

**Lesson Study in initial training: Potentialities and constraints of an interdisciplinary academic experience. A case study in Spain**

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## LESSON STUDY IN INITIAL TRAINING: POTENTIALITIES AND CONSTRAINTS OF AN INTERDISCIPLINARY ACADEMIC EXPERIENCE. A CASE STUDY IN SPAIN.

### Abstract

**Purpose-** This paper focuses on analysis of the incorporation of a Lesson Study cycle *within the university training proposal*, as a teaching strategy in initial training in the Infant Education Degree.

**Design/methodology/approach-** Qualitative research was conducted through a case study methodology.

**Findings-** Proposing training strategies based on this methodology encourages both the reconstruction of future teachers' practical knowledge and also adequate professional development from initial training.

**Research constraints/implications-** The main constraint in the study was the cost-benefit ratio, since this experience has required significant practical and emotional dedication by the people involved, while the expected results have only been partially evident in the students, which would seem to imply that this strategy requires continuity over time in order to fully impregnate future education professionals.

**Practical implications-** More continuity in these experiences would be necessary in order to fully analyse their actual value. To achieve this, the experiences need to be more closely related to the university curriculum, and there must be greater coordination between the subjects in order to approach LS in a holistic manner.

**Originality/value-** This article shows the potentialities and constraints of LS as a collaborative action-research strategy that promotes the reconstruction of students' practical knowledge and their professional development as teachers.

**Keywords-** Lesson Study, higher education; professional development, training strategies, initial training, qualitative research

**Paper type-** Research paper

### Introduction

The characteristics of today's society demand reflective professionals committed to the teaching profession (García & Castro, 2012; Korthaguen 2010; Perrenoud, 2008), a commitment that must be encouraged and developed from initial training, since future Infant Education teachers need to prepare themselves to work in an ever-changing, unpredictable environment (Pérez Gómez, 2012; Marcelo, 2001; Peña & Pérez Gómez, 2019). Initial training is therefore an ideal setting for future teachers to rebuild their practical knowledge through mutual observation and in-depth reflection in university classrooms, reconstituting all they have learned and experienced (Marín and García, 2016; Pérez Gómez, 2012) in order to develop higher-order learning in which in-depth reflection and critical analysis are key (Soto, 2016).

Different research has shown that LS is a very powerful training strategy for both initial and ongoing teacher training at national and international level (Elliott, 2012; Suzuki,

2012; Cheung & Wong, 2014; Dudley, 2012; Lewis, 2009; Peña et al., 2015; Rasmussen, 2016; Ní Shúilleabháin, 2015; Bahn, 2018). This work focuses on further examining the training potential of LS through a case study during initial training of a group of prospective Infant Education teachers. A cycle of Lesson Study, with its seven phases, was developed for this purpose (Definition of the problem; Design; Development of Experimental Lesson 1; Analysis; Redesign; Development of Experimental Lesson 2; Analysis; and Dissemination in an extended context) in the practical part of year one subjects Didactics of Infant Education and Towards an Inclusive School, both with an average of 60 students enrolled and with 3-4 hours per week of on-campus work. Furthermore, both subjects shared individual assessment mechanisms through a virtual reflective portfolio and close tutoring of the groups by the two teachers, along with several sessions shared between both subjects in which they would work on contents and related procedures.

The evidence that emerged from the experience was collected through: (1) Observation and transcription of the group meetings carried out by one of the groups (chosen as the focal point); (2) Pre, intermediate and post interviews with the participating students, and; (3) Analysis of the participants' entries in their Portfolios, along with other tasks developed during the experience. These data provide the structure of this article, which begins by relating the theory framework and research questions, continuing with a short description of the research design, and ending with the presentation of the results and evidence divided into potentialities and constraints of the Lesson Study in initial training.

In conclusion, we have transformed the contextual and cultural constraints into opportunities to continue advancing in implementing training models based on cooperation and reflection on one's own experience. We have also valued the need to accompany the LS process with a series of pedagogical principles in line with the development of professional skills among teachers.

### **Theory framework and research questions**

As university teachers, providing students with a learning opportunity context –as inherent to cooperative, cyclical strategies such as Lesson Study– is essential in order to ensure fluid dialogue between educational thinking (which helps interpretation) and student-led practice, in which students make their own decisions in collaboration with others, with these, in turn, becoming the object of their analyses (Mayorga & Madrid, 2015). Lesson Study is proposed as a powerful training methodology which, thanks to its cyclical nature and its cooperative and reflective essence, can be used to improve educational practice (Hiebert, Morris & Glass, 2003; Soto et al., 2016), allowing infant school teachers to, based on shared action and reflection processes, become fully conscious of everything that underpins their pedagogy, resulting in a progressive reconstruction of their practical knowledge (Peña et al., 2015) while closely linking the professional development of future teachers to curricular experimentation and cooperative self-training (Pérez-Gómez, Soto & Serván, 2015; Stenhouse, 1975).

After developing an LS experience, Cajkler et al. (2013) showed that this methodology during initial training allows the acquisition of consistent learning, and favours the integration of teams and the building of practice communities. Other studies have shown that implementing LS improves students' culture, practice, beliefs, expectations and

learning (Dudley et al., 2019). Moreover, Wilson & Sharimova (2019), after carrying out a pilot study in Kazakhstan based on improving the education system by implementing LS, concluded that this methodology provided participants with the opportunity to think and make collaborative judgements which had a real effect on teaching practice. According to these authors, the ability to change practice lies in the possibility to reflect on what happens in the classroom, and in having the skills and time needed to analyse the effect that learning has on pupils.

Moreover, several authors point to the difficulties of this training strategy due to the lack of time and the work overload involved in implementing it (Wake et al., 2013; Seleznyov, 2020). A study by Godfrey et al. (2019) to ascertain the impact of LS, based on 133 primary and secondary school teachers, concluded that participation in the LS process was lower when teachers had to increase their workload, making it necessary to focus on the "learning object". Similarly, after carrying out a longitudinal case study lasting 5 years at a school in England, Seleznyov (2020) concluded that the LS methodology faces important challenges: the lack of structures and systems to accommodate the methodology; the difficulty in demonstrating its short-term impact; the fact that teachers do not possess sufficient research skills; the scarcity of access to learning materials; and pressures around ensuring accountability.

This study aims to help understand the characteristics of the practical educational training developed by some university teachers who incorporate Lesson Study in their subjects, as relates to the emerging process of curriculum creation and guided by the Lesson Study process, striving to answer the following questions: What are the benefits and constraints in developing a Lesson Study experience within the university context? Can this work dynamic adapt to the requirements, contents and skills to be developed in each of the subjects? How can we move from what is desirable to what is possible, in order to ensure sustainability in the teaching innovation and research processes?

### **Research design**

Qualitative research was carried out through a case study methodology during academic year 2018-2019 with students from year one of the Infant Education degree (second semester), jointly coordinating two subjects. The research design was characterised by the systematisation of the process, defined in 7 phases. The LS cycle included two developments (the initial proposal and the improved one) in which the university students played different roles, on the one hand as observers and on the other as teachers, thus creating an excellent opportunity for contrast, reflection and cooperation. Practical training with Infant Education students was carried out at the University itself, thus facilitating the link between University and School (Elipane, 2012). The data were analysed on the basis of an emerging category system.

### ***Participants***

To develop the research, it was agreed to monitor one of the groups within the class group (case group), made up of 6 students. The case group was chosen as of the second week of classes, following an initial interview with the group in order to check students' availability and disposition. The following selection criteria were taken into account: the group's openness and positive predisposition towards the proposal, regular attendance at

class sessions, internal cohesion, and even the outstanding maturity of one of the members of the group.

### **Information collection tools**

With regard to the data collection instruments, it is worthwhile reflecting on the complexity of sources, dates and information analysed, all of which give this study its form, content, structure, reliability and rigour. Semi-structured in-depth interviews and systematic audio and video observations (all transcribed) were carried out, along with documentary analysis of student portfolios, self-accounts, group activity products, etc. Data collection was carried out over 12 months.

Prior to the study, all students read and signed the informed consent document in which the researchers undertook to use their data anonymously for academic purposes.

Main data collection instruments		Quantity
Questionnaires/ Interviews	Closed questionnaires	2 (Initial and final)
	Recorded group interviews	3 (Initial, intermediate and final)
	Recorded individual interviews	2
Observations and audio and video recordings	Large group work sessions	7
	Small group work sessions	12
Paper documents	Portfolios	6
	Research records	9
	Teachers' reflections on tutorial function	4
	Students' reflections on tutorial function	6
	Flip chart of the Evalu-Art Workshop	6

Table 1. Information collection tools

## **Results**

The results obtained in this study are organised on the basis of valuable, significant elements of LS (potentialities) for initial teacher training, as well as elements that hinder development in initial training (constraints).

### ***Known and common potentialities of LS in initial teacher training***

#### *Authentic tasks:*

The first category that emerges from the analysis is the benefit of Lesson Study in allowing students to take part in authentic tasks, incorporating what they say, feel and do at each stage, as such tasks have enabled students to theorise practice and experience theory (Soto, et al. 2015). This strategy of connecting University and School allows us to focus on childhood (Caparros, 2015) and on children's real needs, interests and motivations and, from there, to start modifying educational practices. Furthermore, those taking part in the study stated that this initial contact with Infant School children was a motivating element, since on many occasions it was the first time they had worked with pupils in these age groups.

The main lessons that this participation in authentic tasks has contributed to are:

- a) Reconstructing the image of childhood

The group showed low expectations towards childhood from the very beginning, with their dialogues expressing ideas such the need to "measure" our vocabulary and adapt our

language to "their level" when talking to children, simplifying both the content and form of our language to make it more "childish" (immature), but without considering the risk of falling into a relationship which, by failing to provide a suitably mature language model, would be bland and unnatural, treating children as a uniform or stereotyped group:

*E: They don't know the parts of the body. That's right, they're still very little...*

*[...]*

*E: [...]* They love pirates. (Case group observation, Phase 2).

This homogenising image was also evident in relation to the methodology to be used. For example, they proposed prototypical children's education activities such as drawing, colouring or cutting out. Such activities were decontextualised from holistic psycho-evolutionary development and the particular needs of the group of children that would come to the University, and with whom they had a video call in order to identify such needs.

Moreover, when discussing the criteria for assessing the activities (considering them "good" or "bad"), this was done from an adult perspective, without taking into account the children's level of development or particular learning processes (progress, motivation, help given or requested, etc.):

*P: The eyes don't go there [addressing a girl who is making a lion out of pieces of fruit].* (Case group observation, Phase 3).

However, in the first Experimental Session (ES1), horizontal interaction with the children allowed the students to reconstruct their previous image of childhood, dismantling some of their previous beliefs:

*A: I thought they were going to pick less fruit... I loved the moment the kids would arrive and I would ask them "Do you want some fruit?", and they would be really happy.* (Case group observation, Phase 4).

Indeed it allowed them to deconstruct their initial low expectations:

*A: I was struck by the fact that they took the plasticine and put it on the doll to measure its neck (...). They tell you they can't do it, but if you insist then in the end they will at least do something (...). A little girl was saying: I can't, I can't do it... So I took a piece of plasticine and I said: "Come on, let's make a ball". So I started to make a ball, and then the others made it, but by themselves.* (Class LS Group Observation, Phase 4).

Their direct experience with children helped them realise that pupils' needs and interests could only be known through being with them, inhabiting their spaces, and observing their actions and reactions:

*E: To know the needs of a group, you have to be with them day by day. You have to be involved with them [...].*

*R: Go to centre and see them in their...*

*S: Habitat! [they laugh].*

*R: ...in their environment.* (Case group observation, Phase 7).

It can be stated that the Experimental Lesson experience has allowed them to place more value on childhood, to believe in children's capabilities, to not have such preconceived, stereotyped ideas about them, and to understand the interactions between their potentialities and the developmental contexts in which they live.

b) Reviewing ideas about the role of teachers

A primitive belief is verified among students with regard to the teacher's role, namely that the teachers are the ones who are with the children, disregarding the intellectual, moral and political character of their work:

*A: So, what do we expect from the children? Well, we hope they have a good time.*

*A: So, let's look for fun activities. (Case group observation, Phase 2).*

It is particularly worthy of note that university students acting as teachers were perceived as over-elaborate in Experimental Lesson 1, with exaggerated positions and expressions, and even browbeating the children in terms of questions and facilitation. This showed their interest, but also, as discussed above, their lack of confidence in them. Indeed, they were continually telling them what to do and asking them questions, which they often answered themselves, speaking, indicating, proposing... They therefore expressed the roles of interventionist teacher and submissive pupil, limiting children's autonomy and creativity:

*[One of the children is finishing his lion. Kenia passes him the things he has to put on the plate, and he places them on it. Then he says the ears are missing. Rocio moves the pieces he had used for the eyes around, and tells him "These are the ears, these are the eyes..."; Alicia takes two smaller pieces of banana, puts them in place and says "These are the eyes". The child, somewhat worriedly, asks whether the lion will move if he picks up the plate. The trainee teachers tell him not to worry, saying that they will fix it later.] (Case group observation, Phase 3).*

However, in the second Experimental Session, some groups show changes in their vision of the teaching role, progressively letting the children flow and interact more freely with the resources and their peers:

*A: I sat alongside them during face painting, making sure I was at the same height as they were. I would say to them, "Come on!" and ask them: "What are you going to paint yourself as? Are we going to paint a mask? The aim was for them to interact with each other and tell each other what they were doing, and then in the theatre they were also free; there was no saying "You have to do this!" or any such thing. If some children wanted to jump and others wanted to run, well that was fine too." (Class LS Group observation, Phase 6)*

Some of the groups therefore transformed their teaching role between the two sessions, and started to believe more in the children's abilities while also suppressing their automatic urge to intervene and do things for them:

*A: ... in the second one [EL2] they were more receptive, because I would say to them "Come on, you can do it", "Come on, pick up the plasticine", and they did it, even though the first one was quite hard for them (...). So I liked being a teacher in the second one more than in the first one because the children interacted more, they cooperated more... in the second one they were more autonomous." (Case group observation, Phase 6).*

Despite progressive awareness of this non-visible part of the teaching task (more active in the design and assessment of experiential contexts for the development of competencies, but less manifest and active in the moment of action with children), they were still shocked by the idea of a teacher who "stands aside" and observes.

c) New perspectives on designing and developing a training proposal

At first students focused their interest on compiling activities. Such activities included either material posted on the Internet or spontaneous ideas from group brainstorming sessions, generally leaving to one side the goals or purposes that, as teachers, they had set out in Phase 1, based on the children's needs. This led to contradictions and feelings of distrust and a certain uneasiness on the part of the group. However, these "discomforts" (due to cognitive and social conflicts) subtly brought the need to reach useful agreements that would help them carry out the proposal.

Given the nature of the authentic tasks, the problems were therefore solved in subsequent sessions as the group's real need to draft a comprehensive, detailed design became evident (even though they consciously failed to give this pre-action work the value it deserved):

*E: We are going to have to clarify the rules, because there are going to be cases where they fight with each other and so we have to know how to act, we should prepare ourselves before the session (...). (Case group observation, Phase 2).*

Ideas for experiential learning gradually emerged. At first they talked about plastic food, but slowly decided to switch to real food and a diversity of learning situations within this context:

*E: What do you think about giving them food to handle?*

*P: What types of plastic are we going to bring in?*

*E: For instance, we could use a banana as food, and let them use their imagination, so it can be a trumpet, a recorder... you see what I mean? Make them think about what they can be.*

*R: And let's not forget curiosity...*

*S: Curiosity is really to do with everything... Let them touch the food or do what they want... or maybe they don't want to touch it and prefer to simply smell it.*

*E: Let them be completely free to touch everything. (Case group observation, Phase 2).*

These sessions led to misgivings when it came to specifying concrete aspects of their action. In general, it seemed that they gave particular importance to improvisation (which, although necessary, is not sufficient in itself), as opposed to the rigour of a well thought out, well designed proposal:

*A: I think that this would be easier if, for example, we were (...) less fixated on what we are going to do when we are with the children (...) (Case group observation, Phase 2).*

The emotions they perceived during Experimental Lesson 1 (EL) were of fear and uncertainty: from the insecurity of the first time they had an experience of this kind, through to confusion following the "chaos" they had gone through, which emerged even despite "having everything ready beforehand":

*A: Let's see... we had the resources well prepared in advance, all in their little boxes, but when the children came it was a bit chaotic (Case group observation, Phase 4).*

This is proof that LS is a training strategy that takes students outside their comfort zones and allows them to start questioning their own practical knowledge, contrasting it with the cooperative experiences lived in authentic tasks reviewed and redesigned for their practical action.

1  
2  
3 These intense experiences and the internal and external contrasts that emerged caused  
4 conflicts in the group. For example, even when redesigning the Experimental Lesson -  
5 EL (Phase 4), as the class group discussed how they were going to receive the children  
6 and how they would distribute them in the workshops, it could be seen how most of them  
7 continued to focus their interest on the teachers, followed by the workshops, rather than  
8 on the children. Notwithstanding, some students, individually, did argue about  
9 organisation and prioritising attention to pupils, taking up a position based on previous  
10 experience:  
11

12  
13  
14 *Well, if I'm in the middle of a giant hug, I'm not going to say: Out!!! But, since*  
15 *there are three teachers, maybe while I was finishing, they could take those who*  
16 *were arriving and starting." (Class LS Observation Group, Phase 4).*  
17

18 All this gradually led them to show greater precision in organising the materials, in the  
19 communication context, in proposals for more flexible activities, in spatial organisation  
20 to attend to the children, etc., and, little by little, they became aware that the work of a  
21 teacher goes much further than simply that which is seen at the moment of action:  
22

23 *A1: I have learned that in the teaching profession there is a lot more work behind*  
24 *the activities than would appear at first sight.*

25 *A2: Yes. At the beginning we were only looking for activities on one side and*  
26 *objectives on the other (...). (Case group observation, Phase 6).*  
27

28 They gradually became aware of the multiple factors that come into play when teaching,  
29 along with the importance of having security and confidence in working with children,  
30 something which, at least in part, comes from having clear goals underpinned by  
31 foundations that justify what is done and why ("having theory references that illuminate  
32 practice," as Esperanza said):  
33

34  
35 *A: And I think that, had we not seen the process, which is everything, every theory,*  
36 *so to speak... if the kids had only come on that day without everything else behind*  
37 *us, I think it would have been different;*

38 *R: We wouldn't have known what to do...;*

39 *A: You don't know what you've done right or wrong. Because in some way the*  
40 *process makes you see what you have done with the objectives... you may achieve*  
41 *them or not. Then you can put your mistakes right. (EF, Case group, 07/2019).*  
42

43 The trainee teachers undoubtedly found that the LS process induced them to plan ahead  
44 (both during and at the end), allowing them to give meaning to their educational practice,  
45 which also favoured motivation, effort, resistance in the face of difficulties, the search for  
46 ongoing training, etc.; in short, the need, to sustain themselves through cooperative work  
47 in the face of complex, ever-changing realities.  
48

49 *The value of cooperative work:*

50  
51 Another of the strengths of LS as a training strategy is that it favours the development of  
52 cooperative processes among students.  
53

54 The degree of heterogeneity when observing exchanges and dialogues during the  
55 experience was particularly notable, leading to situations of contrast that allowed the  
56 group's diverse tendencies to be self-regulated:  
57

58  
59 *R.: [We can ask them:] Do they give you a lot of homework?*  
60

1  
2  
3 *E: But it's not really useful for the activity, is it? We have to focus on the activity*  
4 *we want to programme, so what is the use of knowing that?" (Case group*  
5 *observation, Phase 1).*  
6

7 The first moments as a group were highly constructive. In the first working sessions the  
8 case group carried out a sustained, balanced participation between the different  
9 components. However, as the sessions progressed, it became apparent that the group was  
10 continually going back and forth in a cyclical manner. For example, well into the course  
11 (in session 10), it was clear that they still had a long way to go, since they understood it  
12 not as joint teamwork, but rather as group work, with a clear division of tasks in which  
13 the individual parts would be added, but without an articulated overview. However,  
14 almost at the same time –still with feelings of uneasiness and awareness of the  
15 contradictions in their day-to-day activities– new questions were being provoked that  
16 expressed the group's increasing apprehension around the formative meaning of the LS  
17 proposal:  
18  
19

20  
21 *K: How are we going to act with the children to ensure they develop their*  
22 *workshop?*

23 *E: Of course, but first we need to agree on the methodology, our teaching role,*  
24 *and so on; we need to clarify how we are going to act in the activity, and*  
25 *assessment will come from this (...) We can't go on like this [nervous laugh]. We*  
26 *have so many things to do that I don't know where to start.*

27  
28 *S: I'd start at the beginning. Otherwise we won't be able to... because we really*  
29 *are lost. (Case group observation, Phase 2).*  
30

31 External observation of the groups shows that group participation becomes increasingly  
32 balanced when decisions have to be made on practical issues such as deciding on the title  
33 of the workshop. However, it is much more unequal when they involve decisions of  
34 greater intellectual and critical or academic significance, where a certain inhibition is  
35 appreciated on the part of the group, with those students with greater involvement in their  
36 learning taking the initiative.  
37

38 But all this helped ensure that, however slowly, cooperative work was improving:  
39 common strengths were highlighted, shared doubts were questioned and mistakes learned  
40 from, and spaces were created to give visibility to those participants who were initially  
41 less present in the work dynamic. At the end of the project, the students' portfolios showed  
42 that they believed they had formed a solid group in which companionship, listening,  
43 empathy, and a helpful attitude in difficult situations –whether in academic or personal  
44 matters– were particularly worthy of note. Notwithstanding, they recognised that there  
45 was a need for greater involvement of group members, more consensus in decision-  
46 making, and more accountability for individual obligations:  
47  
48

49 *Little by little, we advanced as a group, giving our opinions on each part of the*  
50 *work, so we were all involved in the different sections. We were finally a team.*  
51 *(Paula's portfolio).*  
52  
53

#### 54 ***Constraints in the experience, lights for improvement***

##### 55 *Contextual obstacles:*

56  
57  
58 The large class group size (60 in total); the inadequate acoustic conditions due to a lack of  
59 adequate areas for work in small groups; the short duration of the subjects per term;  
60

1  
2  
3 the lack of coordination between subjects imparted during the same term; and the  
4 excessive demands placed on teachers at the University:

5  
6 *The transcripts of the audio and video recordings of the students in class constantly*  
7 *include notes such as "there is a lot of noise in class and it is impossible to understand*  
8 *what they are saying"; students in the case group can often be heard to say how*  
9 *difficult it is to understand each other due to the background noise, or talk about the*  
10 *discomfort they feel for this reason; similarly, you can occasionally hear somebody*  
11 *call out, asking the group not to speak so loudly. (Research Diary).*

12  
13 Class group size became one of the main constraints, since, with an average of 60 students  
14 enrolled for the subjects, it was very difficult to help students think and analyse their  
15 reflections in depth, making personalised tutoring a challenge. Likewise, relational  
16 processes based on mutual knowledge and trust were hindered, thus conditioning the  
17 depth of the exchanges, which were sometimes limited to simply discussing formal and  
18 organisational aspects, without going into the pedagogical principles that were involved  
19 in their decisions as trainee teachers.

#### 20 21 22 *Cultural difficulties:*

23  
24 The experience was carried out in the academic framework of two compulsory subjects  
25 in year one of the degree course. On this course, most students arrive directly from high  
26 school having learned to reproduce information "aseptically" and out of context,  
27 assimilating a role of passive students to whom knowledge is transmitted in a traditional  
28 way by the omniscient teacher. The strategies proposed to invite self-reflection were  
29 therefore received with reluctance and feelings of insecurity and incapacity,  
30 demonstrating great difficulty in breaking away from learned routines. Moreover, on  
31 many occasions, this led to inhibition, to a lack of concern, or to more or less lasting  
32 resistance to the shared educational project.

33  
34  
35 *While teacher 2 explains to Estrella the goal of the session task, the rest of the group*  
36 *is talking about other things. (Research Diary).*

37  
38 A certain immaturity, a lack of commitment, and low motivation regarding their training  
39 process were also perceived in some students. Proof of this can be found in the fact that,  
40 even though the teachers provided a range of guides and materials, some students had still  
41 not consulted them even deep into the process, showing their individual differences in  
42 terms of dedication and interest in monitoring the subjects and, in turn, the co-  
43 responsibility assumed in the evolution of small-group and class-group work:

44  
45 *Teacher 1: But have you read the programme, the topics? Have you read them!?*  
46 *S: I think we've been so focused on doing it that... (EM, Case group, 04/2019).*

#### 47 48 *Pedagogical and didactic constraints:*

49  
50 Finally, the lack of balance achieved between skills, content and espoused pedagogical  
51 principles in each of the subjects was considered to be a pedagogical and didactic  
52 constraint, while the mistaken ways of dealing with conflicts (by fleeing or avoiding  
53 them), along with the lack of time to discuss and agree on solid decision-making criteria  
54 among teachers, meant the didactic proposals and reactions were occasionally perceived  
55 as contradictory by students and teachers alike.

56  
57 *Teacher 2 tried to make students see the meaning behind the design, prioritising this*  
58 *meaning (content) over the format or presentation of the sections. However, she*  
59  
60

*unwittingly entered into a continuous contradiction with her colleague when she undermined the structure or its rigorous nature. (Research Diary).*

This reality of a lack of initial time for deep pedagogical adjustment among teachers meant extra effort was required, in addition to their professional commitment to the LS methodology, since, once immersed in the proposal, it was difficult to find the conditions necessary for calm discussion in the decision-making process, even though this difficulty became a new space for professional learning.

*I realised that we had taken for granted things that we disagreed too much about (I could say that we were practically unknown to each other in terms of teaching), but it was already too late. (Participant's Research Diary).*

This accumulation of events generated a certain lack of motivation and discomfort in the experience. Moreover, the control group gradually split in two, as those who wished to use the class meetings to move forward began to move away from those who let themselves be carried away by the lack of commitment and involvement. This led to tedious team meetings which, far from being mutually enriching, involved discussions about who did what, and what to put in each section. The Lesson Study team's primary goal (learning to be a teacher) therefore shifted to more bureaucratic goals based on how to present information to the teachers in a way that would satisfy both of them.

*A: Should I include everything in the record?*

*S: It was motivation, freedom and values.*

*P: It was motivation, freedom and autonomy.*

*S: Values, empathy and suchlike.*

*K: But listen... Are you sure that goes here?*

*P: Yes. Because it says initial purposes (...).*

*E: I think we have need to follow the law more closely, because the contents do not have anything to do with fruit.*

*S: Yeah, but we can't be doing so badly, otherwise she would have told us. (2019-03-28, PG, Sonia, Estrella, Paula, Alicia and Kenia, VID, Au).*

This "tension" ends up affecting the quality of the group process, leading to the objective or value most present among students being to finish the work as soon as possible.

*S: We haven't carried out the methodology, the assessment or the teaching role. So, at the very least, outline the three points and then develop them. At least we have done these. (Case group observation, Phase 2).*

## **Discussion and conclusions**

This experience has made it possible to demonstrate that LS is a training strategy which promotes the development of reflective habits in teachers, in accordance with García & Castro (2012), Korthaguen (2010), Perrenoud (2008), Marín & García (2016), and Soto (2016). Designing authentic tasks has allowed students to go beyond the academic field, coming out of their comfort zones and developing a will and predisposition to learn, i.e. what Pérez Gómez (1998) proposes as relevant learning, breaking away from the synergies they had learned throughout their school years. The need for collaborative spaces, rethinking the design of the tasks and taking up a position as a teacher who guides, accompanies and facilitates learning, has helped them to develop their professional teaching (Wilson & Sharimova, 2019).

Furthermore, although the scarce trajectory in cooperative learning in the teaching profession (Baldin, 2010) has been demonstrated, it should be noted that using LS as a training strategy facilitates the implementation of cooperation, dialogue, exchange and consensus-building among professionals (Cajkler et al., 2013).

According to Wake et al. (2013) and Seleznyov (2020), implementing such strategies in the curriculum would require more time for planning and implementation, along with increased coordination and connection to the subjects of the curriculum (Seleznyov, 2020), building the training proposal based on Lesson Study and common pedagogical principles around the development of professional skills and the reconstruction of practical knowledge. If there is one thing that stands out from this experience, it is that Lesson Study does not by itself ensure progress in training processes, but rather must be accompanied by a meaning and a reason, and this meaning will always be the process of opportunities for reconstruction.

Our in-depth study leads us to the conclusion that initial teacher training can only be successful if based on training strategies of this type and carried out under the primitive, essential conditions explained above, as this favours the professional development of teachers from initial training and cooperative learning based on the heterogeneity of participants. Given the complexity of LS, it would also be advisable to propose shorter "demo" experiences around LS, giving students an overview of the entire process from the very beginning.

Studying close tutoring as a core aspect in the Lesson Study process in initial training is proposed as a future line of research.

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