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## Lesson Study, a methodology to reconstruct knowledge

### ABSTRACT

Education is constantly looking for methodological alternatives to improve the teaching-learning process with the aim of improving the training of future generations of citizens. Among these alternatives is the Lesson Study methodology. The aim of this essay is to analyse the importance of the Lesson Study methodology in the practical reconstruction of the teacher's knowledge of the teaching-learning process; for this purpose, a literature review was carried out based on the analytical-synthetic, hermeneutic and historical-logical methods and documentary analysis. Among the main findings we can mention that this methodology is a process of improvement of educational practice and the process of pedagogical research, focused on student learning, since it contributes to the understanding of the teaching-learning process and seeks the positive modification of the way in which teaching is carried out, which has an impact on the quality of student learning. One of its benefits is the practical reconstruction of the teacher's knowledge of the teaching-learning process as a consequence of a regular and systematic cooperative and critical study of teaching practice.

**Keywords:** lesson study, teaching practice, pedagogical research.

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## Lesson Study, una metodología para reconstruir el conocimiento

### RESUMEN

Le educación busca constantemente alternativas metodológicas para perfeccionar el proceso de enseñanza-aprendizaje con el objetivo de mejorar la formación de las futuras generaciones de ciudadanos. Entre estas alternativas se encuentra la metodología *Lesson Study*. El presente ensayo tiene como objetivo analizar la importancia de la metodología *Lesson Study* en la reconstrucción práctica del conocimiento del docente sobre el proceso de enseñanza-aprendizaje; para su cumplimiento se desarrolló una revisión bibliográfica sustentada en los métodos analítico-sintético, hermenéutico, análisis documental e histórico-lógico. Entre los principales hallazgos se pueden mencionar que, esta metodología

es un proceso de mejora de la práctica educativa y del proceso de investigación pedagógica, enfocada en el aprendizaje de los estudiantes, toda vez que aporta a la comprensión del proceso de enseñanza-aprendizaje y procura la modificación positiva de la forma en la que se lleva a cabo la enseñanza, lo cual repercute en la calidad del aprendizaje del alumnado. Uno de sus beneficios es la reconstrucción práctica del conocimiento del docente sobre el proceso de enseñanza-aprendizaje, como consecuencia de un regular y sistemático estudio cooperativo y crítico de la práctica docente.

**Palabras clave:** *lesson study*, práctica docente, investigación pedagógica

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## **Lesson Study, uma metodologia para reconstruir o conhecimento**

### **RESUMO**

A educação busca constantemente alternativas metodológicas para melhorar o processo de ensino-aprendizagem com o objetivo de melhorar a formação das futuras gerações de cidadãos. Entre essas alternativas está a metodologia Lesson Study. O objetivo deste ensaio é analisar a importância da metodologia Lesson Study na reconstrução prática do conhecimento do professor sobre o processo de ensino-aprendizagem; Para sua realização foi desenvolvida uma revisão bibliográfica baseada em métodos analítico-sintéticos, hermenêuticos, análise documental e histórico-lógico. Dentre as principais conclusões, podemos citar que esta metodologia é um processo de melhoria da prática educativa e do processo de pesquisa pedagógica, voltado para a aprendizagem dos alunos, pois contribui para a compreensão do processo de ensino-aprendizagem e busca a modificação positiva da forma como em que o ensino é realizado, o que tem impacto na qualidade da aprendizagem dos alunos. Um de seus benefícios é a reconstrução prática do conhecimento do professor sobre o processo de ensino-aprendizagem, como consequência de um estudo cooperativo e crítico regular e sistemático da prática docente.

**Palavras-chave:** estudo de aula, prática docente, pesquisa pedagógica

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### **INTRODUCTION**

Thanks to scientific and technical advances, which reach the educational sphere, we live in a society in constant transformation. The school is the institution in charge of training future generations of citizens capable of fully developing in a society characterised by the rapid application of scientific and technological advances. New teaching methodologies are emerging where the teacher plays the role of mediator in student learning and is therefore committed to innovating his or her pedagogical strategies in order to direct this process.

Faced with this reality, teachers ask themselves how to improve educational practice so that students learn better. The search for an answer to this question demands constant pedagogical research, reflection on educational practice and the creation of a community of professional practice through which to share criteria and look for alternatives that allow for the improvement of teaching and student learning, which in turn helps them in their professional development, as they acquire and improve fundamental competencies for the practice of their work.

In this endeavour, teachers must investigate the variety of methodological strategies that exist and select the one that allows him/her to create spaces which favours collaboration with other educators, so that they can exchange experiences, knowledge and criteria. The construction of a dynamic network that activates the participation of the community of educators enables teachers to broaden their vision of educational praxis, which helps to generate reflection, critical thinking and decision-making about what happens in the

classroom (Calvo Salvador et al., 2021; Luengo Molero et al., 2021). In this way, new methodologies emerge in response to the demands of the new times, based on methods that optimise the teaching-learning process and improve teaching practice.

It is important for teachers to constantly evaluate their work in the classroom, to critically observe the methodology used and the realisation of the proposed objectives, as well as the knowledge, skills and attitudes achieved by students, as a result of their participation and work in the learning process; for this purpose, different methodological resources are available, including tests, interviews with students and "lesson research".

This last resource, also known as "Lesson Study", focuses on the study of the teaching practices of a group of teachers, who, based on their own work in the classroom, propose learning objectives, implement strategies to achieve them and improve their performance as educators; in this way, a better focus, orientation and understanding of teaching practice is achieved, which ultimately strengthens the teaching-learning process (Dudley, 2011 a; Del Río Fernández, 2021; Sarmiento Berrezueta et al, 2021).

Various studies have been carried out on the Lesson Study methodology, although not yet sufficient, including those by Elliott and Tsai (2008), Dudley (2011 b), Carlgren (2012) and Sumba Arévalo (2022), who, from different perspectives, consider that it allows the enquiry and identification of multiple aspects of personal and professional practical knowledge, which intervene and impact on the work of the teacher; in this way, this professional acquires research skills. This fact, together with the new direction taken by pedagogical research, raises expectations about their performance.

In addition, through this methodology, the educator seeks changes that make the way he/she teaches more effective. The enquiry that is carried out involves developing a class design, experimenting with it in practice and analysing the results of the lesson. This is a way for teachers to learn that contributes to the development of their training potential and to be able to demonstrate it in the educational activity (Luengo Molero et al., 2021).

The Lesson Study methodology minimises empiricism in the planning, execution and evaluation of knowledge. In addition, it harmonises pedagogical praxis in a social and cooperative framework that responds to the global challenges of education in line with Good Living. Hence the importance of this study, which responds to the need to project an active and humanising educational action that enhances epistemic diversity based on the cultural and individual characteristics of teachers and students.

This study was motivated by all the above mentioned points and aims to analyse the importance of the Lesson Study methodology in the practical reconstruction of the teacher's knowledge of the teaching-learning process. To this end, aspects such as: the concept of this methodology, its background, stages or phases of execution, the role of the members of the teaching team in its implementation and the benefits it entails for teaching practice were investigated.

## **METHODOLOGY**

This essay is the result of the review of literature, based on the analytical-synthetic, hermeneutic and documentary analysis methods, which facilitated the analysis, interpretation and summary of the texts found in books, documents, scientific articles, theses and materials retrieved from databases and repositories of national and foreign universities with the help of the Google Scholar search engine.

In particular, the analytical-synthetic methods and documentary analysis were used for the theoretical-methodological foundation, as a result of the systematisation of the information. The historical-logical method was also used to study the emergence and evolution of this methodology over time.

## **DEVELOPMENT**

Before any analysis, it is necessary to carry out an epistemic approach to the notion of Lesson Study methodology.

### **What is the Lesson Study methodology?**

Lesson Study is a new contribution to the training processes of pedagogical professionals in the Hispanic context carried out by higher education centres and other educational institutions. They are inspired by the tradition of action research and include teamwork based on the teaching practice; they focus on student learning. It is "a methodology for research and improvement of educational practice" (Soto Gómez and Pérez Gómez, 2014, p. 1).

Its main objective is to improve the teaching-learning process; in pursuit of this purpose, teachers reflect together with other colleagues and students on their own practice. In addition to the application of the teaching method based on the collaborative work of the teaching team both inside and outside the classroom, problem-based learning (PBL) is used.

PBL can be defined as a process of inquiry that resolves questions, doubts and uncertainties about complex life phenomena (Barrel, 2007). This method allows students to assume a more active role in the teaching-learning process; it stimulates interest in learning, active participation, autonomy and responsibility; in addition, it can promote learning spaces mediated by new technologies as didactic tools. According to Bermúdez Mendieta (2021), PBL develops learners' skills to solve the problems they face daily in the educational and social sphere.

Regarding PBL, Prieto Martín et al. (2006, p.175), states that "it is a strategy integrated by methods that stimulate critical and accurate reasoning, which allows to generate cognitive, procedural and attitudinal changes in the learner, surpassing traditional methodologies". Through this, students achieve meaningful learning from real situations and difficulties of everyday life (Gil Galván, 2018).

Following this analysis, Espinoza Freire (2021) adds that PBL is a learning methodology that fosters a personalised academic environment of autonomous training; a space where the trainee teacher investigates to find the best alternative solutions to the problems that arise in school, professional and/or personal life. For all these reasons, PBL gives the Lesson Study methodology a scientific-investigative character that allows the development of skills for inquiry and the resolution of problems.

On the other hand, the Lesson Study methodology process must start from the need to resolve an existing cognitive deficit in the object of study. It is characterised by:

It is exclusive to the study of Teaching Practice, it maintains the focus of observation on the students' learning process, it stimulates teacher training and allows for the improvement of teachers' practices in a collaborative study of their classes or lessons (Lizarazo Torres, 2020, p. 29).

This methodology requires the direct participation of teachers who, after its implementation, reflect on their own work in the classroom, thus becoming a teacher-researcher who takes on action research (Stenhouse, 2003). From a position of self-criticism and the construction and reconstruction of knowledge, this teacher, through deliberate, conscious and collaborative participation, submits his or her work to the scrutiny of others (Elliott, 2015, p. 30).

Authors such as Sims and Walsh (2009), Chassels and Melville (2009), and Leavy (2010) consider that the Lesson Study is a cooperative action research strategy through which a group of teachers design, develop and analyse didactic proposals in a real context, which can be considered a reflective, critical and creative learning process.

Peña (2012) also considers Lesson Study to be a cooperative action research process that allows for the observation of everyday life; a criterion shared by Soto Gómez and Pérez Gómez (2015), who also emphasise that it does not focus on what students learn, but on

how they do it, how they respond to the questions, didactic resources and teaching strategies used by the teacher in the classroom. These authors consider it to be:

A lifelong learning strategy for teachers aimed both at improving practice and research in the classroom, therefore, they are "an alternative" to the traditional processes of reflection and improvement of educational practice and consequently we could say that of reconstruction of knowledge and teaching practices (Pérez Gómez and Soto Gómez, 2015, p.16).

The Lesson Study methodology is a system for teaching to learn and learning to teach; authors such as Lewis (2002), Chokshi and Fernandez (2004), and Fernandez and Yoshida (2004) consider it as such. This system forms a structure composed of "a set of practices, habits of mind, interpersonal relationships, structures and tools that help teachers to work collaboratively and improve their teaching practice" (Soto Gómez, 2021, p. 21).

In summary, it can be said that Lesson Study is a methodology based on cooperative action research strategies that systemically integrates educational practices, skills, habits, methods, procedures, didactic resources, relationships between participants, etc. with the aim of promoting and enhancing the development of teachers' professional competences, which contributes to the improvement of classes.

### **Background of Lesson Study methodology**

As indicated above, Lesson Study is a research methodology that improves educational practice. It originated in Japan at the end of the 19th century (Hevia Artime et al., 2019; Hummes et al., 2019), with pedagogical references such as Pestalozzi's didactic philosophy and action research (Soto Gómez and Pérez Gómez, 2015; Hummes et al., 2019),

It is from the 1920s onwards that the process of implementing this methodology was consolidated, based on the postulates of John Dewey and the use of research procedures, participant observation and problem-based teaching, among other components, in the teaching-learning process. However, it was not until the end of the 20th century and the beginning of the 21st century that it spread throughout the Western world, with great repercussions in Europe (Sweden and the United Kingdom) and in North America. At this stage, there are prominent contributions of pedagogical, didactic and socio-pedagogical studies by various authors, including Catherine Lewis, who is the president of the International Association of Lesson Study (Sarmiento Berrezueta et al., 2021).

### **Lesson Study as a teaching methodology**

Among the tasks of teaching is the adaptation of educational practices to the specific situations of the context of the group of students with whom teachers work (Hevia Artime et al., 2019, p.1068); with the aim of responding to the cognitive needs presented by the students, considering their diversity and singularities to employ appropriate actions, and combat those factors that may be negatively influencing the academic performance of students, so that there is a continuous improvement of teaching.

As a didactic methodology, Lesson Study uses strategies based on observation of the teaching-educational process (Sánchez González et al., 2021). This makes it easier to delimit the thematic field or problem to be solved in order to have a clear and precise result, by applying certain methods and criteria, and establishing a protocol. The basic operation of this strategy is the implementation of a methodological action plan, which allows understanding how students acquire the content dealt with in the class; starting from the premise that this plan is a tool that facilitates the understanding of the planning and dynamics of the learning process in which the relationships between each of its components are shown.

The application of this type of strategy "is fundamental in any training programme, as it provides the tools for the planning, execution and dissemination of any research or process

aimed at obtaining new knowledge" (Arias, 2008, p. 66). In other words, once this methodology has been incorporated, it will provide benefits, since its purpose is to respond to the problems of the teaching-learning process, through the understanding, verification and correction of the phenomenon studied; but, above all, it teaches the teacher to learn and to teach.

The study and in-depth analysis of teaching practice helps to identify how students assimilate the teaching strategies implemented, giving way to the application of their didactic strategies, and if necessary, it proceeds to search for new innovative and creative strategies to be applied. Through observation and teamwork of the group of teachers, the strengths and weaknesses of the teaching and learning methodologies are determined. Identifying the needs and inadequacies of the teaching-learning process and how its protagonists (teacher and students) face them requires the continuous preparation of the teacher (Hevia Artime et al., 2019).

Considering all of the above, it is easy to understand that the Lesson Study methodology gives a better focus and orientation to teaching practice, contributes to its understanding and strengthens the teaching-learning process. It is based on the search for long-term changes that bring about a modification in the way teaching is carried out, which has an impact on the students' learning process.

### Stages or phases of the implementation of the Lesson Study methodology

The Lesson Study methodology as an action research process goes through seven phases, as shown in Figure 1 below.

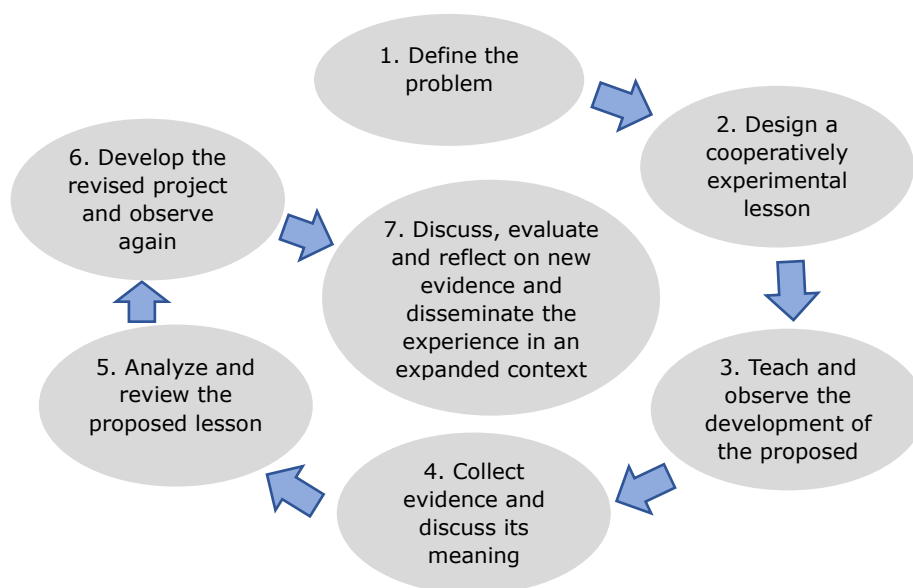


Figure 1. Phases of the Lesson Study methodology  
Source: Soto Gómez and Pérez Gómez (2014; 2015).

Each of these phases is explained in Table 1 below.

Table 1. Lesson Study Methodology Implementation Stages

| Stage  | Description  |
|--|--|
| 1) Definition of the problem                                     | <p>Definition of the problem that will motivate and guide the work of the lesson study group. This is one of the crucial steps of the methodology. Identifying the problem(s) should arise from daily classroom practice; the teachers will determine through their experience which are the difficulties that occur in the classroom in order to look for alternative solutions together.</p> <p>The identification of the problem(s) must be objective to perceive the needs, shortcomings and inadequacies that must be resolved in order to achieve the effectiveness of the training process.</p> <p>Long-term goals for training and development are established.</p>  |
| 2) Designing a cooperative experimental lesson                   | <p>In this phase, an experimental lesson is designed cooperatively based on the difficulties detected and the factors that directly affect the solution of learning problems. Planning must consider the components of the teaching-learning process (objectives, contents, methods, means, forms of organisation and evaluation), as well as the necessary didactic-methodological strategies, the result of collective consensus.</p> <p>The group planning and design of educational resources is carried out by the different members of the teaching team. The exchange of experiences, ideas, memories of classroom situations or impressions related to the class is discussed with the intention of unifying criteria and future educational recommendations to solve the problems identified.</p> |
| 3) Teaching and observing the development of the proposed lesson | <p>What was agreed in the previous phase is carried out in a classroom. In this stage, the implementation of the lesson is carried out by one of the team members, while the rest of the team observes and records the results.</p> <p>It should be remembered that the focus of observation is not the teacher implementing the lesson, but the lesson itself.</p>  |
| 4) Collect and discuss evidence and its meaning                  | <p>Participants collect evidence of the lesson development and learning outcomes of the students. Elements that will be used as a reference and starting point to improve the lesson.</p>  |
| 5) Analysing and revising the proposed lesson                    | <p>The collection of evidence and its subsequent discussion involves analysing and revising the proposed lesson. Based on the evidence, the teaching team meets to contrast ideas, asking to what extent the expected results have been achieved and what difficulties persist and who has experienced them.</p> <p>This stage allows for correction and changes in methods, materials, strategies, activities, content, etc. to perfect the lesson.</p>   |

|  |   |
|--|---|
| 6) Develop the revised project and observe again   | Once the results have been determined, it is time to develop the lesson already revised and improved in another class by another teacher and observe again the regularities of its application, in order to analyse and improve it again. |
| 7) Discuss, evaluate and reflect on the new evidence and disseminate the experience in an expanded context | The new evidence obtained is discussed, evaluated and reflected upon; the experience is then disseminated, transferred and generalised.   |

Source: Soto Gómez and Pérez Gómez (2014; 2015) and Sarmiento Brizuela et al. (2021)

However, for the successful implementation of these phases, it is necessary that each of the members of the teaching team (regularly composed of 4 to 6 educators), fulfils the role conferred to them; this aspect is discussed in the following section.

### **Role of the members of the teaching team in the implementation of the Lesson Study methodology**

In the implementation of the Lesson Study methodology, it is necessary to incorporate organisational structures and roles that facilitate the process and management of the work sessions. The definition and distribution of roles among the members of the teaching team contributes to improving the efficiency and dynamics in the development of the different stages of this methodology, thus favouring organisation, reflection and discussion. The roles of the team members are summarised in the following table 2:

Table 2. Role of the members of the teaching team for the application of the Lesson Study methodology

| <b>Role</b>        | <b>Description</b>  |
|--------------------|---|
| Secretary          | Records all aspects of the meeting and sends them to all team members. He/she closes the meeting and summarises important decisions and discussions. He/she also recalls the tasks to be carried out, schedule and roles for the next meeting.  |
| Moderator          | Organises and energises the meeting, ensuring that all members participate and express their opinions and criteria on the issues discussed. Proposes the agenda and keeps the group focused on the subject under analysis.<br>After agreeing on the start and end times of the meeting, as well as the time dedicated to each of the items on the agenda, he/she keeps the meeting on schedule, or if the task exceeds the allocated time, he/she proposes a review and extension of the time and readjustment of the agenda. |
| Pedagogical leader | The role of the pedagogical leader is of special significance and relevance, as he/she is responsible for focusing on the objectives agreed upon by the group. This is a shared role, as the whole group has participated in the creation of the lesson design.   |
| Document manager   | The document manager is in charge of securing, sending and providing the necessary materials for the meeting, e.g. the agreements made at the last working meeting, the latest version of the document generated by the group, etc.   |

Source: Soto Gómez (2021)

All roles should be rotated to facilitate the understanding, responsibility and commitment of all members of the group.

### **Benefits of the Lesson Study methodology**

Research by Hevia Artime et al. (2019), Luengo Molero et al. (2021), Cifuentes Garzón et al. (2022) and Soto Gómez (2022) attest to the benefits of this methodology for both trainee and practising teachers. According to Hevia Artime et al. (2019, p. 1069) this methodology has among its greatest potentialities "the possibility it offers to observe classroom life and, subsequently, to analyse it".

The Lesson Study methodology is effective in understanding and reconstructing the teacher's practical knowledge of the teaching-learning process, while at the same time allows new problems to be identified. By analysing and reflecting on the results obtained in the educational process, the teacher will have the opportunity to improve the organisation and planning of each class session, so that he/she acquires greater pedagogical knowledge and a better understanding of the subject he/she teaches, thereby achieving optimal teaching practice.

Similarly, Luengo Molero et al. (2021) believe that it enhances collaborative work, facilitating peer learning; it helps to achieve knowledge and reflection on teaching practice, as well as to visualise possibilities for improving and transforming it. For Cifuentes Garzón et al. (2022), the main contribution of the Lesson Study methodology lies in the development and improvement of the competences of practising and trained teachers to carry out teaching practice, given that this methodology focuses on teamwork, the exchange of opinions and collective reflection to improve the class, which is analysed continuously and from different perspectives. In this way, the teacher fosters critical professional thinking, oriented towards solving the needs of the students.

Benefits also considered by Soto Gómez (2022), who points out the possibility it offers teachers to "learn to investigate and develop critical and creative thinking, which transforms information into knowledge, knowledge into thought and this into wisdom [...] it teaches them to learn how to learn and how to self-regulate their own learning" (p.166).

Likewise, the studies developed by Macías Ibarra and Mera García (2021) allude to the benefits of the Lesson Study methodology, since it trains the teacher as a researcher, condition that accompanies it throughout the entire constructive process of teaching and learning, applying innovative proposals that enable his permanent improvement.

By way of summary, and following Pérez Gómez and Soto Gómez (2015), it can be said that the main benefit of the Lesson Study methodology is that it becomes a process of improvement of educational practice and pedagogical research; meaning that practice is necessary to seek change and research is necessary to better understand practice. Therefore, it leads the teaching team to plan the lesson, document it from observation, review and reformulate the methodological structure used based on the contents and the motivation of the students for learning. The analysis and relevant feedback that leads to the reconstruction of professional knowledge are important, as a result of a regular and systematic cooperative and critical study that is made of the teaching-learning process.

### **CONCLUSIONS**

The bibliographical review carried out allows us to conclude the following:

- Lesson Study methodology is based on cooperative action research strategies that integrate educational practices, skills, habits, methods, procedures, didactic resources, relationships between participants, etc. into a system with the aim of promoting and enhancing the development of teachers' professional competences in order to improve the classroom.
- This methodology is relevant in the teacher training process, as it offers answers to various educational problems related to planning, organisation, realisation and

didactic resources used in the classroom. Its implementation favours effective change in the teaching-learning process through constant reflection on teaching practice for professional improvement and optimal development of students.

- Lesson Study as a teaching methodology focuses on student learning by reconstructing the teacher's knowledge in order to bring about positive changes in the way teaching is carried out, which has an impact on the students' learning process. It contributes to understanding and strengthens the teaching-learning process.
- The school context is always different, it is constantly evolving, so teaching practice must adapt to constant change. In other words, the teacher must be aware of the importance of reflecting systematically on educational issues; this must characterise the teaching practice.
- This methodology goes through different stages (defining the problem; designing an experimental lesson; teaching and observing the development of the proposed lesson; collecting and discussing the evidence; analysing and revising the proposed lesson; developing the revised project and observing it again; and discussing, evaluating and reflecting on the new evidence, as well as disseminating the experience in an extended context).
- For the success of the Lesson Study methodology, the team members (secretary, moderator, pedagogical leader and document manager) must fulfil different roles on a rotating basis.

### **LIMITATIONS AND FUTURE STUDIES**

The limitation of this paper is its descriptive scope. The author intends to establish the relationship between Lesson Study methodology and students' academic performance in a future study.

### **RECOGNITION**

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