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смогли правильно выбрать объекты исследования по разделу "Растения". В процессе постановки опыта на объекты исследования повысился интерес к биологии, что положительно сказывалось на качестве знаний. Эксперименты в области гидропоники позволили учащимся освоить новые биологические области, попробовать их на практике.

**Ключевые слова:** биологический эксперимент, опыты, методы, область гидропоники, лабораторные инструменты, процесс фотосинтеза, процесс обучения.

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## IMPLEMENTATION AND EFFICIENCY OF THE LESSON STUDY CURRICULUM IN EDUCATION

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**Abstract.** Lesson Study is professional experiential learning that stands out by developing fun activities and improving knowledge. In the Lesson Study model, the teacher, usually at the level of one class or regular course, comes together to create and plan classes, which becomes a search for effective teaching methods.

Lesson Study, as a growing interest in global education, involvement, experience and professionals in the field of use for learning lessons - this is also happening in Uzbekistan. originally used in the teaching of mathematics in Japan, it is now used in economics as well from others. An adaptation of the Lesson Study on the fact that Japan and Uzbekistan have an interesting different culture. While there is a lot of information about how the lesson is usually conducted in Japan and the US, there is little research on how it is used in Uzbekistan. this is a case study, it is focused only on the school. Interview and observation were the tools used in this experience. Usually, in order to obtain information about how lesson learning was carried out, observation was also used to observe the actual implementation of the program, lesson research happened. This article focuses heavily on the events that occur in the implementation of the Lesson Study and in the learning and learning process.

**Key words:** Lesson Study, education, lesson, school, teacher's activity.

**Introduction.** Education is one of the main pillars of the development of a nation in any country. This makes sense because the teaching shapes the influence of a person to be more human, to be more sincere, and to care more about others. As Slattery says, a deep conviction that education is essential to our survival. However, this type of mission is not without problems. Knowledge is a system in which people can solve various problems in the system itself. As long as these people are actively meeting, the system faces some challenges and people don't stop talking and discussing its existence - from fundamental philosophical things to technical and operational issues. Many educational issues are mainly focused on how to find the best way to get a highly valued education in terms of creating the best human resources in Academic, social, personal and/or professional terms.

**The purpose of the study:** to determine the effectiveness of the school course in economics using the Lesson Study method.

**Object of research:** pedagogical conditions as the main component of the pedagogical system. The relevance of this work lies in the fact that Uzbekistan has long been practicing the process of teaching and learning, which are traditional ways focused not on students, but on teachers. The results of such training and learning process did not fully contribute to the quality

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process and the improvement of student achievement. Therefore, the use of the Lesson Study in the era of renewed education and the determination of its effectiveness.

**Research methods:** to achieve the goal, the following research methods were used: analysis of teaching aids, conversation, observation, synthesis of theoretical material, deduction, induction, testing, generalization and analysis of the results, summing up.

**Main part.** One of the most relevant educational issues of interest for discussion is the Lesson Study, which emerged as an alternative to solving the problem of teaching and learning practice. It appears that the Lesson Study could be an alternative way to make a change for better and more effective improvement in the context of teaching and learning in Uzbekistan. Hollingsworth and Oliver say lesson study is a teacher training model that began in Japan. It includes small groups of teachers who meet regularly to participate in a collaborative process of planning, implementing, evaluating and refining lessons.

Chazels and other researchers have found that studying Japanese lessons provides teacher candidates with opportunities to build a professional learning community, deep understanding of curriculum and pedagogy, and develop critical observation, analysis, and reflection skills. While the benefits of the Lesson study are numerous and important, our research identified implementation challenges related to time, practice, and professional development of associate teachers. Benefits include developing new perceptions of teacher candidates about student needs, increased awareness of different teaching strategies, and the importance of collaboration. The problems are mainly focused on the problem of time and the administrative structures of the school that hinder the cooperation of teachers.

In addition, the Japanese lesson learning model showed that schools support micro-level education reform in practical management, unite teachers to learn from each other, and unite the school to promote learning and develop capacity to form common values. Lesson study should be understood as an ongoing practice as well as a process, and problems are not solved after one session. Effective lesson learning tracks student learning and progress over a long period of time. This is a kind of long-term and continuous line of research, the learning of lessons is at the heart of the school culture.

The Lesson study stated that it would allow teachers to develop a professional research community with the power to improve, commitment to survey, common goals, and a sense of common purpose.

Lesson Study - This is the first time elementary school teachers in Japan are developing Kenkyuu Zhuge in Japanese. Makoto Yoshida Kenkyuu is credited as the person who introduced the jugyo. It was first used in mathematics. The success of Japanese teachers in the development of the Lesson Study system in several other countries, including the United States. In the United States, the Lesson Study program was introduced by Katherine Lewis, who has been conducting the Lesson Study in Japan since 1993.

In Uzbekistan, Lesson Study is a problem of today and is also being socialized as an alternative model for increasing student achievement in each subject. It may not provide specific strategies or methods for improving student performance in the classroom, but it can be done by examining the factors that contribute to student learning success.

Hollingsworth and Oliver, the key to lesson research is to develop a hypothesis of expected student responses, test those hypotheses, and refine the lesson design. The groups usually meet for a few hours every week or two weeks and only focus on a few activities throughout the year to improve.

The Lesson Study is not a strategy or method for teaching and learning, but rather an attempt by a group of teachers to create and improve the teaching and learning process together and continuously, especially when planning, executing, monitoring and reporting on learning. the result of the learning process. Lesson Study- This is not a temporary project, but an endless attempt to apply general quality management principles as a recovery process based on Lesson Study evidence. The Lesson Study describes the educator as a model for professional development

through collaborative and peer learning. In addition, Catherine Lewis describes it this way: “The Lesson Study is a simple idea. If you want to improve your leadership, what could be more obvious than working with colleagues to plan, track, and reflect on your lessons? While the Lesson Study is a simple idea, it is a complex process, underpinned by collaborative goal setting, careful collection of student learning data, and protocols that enable complex issues to be discussed effectively.

The core philosophy of the Lesson Study is that evidence for effective experience in the classroom is only proven in the classroom. For this reason, the use of the Lesson Study in the classroom is justified. Monitoring the implementation of the planned lesson in the learning process becomes a key part of the success of teaching and learning. The next section of this work discusses the steps of the Lesson Study and is based on the philosophy of.

**Stages of the Lesson Study.** As mentioned above, the Lesson Study includes a group of teachers who study or study lessons. Santyasa suggests four steps in conducting a Lesson Study:

- 1) goal setting and planning,
- 2) exploratory Lesson,
- 3) Lesson discussion, and
- 4) learning validation.

In addition, Kerbin and Kopp suggest six steps in which the Lesson Study shares the same foundation as Santias. Kerbin and Kopp demonstrate the following steps in conducting a Lesson Study:

1. group formation: 3-6 people with similar pedagogical interests are determined.
2. Development of students' learning goals: trestle beds discuss what students want to learn as a result of the lesson.
3. Exploratory Lesson Planning: Teachers design a lesson to achieve learning objectives by predicting how students will react.
4. Evidence collection of students' knowledge: one member of the group teaches the lesson, and the other observes, collects evidence of students' learning.
5. Evidence analysis of learning: the group discusses the results and evaluates progress towards achieving the learning objectives.
6. Repeat Process: The team repeats the lesson and shares their findings, repeating steps 2-5 as needed.

Lewis says the Lesson Study is a complex process, underpinned by collaborative work, accurate data collection about student actions and behavior, and agreements that allow for further productive discussions of current issues. As already mentioned, the Lesson Study is a cyclic continuous activity with practical implications in education. Such a cycle can be depicted as in Figure 1.

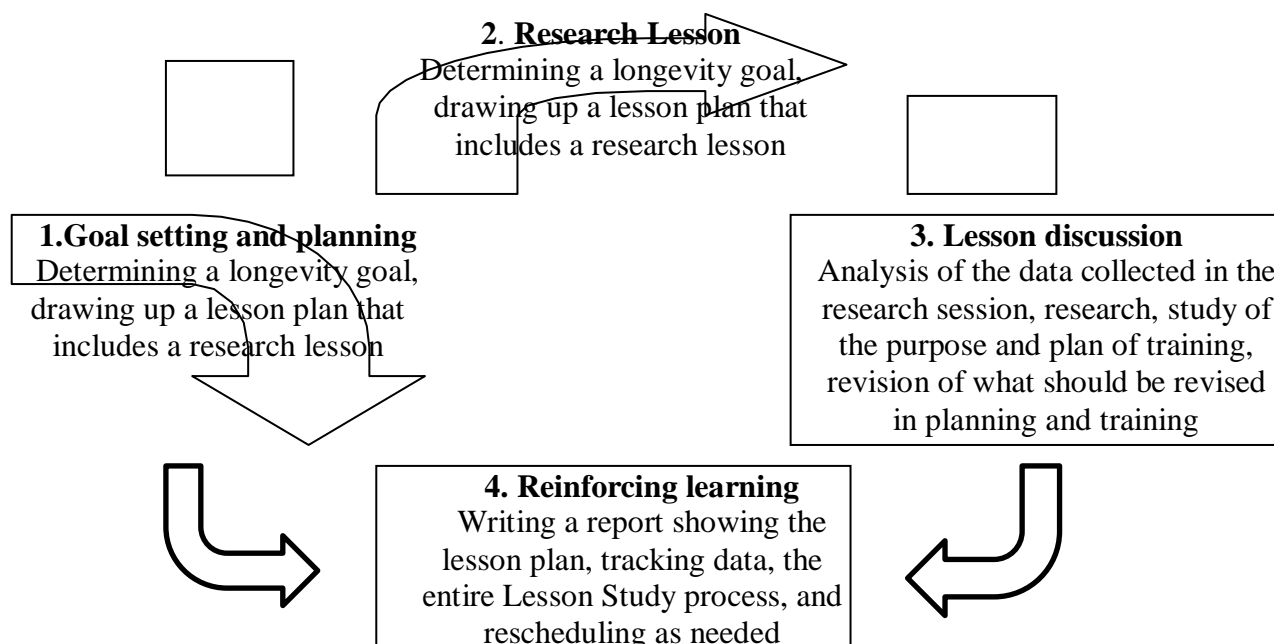


Figure 1: Lesson Study Cycle (Santiasa, 2009)

As part of the Lesson Study process, a lesson is drafted, after which one teacher teaches the lesson while the other members of the group observe it. The lesson is then shared and taught by the other members of the group. This process provides characteristics and active experiences that enhance teacher competence and effectiveness. During the Lesson Study, teachers have the opportunity to try out new curricula and refine and recalibrate teaching as effective practices are discovered and summarized in specific lessons. Starting with its ideas, Lesson Study opens up teachers to critique, educate and expand the learning repertoire. By making learning public and collaborative, teachers learn from their experience, from others, and from research—both their own and their research in the field. This professional development method influences teachers' pedagogical and content knowledge and empowers them as educational decision makers.

Participants aim to create a risk-free environment that allows teachers to take their peers' feedback not as a personal assessment, but as an opportunity to improve learning.

Teacher collaboration creates a culture of attendance as teachers consider issues of experience, learning from and with their peers. Working with colleagues helps to use and create collective knowledge. While Lesson Study products such as annotated classes are important, the Lesson Study process also supports teacher change.

As a school reform tool, the Lesson Study creates new knowledge adapted to the local context and improves learning, including a guide for students of economics. Recent studies show that Lesson Study creates an expert community, putting in situ research first, with teacher learning a natural outcome. By placing professional learning at the classroom level, Lesson Study enhances understanding of school, student, and learning contexts and enables sustainable change.

While the body of research related to adaptive forms of professional development such as the Lesson Study continues to evolve, teachers have called for further research on professional development as part of school reform efforts to determine which forms of teacher support are more important in order to better understand the impact of schooling. teacher training, student learning and learning. More specifically, Daley (2009) and Stillman (2011) have called for an examination of the conditions that support schools in sanctions. Desimone (2009) offers a compelling example of the use of mixed methods, which include teacher knowledge, supervised experience, and student performance measurement to achieve progress in this area. The current research is responding to these challenges.

According to Lewis, there should be three stages in the Lesson Study. First, the Lesson Study usually begins with the creation of a Lesson Study team. This group then discusses a problem that can be solved in the Lesson Study activity. Together they prepare a lesson plan. They try to solve the problem by carefully planning the teacher's actions. The next step will be an example of a teacher who will perform an action when a team member and then other members will observe what happens during the process of teaching and learning in the classroom.

After checking the lesson plan, the group meets again and discusses the conclusions. They analyze the strengths and weaknesses of the plan. Training and the learning process are the main areas of discussion. Example The teacher talks about the difficulties he encounters in the implementation of the plan. The final stage is a reflection of the whole process and a Lesson Study report. All of these Lesson Study steps were not demonstrated in the implementation of the Lesson Study in this supervised school.

As a result of observations and interviews, the researchers found that the lesson study in this school is slightly different from what we discussed in the previous section. The first exception was non-special groups in preparing which lesson to study. It was just a normal class schedule. The plan and everything necessary in teaching and educational activities is prepared by the teacher himself.

So, the teacher acts as a planner and role model. In such a situation, the goal of the Lesson Study - to get as much preparation as possible for student learning - cannot be achieved. This step should be one of the Lesson Study features. Working together, a team of teachers can provide rich and good training.

Second, three observers, a faculty coordinator, and researchers participated in the Lesson Study. The reason there are only three observers is because other teachers are doing their own lessons or are in charge.

This is slightly different from what the researchers understand in the Lesson Study. In fact, there should be more observers in the Lesson Study, such as the principal, as well as the out-of-school expert(s). The more observers, the more information will be obtained from the Lesson Study. However, this doesn't really matter if the link is only meant to complete the three steps.

The last stage was a period of reflection. At the end of the teaching and learning process, the teacher and observers discuss the result of the plan, talk about the strengths and weaknesses of the plan used. stage of reflection passed in the form of small talk; not at a conference. The allotted time was about 15 minutes from the time the break was taken. It doesn't seem to work effectively due to limited time.

The teacher started to recount the teaching experience using the outline and then the teacher coordinator continued. Their discussion focused on the difficulties and mistakes in implementing the plan. On the other hand, we, as observers, have focused more on the strengths and benefits of learning using this plan. With the help of the completed plan, the strengths and weaknesses of teacher teaching were discussed.

In accordance with the strengths and weaknesses of the design used, we must once again note that the Lesson Study we observed differs slightly from its specific "version". This influenced our observation that the very process of teaching and learning puts its context "between itself"; in a real Lesson Study environment and an adaptive environment. The results of our observations of the teaching and learning process, including the strengths and weaknesses of such a learning model, are listed below.

**The relationship between the lesson plan and its implementation.** In this section, we noticed that the lesson plan is really good and excellent. However, as mentioned earlier, this lesson plan was written by the teacher and not collectively written by the group as expected in the actual Lesson Study. Neither in practice nor in writing, the learning process in the lesson was not considered. This means that the entire learning process did not provide a direct transfer of knowledge, and the topic was actually about "learning procedure". The teacher organized the learning in the classroom only with the help of a "game" taken from the read text. through the students. This resulted in the students not really understanding the instructions because the teacher didn't seem to be managing the students very well from the start either.

**Learning process.** In fact, although the term "teaching and learning" is used as an interactive process, the tendency to "take" and "give" is directly implied between the teacher and students, so such a learning and learning process was not direct. This is a weakness of the model being implemented, as the transfer of knowledge in every learning and learning process can be put in the first place, even for skills. As we have seen, almost all instructions are formatted in "game", and the game itself should be configured only as a trigger, and not for all class instructions.

However, this learning model also had the power to encourage/encourage students to participate in the classroom by playing the game in almost all instruction. At the very least, the students felt more relaxed about learning economics because they really enjoyed the game.

**Anchor charts.** In early planning meetings, I encouraged teachers to include base charts in their classes. Such tables are created during practice to keep the class in perspective, and are referenced later in the class and during individual work. Although the teachers were initially unaware of their goals, during the Lesson Study they commented on the effectiveness of this tool and began using it in their teaching.

Changes in teaching practice of teachers. In addition to analyzing quantitative measures of student achievement, qualitative data were analyzed to consider both changes in teaching practice and changes in teacher effectiveness and collaboration. Qualitative analysis of Lesson Study meeting and observational data showed that the teaching experience of teachers has changed to implement high-impact strategies. Various data were collected and made along with the four teachers who participated in this study. Artifacts such as unit and lesson plans, supporting diagrams, and student papers have proven the changes described in the informal conversations and Lesson Study meetings. These changes were also observed while observing the lesson. Some of the modified practices were intentionally introduced by me during the Lesson Study discussions (reverse planning, rubrics, sample articles, anchor charts, and use of mentors' texts), etc. were spontaneous outcomes of the Lesson Study process (discussing with peers, establishing an appropriate foothold, counseling). The arguments for each of these conclusions are discussed below.

**Intentional changes.** Changes teachers deliberately introduced and then adopted in this study included the use of reverse planning in block design and the use of student rubrics and templates, anchor charts, and mentors' texts. Although these experiments were not obvious at the beginning of the study, they were a constant part of teacher training.

**Transformational cooperation.** The effects on teacher effectiveness and collaboration are considered together here because when these teachers experienced change, they seemed to be connected to each other. The phenomenological analysis viewed the experience of these teachers in the Lesson Study as a transaction in which individuals and their contexts shape and shape each other. It is recommended to analyze the effectiveness of the Lesson Study and the impact on collaboration may have been heightened by the situation of high pressure in this "fun school". At first, teachers seemed unsure how to use their existing knowledge, and this characteristic was associated with the pressure of the accountability policy. They looked for outside validation rather than assessment of local knowledge. An analysis of the changing attitudes of teachers revealed the stages of transformation that these teachers seem to have observed during the Lesson Study.

**Reverse planning.** The three writing units developed during the Lesson Study were originally planned backwards with the writing goals that teachers want their students to achieve and how those goals are measured. When they started to plan the sections together, the teachers reported that they had previously planned the sections by sequencing the lessons. Their review of the previous two divisions of the record confirmed that these divisions were a compilation of materials and activities that did not specify targets, and called the evaluation only the department's final effort. In the Lesson Study, teachers, when planning individual lessons, referred to class-level writing standards, using them to select the focus of the lesson. Sometimes the SmartBoard shows the standards; in other cases, one of the teachers pulled out a three-pin binder with standards. The learning design process after completion of the formal Lesson Study. Planning units by first formulating goals and evaluating how those goals are measured was a change in practice.

**Mutual discussion.** Although the teachers' discussion was not an experience that I deliberately singled out, the teachers marked two lessons as something we would like to "keep back" when considering our post-observation perceptions. Subsequently, they included in their lesson plans a time when students talked about mutual repetition and discussed effective ways to support each other's learning. Although discussion among teachers has in the past been part of these teachers' lessons, the Lesson Study process has increased their awareness of the effective practice of peer discussion and increased their purposeful use of this strategy.

**Results.** In general, the students were familiar with the teacher, and this gave them a sense of comfort during the lessons with the teacher. On the one hand, this acquaintance is useful for motivating students to learn. On the other hand, this was wrong because the actual Lesson study uses the model teacher shown by the team to see how well the teacher is doing with the lesson plan.

With regard to student responses, especially when the teacher describes the lesson guidance "today", we noticed that the students are aware of this. In any case, classroom learning was more game oriented than traditional learning, so class management should also be one of the priorities to consider. For example, as we have seen, the students' tables and chairs are filled with empty spaces, those that appear at the beginning of the game must be placed first and then moved after the game is over.

A teacher using games in the classroom, in our observation, can provide a fun and relaxing atmosphere in the learning process in the classroom. However, at least two points should be taken into account. First, play is not the goal of learning. When the teacher uses the game as the main material, the purpose of teaching and learning becomes unclear. Students cannot find the learning objective. When this happens, the purpose of the lesson may not be clear. Second, student participation must be fair. Some games require only a small number of players. Usually in Uzbekistan this can be difficult when there are 30-40 students in a class. Many schools have even more students. With these two questions in mind, learning and learning about teaching in an era of high responsibility. While teachers are offered structures to help them solve problems, they are creating approaches that respond to the "local characteristics of the school system", "shared knowledge gathering". Abandoning the notion that decisions should be top-down and instead focusing on economics facilitated by play can be fruitful.

**Conclusion.** This study examines the factors that strengthen teachers as agents of improved creating local solutions creates a "pressure release" that promotes professional learning and better learning.

Educational educators and researchers are interested in understanding how to keep improving learning at a higher level in today's educational situation. This study sheds light not only on what structures can be used to support such change, but also on factors that can be considered to improve reliability and efficiency in schools with high needs.

As a new perspective, the Lesson Study is becoming increasingly important not only in the teaching and learning of mathematics and science, but also in other disciplines. The most important thing is that the output of the Lesson Study be maximized and executed correctly so that it can contribute to determining what happens during the lesson and offer solutions to the problems that await, while maintaining a good preservation. values recorded by observers. By using Lesson Study, a school or teacher union database, teachers and students can benefit from Lesson Study to improve teaching and subject learning.

However, this very small case study shows that economics teachers in Uzbekistan may not be fully aware of how to use Lesson Study to develop teachers' ability to design and deliver lessons. Further training could be directed towards the Lesson Study and see how the introduction of a "real" Lesson Study would benefit the teaching of economics in Uzbekistan.

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