abstract here...

## 1. Introduction

Education plays significant role within the development of a country and that also applies in Indonesia. Through well-qualified education, the future generation with prominent excellence might be borne. In relation to the statement, the efforts of improving the educational quality might be initiated by improving the teachers' quality within the teaching-learning activities and within the professional conduct. Then, holding various training and education programs for the teachers might also serve as one of those initiatives. Unfortunately, the knowledge and the materials that have been attained from these initiatives most of the times are not continuously implemented in the teaching-learning activities. Thus, such situation becomes a strong reason for the necessity to initiate other efforts of improvement that focus on the actual condition and these efforts will range from the learning condition in the classroom to the teachers' condition and the school environment. One of the initiatives for these efforts is implementing the lesson study

Lesson study is an activity that might be turned into a tool for improving the quality of both the teachers and the learning quality within the school. The activities of the lesson study may help the teachers to expand their pedagogical knowledge [1] in order to improve their professionalism within the teaching-learning process [2]. The activities of the lesson study are performed by investigating and reflecting systematically the learning activities that have been performed [3]. The fundamental objective



of conducting the lesson study activities is to improve the teachers' role in meeting and facilitating the students' learning needs. The main focus of implementing the lesson study is the students' overall activities during the learning process within the classroom [4]. Teachers collaboratively design the learning activities that fit into the learning objectives and also implement, observe, reflect, and discuss the learning activities that have been performed in order to improve the learning activities for the next sequence [5][6][7].

The term lesson study has been derived from a word in Japanese language namely *Jugyokenkyu* which consists of *jugyo*, meaning lesson, and *kenkyu*, meaning study. Therefore, lesson study might be defined as an activity of reviewing the learning activities [8]. Lesson study was first developed by the elementary school teachers in Japan. The activities of lesson study then started to spread around the globe including Indonesia. In 1998, the activities of lesson study started to develop in Indonesia through the Indonesian Mathematics and Science Teacher Education Project (IMSTEP). IMSTEP is a joint project between the Japan International Cooperation Agency (JICA) and three Institutions of Teachers Training and Education namely the Bandung Institution of Teachers Training and Education (now Universitas Pendidikan Indonesia), the Yogyakarta Institution of Teachers Training and Education (Universitas Negeri Yogyakarta), and Malang Institution of Teachers Training and Education (now Universitas Negeri Malang). Although in the beginning the activities of lesson study focused on the development of elementary education, nowadays the activities of lesson study have been widely socialized and developed from the high education degree to higher education degree.

In relation to the implementation, there are two kinds of lesson study namely the school-based lesson study and the subject teacher forum-based lesson study [9][10]. The school-based lesson study is implemented in the school level by all of the subject teachers along with the school principal. The main objective of the school-based lesson study is to improve the quality of the learning process and results in all subjects. On the other hand, the subject teacher forum-based lesson study is implemented in the region level and the activities of the subject teacher forum-based lesson study are reviewing and extending the learning process through the efforts performed by a group of teachers under certain subjects.

In the Indonesian context of IMSTEP-JICA, the lesson study that has been introduced by Saito et al. [11] has orientation on the practice with 3 main stages namely: (1) the plan stage, which is related to planning the learning process by reviewing the learning topics and media that will be involved; (2) the do stage, which is related to implementing the learning activities by referring to the lesson plans and the available learning media and also by inviting the peer teachers to be the observers for the conduct of the learning process; and (3) the see stage, which is related to reflecting the learning activities that have been performed by sharing opinions and having discussions with the observers of the learning process. Similarly, Lewis [12] classifies the process of lesson study implementation into 6 stages namely: (1) the formation of lesson study group (2) the pursuance of the focus for the lesson study group; (3) the learning process plan; (4) the conduct of the learning process and its observation in the classroom; (5) the discussion and analysis on the learning process that has been conducted; and (6) the reflection on the learning process and the planning for the next learning process. The activities in this kind of lesson study are usually performed for more than one cycle.

One of the benefits that the teachers perceive from taking participation in the lesson study is that the repetition of each stage within the learning cycle, especially in the reflection on the learning process, enables the teachers to reflect on various domains within the learning process that has been conducted. The reflection thus will improve the quality of the teachers' capacity [9][13]. In addition, through the reflection the teachers may also develop their capacities to read and to interpret how far the students have progressed in attaining the relevant knowledge [14].

The teachers' readiness in implementing the lesson study activities becomes one of the decisive factors for the successful implementation. Unfortunately, there have not been many studies that investigates the teachers' readiness in implementing the lesson study activities. Therefore, the present study would like to identify and to describe the readiness among the Mathematics teachers for junior

high schools in implementing the lesson study activities under the efforts of improving the Mathematics' learning quality.

## 2. Method

The study was a qualitative research that had been conducted by using the phenomenological approach. The objective of the study was to describe how far the teachers had prepared themselves and what had been the obstacles for the teachers in implementing the lessons study activities. The participants in the study consisted of 12 teachers from 12 junior high schools that had been located in the Regency of Gunung Kidul, the Province of Yogyakarta. The participants themselves consisted of 5 male teachers and 7 female teachers. These teachers were recruited from the schools with "High" achievement, "Moderate" achievement, and "Low" achievement. Then, the data were gathered through an open-ended questionnaire that consisted of 6 questions in relation to the theme of the study. The data that had been gathered then were analysed and were presented in the form of tables in order to ease the data reduction. The data analysis was performed by using the Bogdan & Biklen (1982) model in order to identify the teachers' readiness in implementing the lesson study along with the obstacles that the teachers should deal with and the efforts that the teachers have done in order to overcome these obstacles.

## 3. Results and Discussions

### 3.1. Result

Through the teachers' response that had been gathered from the questionnaire, there were several information that might be important in relation to the teachers' readiness in implementing the lesson study. The teachers' response was classified into several important points namely teachers' knowledge and skills in relation to lesson study, teachers' obstacles in implementing lesson study, and efforts to overcome the problems that might be caused by lesson study implementation. Each point would be elaborated as follows.

#### 3.1.1. Teachers' Knowledge and Skills in Relation to Lesson Study

The results of data analysis and data reduction that had been attained in relation to the teachers' knowledge in implementing lesson study fell into the "Sufficiently Good" category. Unfortunately, the knowledge possession had not been followed by the teachers' experience in implementing the lesson study. Then, the results of the analysis in this regard might be consulted to Table 1.

Based on the results in Table 1, almost all of the teachers had already attained the theoretical knowledge with regards to lesson study. They had also understood that lesson study is one of the efforts for improving the learning process and quality collaboratively by the teachers and the related parties. In other words, the lesson study might be related to not only the efforts of pursuing the teachers' competence and quality but also the students' learning activities and process. In relation to the knowledge within the implementation of lesson study, based on the results of the analysis it might be inferred that the teachers had also identified the guidelines on the stages of activities that should be performed within the lesson study. Almost all of the teachers mentioned that the lesson study activities had included the plan, the implementation, and the reflection stage over the learning process. Several teachers had also specifically defined the activities that should be performed in each stage. Furthermore, the teachers had also identified multiple benefits that both the teachers and the student might attain through the lesson study activities.

In general, the benefits that both the teachers and the students might attain from performing the lesson study activities were mentioned in their responses. The benefits that the teachers had attained were related to the improvement on the teachers' competencies, for example: improving the knowledge, the technique, and the response of the teachers on variation of the learning methods/models; improving the teaching proficiency based on the routine discussion and reflection in relation to the learning activities that had been performed; and attaining the spirit and encouragement for persistently pursuing innovation within the learning process. On the other hand, the benefits that the students had attained were, for

example, attaining more opportunities for pursuing the active participation within the learning activities both in the group discussions and in the classroom discussions and being more motivated in attending the learning process that had been designed. The reason was that the lesson study activities had been enjoyable to attend and had provided numerous new experiences for the students within their exploration with the knowledge that the teachers had transferred in the classroom.

**Table 1.** Results of Data Reduction on Teachers' Aspect and Teachers' Experience in Relation to Lesson Study

Response	Theme	Inter-Theme Relationship
<ul style="list-style-type: none"> <li>- One of the collaboration forms between the teachers and the officials in relation to the implementation of a number of learning activities</li> <li>- The effort of improving the learning process and quality through inter-teachers cooperation that is performed continuously</li> </ul>	Knowledge on Lesson Study conceptual aspect has been good	
<ul style="list-style-type: none"> <li>- Improving learning quality</li> <li>- Gaining new experiences in relation to the conduct of learning process.</li> <li>- Identifying the weakness within the conduct of the learning process and solving the weakness that has been found</li> </ul>	Knowledge on Lesson Study benefits has been good	Knowledge on the conceptual aspect, the benefit, and the technical implementation of Lesson Study has been attained by most of the teachers. However, the teachers still have minimum experience in the Lesson Study implementation.
<ul style="list-style-type: none"> <li>- Drafting the lesson plans together with the teachers from the same subject and reviewing, implementing, and reflecting on the lesson plans that have been drafted</li> <li>- Designing, implementing, and performing learning evaluation</li> <li>- Designing, implementing, reflecting on, and planning the learning activity revision</li> </ul>	Knowledge on Lesson Study technical implementation has been good	
<ul style="list-style-type: none"> <li>- 33.00% teachers have implemented the Lesson Study</li> <li>- 67.00% teachers have not implemented Lesson Study</li> </ul>	Teachers' experience in implementing Lesson Study is still minimum	

Unfortunately, the teachers' knowledge of lesson study was not followed by the teachers' experience in attending the lessons study activities. There were only 4 of 12 teachers in the study who used to attend the lessons study activities. According to the teachers who did not attend the lesson study activities, they did not have sufficient experience in performing the lesson study activities because they had minimal knowledge about the lesson study implementation and they did not have equal opportunities or they were not appointed by the school to attend the lesson study activities. Several responses which showed that the teachers had insufficient knowledge of lesson study were as follows:

*"I used to hear and know about the lesson study implementation but I have not attended the activity." (T1)*

*"In the school, we have never been assigned to attend the lesson study activities but we heard about these activities from our colleagues." (T2)*

*“I have not attended the lesson study. I just used to read about it but I have never been involved directly.” (T3)*

Based on these responses, it might be inferred that several teachers had actually been familiar to the lesson study. These teachers had not just been given opportunities to attend or to be involved directly in the lesson study due to certain reasons.

### 3.1.2. The Obstacles that the Teachers Dealt with in Implementing the Lesson Study

From the results of the analysis on the questionnaire responses, it was found that several teachers found various and different obstacles in implementing the lesson study. These obstacles were related to the teachers' personal problems, the students' problems, and the facility availability for the lesson study implementation. The results of the analysis in relation to these obstacles might be consulted in Table 2.

Several teachers admitted that they should deal with their personal problems. These teachers acknowledged that they had been lack of spirit and motivation in attending the activity. There were several factors behind the situation and one of these factors was the limited time. Most of the teachers stated that almost all of their time allocation had been dominated by the teaching-learning activities within the school, recalling the heavy teaching schedule and numerous additional duties assigned by the school. In addition, the teachers' obligation to accomplish the curriculum gave great contribution to the teachers' unavailability to attend the lesson study.

**Table 2.** Results of Data Reduction on the Obstacles that the Teachers should Deal with in Implementing Lesson Study

Response	Theme	Inter-Theme Relationship
- Enthusiasm and motivation within the lesson study implementation has not been maximum.	Teachers' Personal Problem	The obstacles that the teaches encounter within the lesson study implementation are related to the teachers' internal factor, the students' readiness, and the facility availability.
- Difficulty in allocating the time		
- Lesson Study has not been the priority		
- Students have not been active in the learning process	Students' Personal Problem	
- Students tend to be timid and less confident to express their ideas		
- Supporting learning media are still limited	Facility	
- Fund source for the lesson study implementation is difficult to find		

Another factor was that the teachers had never been assigned to attend the lesson study by their school. Some of the schools have already had their own agenda, including the targets that direct the National Examination as the focus of their learning process. That explained why the teachers did not pay attention the teaching-learning process in the classroom. In addition, the teachers' minimum knowledge in relation to the lesson study and to the lesson study that had been relevant to the current learning process made several teachers to be less interested and less confident in attending the existing lesson study activities although they had the opportunity to attend the activity. The responses that described such situation were as follows:

*“My main obstacle in attending the lesson study activities is that I have already had heavy teaching schedule. Not to mention, all of IX Grade teachers should focus on preparing the students to take the National Examination.” (T4)*

*“Usually it is the junior teachers who attend the lesson study activities. I am about to retire so I just teach in the school.” (T5)*

In addition to the teachers' personal problems, the problems that had been related to the students also became their obstacles. Several teachers admitted that they had been pessimistic with their attendance in the lesson study since the students in their school were passive and as a result they were difficult to

be involved in the interaction and the discussion. The students' passivity was caused by the top-and-down paradigm and the fact that the students had been afraid to make mistakes. Not to mention, some of their students were indeed had low performance. An example that had been elicited from the teachers' response with regards to the situation was as follows:

*"The students still have not been able to be active in the classroom. The improvement on the learning process through the lesson study seems to not be maximum in the near future." (T6)*

Based on the teachers' response, it was found that the obstacles for implementing the lesson study had not only come from the teachers but also from the students. In addition, another obstacle was found in the unavailability of learning facility and the limited fund as well as the learning media and the school environment that had not supported the implementation of the lesson study activities.

### 3.1.3. The Efforts to Initiate the Lesson Study

In relation to the obstacles that the teacher found in implementing the lesson study activities, there were several efforts that might be taken in order to overcome these obstacles. These efforts were namely eliciting the teachers' spirit and improving the teachers' motivation by holding workshops/socializations about the lesson study and inviting the inspiring figures who had been involved in the lesson study. These activities might be pursued by each school. In addition, among the teachers there should be a perception that lesson study is important to implement as one of the efforts for improving the learning process, results, and quality of the learning activities. In relation to this matter, the teachers might be provided with the example of successful small-scale lesson study implementation through the form of cooperation with the teaching colleagues from the same subject.

**Table 3.** Results of Data Reduction in the Efforts of Initiating the Lesson Study

Response	Theme	Inter-Theme Relationship
<ul style="list-style-type: none"> <li>- Workshops on Lesson Study is highly necessary.</li> <li>- Attendance of competent sources in Lesson Study implementation is highly necessary.</li> <li>- Developing awareness on the important of Lesson Study is important.</li> <li>- Relevant examples of Lesson Study implementation with regards to the current learning process is highly necessary.</li> </ul>	Treatment for Teachers	There should be habituation and conditioning for the teachers in attending the Lesson Study and there should be improvement on the students' readiness and motivation in being actively involved in the learning process.
<ul style="list-style-type: none"> <li>- Habituating the students to be active in the learning process</li> <li>- Strengthening the students to be seriously involved in the discussion activities</li> </ul>	Treatment for Students	

Furthermore, one of the important efforts that might be pursued for initiating the lesson study is activating the lesson study through the Subject Teacher Forum from the district level to the regency level and the activation should be pursued continuously as a follow-up from the workshops/socializations that have been held in the schools. Then, not only the teachers but also the students should be habituated to be active in the learning and the discussion activities and both of them should also be motivated to attend the learning activities seriously so that they might achieve the maximum learning results. If the teachers and the students are able to be put in a good condition then it will be very possible that the objective of the lesson study implementation might be achieved.

## 3.2. Discussions

There are many ways that might be taken in order to improve the teachers' quality. One of these ways is implementing the lesson study. The results of the study show that the teachers' knowledge about

lesson study has not been followed up by the field practice. The knowledge that has been attained by most of the teachers are only limited to the conceptual aspect; in other words, the knowledge has not been manifested into concrete actions or it might be inferred that the teachers have not been able to apply their knowledge. In addition, the results of the study also show that despite the teachers have the sufficient knowledge with regards to lesson study most of them have not attended the activity. Similar problems have also been found in a study by Retnawati, Djidu, Kartianom & Anazifa [15]. The results of this study show that the teachers' understanding in relation to the conduct of the learning process has not been accompanied by the teachers' capacity in implementing the learning process. The teachers' difficulty is caused by several matters.

One of the reasons that lie behind the teachers' difficulty in implementing the learning process is found in the study by Retnawati et al.[16]: the teachers have difficulties in translating the knowledge and the concepts that have been attained into the operational forms by means of training activities. Similarly, in this study the teachers have good understanding about the lesson study but they are still unconfident to start implementing the lesson study. Similar case is also found in a study by Mon, Dali & Sam [17]. In their study, they found another factor that becomes the obstacle within the lesson study implementation namely the availability of the supporting facility. It is important for the teachers to understand the students' readiness in relation to the students' preliminary knowledge and characteristics in order that the learning plan in the lesson study might be performed appropriately [18].

From the results that have been attained, it might be inferred that numerous efforts still need to be pursued in order to activate the lesson study through the activities that might improve the teachers' competence and readiness within the lesson study implementation. Some of these efforts might be holding training programs or workshops and inviting competence sources in the domain of lesson study. These activities should be performed continuously. In addition, the students should be motivated in order that they will be actively involved in the learning activities since their activeness will be main key of success in the lesson study implementation.

#### 4. Conclusions and Suggestions

The results of the study show that most of the teachers have understood and notified about the lesson study. However, the teachers' knowledge has not been supported by opportunities for direct involvement within the activity. There are many reasons behind the situation, including the obstacles that come to the surface from the teachers, the students, and the facility. Then, the results of the analysis on the teachers' response show that conceptually the teachers' readiness to implement the lesson study has been more than enough. They teachers only need to be provided with special treatment or condition in order that they will be motivated and will take part in the lesson study in order to improve the quality of the teachers, the learning process, and the students' learning results.

Based on the results of the study, it is suggested that the obstacles that have been found should be the matter of consideration for the relevant parties so that the related problems might be solved. Then, it is expected that through the success of continuous lesson study implementation the quality of both the teachers and the learning process will be better and the students' learning results will be improved. Thereby, the objective of improving Indonesian educational quality might be achieved.

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