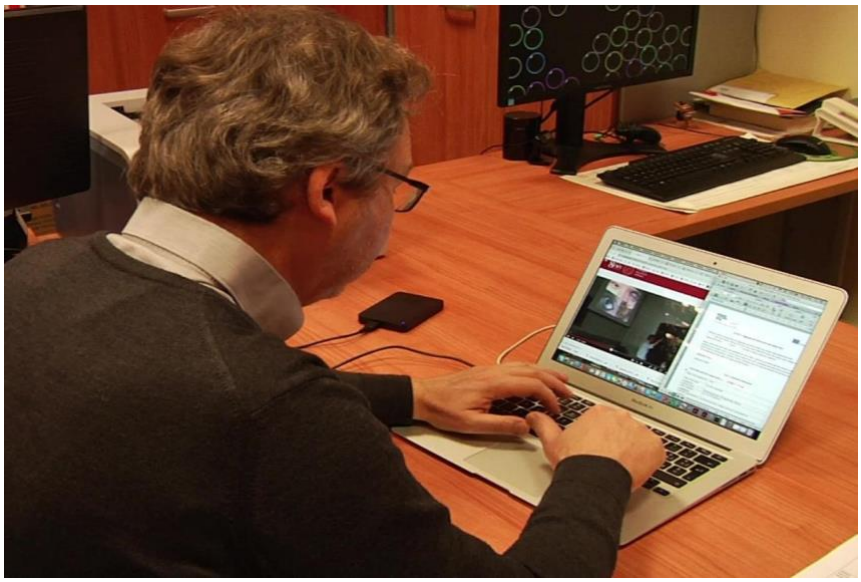
Using videos to promote reflective practice on teaching: A case study



SUMMARY

This case study explores the limits and potential of using videos for reflective practice with higher education teachers. It provides insights and suggestions for academic developers and educators as well as the teachers who wish to organize and engage in video-based reflective practice.
To do so, we review the academic literature and the data collected throughout the IntRef project with academics (N= 37) from different disciplines, seniority levels, and universities, who engaged in one of the video-based reflective methods: The Teaching Process Recall and Peer Observation. Drawing on video-recordings of personal teaching practice, academics identified, reflected, and received, and provided feedback on classroom events to inquire into and enhance teaching and learning.

This case study explores the type of classroom events identified by the teachers, the kind of reflection stimulated by the methods, and the barriers teachers may face and which limit their noticing of classroom events.

It concludes by providing insights and suggestions on how guide and scaffold teachers' viewing and analysis of personal videos to foster the ability to notice significant classroom events and critical reflection.

Keywords
Video-based reflection, reflective practice, selective attention, higher education, teaching & learning

IntRef
Intercultural Reflection on Teaching

A case study by the IntRef Team at University of Padova, Italy (in no particular order)
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What does the literature say?

Compared to classic observation or reflective writing, videos offer a window into classroom activity without sacrificing authenticity and complexity (Gaudin & Chaliès, 2015; Harlin, 2014), making it possible to reveal missed events and making students' thinking more visible (Barnhart & van Es, 2015).
In fact, several scholars agree that the ability to identify and interpret classroom events worthy of reflection and to make decisions based on this understanding represents a crucial part of teaching expertise (van Es & Sherin, 2008; Rosaen et al., 2008). Sherin (2007) defined this ability as professional *vision*, consisting of two main subprocesses: *selective attention* and *knowledge-based reasoning*.

Selective attention refers to how teachers decide to focus their attention on and notice classroom moments that are worthy of inquiry within the complexity of the setting. On the other hand, *knowledge-based reasoning* refers to the ways in which teachers describe and interpret what has been identified in the video based on their own personal knowledge, beliefs and experience of teaching, and how they imagine new mechanisms and alternatives for the future. Thus, the teacher's professional vision can be summarized as a "*noticing and wondering*" activity aimed at inquiring into teaching experience and revising practice.
Research has demonstrated that using videos can, for example, be particularly useful for: testing the effectiveness of teaching methods and identifying alternatives; enhancing classroom interaction and questioning; increasing the active role of students and their speaking in class; challenging assumptions about students and their learning; and inquiring into their thinking processes in order to support them (e.g. Brown & Kennedy, 2011; Cho & Huang, 2014; McCullagh, 2012; Harlin, 2014). However, the use of videos can bring a high cognitive and emotional load, presenting multiple information and emotional responses that can overwhelm the teacher - especially pre-service or novice teachers using their own videos (Derry, Sherin, & Sherin, 2014).

Research clearly demonstrates that without adequate training and focus, teachers experience multiple difficulties in identifying relevant events in classroom videos. Without a particular filter guiding the analysis, teachers tend to focus on elements of little significance, producing a descriptive and superficial reflection (Gaudin & Chaliès, 2015). Various studies have demonstrated the need to prompt participants (e.g. Danielowich, 2014), or to provide scaffolding to support teachers' reflective practice (Blomberg, Sherin, Renkl, Glogger, & Seidel, 2013; Rich & Hannafin, 2009). However, they warn that using predetermined checklists may constrain the gaze and perception of the situation by the observer (Shortland, 2010). Altogether, the literature supports the idea that higher levels of reflection cannot be reached just by watching videos, but that a structured learning process has the potential to support reflection. Thus, video-viewing and analysis should be scaffolded, guided and supported, providing appropriate frames to structure the inquiry process, anticipating elements that may be identified and possible interpretations of these. This can be done by using instructional approaches and frames for reflection - such as those based on Dewey or Gibbs' reflective models/cycles - with open-ended writing prompts, semi-structured guides for video-viewing to accompany group discussion, or highly structured video-annotation tools.

Despite this large body of research on video-based teacher reflection, very little is known about how video-based protocols support reflection (Danielowich, 2014), especially in the higher education sector. The use of video is often described in general terms and few studies document the trainer/facilitator's contribution in the protocols (Arya et al., 2013a), or describe in detail the instructions and how the video is integrated into instruction (Baecher et al., 2018).

The video-based methods

The IntRef project aims to enhance the internationalization and quality of teaching and academic development by proposing and testing methods for collaborative reflection on teaching that encompasses an intercultural dimension. Within the project we developed and tested three methods. Two of these rely on video-recordings

and video-conferencing to facilitate collegial inquiry and discussion about teaching and learning with fellow academic teachers: intercultural Teaching Process Recall and intercultural Peer Observation.

Teaching Process Recall

Figure 1. Chart illustrating the Teaching Process Recall process

Teaching Process Recall (iTPR) is based on principles of action learning and self-assessment, examined through an intercultural lens. A small group of academics film and review their own teaching and share an excerpt during a mutually supportive transnational meeting facilitated by video-conferencing (see Figure 1 illustrating the process). The 'recaller' (the teacher who brings the clip into the discussion) takes ownership of the discussion, during which the other participants, the 'inquirers', help him/her to reflect on his/her own teaching rather than making judgments. Participants take turns to show and discuss their video clips with each other, First the 'recaller' explains the reason for selecting the particular clip and its context. Then the clip is played and discussed by the group, led by a facilitator, usually an educational developer. Members of the group are encouraged to support the recaller in reflecting on the clip by asking questions and sharing observations, rather than making evaluative judgements.

Participants are given two choices for recording a session: they can either receive help from one of the project assistants, or self-record the session using guidance materials. In the first case, one of the project assistants arranges a convenient date/time to visit the class to conduct the recording. Later, the recording is uploaded on to the university media space and is shared with the participant to view. In the second case, participants are provided with guidance material on how to record a session. In both cases, they are provided with a link to the Technological Toolkit which details the steps needed to ensure a good quality recording. Participants are also provided with a template information sheet and general ethical guidelines to share with students before recording.

Participants are provided with guidance on how to view the recording, choose the clip and to record the initial reflections: for example, when viewing, participants are asked to watch the entire recording of the teaching session to note any observations and questions arising from it. They are asked to identify any incidents that are interesting, challenging, successful, and/or surprising. They are advised on how to select the clip by identifying an instance that occurred during the recorded session, something they noticed and that particularly struck them, made them think or wonder and which therefore deserves examining in more depth. We will call this a 'significant event'. We ask for the clip to be approximately 2-4 minutes long – no longer. Participants are asked to fill in a form asking and prompting them to provide information about themselves, the recorded session, and the rationale for choosing that particular clip (see **Link O2**).

Peer Observation

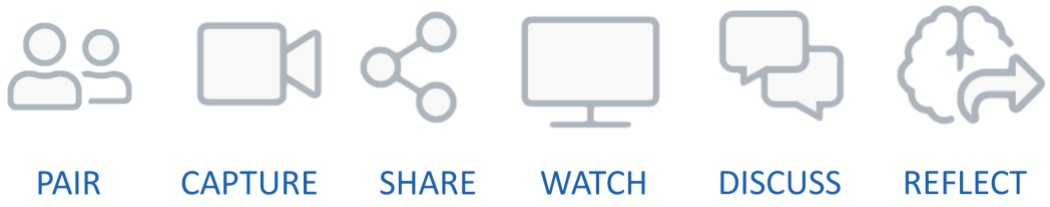

Figure 2.Chart illustrating the Peer Observation process

Peer Observation builds on classroom observation practices, peer review and experiential learning principles (Peel, 2005). It is widely known and adopted in the context of higher education both to evaluate and enhance teaching. In fact, it can be guided by different rationales ranging from evaluative, to developmental, and collaborative models (see Gosling, 2005 for an extensive discussion of these models). Compared to classic peer observation protocols, where one or more colleagues observe the teacher in class, in the IntRef project it is based on video-recordings (see Figure 2 illustrating the process).
Following the idea of Cosh (1998) on the active self-development of the observer, the teachers have the opportunity to review the recording of their own teaching as well as that of their peer involved in the activity, taking turns in the roles of observed and observer. Teachers are assisted in filming their own teaching and forming transnational pairs in which recordings are shared in an online repository to be analysed and discussed.

A crucial factor in the peer observation protocol is the teachers' agency in their learning path. Facilitators have a guiding role in designing and structuring the activity, for example proposing partners, and providing suggestions for making appropriate decisions, as well as recording, editing and uploading the teaching sessions. However, the teachers play an active role in the entire process, such as in selecting their partner, making decisions regarding the session to observe, the type of feedback they would like to receive, the teaching dimensions to inquire, and making plans for their own development.

A preliminary survey is carried out to explore their expectations and objectives for professional development. Accordingly, they are supported in choosing the most appropriate teaching sessions to be recorded and those to be observed and scrutinized. Indeed, in line with their expectations and developmental objectives, facilitators give support in the choice-making process by explaining what type of teaching session might be most appropriate, or what kind of teaching dimensions can be explored through video-recordings. While reviewing the entire session is the main task of the peer observation protocol, a key component of the video-viewing process involves identifying and reflecting on significant classroom events. Our conception of significant events is grounded on the notions of Tripp (1993) and Woods (2012) of critical incidents or critical events. These are considered unintended or unexpected events that occur during class and that serve to trigger insights into some aspect of teaching and learning (Richards & Farrell, 2011). They can be considered critical not because they are negative per se, but because of a personal interpretation of the significance of the event.

In this regard, video-viewing and the identification of classroom events are guided and supported in multiple ways: first, teachers are advised to take notes after the session about events that captured their attention; second, they are provided with instructions explaining and anticipating what type of classroom events they could identify, as well as a grid for video-viewing and prompts for consideration based on teaching dimensions and examples (see **Link O2**).The consequent reflection on classroom events is guided through reflective questions adapted from Gibbs' reflective cycle (1998), and used for describing and interpreting the professional situation, its perceived significance, the related feelings, evaluation and potential alternative of action or interpretation.

The teaching and learning significant events: type and content of classroom events and related reflection

Over the course of the project, academic participants found the video-based methods for reflection to be very valuable resources to help them to explore and enhance their teaching. For most academic teachers, this was the very first time they had had the opportunity to view themselves teaching on video, as well as to engage in reflective practice with the support of colleagues. To investigate the teacher experience and perceived effectiveness of the methods, we developed ad-hoc evaluation questionnaires to be compiled at the end of the activity. The findings from these data suggest that for the teachers involved observing themselves while teaching and selecting and discussing significant events/clips for discussion was a crucial and valuable element in order to structure their personal reflection and discussion with colleagues.

To investigate what kind of events were noticed and selected by academics, we used the written descriptions and reflections produced by participants on selected events (N=37) through the preparatory forms adopted in the Teaching Process Recall and Peer Observation methods. For this analysis, we adapted the coding scheme proposed by Frederiksen, Sipusic, Sherin, and Wolfe (1998) to inquire into teachers' professional vision during classroom observation. We developed a coding scheme that includes four macro-categories: management, climate, pedagogy, and student reasoning (see the coding scheme in Figure 1). The scheme proposed by Frederiksen, Sipusic, Sherin, and Wolfe (1998) refers to mathematical thinking, so we broadened their conception to include subject-based student reasoning, which relates to the subject taught/topic of the lesson.

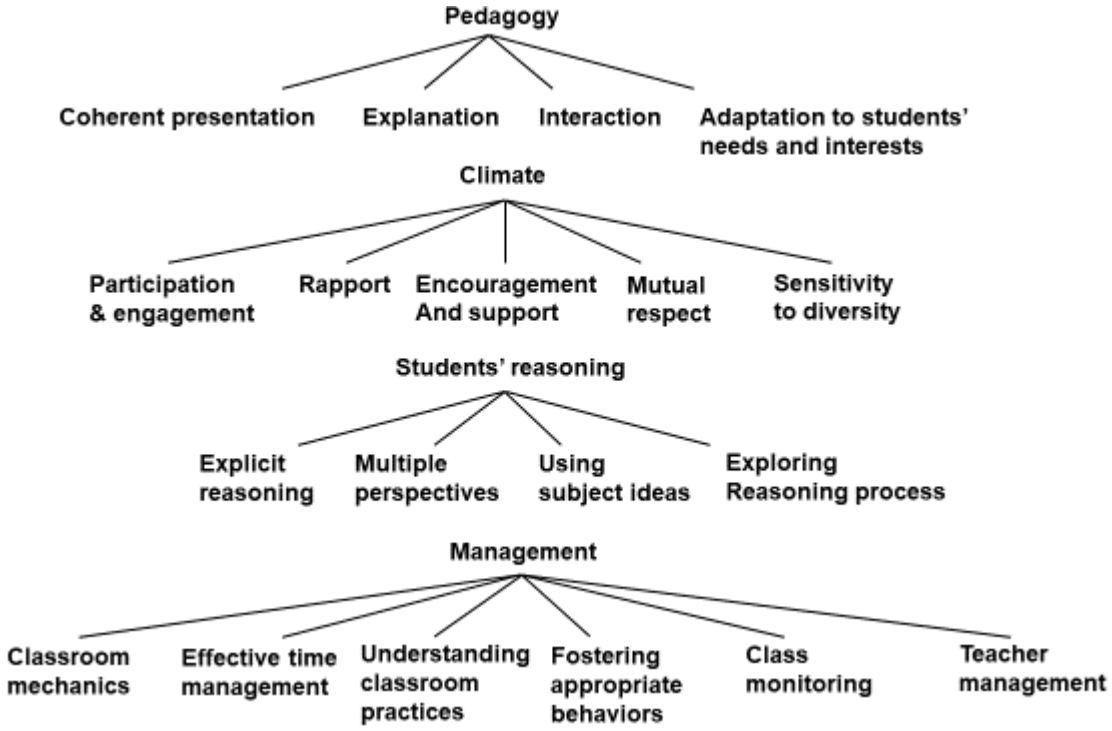

Figure 3. Categories and micro-categories of the coding scheme for classroom events

Events coded as *management* concern issues of classroom organization, such as the handling of disruptions, fostering appropriate behaviours, time management, or monitoring class activities. To these micro-categories, we added inductively a category pertaining to self-management, which concerns teachers' personal performance (e.g. "*My slide is not accurate and correctly phrased and it reflects my lack of preparation and it confuses the students*") or emotional states (e.g. "*I felt a bit frustrated that there were people who had skipped earlier term lectures, and then expected to just pick it up in one revision session*").
On the other hand, climate refers to how the classroom social environment empowers learning. This includes, for example, the level of participation and engagement of students in full class, small group, or in one-to-one

settings, the rapport between the teacher and the students and among students, or respect and sensitivity to diversity. Pedagogy has to do with the teacher's presentation and explanation in the classroom, the selection of tasks, or interaction with students in assessing their understanding and assisting their articulation of thoughts. Finally, student reasoning refers to, for example, engaging in sense making around ideas related to the subject taught, making conjectures and trying to prove them, relating theory to real-world situations or linking concepts to individual experience. It refers to the problematization or real-world application of concepts and theories to allow or improve understanding and learning processes. In coding the events, we adhered closely to the explanations and descriptions provided by the teachers about the reason(s) for noticing and selecting a particular video-segment for further reflection. This is why the total number of final codes is different from the total number of academic participants or selected clips, given that one single event might have been selected because it encompasses various teaching dimensions, such as instances of participation and engagement of students (climate) as well as interaction (pedagogy).

Overall, engaging students in classroom discussion and active and cooperative learning moments were often a focus across the disciplines, demonstrating that video analysis is particularly suited for reviewing teacher and student talk and interaction. In fact, several classroom events that were selected, as well as the mechanisms to adopt in future identified by the teachers, were specifically oriented toward creating a participatory atmosphere in class that facilitates and empowers student learning. Other than that, testing the effectiveness of teaching methods and classroom questioning, improving teacher instructional input and the facilitation of learning, or promoting students' autonomy, critical thinking and awareness were major concerns of the academics involved. Figure 2 and Table 1 show the percentage and frequencies of codes for the different categories (cf. Frederiksen et al., 1999 for a thorough description of the codes).

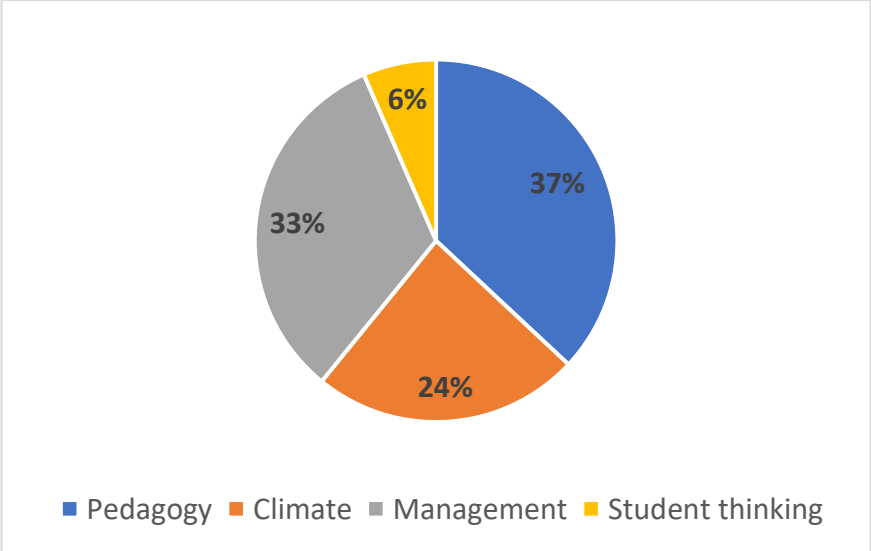

Figure 2. Percentage of macro-categories for coded events

Coded events	N
Pedagogy: Interaction	10
Pedagogy: Explanation	7
Pedagogy: Adaptation to students' needs	1
Climate: Participation & engagement	6
Climate: Rapport	5
Management: Teacher management	7
Management: Monitoring class activities	3
Management: Time management	2
Management: Fostering appropriate behaviour	2
Management: Student understanding of classroom practices	1
Student reasoning: Exploring reasoning process	2
Student reasoning: Explicit reasoning	1

Table 1. Frequencies of micro-categories for the coded events

Our literature review stresses the importance of guiding and supporting the video-viewing activity by anticipating elements that may be identified and possible interpretations. Thus, here we discuss the results, providing illustrative examples pertaining to the events identified by the teachers per category. Our aim is to provide academic teachers with some examples of what they can identify and reflect on when observing their teaching, as well as some tips on how to avoid focusing excessively on events of little significance for a number of reasons.

Pedagogy

Pedagogy represents the most frequent type of noticed events (37%, N= 17), denoting how the interaction element (e.g. teacher asking thought provoking questions, allowing time for thinking, assisting and encouraging students in articulating their thoughts) and subject explanation (giving clear explanations, using analogies or examples to facilitate understanding and learning) mostly attracted the selective attention of the academics. One example is the following extract, referring to the importance of adapting pedagogical strategies to students' needs, experiences and input by giving appropriate tasks and adjusting them according to students' difficulties.

Extract 1: Peer Observation Self-observation form. Participant: UK, Chemistry. Code: Pedagogy - adaptation to student needs

[the event is about a] Discussion about orbital shapes and orientations. It's just hit me that it needs to be done using model kits [..] ***I did note at the time that the students were struggling to picture the orientations of the orbitals****. If I have models of the d orbitals to show them (which are available, but I don't have any)* ***it would have been easier for the students****. Since moving to University teaching,* ***I have become used to using a more 'chalk-and-talk' expository approach, which I know is pedagogically less successful than something more active****. Back in secondary school I always used props and demonstrations. I should return to this. Maybe I'm getting lazy..! I could have asked the students to work together to draw the shapes and orientations of the orbitals, with prompting if needed, so they were all following better.*

What is interesting about this kind of pedagogical reflection is the shift of focus from the noticing about students' difficulties with the task, to the questioning of the effectiveness of the personal teaching approach and the methods used. By noticing students' needs and difficulties, the teacher took the opportunity to question the instructional approach to support students. By doing so, she tries to identify spaces for expanding the teaching repertoire and new mechanisms for the future that involve active and cooperative learning tasks supported by the teacher input with props and demonstration.

Another example is extract 2, referring to the significance of teacher-student interactions to assist students in articulating their thoughts, by valuing and extending their contribution and encouraging them to stretch their current level of accomplishment and understanding.

Extract 2: Peer Observation Self-observation form. Participant: Germany, Media Studies. Code: Pedagogy – Interaction

the group presents their poster. They make some claims that they don't agree with one of the texts at all, they also make some important observations (in particular, that both texts build on each) and ***I don't think I give them good feedback on their work. I wish I had pointed out that they made an important observation on the relation of the texts****. I said it's okay to reject a position or to think it's not relevant anymore. It is a matter of interpretation and I don't want them to assume that there is one right answer as to how to understand film theory****. However, I don't help them understand why I think it's still important to know and understand Bronfen's position*** *(the second author). I didn't realise that my feedback was so evasive in the situation. Watching it now, it feels a bit unprofessional to me or maybe as if I'm uncomfortable [..] my default response is always to be non-confrontational and not to disagree or criticise too hard – and I fear that this sometimes gets in the way of my role as a teacher.* ***I could have engaged the rest of the class and also let them react to their fellow student's work.*** *It would have helped me if I had structured the activity in a way that I had had time to review the posters for a few minutes and to structure my response a bit.*

Again, the excerpt shows that pedagogical reflection starts with noticing and wondering about the actual and potential effect of teacher questioning and feedback to students. Reflection is grounded on the way the teacher has missed an opportunity to assist students articulating their thoughts and encouraging and valuing their critical contribution to the class, as well as helping them to develop a broader understanding of the topic. Even in this particular case, the solution identified relies on engaging the rest of the class, fostering the participatory involvement and cooperative learning of students while giving the teacher appropriate time to reflect on students' input and elaborate positive and meaningful feedback, which values students' contributions and builds on them to scaffold understanding.

Management

Classroom and teacher management represented another great component of teachers' selective attention (33%, N= 15) with teachers mostly focusing their attention on their perceived performance and feelings, and to a minor extent the way they monitor students' progress and understanding of classroom activities, or the ways the teacher effectively manages time between class activities and tasks. A significant example of teacher management is reported in the following extract, which shows how self-management can direct the gaze to the negative aspects of the class and to events of little developmental significance, while undermining the acknowledgement and reflection on the premises of what was positive and worked well.

Extract 3: Peer Observation Self-observation form. Participant: Italy, Veterinary. Code: Management – teacher performance and feelings.

The first feeling was being terrible in it*, the first idea was "**I can't even watch or listen this**". **I had to contextualize** it to the fact that it was the very **first time for me teaching this specific topic** in this session and that it is **out of my own expertise**, that I'm not a statistician nor have experience in teaching this module (second time). **What went well is the constructive collaboration with the students during the exercise**. What did not go well are my frontal teaching parts when I try to explain things. By observing the session I don't feel confident with the topic (I said that I'm sorry for the mistake at least 4 times for the error), the **feeling of being uncomfortable comes out through my voice, my moving around rather nervous and I feel being boring***

Extract 3 highlights a critical problem of selective attention: the role played by emotional distress while watching personal videos, limiting the noticing of moments worthier of reflection due to the gaze being limited by negative features. Indeed, in this instance it is self-evident that while the teacher identified both positive and negative events in the lecture, the focus of personal reflection is totally concentrated on the negative ones. Teacher preoccupations and emotions played a major role in constraining teacher noticing. Such states are likely to be determined by the perception of the so-called "imposter syndrome" - when professionals do not feel competent enough in their work and are anxious that a lack of competence is exposed - which is widely diffused in academia (see e.g. Bothello & Roulet, 2019; Breeze, 2018). Despite this, engaging with colleagues from different universities represented for early-stage teachers an opportunity to discuss, reflect, observe and get feedback about their own teaching while overcoming the emotional barrier constituted by colleagues' evaluation. Teachers concerned about their performance benefitted from the supportive feedback provided by the colleagues during discussion, but it is remarkable to notice that at certain times the full potential of the video was not exploited due to an excessive focus on negative performative aspects.

Climate

The social climate of the classroom environment (24%; N=11) was primarily noticed and explored in relation to the participation and engagement of the students in class (e.g. teacher distributing attention and inviting/including all students in discussion and tasks; teacher providing opportunities for students' input and building up discussions based on students' contributions) and rapport (e.g. the way teacher tries to build a connection and make students comfortable so as to enhance their participation and expression of thoughts). An example of the relevance of providing equal opportunities in creating a participatory atmosphere and involving all the students in classroom activities is provided in extract 4.

Extract 4: Peer Observation Self-observation form. Participant: UK, Classics. Code: Climate – Participation and engagement.

Due to the presence of two more talkative students in his group, **one of the students** in the 'anti-democracy group' **had less the chance of expressing his thoughts**. In this particular instance, he starts talking, but another student ends up finishing his thoughts for him. **This event is significant for me because I believe that every**

student should be able to express his thoughts freely. At the time of the event, I did not take notice [..]. After a while, I noticed he did not actively contribute, so by the end of the seminar I asked him if he wanted to, and he did. Afterwards, I wonder if I should have intervened more, to give him the chance to speak beforehand as well. Generally**, I tend not to interrupt students when they start speaking**, especially when they are **interacting with each other** or when they are following up on what other students said, to n**ot interrupt the flow of the discussion** (I intervene only when the things they are saying are not correct, or the students seem to need an input).

Like many other classroom situations that were selected, classroom discussion is a crucial focus of teachers' critical reflection, denoting an increasing attention of academics to the teaching paradigm transition toward a learner-centred approach: from content transmission to students' activation and cooperation in learning. In this case, it is possible to highlight the relevance of different aspects of climate and insights in the selected event: a) distributing attention to, inviting, including and involving all the students in the discussion/task; b) providing equal opportunities for input and involvement; c) facilitating and fostering group processes accordingly.

A further example pertaining to the social climate of classroom environments refers to the ways in which the teacher can make students comfortable and thus render their active participation and speaking in class more enjoyable (Extract 5).

Extract 5: Teaching Process Recall Clip description. Participant: UK, Language. Code: Climate – Rapport.

To make grammar sessions more dynamic/fun, I tend to put students 'on the spot' by asking them to come to the white board and write out their grammar answer to some questions. So **I nominated 6 students** to come forward. The questions are on the PowerPoint, and **I assign one question to each student**. In this particular instance, they had to fill in the gap in a sentence by using the adequate relative pronoun. I then go through the 6 respective answers, one by one, and **ask the rest of the class if they think each answer is correc**t or not, and they have to explain why. So as you can see, this is j**ust a grammar teaching technique** which I would like to subject to the critical perspective of colleagues: **Is it a bit patronising/ primary-school-like** for final year students? **Does it feel a bit 'bossy'** on my behalf? Does this increase learning gain …or not? **Does it make grammar learning more pleasurable or intimidating**?

In extract 5, a language teacher reflected on the way she tries to engage students in order to make grammar learning enjoyable and students comfortable to participate. Here, active learning is used to check, and monitor students' understanding of grammar rules and engage the whole class. The technique thus attempts to explore the multiple perspectives that pertain to how active learning is conceived by colleagues and experienced by students, and how the teacher herself is perceived in the way she connects and engages with students during the task, sharing doubts and concerns over the educator's role.

Students' reasoning

Finally, student reasoning represents the type of event least noticed or described by higher education teachers (6%, N=3). Only a few teachers referred to students' thinking in describing the reason for selecting the events, and mostly referring to the way the video allowed them to explore and infer students' confusion or difficulties, or how students engaged in sense making about the subject/topic of the class when supported by the teacher. An illustrative example is provided in Extract 6 on explicit reasoning, underlining the significance of teacher engagement in sense-making together with students, building on their contributions and having them evaluate their reasoning and demonstrate their conjectures in order to facilitate the whole class' understanding and learning.

Extract 6: Teaching Process Recall Clip description. Participant: Frankfurt, Language. Code: Students' reasoning – explicit reasoning.

I selected this clip because **it shows me giving the students advice on how to help themselves, regarding the vocalization of Arabic words**. At the end of the clip, one s**tudent asked why a different translation was not possible**. **So I let her translate her given possibility back into German and this showed her why exactly her suggestion was not applicable**. I think that was quite good, because **simply giving her an answer will not have had a lasting effect on the process of understanding and learning**. Instead, l**etting her probe her suggested translation** by translating it back **made her and others understand** why it has to be that way.

What is relevant in this extract is the fact that through the video the participant was able to notice and appreciate the potential of making students check and evaluate their own thinking and inferences for their own learning process. Helping students to explore and demonstrate their thinking is recognized as having the potential to impact the understanding and learning of the entire class.

As we said, student thinking was the least selected event by academic teachers. However, this does not mean that student thinking was not a concern for higher education teachers. Rather, student thinking was often not the point of departure in teachers' noticing and selection of events, but a point of arrival through inquiring into other aspects that were more easily identifiable by the teachers. This is demonstrated in the following extract referring to students' engagement in classroom discussion to monitor understanding, highlighting the significance of the teacher's role in assisting students' articulation of thoughts and making them comfortable in doing this by means of digital technologies.

Extract 7: Peer Observation Self-observation form. Participant: Italy, Engineering. Code: Pedagogy – Interaction; Climate – Rapport.

[It was about a] short activity for the students, and the following discussion. I believe that involving the students in this kind of discussion is the key to provide feedback to them: as long as they are able to follow the discussion and to provide their own contribution to it, then they can understand whether their learning is proceeding or not. ***I wonder if the class involvement was enough or not****, and* ***whether each student could actually hear*** *what the other students were saying during the discussion.* ***I also wonder if I was able to let them follow their own reasoning path, or I forced mine.***
I think that kind of short activity plus discussion should be made more frequent during each class. Perhaps some students were simply waiting for me to give them the solution of the problem, and they did not let themselves to be involved in the discussion. ***Perhaps I might ask each single small group to deliver an answer, e.g. using their mobile phone and engagement tools like Kahoot, Mentimeter or Wooclap****.*

As Extract 7 shows, the participant starts his own reflection by inquiring into a moment of active learning, and engagement strategies in problem-based learning. The reflection begins by exploring elements of climate, particularly whether all the students were fully involved and contributed to the discussion, and proceeds by inquiring into the pedagogical role of the teacher in helping students to articulate and explore their reasoning path without imposing his own or directly providing the answer. In this event, student thinking is clearly at stake, but teacher attention is focused more on the climate and the pedagogical elements that are necessary to engage and assist students in sense-making and problem-solving in an effective and comfortable way so as to improve their learning.

Summarizing, it is remarkable to notice that despite the differences between the academic teachers involved and the events identified a common preoccupation and focus of academic teachers was the interactional dimension, demonstrating the value of videos for exploring students' contributions to the class, teacher-student talk, classroom discussion and in general student reactions to instructional strategies. Pedagogy, climate, and the management dimensions of teaching were at the forefront of selective attention, with interaction, engagement, and teacher performance as the main concerns in academic teaching. In this regard, it is worth underlining and reporting some of the findings from the open questions in the evaluation questionnaires, where the academics involved shared a common view about the 'universality' of teaching challenges and strategies across disciplines and countries (at least in the EU).

> "same challenges with teaching/students are international"
> "we have similar challenges across borders"
> "Teaching works the same in different contexts (different settings and subjects)"
> "Common challenges in different countries and teaching subjects"

Finally, what is worthy of consideration is the result about student thinking as the least noticed category of events. This is in line with other studies on video-based reflection, where participants' concerns remained focused on themselves and on behaviour management (see e.g. McFadden, Ellis, Anwar, & Roehrig, 2013). However, the nature of the project and its activities should be taken into consideration to contextualise this result. The academics involved in collaborative intercultural reflection came from different disciplinary backgrounds, and they were all aware about the rare possibility of finding colleagues from exactly the same

discipline or subject. This may be a reason why they choose to focus on and discuss events about the pedagogy, climate and management facets of teaching, which would be easily understood and discussed by peers as common professional situations and elements of teaching.

Furthermore, to allow and facilitate video-based collaborative reflection among teachers of different nationalities, we recruited and recorded academics using English as the medium of instruction (**see O3 case study on language**). It is well-known that the use of the English language may affect teaching styles, as well as leading to linguistic and psychological barriers for non-native speaker students, especially in the elaboration and expression of their own thinking and understanding. Nevertheless, perspective-taking and shifting the attention from teacher management to the students and their learning process represented an important insight for the academic teachers involved, as the following open answers from the evaluation questionnaires demonstrate:

> "I realized the importance of practical exercises as adjunct to lectures, and leave the scripts to follow students' lead"
> "I should focus more on students' perception and expectations"

How to increase selective attention and foster critical reflection using videos: barriers and strategies

To conclude, based on the literature review and our experience throughout the project, here we review and discuss the main factors that can limit teachers' noticing, and discuss possible solutions. First, teachers experience an ***emotional overload*** **-** more than a cognitive one – in viewing themselves while teaching, which represented a great barrier to teacher noticing. As Gün (2011) already noted, teachers often tend to react rather than reflect, focusing almost entirely on their performance, self-management and self-instruction, as the following excerpt from a peer observation feedback meeting clearly demonstrates.

Extract 8: Peer Observation Online Meeting. Participants: 1- Italy, Psychology; 2- UK, Anthropology

P1: You showed ***the video*** *at the end, and getting your students think to themselves on how to apply the knowledge of the lecture. A* ***very constructive exercise*** *[..] The brilliant is to pick up and use misunderstandings. Without some exercise at the end, we are not aware about the misunderstandings, how students receipted and understood.*
P2: this was actually the significant event I identified. ***The problem is my explanation of the video****.*
P1: I could see the critical, but I think you made very well, questions are ok. ***I focused on another event I found interesting****. When the students talk about the Pygmalion effect, l****ike my critical incident where students brought up something I did not expec****t.* ***This comment from your student****, was a surprise and* ***seems to me the rest of the class had the opportunity to learn something*** *about that thing, differences, and similarities with what you talked about. What the effect is..*
P2: this is a good observation, I would have asked the student "can you define the Pygmalion effect? More"
P1: yes, ***talk to the class and not to you, removing the effect of examiner-examined***

As in many other situations in identifying significant events, the teachers involved demonstrate harsh self-criticism and focus on personal mistakes or instructional issues arising from their performative acts. Thus, the cognitive and emotional factors, such as those linked with the emotional distress arising from viewing oneself teaching, may limit the noticing of significant classroom events and the potential of critical reflection. As Extract 8 shows, however, it was clearly possible to focus on a different event, such as that spotted by the colleague, later recognizing it as meaningful for critical reflection and serving a professional development purpose. All in all, academic teachers were better able to identify negative events, neglecting what worked well due to an excessive focus on themselves.

In this regard, teachers should be explicitly instructed to view **teaching and learning as constitutive of each other**, and inquire into teaching as a dialogical process that connects student thinking to instruction and vice versa. This requires prompting consideration about how different lenses are simultaneously co-implicated and interact, thus constantly **moving the attention between the teacher and the students** in their co-construction process of the teaching practice. Additionally, instructions for video-based reflection could adopt an appreciative inquiry framework and ask teachers to **identify moments that are perceived as positive and**

negative. Appreciative inquiry provides a frame that makes it possible to overcome and shift away from the deficit thinking in which the experienced or perceived negative elements of teaching practice are amplified, with negative connotations for the professional identity and capacity of the teachers. Appreciative inquiry embodies discovering strengths and positive aspects, envisioning possibilities, developing structured goals, and realizing or strengthening propositions; thus, it does not necessarily mean that criticisms are avoided or dismissed. **Adopting an appreciative inquiry framework** (see e.g. Fileborn, Wood, Loughnan, 2020) has the potential of counterbalancing harsh self-criticism and focusing teacher reflection on the deconstruction and exploration of the pedagogical premises of positive events, which may benefit the teacher learning process, and, as a consequence, that of the students. Nevertheless, as De Latour (2009, p.85) claims, "it often takes someone else to articulate and recognize the strengths of one's practice".

Regarding the instructional approach adopted to guide, support and scaffold video-viewing, we suggest **using video-viewing grids** - such as those used for peer observation – through which the teachers have the opportunity to explore previously elements and professional situations that may be noticed and that pertain to the teaching dimensions that are relevant to their perceived needs and expectations for professional development. This has the potential to **guide teachers' noticing while not constraining their gaze excessively**, as is often the case of predetermined checklists or structured guides (Shortland, 2010).

Moreover, we suggest the **use of reflective prompts based on Gibbs' reflective cycle** (1988) to facilitate and support the identification and reflection of significant classroom events, in conjunction with an **instructional approach that favours open questions for future reflection** rather than asking for insights, conclusions, or generalizations (see Biesta, 2019). This has the value of favouring an action-research attitude and experiential learning approach in teachers' reflective practice, avoiding the risk of practitioners just reacting to the video stimuli and jumping directly to conclusions without adequate in-depth reflection on how different mechanisms could work in actual practice and be adapted in local practice (Tenenberg, 2016). Beyond this, we found that other two factors limited the professional vision. The first concerns **technology** - what and how to record teaching - and the ability to simultaneously direct the gaze to different aspects of the classroom. In this regard, some teachers were not able to focus on student reactions to instructions, or the link between the instructional material (PowerPoint slides) and teacher practice (explanation) due to the use of cameras following the teacher automatically for recording.

While this technology can be very useful and effective in capturing high-quality teacher audio and video input, it may at the same time undermine and constrain the observation and the noticing of classroom events or the students' perspective. **Using and editing different video inputs** or having a human operator **recording the students' classroom interaction, the lecturer and the instructional material** has the potential to minimize this limit, although it can be technically difficult and probably requires the involvement of technicians. Moreover, it appears essential to **support teachers in choosing and recording teaching sessions** that are in line with the potential for the use of video-recording (e.g. interactive sessions) or the perceived needs for professional development (e.g. inquiring into the effects of interaction with or feedback to students). A further consideration that must be made concerns the **limited awareness and experience of teaching strategies** by some academics. Indeed, when compared with school teachers, many higher education teachers tend to reproduce in their practice what they have been exposed to - their teaching methods and attitudes repertoire is static. As Guarda and Helm (2016) stressed, and as explained by some of the participants, university lecturers often lack training and preparation regarding pedagogy, since their recruitment and career progression is mostly dependent on research and publications. Having a limited knowledge base on which to interpret teaching events, they may benefit from **viewing videos of peers' teaching**, which introduces them to examples of different and potentially best practices, and a way to 'double-seeingì (see Tenenberg, 2016) comparing and analysing their own practice. By using peer videos and exposing teachers to different methods, practices, and classroom events, they can increase their knowledge and awareness and engage in different sense-making strategies - comparing personal classroom events with those of the colleagues, generalizing insights, problem-solving, critically reflective thinking.

In this regard, teachers may benefit from **training strategies for scaffolding critical reflection** that involve, for example, inner dialogue counterposing alternatives or oppositional voice, which can be used both for self-reflection or feedback in collegial discussions (see e.g. Clàra et al., 2019). Finally, we stress that professional vision and critical reflection are not an on-off accomplishment but should be introduced and experimented

with over time. No one should expect teachers to develop a professional vision and critically reflective practice by viewing one or a few videos and participating in an ad-hoc reflective meeting. As Blomberg and colleagues (2013) stated, developing a professional vision and **raising the level of reflection takes time and multiple observations**, coinciding with developing a new perspective on teaching and an enrichment of teaching knowledge, which ultimately enhance professional vision.

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