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Cooperación docente y disposiciones subjetivas a través del ciclo de Lesson Study. Un estudio de casos en formación inicial.

Cooperação de docentes e disposições subjetivas através do ciclo de Lesson Study. Um estudo de casos na formação inicial.

教学协作与主观意愿在 Lesson Study 循环中的体现：初始教学的案例研究

التعاون بين المعلمين والاستعدادات الذاتية من خلال دورة

Lesson Study: دراسة حالة في التكوين الأولي

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Abstract

In the university setting, cooperation presents a considerable challenge due to the social and academic context being deeply entrenched in individualism and competitiveness. Based on this premise, this study aims to explore the favourable conditions for cooperation that influence the professional development of future education professionals. It encompasses two qualitative-interpretative case studies involving groups of Infant Education degree students whose final practical training period involved a methodology centred on reflection and shared action (Lesson Study). Relevant data for further progress are therefore presented by triangulating data from interviews, direct observations of action, and documentary analysis of each participant's portfolio. Specifically, ideas emerge highlighting the importance of tutorial work in facilitating groups and a series of valuable teaching dispositions for cooperation that are crucial in such experiences and bring us closer to the goal of creating a collaborative culture in teaching from initial teacher training.

Keywords: higher education, teacher training, case studies, cooperation, observation, educational change

Resumen

En un contexto social y académico basado en el individualismo y la competitividad, la cooperación real supone todo un reto dentro del panorama universitario. Partiendo de ahí, el presente estudio trata de indagar en aquellos condicionantes favorables para la cooperación que repercuten en el desarrollo profesional de los futuros profesionales de la educación. Se trata de dos estudios de casos de corte cualitativo-interpretativo, dos grupos de estudiantes en el Grado de Educación Infantil que transitaron por su último periodo de prácticas a través de una metodología basada en la reflexión y la acción compartida (Lesson Study). Por ello, a través de la triangulación de datos procedentes tanto de la entrevista, como de la observación directa en los momentos de acción y del análisis documental del portafolio de cada una de las participantes, se presentan datos relevantes para seguir caminando en esta dirección. Concretamente emergen ideas relacionadas con la importancia de la labor tutorial en la facilitación de grupos así como con aquellas disposiciones docentes valiosas para la cooperación que se ponen en juego en experiencias de este tipo. Conclusiones que nos acercan a la pretensión de crear una cultura colaborativa en el profesorado desde la formación inicial docente.

Palabras clave: formación universitaria, formación del profesorado, estudio de casos, cooperación, observación, cambio educativo

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Resumo

Num contexto social e académico baseado no individualismo e na competitividade, a verdadeira cooperação representa um desafio no panorama universitário. Partindo daí, o presente estudo procura investigar as condições favoráveis à cooperação que se repercutem no desenvolvimento profissional dos futuros profissionais da educação. Trata-se de dois estudos de caso de tipo qualitativo-interpretativo, dois grupos de estudantes da Licenciatura em Educação de Infância que passaram pelo seu último período de estágio através de uma metodologia baseada na reflexão e na ação partilhada (Lesson Study). Assim, através da triangulação de dados procedentes tanto da entrevista, como da observação direta nos momentos de ação e da análise documental do portfólio de cada uma das participantes, apresentam-se dados relevantes para continuar a caminhar nesta direção. Concretamente, surgem ideias relacionadas com a importância do trabalho tutorial na facilitação de grupos, bem como com as disposições docentes valiosas para a cooperação que são postas em prática em experiências deste tipo. Conclusões que nos aproximam da pretensão de criar uma cultura colaborativa nos professores desde a formação inicial docente.

Palavras-chave: Formação universitária, formação dos professores, estudo de casos, cooperação, observação, mudança educativa

摘要

在一个以个人主义和竞争为基础的社会与学术环境中，实现真正的协作是大学教育中的一项重大挑战。本研究旨在探讨有利于协作的条件，以及这些条件如何促进未来教育工作者的职业发展。研究采用定性－解释性的案例研究方法，聚焦于两个幼儿教育学位学生群体，这些学生在最后一阶段实习中通过基于**反思与共同行动**的教学方法（Lesson Study）进行学习与实践。

通过对来自不同来源的数据进行三角验证，包括访谈、行动阶段的直接观察以及参与者个人档案的文档分析，研究揭示了多个有价值的发现。具体而言，研究突出了导师工作在小组协作中的重要性，以及在此类协作体验中发挥作用的宝贵教师素养和主观意愿。

研究结论表明，初始教师培训应致力于培养一种教师间的协作文化。这不仅有助于提升教师的专业能力，也为教育变革奠定基础。

关键词：大学教育、教师培训、案例研究、合作、观察、教育变革

ملخص

في سياق اجتماعي وأكاديمي يعتمد على الفردية والتنافسية، يمثل تحقيق التعاون الحقيقي تحديًا كبيرًا في البيئة الجامعية. انطلاقًا من هذا الأساس، تهدف هذه الدراسة إلى استكشاف العوامل المؤثرة التي تعزز التعاون وتساهم في التطور المهني لطلاب التعليم المستقبليين. تتناول الدراسة حالتين باستخدام منهجية نوعية تفسيرية، شملت مجموعتين من طلاب درجة تعليم الطفولة المبكرة الذين خاضوا فترة التدريب العملي الأخيرة من خلال منهجية تعتمد على التأمل والعمل المشترك (Lesson Study). لذلك، من خلال منهجية تثليث البيانات المستمدة من المقابلات والملاحظات المباشرة أثناء لحظات العمل، وتحليل الوثائق في ملف الأعمال الخاص بكل مشاركة، يتم تقديم بيانات ذات أهمية لدعم السير في هذا الاتجاه. على وجه التحديد، تظهر أفكار مرتبطة بأهمية دور الإرشاد في تسهيل عمل المجموعات، بالإضافة إلى السمات التدريسية القيّمة التي تعزز التعاون والتي تظهر في مثل هذه التجارب. تقدم هذه الاستنتاجات خطوات نحو تحقيق هدف بناء ثقافة تعاونية بين المعلمين تبدأ من مرحلة التكوين الأولي للمعلمين

الدالة الكلمات: التعليم الجامعي، تكوين المعلمين، دراسة الحالة، التعاون، الملاحظة، التغيير التعليمي

Introduction

Cooperation is fundamental for meaningful, relevant learning (Pérez Gómez, 1998). People learn when they have the opportunity to exchange their personal experiences (dialogue), to contrast different viewpoints, to establish rules for democratic engagement (search for understanding), and to perform tasks collaboratively and cooperatively (search for consensus), with the latter resting on the human ability known as "intersubjectivity". According to Bruner (1997, 39), intersubjectivity allows us to understand the minds of others, whether through language, gestures or other means.

This takes on particular importance in teacher training. Throughout their careers, teachers face numerous practical dilemmas requiring them to respond and, therefore, to continually construct and reconstruct their professional or practical knowledge (Pérez Gómez, 2012) within an unstable, uncertain, evolving environment. The importance of a group when sharing educational experiences is such that some key figures place the focus on ongoing teacher training through continuous communication among a group of individuals who perceive themselves as interdependent and who engage in ongoing dialogue and discussion about what they do in the classroom (Perrenoud, 2008; Korthagen, 2010; Imbernón, 2007).

Despite these theoretical advances, numerous analyses show that the prevailing teaching culture is characterised by isolation (Fullan and Hargreaves, 1997), and point to the difficulties this entails for professional development (Pérez Gómez, 1998; Stenhouse, 2007). It is therefore essential to, from the very start of teacher training, develop contexts and strategies that promote professional learning communities and encourage active participation within them.

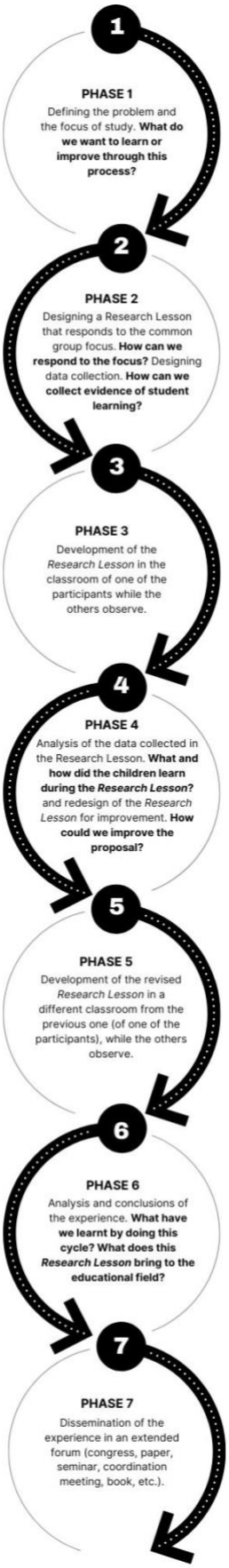
Participatory Action Research (PAR) promotes mutual collaboration processes aimed at achieving intersubjective agreements, sharing diverse perspectives on the same situation, and cultivating a sense of collective achievement that is both valid and legitimate, not only for the group but also for any observer of the situation, thereby enhancing collective wisdom (Hawkings, 2015). In the same vein, the Lesson Study (LS) process takes this tradition and intensifies it by giving it a specific, systematic structure that is well suited to the peculiarities of the school environment, and in particular to the community of teachers sharing the educational practice (Soto et al., 2019).

Learning to cooperate through Lesson Study

We could conceptualise Lesson Study (LS) as a way of understanding teacher training through cycles of research and cooperative action (Lewis, 2000). Its aim is to transform teaching practice through seven interconnected phases, each with distinct levels of conceptual abstraction and group interdependence based on daily actions and inertia. The individuals responsible for the LS cycles carefully review and collaboratively adjust the questions asked in class, the methods used, the plans carried out, and, most importantly, the effects of these actions on student learning. This process empowers teachers and enriches their professional knowledge through critical, cooperative, ongoing, systematic study of what they do in the classroom and the impact of these actions on student learning (Cerbin & Kopp, 2006; Dudley, 2015; Pérez Gómez, 2007; Pérez Gómez & Soto, 2011).

The seven phases (Figure 1), carried out cooperatively in a Lesson Study process, require teachers to engage in a series of cognitive, dispositional and affective processes. All are founded on interdependence, offering an opportunity to re-evaluate the intricate process of teaching and learning, thereby impacting professional development (Cajkler et al., 2013; Hiebert et al., 2003).

Figure 1. Lesson Study phases



The role of subjective dispositions

According to Socket (2012), dispositions encompass the attitudes, values and emotions that come into play at the moment of action, taking precedence over specific knowledge and skills. Such is their importance that the essence of teaching practice is understood as a series of irrational schemas incorporating the dispositions. Murrel et al. (2010) define them as professional action habits or moral commitments that translate into an understanding of teaching and an orientation towards work and professional responsibilities.

Studies by Socket (2006), Costa and Kallick (2000), Hansen (2001), and Peña & Pérez Gómez (2019) distinguish between dispositions that positively affect teachers' conduct in the classroom and their engagement with cyclical cooperative training processes such as Lesson Study. Specifically, the following are worthy of note: a) *temperance* (Socket, 2006), as a fundamental disposition in cooperation, developed through engaging in group discussions; b) *responsiveness* (Socket, 2006), as a disposition that nurtures relationships, thereby facilitating knowledge construction through exchange and interaction; c) *listening* with understanding and empathy (Costa & Kallick, 2000; Hansen, 2001), as the disposition of professional teaching intelligence necessary to build mutual learning networks driven by genuine, profound interest in others' wisdom and experience; and d) *intellectual curiosity*, *nonconformity* and *commitment* (Peña & Pérez Gómez, 2019), as favourable dispositions for the reconstruction of practical knowledge within a context of cooperation.

The following research questions emerge from the outlined theoretical framework: Which conditions foster real scenarios of actual cooperation (dialogue, understanding, consensus) in the Lesson Study processes? Which subjective dispositions come into play in each of the phases that teachers go through when developing a Lesson Study? What limitations and possibilities arise when cultivating a collaborative culture among teachers in Spain?

Method

The research carried out between 2018 and 2021 by the HUM-311 research group at University of Málaga falls within a National R&D project titled *"Lesson Studies, School and University: Researching the reconstruction of practical knowledge in initial teacher education"* (Ref: EDU2017-86082-P). The inquiry methodology used in the study was qualitative-interpretative. Specifically, two case studies were conducted using an emergent parallel design in order to understand the cooperative process experienced before, during and after a Lesson Study cycle by a sample of ten trainee teachers (divided into two groups, one of six and the other of four), with the aim of analysing the quality and impacts of the cooperative process carried out, thereby responding to the previously posed research questions.

Data collection instruments

To accurately represent the data collected, it is worthwhile considering the various sources, dates and types of data that have been analysed and which give shape, content, structure and depth to the findings of this study (Table 1). Each of the instruments used to collect relevant information for the case study is described and detailed below:

Table 1. *Data collection instruments*

Data collection instruments		Quantity	
		Case 1 (EC1)	Case 2 (EC2)
Interviews (I)	Group interviews	2 (initial and final)	3 (initial, intermediate, final)
	Individual interviews	2 (60 min)	2 (170 min)
Observations (OB)	Practicum seminars	6 (720 min)	7 (858 min)
	Prepare Research Lessons	2 (60 min)	2 (60 min)
	Research Lessons	2 (120 min)	2 (180 min)
Documents (Doc)	Practicum III and Dissertation Guide	1	1
	Research Lesson designs		1 (2 versions)
	Portfolios	4	1
	Dissertation	1	1
	Researchers' diary		84 pp.

Observe to understand (Direct observation)

Direct observation (Yin, 2009) has served as a data collection instrument in the research. Specifically, in this case the observations were made within the research field, with the subjects being aware of their participation in the research. During these moments of action, the researchers collected data on paper on-site and unobtrusively, without intervening in the events as they unfolded; additionally, these specific sessions and moments were recorded on video (with informed consent) in order to later revisit, transcribe certain interventions, and describe the gestures most relevant to the research. For the analysis set out in this article, we focused on dialogues and interactions both within and beyond the seminars as members prepared and organised research lessons, including searching for consensus, listening, observing, noting the participation level of each group member, etc.

The value of listening (Semi-structured interview)

The interview served as an additional essential tool in the research process. Thanks to this procedure, founded on respectful reflective dialogue, we have been able to collect information on student teachers' experiences with the cooperative process. They were carried out based on the suggestions of Kvale (2011). This author believes that the more spontaneous the interview moment, the more likely it is to elicit spontaneous, lively,

intuitive responses from interviewees. On the other hand, the more structured the interview situation is, the easier it becomes to conceptually structure it for subsequent analysis. Efforts have been made to balance spontaneity with structure.

Reflective writing (Individual diary in the educational portfolio)

Analysis of the documents that participants entered in their reflective diaries, along with other tasks uploaded to their virtual Portfolio, served as another data collection method that allowed the information to be triangulated. As Contreras & Pérez de Lara (2010, 81) state, *writing is a passage, a bridge, mediation, a translation between living and thinking*.

Categorising the information

Once the data were collected, the different voices and observations were interpreted in a contrasting manner from a hermeneutic perspective (Habermas, 1986), while also conducting a thorough review of participating students' diaries and tasks (portfolio). The information collected from the instruments presented was then categorised using an a priori approach (Cisterna, 2005) based on a range of topics, including cooperative analysis of the case. In turn, each of these areas was divided into a series of emerging categories (or, as Elliot (1990) calls them, sensitive data), as shown in Table 2.

Table 2. Emerging categories

Topic	Emerging categories
Cooperation	**Limitations**
	Difficulties in reaching consensus
	Lack of time
	Instances of non-listening
	Tendencies towards individuality
	Virtualities
	Contrasting perspectives
	Sustainable workload
	Emotional support
	Interdependence
	Trust and confidence

Sample

The sample in this research comprises 10 trainee teachers and their 2 academic tutors, who, in turn, are subdivided into two cooperative groups that develop the Lesson Study. Case 1 (C1) consists of Tutor 1 and her group of 4 student teachers; and Case 2 (C2) consists of Tutor 2 and her group of 6 students. All the students were in their fourth year of the Infant Education degree. Table 3 summarises the nature of the specified sample.

Table 3. Detail of the sample of participants

Case 1 (C1)	
Tutor 1 (Marisa): Associate Professor at University of Málaga	**Participant 1.1 (Eva):** Student **Participant 1.2 (Alba):** Student **Participant 1.3 (Victoria):** Student **Participant 1.4 (Claudia):** Student
Case 2 (C2)	
Tutor 2 (Inés): Acting Substitute Professor at University of Málaga	**Participant 2.1 (Ana):** Student **Participant 2.2 (Anabel):** Student **Participant 2.3 (Amelia):** Student **Participant 2.4 (Mara):** Student **Participant 2.5 (Inma):** Student **Participant 2.6 (Miriam):** Student

Limitations and ethical issues

It should be noted that the sample of informants is not meant to be representative or generalisable. The collected data help us understand the focal point in greater depth and detail than a large-scale test on a bigger sample would. We agree with Contreras and Pérez de Lara (2010, 23) when they say: "*Approaching education as an experience means focusing on real-life qualities: events in time, in moments, places, relationships; what is lived happens in a body, and so approaching it from experience also entails a subjective stance: the way it is experienced, felt and lived by someone in particular."*

Before starting this study, participants signed a consent form and learned about the research's goals and purpose. Once completed, the reports were made available for all participants to read and approve or qualify.

Context

The case studies presented below take place in the context of students' experiences of Practicum III and of preparing their Dissertation in year 4 of the Infant Education Teaching degree at the School of Education Sciences, University of Málaga, over the course of academic year 2018/2019.

The regulatory framework for the School of Education Sciences at University of Málaga mandates that the Practicum III subject (closely linked to the Dissertation) must include a four-month placement in Infant Education schools (0-6 years). Over this period, students must design an Autonomous Intervention Project (AIP), showing their ability to diagnose, plan and develop an educational proposal in line with a given context. The Dissertation focuses primarily on reflecting on the AIP and analysing its strengths and weaknesses, and on designing an improved proposal incorporating the learnings acquired throughout the process. This structure provides the ideal setting for proposing Lesson Study and its different phases as a methodological research strategy to improve practice (Soto et al., 2014).

Results

The following results, presented in the form of categories, emerge from the case studies conducted. In turn, these are grouped into two main sections, aligning with the research questions set out above.

The challenge of real cooperation. Favourable conditions

The two cases analysed lead us to consider the value of the Lesson Study process for cooperative learning; however, prior to this, certain conditions must be met, particularly as groups start to progress: Which conditions foster genuine cooperation in the Lesson Study processes? In both cases, these conditions are initiated from academic tutoring:

Group facilitation

Within the academic tutoring of both cases, the teachers in charge (T1 and T2) implicitly assume the role of group facilitators to respond

to the individualistic, competitive culture found in the social and university context (Pérez Gómez, 2012). This implies making a real effort to listen, understand and read the concerns of each participant, highlighting common elements in order to firmly consolidate a shared project from the very outset.

The C2 tutor provides a clear explanation of her role and its importance in her email response to Anabel, one of the students who expresses reservations about the group design of the Autonomous Intervention Project.

> *It's normal to feel anxious about working in groups, but with such close supervision, I'll always try to ensure you all get involved and add your input. Moreover, the vast majority of the work will be done during the seminars (...), and I will be on hand to offer advice (...).*
>
> *The sense of all this (of stepping out of the comfort zone, of individualism) is to improve the school in order to improve the world. We need to start somewhere. True cooperation remains an outstanding issue in our society; to foster a more empathetic, humble and humane society, we must teach children these values, a task that is impossible unless we first embody them ourselves* (Email from Inés to Anabel, 18th October 2018)

By the time seminar 2 (phase 1) takes place in C1, students will have completed three weeks at their designated practical training schools, collecting context-specific information and posing questions for collaborative research. Before starting the dialogue between participants, the academic tutor (T1) explains the aim of the seminar:

> *Let's start the Lesson Study! Today's task involves choosing a main focus (...). Once you have chosen the main focus, think about what you need to read in order to delve deeper into it (...). Maybe there are some topics that you all need to read, while others are more supplementary and not as essential for the focal point you choose, and can therefore be divided up.* (C1, Seminar 2, T1, 6/10/2018)

Similarly, this facilitation work seeks to stimulate the core areas of dialogue and participation by leveraging data collected so far in the virtual portfolios. In this particular instance (C1), the tutor (T1) uses this seminar to emphasise the need she has identified in all the diaries relating to: (1) Teacher role: how to intervene without interfering with what the children are doing?; (2) Gaining confidence in order to ensure practice is more in line with theory; (3) Gaining patience in order for children to develop their autonomy and express themselves freely; (4) Conflict resolution: when to intervene when two children are fighting?

Climate of trust and respect

For dialogue, exchange and consensual construction to come about within a group based on horizontal relationships, it is important that these relationships take place in a climate of trust (Rué, 2016). In implementing C1, the tutor (T1) initiated a climate of trust by striving to understand the concerns and needs of future teachers, offering clarity in critical and challenging moments, and fostering a sense of being heard and understood within the group. A representative fragment of this moment could be when the tutor (T1), noticing the group's conversation veering off topic, intervened to steer the reflection back to the group's common core areas, showing empathy at all times:

> *You have spoken a lot about emotional regulation when dealing with conflict management. There are two things that it seems all four of you agree on. Something seems to bring you quite close together. And that was not all. You were also concerned about how to ensure children remained quiet, in the sense of "I need to have more patience because they are all becoming too much" (...).* (Seminar 2, AT, 6/10/2018)

Another important aspect that reinforces this climate of trust and closeness in both cases (C1 and C2) is the tutors' constant approachability and readiness to address queries. They used all the seminars they observed to reiterate their willingness to assist participants between seminars by email or in personal tutorials, as well as their openness to answer all kinds of questions.

Group roles

Taking Arrow et al. (2000) as the reference point, every cooperative and group process fulfils three main functions:

1. Results: Achieve results and reach objectives related to the shared purpose.
2. People: Satisfy members' key needs, such as the need for belonging, affection or self-actualisation.
3. Processes: Maintain system integrity through optimal working processes.

The quality of the group process will obviously depend on the attention given to these three functions, which tutors protect in both cases by allocating specific roles for group work sessions. Based on De Bono's technique (2019), Table 4 sets out the roles for groups in the relational work process and their connection to the main functions of the envisaged group processes:

Table 4. Group roles

ATTENTION TO RESULTS	
Secretary	Records everything discussed in the meeting, and sends it to the group afterwards in the form of minutes. Closes the meeting and summarises the most important decisions and discussions. Reminds attendees of tasks, time and roles for the next meeting.
Beacon	Once the group has established the *Lesson Study* objectives, this person helps keep the group focused on this shared goal or group mission.
ATTENTION TO PROCESSES	
Moderator	Moderates and energises the meeting, noting speaking turns and ensuring that everyone takes part and shares their opinion. Also proposes the agenda and keeps the group focused on the topic at each moment.
Materials Manager	Is tasked with providing all documents required for the meeting, either on paper or in digital format.
ATTENTION TO PEOPLE	
Refreshments Coordinator	Is responsible for providing refreshments for the meeting and organising the break, ideally halfway through the meeting.

In C1, the tutor introduced certain roles in seminar 2 (developing Phase 1), attempting to delegate dialogue to the group; however, to the surprise of T1, the group chose to dispense with these roles, considering them unnecessary due to their small size. In this case, T1 respects the decision but insists on the importance of this role:

> *The moderator is important to ensure that everybody gets to talk, because if we don't keep that in mind, some voices might be heard more than others, even if there are only four people. Try to remember not to digress, not to talk over each other, and, if someone doesn't speak, be sure to ask for their opinion.* (The students nod and choose Alba as the secretary). (C1, Seminar 2, AT, 6/10/2018).

In C2, however, the group embraced the roles with enthusiasm and internalised this way of cooperating, even distributing the same roles in meetings where the tutor was not present. This allowed the tutor to adopt a more passive role, intervening only when essential to advance the group's reflections.

The tutor managed group dynamics throughout, reminding everyone to fulfil their roles as needed.

> *Tutor: You're all speaking at the same time. Let's try to... Who is the moderator? Ana? Moderator, let's start asking for speaking turns... now who would like to speak?* (C2, Seminar 2, AT, 5/11/2018)

Group progression through the LS phases. An analysis from subjective dispositions

Once the group identity is established, participants begin to move through each of the phases (Figure 1). What subjective dispositions come into play at each moment?

Shared intentionality and listening

> *The first factor that benefits any group process is the development of a shared intentionality among participants.* (Tomasello et al., 2005 and Rué, 2016)

The first phase of LS (*Phase 1. Defining the problem and the main study focus* allows those involved in such an experience to form a team identity based around common concerns and needs. In this regard, the initial group meetings strive to foster a collective approach and construction based on *listening* (Costa and Kallick, 2000), uniting efforts to ensure the main focus chosen by the group represents the whole (Rodríguez et al., 2020).

In C1, group dialogue begins with the topic of the contextual differences present in each classroom Specifically, they discuss the differences between 3-year-old and 5-year-old children:

> *Claudia: This year is proving a bit more challenging for me because they are 3-year-old children. My day-to-day work is not as easy as with the 5-year-olds I had last year. It's not the same. It's more difficult.*
>
> *Eva: This topic is very important, both in conflict mediation... in managing frustration and emotions (...).*
>
> *Victoria: That also happens in my class, because right now they are only interested in themselves: it's mine, mine, mine."* (C1, Seminar 2, Claudia, Eva, and Victoria, 6/10/2018)

In this case, dialogue emerges from a collective *insecurity* about how to address conflicts, serving as genuine motivation for teamwork, with everyone starting from an equitable scenario characterised by vulnerability perceived at the moment of action. And the focus evolves towards the development of strategies that allow them to intervene in the conflicts that occur in the classroom.

Reflection, openness and metacognition

This process of establishing a common focus for designing the Research Lesson within the LS process begins with two premises: firstly, it is necessary to diagnose the context in which the *Research Lesson* will be developed; secondly, it is essential to reflect on one's own identity as a teacher, identifying both limitations and opportunities for professional development. The *individual reflective journal* serves as a crucial tool in both scenarios, allowing evidence regarding the needs and interests of students engaged in the Research Lesson and its context to be collected, processed and analysed, while also ensuring trainee teachers can reflect on their professional skills and identify areas to focus learning on.

> *I believe punishment would serve no purpose and would prove more troublesome for us teachers than for the children; however, I understand Victoria's perspective... When we have heated emotions or feel frustration, we fail to think clearly and instead act on our subconscious impulses.* (C1, Virtual Portfolio, Claudia, 21/11/2018)

Similarly, this information, derived from sharing various contexts and the personal concerns of group members, is also contrasted with theoretical resources.

> *Alba suggests reading about emotional management. Victoria adds that, ideally, they should familiarise themselves with all topics; however, following a discussion, they decide to divide up the different topics.* (C1, Research Diary, Seminar 2, 6/10/2018)

Theory allows the group to share a common language, facilitating discussion throughout the process and communication with a broader audience.
This makes it possible to resort to common theoretical references that allow the group to share a language that facilitates discussion throughout the entire process, as well as communication to a broader audience. (Kvan and Munthe, 2020).

Confrontation and contrast

Once the shared focus is agreed upon and a group identity starts to take shape, the start of the second phase of LS takes place (*Phase 2. Design a Research Lesson that responds to the common group focus and Design the data collection)* This phase requires the team to mobilise cognitive resources, searching for strategies and methods to tackle the initial problem; through dialogue and practical contrast, the teaching team puts together a detailed plan (objectives, content, methodology, resources, the teacher's role, evaluation, etc.) and chooses the tools to collect information on what and how students learn (Rodríguez et al., 2020). This phase marks the start of dialogue, consensus-seeking, and confrontation, for which the *responsiveness* proposed by Socket (2006) is fundamental.

The cases analysed (C1 and C2) make it evident that numerous agents are involved in the group's conversations during this phase: personal beliefs about childhood, teaching styles learned from observing professional tutors (giving freedom versus controlling learning by interpreting their drawings), objectives of the proposal, etc. This often causes certain factors to clash at specific moments, leading to 'cognitive conflict' among participants, as set out below:

> *At this point, Victoria interrupts the group's brainstorming session with the following statement: "But your proposal implicitly involves guidance."*
>
> *Alba: Yes, it involves guidance, but it can't all be freedom, can it?*
>
> *Eva: No, of course not... Otherwise it's...*
>
> *Alba: Otherwise it's total freedom... and we won't meet the objectives. Then we would have to set far fewer objectives, objectives that are more about how children express themselves...* (C1, Seminar 3, AT, Alba, Victoria, Claudia, 30/11/2018)

These dialogues allow participants to gain deep understanding of their practical knowledge (Pérez Gómez, 2012) and reconstruct it in this and subsequent phases of the process, as they test some of the proposed hypotheses (Kvan and Munthe, 2020). This can be stimulated through tools such as the teacher role design tables, promoting the formulation of hypotheses on potential situations and designing the specific responses that teachers will give them. Observation and evaluation tables for students also help, predicting how children will react by identifying actions that demonstrate their learning, in line with the teaching team's objectives (Dudley, 2014).

Mutual observation, interdependence and mimicry

Joint development of the Research Lesson (*Phases 3 and 5. Development of the Research Lesson by one of the participants while the others observe in situ)* reinforces the group's interdependence, as well as their *commitment* to the context and to education (Peña and Pérez

Gómez, 2019), which is particularly important in the case of trainee teachers during their first experiences in real teaching and learning situations.

This interdependence becomes evident in the richness of the proposals presented to students, which, by allowing materials to be collected by all those involved, are much richer than any single teacher could propose.

> *They go to class to look for materials, and, as they start to set them up, Ana says to Miriam on several occasions: "Miriam, I have brought this for you." Ana brought some corals she had found on the beach in Mexico. "Mara went to the countryside and brought back dry thistles, a honeycomb, pine cones..."* (Researchers' diary, p. 47).

This is also evident at certain moments in the research lessons, when the group's support is very valuable in giving support to the teacher who is developing the lesson.

> *"This proved to be a significant positive aspect, as I felt supported by my colleagues; they were very helpful, especially when I encountered difficulties and the children were reluctant to participate."* (C2, E2, Participants 2.1, 18/3/2019)

However, other strategies for cooperative learning also come into play: mutual observation at the moment of action and mimicry. This responds to what Díez (2003, 91) discusses with regard to the need for teachers to observe each other, as *it is always easier to identify certain attitudes when viewed from an external perspective not directly engaged in the relationship.* An example of this can be seen in C1, when one of the participants evaluates a section of the designed proposal (assembly) from an external perspective that aids reflection by the person in charge of developing the Research Lesson.

> *I think there were two mistakes in the final assembly. In my view, one of them is not giving enough notice of the end of the sessions. This aspect, coupled with the fact that the assembly takes place in the same space and close to the areas where they have been playing, can distract children, leading to inattention.* (C1, Reflective diary in the portfolio). Phase 3, LE1, Victoria, 01/2019).

Commitment, responsiveness and temperance

The analysis phases (*Phases 4 and 6: Analyse and redesign the Experimental Lesson* and *Conclusions about the experience)* involve the group analysing the data collected based on evidence of learning.

> *Alba: The children need to mix things up (...).*
>
> *Eva: It has caught my attention that they have taken materials and used them for other purposes (...).*
>
> *Eva: I was surprised to see a girl making drawings on a mound of spices as if it were sand on a bedside table.*
>
> *Claudia: Maybe next time we can leave little piles of spices on the paper.* (C1, Phase 4, Alba, 01/2019)

This allows the group to subject their own criteria to the judgements and evaluations of other teachers (Tomasello et al., 2005; Rué, 2016). Under this procedure of responsiveness (Socket, 2006) and of becoming open to others, it is recognised that learning to teach is a complex task that goes beyond merely following instructions, or repeating or imitating. Learning to teach involves reflection, analysis, critical introspection and application. According to Cajkler et al. (2013), such in-depth learning involves critically engaging with practice (Peña and Pérez Gómez, 2019) and the ideas of others, showing *temperance* (Socket, 2006) and contributing to the construction of a teaching culture that is felt and thought of as shared (Hiebert et al., 2003). An example of this dimension can be seen in C1 when, during a discussion following a Research Lesson, two participants present

contrasting opinions on the role of silence in infant education.

> *Victoria: What do you mean by the silences, Alba?*
>
> *Alba: I mean the sense that often they would be quieter, watching the little ones during the game.*
>
> *Victoria: I agree, but in the assembly, for instance, they didn't engage much, or some did and others didn't. And in the game, they would touch and say something, but it was nonsensical rather than meaningful. But silence is very important, of course (...).* (C1, Phase 7, Victoria, Ana, 01/2019).

Conclusions

> *"What started out as a challenge has become a comprehensive Action Research process, immersing us in the world of cooperative research; this has enabled us to, firstly, enhance our competencies as future educational professionals, and, secondly, identify a shared focus for further developing our proposal, continually aiming to improve both learning processes and our teaching roles."* (Dissertation Ana, p. 6)

In a context marked by an artificial, individualistic teaching culture (Pérez Gómez, 2012), the cooperative nature of Lesson Study presents an auspicious scenario for teachers, allowing essential qualities for teaching and professional development to emerge. The cases detailed in this study collect evidence related to learning to cooperate. Experiencing a long, continuous process marked by each phase of Lesson Study stimulates and encourages the need for a collaborative network among teachers. Such evidence shows that the teacher network in question is not based on artificial agreements (what Hargreaves (1994) or Pérez Gómez (1998) define as *bureaucratic collegiality*), but rather on the need for mimicry, dialogue and interdependence in order to grow, advance and consolidate a cooperative culture in the teaching profession. A cooperative culture appears to aid in the development of various dispositions and tendencies among future teachers, fostering greater confidence in their actions and inertia, as they acknowledge that each individual possesses strengths that can complement one another (dispositions of self-awareness, empathetic listening, and understanding), while collectively assuming both successes and mistakes (dispositions of responsiveness, relationship and responsibility), ensuring they feel supported in unforeseen situations and resist settling for initial solutions (disposition of non-conformity), remaining cognisant of the progress facilitated by the process, thanks to it being grounded in practical experience and conducted in collaboration with others.

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References

Arrow, H., McGrath, J., & Berdahl, J.L. (2000). *Small Groups as Complex Systems. Formation, Coordination, Development, and Adaptation*. Sage Publications. https://doi.org/10.4135/9781452204666

Bruner, J. (1997). *La educación, puerta de la cultura*. Aprendizaje-Visor.

Cajkler, W., Wood, P., Norton, J., & Pedder, D. (2013) Lesson Study: towards a collaborative approach to learning in Initial Teacher Education? *Cambridge Journal of Education*, 43(4), pp. 537-554. https://doi.org/10.1080/0305764X.2013.834037

Cerbin, W., & Kopp, B. (2006). Lesson Study as a model for building pedagogical

knowledge and improving teaching. *International Journal of teaching and learning in Higher Education.* 18(3), 250-257.

Cisterna, F. (2005). Categorización y triangulación como procesos de validación del conocimiento en investigación cualitativa. *Theoria*, 14(1), pp. 61-71.

Contreras, J., & Pérez de Lara, N. (2010). *Investigar la experiencia educativa*. Morata.

Costa, A., & Kallick, B. (2000). *Discovering and exploring habits of mind*. Alexandria, VA: Association for Supervision and Curriculum Development.

De Bono, E. (2019). *Seis sombreros para pensar.* Paidós.

Díez, M.C. (2003). *Diez ideas clave: La educación infantil*. Graó.

Dudley, P. (2014). *Lesson Study Workbook*. https://doi.org/10.4324/9780203795538

Dudley, P. (2015). *Lesson Study. Professional learning for our time*. Routledge. https://doi.org/10.4324/9780203795538

Elliot, J. (1990). *La investigación-acción en educación.* ~~Madrid,~~ Morata.

Fullan, M., & Hargreaves, A. (1997) *¿Hay algo por lo que merezca la pena luchar en la escuela?* Publicaciones MCEP.

Habermas, J. (1986). *Conocimiento e interés.* Taurus~~.~~

Hansen, D. (2001). *Exploring the moral heart of teaching: Toward a teacher's creed*. Teacher College Press.

Hargreaves, A. (1994). *Changing Teachers, Changing Times: Teachers' Work and Culture in the Postmodern Age.* Cassell.

Hawkings, K.A. (2015). The complexities of participatory action research and the problems of power, identity and influence. *Educational Action Research,* 23(4), 464-478. https://doi.org/10.1080/09650792.2015.1013046

Hiebert, J., Morris, A., & Glass, B. (2003). Learning to learn to teach: an "experiment" model for teaching and teacher preparation in mathematics. *Journal of Mathematics Teacher Education*, 6, 201–222. https://doi.org/10.1023/A:1025162108648

Imbernón, F. (2007). *La formación permanente del profesorado. Nuevas ideas para formar en la innovación y el cambio*. Graó.

Korthagen, F. (2010). La práctica, la teoría y la persona en la formación del profesorado. *Revista Interuniversitaria de Formación del Profesorado*, 68 (24,2), 83-101.

Kvale, S. (2011). Las entrevistas en Investigación Cualitativa. Morata.

Kvam, E. K., & Munthe, E. (2020). Strengthening knowledge development in teachers' conversations in lesson study. En A. Murata & C. Kim-Eng (Eds.). *Stepping up Lesson Study* (pp. 66–75). Routledge. https://doi.org/10.4324/9781003002536-7

Lewis, C. (2000). Lesson study: the core of Japanese professional development. New Orleans: Paper presented at the American Educational Research Association Annual Meeting.

Murrel, P. C., Diez, M. E., Feiman-Nesmer, S., & Schussler, D.L. (2010). *Teaching as a moral practice. Defining, Developing, and Assessing Professional Dispositions in Teacher Education.* Cambridge: Harvard Education Press.

Peña, N., & Pérez, A.I. (2019). Las disposiciones subjetivas de los docentes en la superación de las resistencias al cambio ante procesos cíclicos de formación basados en la investigación (Lesson Study): Estudio de un caso. *Revista Complutense de Educación,* 30(2), 569-587. https://doi.org/10.5209/RCED.57780

Pérez, A. I. (1998). *La cultura escolar en la sociedad neoliberal*. Madrid: Morata.

Pérez, A. I. (2012). *Educarse en la era digital*. Morata.

Pérez, A.I. (2007). Reinventar la escuela, cambiar la mirada. *Cuadernos de pedagogía,* 368, 66-71.

Pérez, A.I. & Soto, E. (2011). Lesson Study. La mejora de la práctica y la investigación docente. *Cuadernos de Pedagogía*, 417, pp. 64-67.

Perrenoud, P. (2008). *Desarrollar la práctica reflexiva en el oficio de enseñar*. Graó.

Rodríguez, C., Peña, N., Soto, E., & Serván, M.J. (2020). Aprender el sentido de ser docente: las *Lesson Studies* como espacio de cooperación, inclusión y reflexión en la universidad. En E. Caparrós, M. Gallardo, N. Alcaráz, & A. Lavinia (Coords.). *Educación inclusiva, Un desafío y una oportunidad para la innovación educativa en la formación inicial del profesorado.* Barcelona.

Rué, J. (2016), Reflections on the craftsmanship of teaching. Lesson/learning studies as a cooperative means to enhance professionalism, *International Journal for Lesson and Learning Studies*, 5(4), 348-361. https://doi.org/10.1108/IJLLS-07-2016-0019

Socket, H. (2006). *Teacher dispositions: Building a teacher education framework of moral standards.* American Association of Colleges for Teacher Education.

Socket, H. (2012). *Knowledge and virtue in teaching and learning. The Primacy of dispositions*. Routledge. https://doi.org/10.4324/9780203155509

Soto, E., Serván, M.J., Peña, N., & Pérez, A.I. (2019): Action research through lesson study for the reconstruction of teachers' practical knowledge. A review of research at Málaga University (Spain), *Educational Action Research*, https://doi.org/10.1080/09650792.2019.1610020

Soto, E., Serván, M.J., & Caparrós, R. (2016). Learning to teach with Lesson Study: The practicum and the degree essay as the scenario for reflective and cooperative creation. *Internacional Journal for Lesson and Learning Studies*, 5 (2), 116-129. https://doi.org/10.1108/IJLLS-12-2015-0042

Stenhouse, L. (2007). *Investigación y desarrollo del currículum*. Morata.

Tomasello, M., Carpenter, M., Call, J., Behne, T., & Moll, H. (2005). Understanding and sharing intentions: The origins of cultural cognition. *Behavioral and Brain Sciences* 28(5), 675-691. https://doi.org/10.1017/S0140525X05000129

Yin, R. K. (2009). *Case study research: Design and methods.* Sage Publications.

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