Teachers' Views of the Use of Video in Lesson Study in Higher Education: A Multiple Case Study in Spain

Lesson study (LS) is a process through which teachers design, teach and discuss a lesson collaborating with colleagues. Sometimes, it includes video recording the lesson so teachers can use videos to later discuss the lesson and its improvement, however, there is little research addressing the consequences of doing it. This article investigates participants' perceptions and use of video within LS. Results show that participants perceived video in LS as viable and with potential to stimulate reflection and to improve lessons, but also evince that video affects the outcomes, management and sustainability of LS. We analyze and discuss its potential and the challenges it poses, suggesting ideas for its implementation.

Keywords: lesson study; video; stimulated recall; higher education; reflection.

1. Introduction

This research forms part of a teaching innovation project at four colleges of a public university in Spain in which lesson study (LS) was conducted. LS is a practice originating in Japan through which groups of teachers collaborate to design, teach, observe and analyze a lesson aiming to improve students' learning (Lewis, 2009). As in other teachers' training activities, video recording of classroom experiences is sometimes used in LS (in higher education, see, for example, Kamen et al. [2011]), with videos later being reviewed to encourage the participating teachers to reflect on the development of the lesson. However, the use of video in LS has often been adopted uncritically, taking its virtues and benefits for granted. Without an explicit examination of how or whether video is helpful in the specific process of LS, we only find the study of Lim, Lee, Saito and Syed Haron (2011) discussing how participants in LS liked or

not using videos; in consequence, as described by Wang and Hartley (2003, p. 105) for video technology in teacher education, "its effectiveness is more often assumed than carefully documented". With this in mind, we seek to answer the following question: How do LS participants perceive and experience the use of video in the LS process? Up until now, any consideration of the merits of the use of video in LS has generally been extrapolated from studies about the use of audiovisuals in other teachers' training practices. Our contribution is to provide an analysis of the use of video in LS itself, establishing a baseline for future discussion.

1.1 Lesson study

LS is a cyclical process of inquiry that a group of teachers carry out to create a lesson, teach it, and analyze it so that they can later improve it. In its basic form, LS consists of the following phases (for details, see Lewis & Hurd, 2011; Takahashi, Watanabe, Yoshida, & Wand-Iverson, 2005):

(1) Set objectives for the lesson, usually in terms of students' learning.
(2) Design the lesson, paying attention to the students' characteristics and reviewing instructional materials.
(3) Design a proposal of inquiry (motivation, tools for collecting data, etc.) that teachers will carry out, so they can analyze the lesson later.
(4) Teach the lesson (usually one teacher) and observe it (the rest of the group) to collect data relevant to the previously designed proposal.
(5) Jointly analyze the lesson using the data collected in a reflection session, so that the lesson can be improved, re-taught, and disseminated.

Since the end of the 1990s, LS is a practice that has been adapted for use in around 30 countries (Lewis & Lee, 2017), but its roots are in Japan, where it is a central

component of the teachers' training and professional development (Stigler & Hiebert, 1999). LS has generally been used in primary and secondary schools and in undergraduate-level teachers' training, given its usefulness for, among other goals, helping teachers develop their pedagogical content knowledge (Coenders & Verhoef, 2018), change their practice (Pareja Roblin, Ormel, McKenney, Voogt, & Pieters, 2014) and generate curricular development (Darling-Hammond, 2017) and innovation (Kuno, 2018). In contrast, the use of LS to train teachers in higher education finds itself in relatively unchartered waters (Watanabe, 2011).

Regardless of the education level, it is not uncommon for LS practitioners and researchers to use video recording to carry out and conduct research about LS, occasionally attempting to boost collaborative reflection with it (e.g, Cohan & Honigsfeld, 2007; Vrikki et al., 2017). However, as we have noted, the videos' usefulness is taken for granted and has not been deeply analyzed in the specific context of the LS practice. Up until now, only Lim et al. (2011) have asked the teachers whether they liked or disliked different components in LS, including video among them. Our study though, pursues to go into detail about the teachers' perspectives beyond their liking or not to the tool.

1.2 Video in teachers' training

In their review of 255 studies that used video in teachers' training, Gaudin and Chaliès (2015) conclude that practitioners should use video with caution, keeping in mind the concrete challenges presented by its effective use, which is determined by the way that video recording is incorporated into other tasks (Masats & Dooly, 2011). Also, Major and Watson (2018), in their review of 82 studies that examine the use of video to support teachers' professional development, arrive at a similar conclusion when they recommend remaining cognizant of the kind of learning that video can foster. Seidel,

Stürmer, Blomberg, Kobarg, and Schwindt (2011) also take up this question, calling for more research exploring different scenarios in order to understand better the impact of the use of audiovisual tools in different teaching practices.

A review of relevant recent research focused on teachers' training programs that use video (Browe, 2009; Cutrim Schmid, 2011; Henry & Fetters, 2012; Nilsson & van Driel, 2010) shows that these programs tend to justify the use of video by characterizing it as a resource for recalling lived experiences. Tacitly, they accept that video makes it possible to connect practical examples with different aspects of teachers' cognition (Morton, 2012), enabling them to work with the meanings that teachers attach to past actions and discourses. This recall potential of video, alongside its usefulness in eliciting views of the profession (Blomberg, Stürmer, & Seidel, 2011) and encouraging reflective skills (Loughran, 2010), has made video a popular resource for teachers' and pre-service teachers' training at all levels of education (Calandra, Brantley-Dias, Lee, & Fox, 2009; Ching Leung, Ho Chan, & Cuililng He, 2019; Kale & Whitehouse, 2012).

Nonetheless, we cannot assume that watching videos of teaching experiences is always productive or that it leads teachers to reflect spontaneously on their practice (Consuegra, Engels, & Willegems, 2016). The usefulness of video as a training tool depends on the way its viewing is understood and approached (Tochon, 2007) and on the lenses used to guide its analysis (Santagata & Angelici, 2010). Thus, merely viewing classroom videos does not ensure that teachers will learn (Gaudin & Chaliès, 2015), nor will it necessarily lead them to develop professional knowledge or more effective classroom practices.

To encourage these outcomes, teacher's training tends to combine the viewing of videos and the asking of questions to stimulate recall. Stimulated recall refers to an introspective and retrospective method to elicit data about thought processes (Fujii &

MacKey, 2009; Gass & MacKey, 2007). It is a set of procedures (Calderhead, 1981)—derived from the practice of "thinking aloud"—which involves recording behaviors and using the recordings to help participants develop narratives that evoke the thought processes that underlie the recorded behavior. According to Clark (1998), these are the main techniques for carrying out processes of reflection and analysis. Thus, combining video with stimulated recall can help teachers to become aware of the lived process and give an account of it, providing direct access to their cognition (Kagan, 1990). This makes it possible to capture teachers' reflections (Dempsey, 2010; Stough, 2001) and call on them to deepen their explanations and pay attention to possible alternative strategies (Lyle, 2003) for their actions, which is a process necessary for LS.

2. Methods

2.1 Participants

The research, approved by the Ethics Committee of the hosts colleges (Institutional Review Board BLINDED), took place during the 2017-2018 and 2018-2019 academic years as part of a program for teaching innovation at four colleges of one of Barcelona's public universities.

This program, still ongoing, incorporates several strategies and methodologies for teachers' training, including LS, and aims to enhance the teaching quality at these four colleges by demanding its participants to cooperate and reflect on their teaching practice. Over 204 teachers have joined the program. Data for this paper come from 12 teachers that participated in the LS program in its implementation for health sciences teaching.

The teachers participated in the program and in this research of their own accord and were selected following six inclusion criteria: (a) representation of different

disciplinary perspectives, (b) representation of different academic career moments (novice and senior teachers), (c) no previous experience being video-recorded while teaching, (d) no previous experience carrying out LS, (e) availability to participate in all the sessions of the program, and (f) willingness to be audio and video-recorded all along the full LS cycle. Our 12 participants met these criteria and included six teachers from the bachelor's degree in nursing (N1, N2, N3, N4, N5 and N6), three from the bachelor's degree in medicine (M1, M2 and M3), and three from bachelor's degree in podiatry (P1, P2 and P3).

Considering their availability, these participants were divided into four interdisciplinary groups each of which carried out one LS cycle. The LS cycles were conducted in four different courses, which had a total of approximately 160 enrolled students who participated voluntarily in the study and consented in writing to be recorded and to have these recordings used for research purposes.

Table 1.

LS cycles, degrees and participants.

LS cycle	Degree in which the lesson was taught	Teacher delivering the lesson	Participants in the LS cycle
1	Master's degree in Applied Research Methodology in Nursing Care	N1	N1, N3, N4, N6 and P2.
2	Bachelor's degree in Nursing	N5	N5, P1, P2 and P3.
3	Bachelor's degree in Podiatry	P1 and P2	P1, P2, P3, N2 and M3.
4	Bachelor's degree in Medicine	M1 and M2	M1, M2, M3, N2 and P1.

2.2 Method, procedure and data collection

We conducted a multiple case study as a research strategy that provides robust data (Yin, 2009) and makes it possible to transfer results to other contexts (without aiming to generalize). Our cases were the four LS cycles, each conducted by a different LS group on a lesson in a different field in the health sciences.

We follow Stake (1995) in understanding the case study as a methodology that is particularistic, that allows interpretations to be sensitive to the context, and that is oriented toward increasing understanding and discovering meaning, generally, through induction.

We strategically triangulated our modes of data collection to ensure the reliability of the results, using the following instruments because of their usefulness in exploring a reality through participants' perceptions and experiences:

- Reflective diaries: in parallel to the LS process, the participants kept an online diary in which they were encouraged to reflect on the process by responding to different prompts that, among others, asked them to write about their perceptions carrying out LS, their thoughts on what worked and did not work, the experience of being observed and video recorded and its effects on LS, and their impressions on what they would do different given another chance. The diaries gave us the opportunity to monitor the changes they reported (Kaun, 2010) and later compare them with our observations.
- Participant observation and field recordings: during the LS process, the first and second authors collected data through participant observation. Additionally, data were gathered by video and audio recording the various stages of LS.
- Semi-structured qualitative interviews with the participants: interviews were conducted before the LS cycles began to allow us to get to know the participants

and focus our research. Our queries were focused on their expectations regarding LS, their professional biography, previous collaborative experiences and their conceptions of teaching. A second round of three interviews was conducted after the LS cycles ended to discuss our emerging analysis with the six teachers who gave the lessons (two teachers per interview), the most involved in the program as their lessons and students were central to the LS process. The goal of this second round of interviews was to discuss our emerging analysis and gain understanding of some segments studied. Through these interviews—encouraging argumentation following Brinkmann (2007), who writes of the need to challenge the interviewee—, we were able to monitor the relationship between facts and the participants' narrations (Silverman, 2000).

These tools were incorporated into the LS process as we carried out our research in the following sequence:

- Negotiated access to the LS groups.
- Conducted interviews before beginning LS.
- Audio-recorded and observed the sessions conducted to plan the four lessons that were developed.
- Video-recorded and observed the four lessons when they were delivered in the classroom.
- Audio-recorded and/or video-recorded the four reflection sessions, one for each lesson. They took place one week after the delivery of the lessons.
- Conducted interviews after the LS cycles were complete.
- Conducted inductive analysis of the data using the procedures of grounded theory.

2.3 Data analysis

We analyzed and organized the data with the goal of inferring meanings and making sense of the reality that we were studying, in a cyclical process of selection, inductive categorization and comparison governed by the procedures of grounded theory (Glaser & Strauss, 1967; Strauss & Corbin, 2015). The analytical process consisted of three coding stages within the following steps:

(1) Transcribing the content of the interviews and the post-lesson discussions.

(2) Revising the field notes from our observation and reviewing the audio and video-recordings of the planning of the lessons and of their delivery.

(3) Open coding of the transcriptions previously mentioned and of the diaries of the participants, in which we developed a set of inductive codes with properties and dimensions. To ensure reliability, accuracy and internal validity, coding was conducted separately by the first author and second author moving through the data word by word, microanalytically (Strauss & Corbin, 2015). These two set of codes were compared, merged and refined by the third author through discriminating sampling and theoretical comparison techniques to increase their sensitivity and verify their reliability, validity and accuracy. This final set of codes was used by the three authors to code an additional interview, reaching an inter-coding agreement for the codes from 87 to 92%. Thus, this set of codes was used by the first and second authors to code the rest of the transcriptions.

(4) Axial and selective coding, in which the three authors distilled the codes and structured them as a relational model of categories and subcategories.

3. Results

Keeping in mind our research question of how LS participants perceive and experience

the use of video in LS, our analysis results in the following (see Table 2) grouping of three qualitative dimensions, which are divided into several categories and subcategories:

Table 2.

Dimensions, categories and subcategories.

Dimension	Category	Subcategory
1. Presence of cameras	1.a Experience	1.a.a Naturalness
		1.a.b Discomfort
		1.a.c Changing sensations
	1.b Perception	1.b.a Individual
		1.b.b Individual in groups
2. Time	2.a Reviewing	No subcategories
	2.b Length	No subcategories
3. Reflection	3.a Perspective	No subcategories
	3.b Recall	No subcategories
	3.c Concreteness	No subcategories
	3.d Participation	No subcategories
	3.e Logistics	No subcategories
	3.f Discourse and communication	No subcategories

(1) Presence of cameras: this dimension encompasses two categories related to the impact of the cameras:

(a) Experience: category for data connected to how the teachers experienced teaching the lesson in front of the cameras. This category has three subcategories (see table 3), which indicate different patterns with similar weight in terms of the number of teachers who displayed them, and which were not linked to their number of years of teaching experience.

Table 3.

Subcategories and examples from Category "Experience".

Subcategory	Example from the data
1.a.a Naturalness	P1: "I'm not that shy [in front of the cameras] because I think that I have to do what I have to do and I'm not thinking about them".
1.a.b Discomfort	N5: "At no time could I stop thinking about the cameras, because, even though they say that you forget after 10 minutes, you don't".
1.a.c Changing sensations	P2: "It made me feel a little uneasy at first, but then I managed to let go of the cameras and enjoy the experience".

(b) Perception: category for data connected to teachers' perceptions of students' participation during the lesson in front of the cameras. This category encompasses two subcategories (see table 4). The first, "Individual", is related to individual behavior in the full group and shows that, in three of the four cases, the teachers perceived that there was less participation than usual. The second, "Individual in groups", is related to individual behavior during small-group work, and it reveals that, in the two cases in which there was small-group work, the teachers did not perceive that the cameras had an effect.

Table 4.

Subcategories and examples from Category "Perception".

Subcategory	Example from the data
1.b.a Individual	N2: "I saw that they didn't express themselves spontaneously".
1.b.b Individual in groups	P2: "In the slots that were designed for group work (...), I value the actions of the majority, which was predisposed to participate".

(2) Time: this dimension encompasses two categories (without subcategories) related to time constraints and the time pressure caused by using video in LS:

(a) Reviewing: category for data that have to do with the amount of time necessary for reviewing the videos before the reflection session, in order to get the most out of the session. In two of the four cases, the teachers commented on this matter.

(b) Length: category for data that connect the videos to the length of the LS reflection session and teachers' attendance in it. Participants noted in three of the four cases that playing the videos lengthened the session and that they felt less inclined to view long videos.

Table 5.

Categories and examples from Dimension 2.

Category	Example from the data
2.a Reviewing	N5: "I think the time is too short. It's now. And I wasn't going to make it".
2.b Length	N5 (asking to leave during the reflection session as they were watching a video): "Can I leave? It's 26 [minutes] and I need to go".

(3) Reflection: this dimension encompasses six categories (without subcategories) that emerged in the four cases and that are related to the effects that video had on the LS reflection sessions:

(a) Perspective: data related to the perspective that participants gained on the lesson, its delivery, and on how people acted in class.

(b) Recall: data that encompasses the participants' allusions that attributed to video the potential to facilitate their recall of situations that were difficult to remember when the reflection sessions took place.

(c) Concreteness: data connected to how the participants used videos to retrieve precise moments and concrete examples when revising the lesson.

(d) Participation: data related to the perception of video as a tool that helped the teachers participate in the reflection session, because it reduced the worry they felt about talking about the actions of another teacher.

(e) Logistics: data related to views of how working with video made it more difficult to manage the LS process.

(f) Discourse and communication: data that reflect how, through video, the participants could more easily analyze discourse, non-verbal language and bodily position.

Table 6.

Categories and examples from Dimension 3.

Category	Example from the data
3.a Perspective	M2: "[The videos] help me compare myself with M1 and others".
3.b Recall	P1 (in a conversation among participants regarding their memory of a situation): "I'd be lying because probably I wouldn't [remember without the video]".
3.c Concreteness	P3: "(...) a really long slide; I have it written down here, at [minute] 10:33".
3.d Participation	P2 (in a conversation, P2 uses the video to talk about another participant's words during the lesson): "She says (…); given that we can rely on the video…".
3.e Logistics	M1: "I was unable to load or watch the videos. I have no access".
3.f Discourse and communication	M2 (analyzing herself in a recorded situation): "I like to point at things. I go way up to the front, then over here for a little bit, over there again…".

4. Discussion

Our results make it possible to go beyond common assumptions about the use of video in teachers' training. With them, we can consider and understand how videos fit into LS in examining how they influence the LS process and its goals and, from there, discuss its implications and recommendations when combining them.

In relation to the first dimension, presence of cameras, we have seen that, according to the participants, recording classes in order to have videos that will help them reflect on the lesson and its delivery affects the behavior of the students and of the teachers who are not accustomed to it, the reactivity or camera effect (Blikstad-Balas, 2016). In this sense, the lesson unfolded differently from how it would have without the cameras, raising doubts about the validity of the modifications that arise from its delivery.

Video-recording the lesson also affected the LS reflection session, because the behaviors related to the presence of cameras became a topic of conversation, triggering comments extrinsic to the lesson itself (see table 3, subcategory discomfort); yet, those comments might generate pedagogical reflections on the lesson. For example, when teachers noted that individual participation was reduced in full-class interaction but not in small-group work (see table 4), they opened the door to increasing the proportion of small-group activities in the lesson.

We could argue, as Aarsand and Forsberg (2010) do in their study with children, that regularly carrying out this process would contribute to teachers and students overcoming their uneasiness with the cameras. But both LS (Chassels & Melville, 2009) and long-term practices that incorporate viewing videos (Gaudin & Chaliès, 2015) are difficult to maintain over time. The participants in our research noted that the process of using videos in LS created difficulties related to logistics and time management, so

adding more cycles of LS could exacerbate these difficulties. In this sense, the feasibility of performing various LS cycles in a single class in order to naturalize the presence of cameras among a given group of teachers and students is unclear.

In relation to the second dimension, time, the data reveal participants' ambivalence. On one hand, the teachers wanted more time to review and prepare their videos and reflections before the LS reflection sessions (see table 5, category reviewing). On the other hand, they indicated that the passage of time between the lesson and the reflection session made it more difficult for them to remember classroom situations and their thoughts at the time (see table 6, category recall). Here we see the issue of time as a factor that we must take into account to prevent participants' memory of the delivery of the lesson from combining with memories of other experiences, thus undermining the validity of what they say (Calderhead, 1981) in the reflection sessions. The literature doesn't offer a definite answer on this issue. Some researchers note the importance of immediate recall in making it less likely that perceptions will be altered (Lyle, 2003) and avoiding reconstruction based on the video rather than from memory (Henry & Fetters, 2012). Other researchers point out the potential of videos to extend the time between the experience and reflection and to help overcome the cognitive bias that affects reflection based solely on memory (Hill, Crowe, & Gonsalvez, 2015). The use of web enabled video systems for reflection could contribute to overcome any time constraints (Cheung Kong, Shroff, & Keung Hung, 2009); however, it would increase the difficulties to collaborate and the face-to-face nature of LS. Therefore, those who wish to incorporate video into LS could contemplate two courses of action:

(1) Minimize the time between the delivery of the class and the reflection session, allowing memory to be stronger and therefore play a larger role in improving the lesson (see an LS example in Takahashi and Yoshida [2004]), raising the

possibility of not having to show some parts of the video, since the memory would be fresh (Browe, 2009). This approach would make it possible to complete more LS cycles, but it would make the process more difficult logistically and would limit the time that participants had to reflect and prepare before the reflection session and therefore their chances of participating at all.

(2) Increase the time between the delivery of the class and the reflection session to facilitate logistics, participation, and the previewing of the video by the participants. This would also increase their chances to gain perspective and reflect on the lesson (see an LS example in Hurd and Licciardo-Musso [2005]), at the expense of hindering memory—as Alles, Seidel and Gröschner (2018) found—and reducing the number of LS cycles that can be completed in a single course.

We have also seen that the teachers were inclined to make selective use of the videos, preferring to view short fragments rather than extensive episodes (see table 5, category length) that illustrated all issues relevant to the lesson and that made the LS reflection sessions longer (for similar observations not related to LS, see Browe [2009]; Henry and Fetters [2012]). These preferences are related to a freer use of the videos, which, according to Danielowich (2013), generates greater acceptance and feelings of ownership over the reflections that emerge from the viewing. These ideas also gibe well with those of Tobin and Hsueh (2007), who observe that videos of a documentary nature (in our research, those summarizing the whole lesson) lead participants to abandon their critical positions to adopt more passive attitudes. These reflections support the position of Borko et al. (2008), who argue that there should be a concrete goal for viewing videos. In the case of LS in the professional practice of teachers, this leads us to contemplate the use of video as a way to evoke memories that facilitate

critical analysis of situations, rather than using it as didactic tool in itself. Taking this approach, and specifying the length and intention of the videos, would contribute to making it easier for teachers to participate regularly.

Finally, a third dimension of analysis is participants' reports of how videos contributed to the LS reflection sessions. As shown by previous research (Borko et al., 2008; Hill et al., 2015; Santagata & Bray, 2015; Watters, Diezmann, & Dao, 2017), working with videos in interactive ways helps teachers become aware of and work on aspects and critical incidents of the lesson and classroom situations that would otherwise go unnoticed. One such aspect is the analysis of discourse and non-verbal language. Teachers had not paid much attention to these aspects when planning their lessons, and without the video, discussion of non-verbal language would have been imprecise during the reflection sessions. Video data enriched the discussion of changes in the lesson, because it enabled participants to pay attention to nuances (see table 6, category discourse and communication) related to the teacher's bodily position or his/her expression of communicative intentions (to the point of observing the participants analyzing the use of pragmatic markers [Fraser, 2006] that made it difficult for the students to interpret what the teachers were saying). Furthermore, this attention to language use had the potential to make LS participants aware of what their use of certain expressions revealed about their view of the teaching-learning process.

Research on non-LS teachers' training suggests that teachers immerse themselves in a lesson when they see themselves in video (Seidel et al., 2011). In contrast, our data (see table 6, category perspective) reveal that video helped participants to distance themselves from the lesson (which was probably also aided by the fact that the lesson was constructed collaboratively rather than being the work of a lone teacher). This process of distancing discourages teachers from giving automatic

responses when they explain what they have observed in the classroom. It also increases the likelihood that, when improving the lesson, they will return to it with greater perspective and from a less personal stance.

Our results also qualified those of authors who point out that teachers feel threatened sharing videos of their classes (Borko et al., 2008), that they hesitate to engage in peer evaluation (Cutrim Schmid, 2011) and that they need to be extra-committed to be willing to face their actions on video (Dempsey, 2010). Most of our participants acknowledged that having a video helped them participate and comment on the actions of colleagues (see table 6, category participation) by enabling them to make more specific observations (an acknowledgement that Rosaen et al. [2008] pointed out in their study of how videos change teachers' reflections) and, in so doing, release group tension. In that manner, as Alles, Seidel and Gröschner (2018) found, the videos were used to support arguments in front of the colleagues.

Similarly to Gaudin and Chaliès (2015), teachers recognized the potential of videos to create collaborative spaces in which the boundaries of personal knowledge are transgressed. The participants found that sharing the videos resulted in a more productive practice in terms of improving the lesson, since they could incorporate their peers' opinions to improve it and justify the modifications more rigorously by retrieving precise moments (see table 6, category concreteness).

5. Conclusion

To conclude, this study shows that teachers' training programs should avoid assuming that what we have learned from studying the use of video in other practices is also transferable to LS. We have demonstrated that LS participants perceived video in LS as viable, and that they noted its potential to stimulate reflection and to improve lessons. Thus, we have shown that using video in LS made it possible for participants to be more

specific; gave them perspective in analyzing the lesson; reduced participants' worries about expressing their opinions; and made it easier for them to remember, notice and analyze situations, pedagogical viewpoints and communicative aspects. However, participants also noted drawbacks that affected the process of LS and its outcomes. Using video in LS meant that LS participants worked with data on lessons and behaviors that had been altered by the presence of cameras. Moreover, participants raised concerns about the length and characteristics of the videos and faced difficulties in logistics and time management, which affect their opportunities to re-implement the lesson and sustain the LS process. The implications of these results bring us to recommend caution in incorporating video into LS. Practitioners should be aware that the positive outcomes that video adds to LS come with a price: the higher chances of making LS a bothersome and unpractical task for the teachers, affecting their motivation, learning outcomes and continuity in the process. Thus, at the light of these results, we recommend that in contexts where LS is still a new practice used to encourage teachers' professional development, if there is an interest to include the use of videos, to do it: a) preparing beforehand the reflection session in order to decide how and when it is the best moment to watch the videos in order to facilitate its integration within it; b) selecting video segments specifically thinking about potential teachers' learning outcomes we want to promote; 3) using short and very specific segments to refer to particular situations, instead of long segments including different topics to discuss.

Despite these results we have discussed, some limitations of this study deserve to be highlighted. First, even if the participants of the study come from different disciplines, they all come from health sciences related degrees and from the same institution. Thus, the sample size should be increased and institutionally and

disciplinary extended to find if these results and their quality is maintained. Second, the participants of the study are at different career moments and their learning and professional needs and interests varied. As a result, their perceptions sometimes differed, and research findings may be affected. Third, in terms of the methodology of this study, the use of reflective diaries as a data source was perceived by the participants as time-consuming, unnecessary and redundant, as they found they were writing about the same topics we addressed during the interviews.

For further studies, we recommend taking these limitations into consideration and to expand our knowledge by: a) investigating whether these findings are transferable to other educational contexts; b) comparing the influence of the disciplinary field on participants' perspectives of the LS process; c) analyzing and comparing the perspectives and experiences of novice and senior teachers. Beyond this, we also encourage future researchers to incorporate students' views in relation to how they consider that the lessons and their teachers' instruction and attitudes could have been affected by the presence of the cameras.

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