

Analysis of Video-Based Training Approaches and Professional Development

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The use of videos to analyze teaching practices or initial teacher training is aimed at helping build professional skills by establishing more explicit links between university education and internships and practical work in the schools. The purpose of this article is to familiarize the English-speaking community with French research via a study of the use of videos in preservice teacher education. The scientific research trend called “course of action” is presented, along with a brief summary of several studies conducted in the context of initial teacher education in France, which point out the respective contributions of four distinct video-based approaches to professional development for educating new teachers. Last, the authors’ conceptual contribution is presented based on a few scientific studies conducted between 1965 and 2017 that exemplify the different approaches to the use of video-based training for new and experienced teachers. This conceptualization is designed to help the field rethink the various ways of conceiving of video resources in education, of providing guidance during video viewing, and of organizing the various goals of video viewing and the different objects of analysis into a step-by-step teacher-training program.

The growing use of videos, not only in preservice teacher education (Calandra & Puvirajah, 2011) but also for professional development (van Es & Sherin, 2008), is aimed at helping new teachers build professional skills while establishing more explicit links between university education and student teaching or teacher training within the schools. Internationally, videos are also being used to enhance teaching skills in particular disciplines (e.g., for mathematics: Santagata, 2009) and to improve generic teaching skills (e.g., Leblanc & Ria, 2014).

In France, the new teaching degree at the master's level is driven by the principles of professionalization and gradual entry into the profession, in alternation with integrative student teaching (Filâtre, 2014). Integrative alternation is aimed “not at putting knowledge and skills side by side, but at combining them in a closely tied relationship with the situations where the profession is exercised and with pedagogical and professional goals” (p. 7; our translation). Designing a developmental approach to mentoring that draws upon teaching experience or onsite practices as educational aids (Durand & Poizat, 2015; Leblanc, Ria, Dieumegard, Serres, & Durand, 2008) has proven useful for combining knowledge and skills with real-world teaching situations.

The purpose of this article is to familiarize the English-speaking community with French research conducted in this framework. We studied the use of videos in preservice teacher education with the hope of providing some answers to the following questions:

- How can real experiences and actual classroom work be successfully incorporated into teacher-education curricula?
- Under what conditions can professional experience and onsite teaching work be analyzed in teacher education to promote learning and change actual classroom practices?
- What are the best ways to simulate and trigger reflective analysis that will have the greatest impact on learning, not only about one's own teaching activity but also about the activity of a community of teachers with varying degrees of expertise?
- How can these spaces of confrontation (Mollo & Falzon, 2004) with teaching experience and practices be designed to fit with the expectations and concerns of future teachers, while also allowing them to anticipate previously unnoticed difficulties and plan for ways of intervening that will guarantee their professional development?

Video viewing is being used increasingly to address these issues, both by educational institutions and by the actors of teacher education and onsite training. Although viewing classroom videos is not a new technique or area of research in teacher education, the exponential development of digital tools, their availability to the general public, and the recent use of the conceptual and methodological tools of activity-theory research (Durand & Poizat, 2015; Leblanc et al., 2008) have all contributed to bringing back and diversifying the ways in which video viewing can be utilized and studied (Gaudin & Chaliès, 2015).

In this article, we begin by defining the scientific research trend called “course of action” (Leblanc, Ria, & Veyrunes, 2012; Theureau, 2003, 2015), which encompasses studies that enable us to address the questions raised previously. Then, we present a brief summary of several studies conducted in the context of initial teacher education in France, which point out the respective contributions of four distinct video-based approaches to the professional development of new teachers (NTs).

Last, we present our conceptual contribution based on a few scientific studies conducted between 1965 and 2017 that exemplify the different approaches to the use of video-based training for new and experienced teachers. This conceptualization is designed to help educators rethink various ways of using video resources in education, of providing guidance during video viewing, and of organizing the various goals of video viewing and the different objects of analysis into a step-by-step teacher-training program.

Conceptual Framework

The data used as a basis for the present contribution was compiled and analyzed as part of a research trend that has both an empirical facet (aimed at knowledge construction) and a technological facet (aimed at ongoing coconstruction via video-based training). This trend, called “course of action,” draws upon analyses of various types of activity carried out by key actors in a field (i.e., teachers, tutors, learners, and instructors in this context).

In the framework of “enactive cultural anthropology” (Theureau, 2015) the teaching activity — seen as cognitive, autonomous, embodied and situated, individual and collective, as well as technically constituted, cultivated, and experienced — is defined as a dynamic that drives asymmetrical interactions between actors and their environment (physical, material, social, etc.). It includes not only what happens in a manifest way during a video-based training session (for example, the exchanges that take place between learners and instructors, the video excerpt viewed, and the attitudes of the various participants) but also the implicit, opaque, nonvisible activity of each participant (their concerns, intentions, knowledge, perceptions, emotions, private discourse, etc.). The results are the output of analyses aimed at producing fine-grained descriptions and understandings based on (a) psycho-phenomenological data constructed during self-confrontation sessions or sessions evoking actual teaching experiences in class and (b) data pertaining to the constraints of the activity related to the body, situation, and culture of each actor under consideration, gathered using the usual methods of ethnography (Theureau, 2015).

Method

Context of Teacher Education in France

The French system of teacher education is organized into two distinct phases. The first phase, which lasts 4 years, takes place almost solely on university premises and ends with a nationwide competitive exam. During this phase, 1 or 2 weeks of internships in the schools, for observation of experienced teachers, are included in the curriculum. The second phase, which lasts 1 year, alternates between half a year of classroom teaching where the student teacher is responsible for a class, and half a year at the university. This year provides true initiation into the profession. Student teachers are accompanied in their classrooms by two tutors: an onsite teacher (often the one assigned to the classroom) and a university professor (from the school of education in a related or generic teaching discipline).

Overview of Four Video-Based Approaches to Mentoring

In this section four different video-confrontation modalities are presented that help a teacher or a group of teachers react to, and interact with, an instructor:

1. **Self-viewing.** A training modality (inspired by therapeutic approaches; Geffroy, Accola, & Ancelin-Schutzenberger, 1980) that consists of showing student teachers videos of themselves so they can grasp their own functioning, not based on an imposed model but via the objective detection of their own errors and shortcomings.
2. **Self-confrontation.** A training modality (inspired by work-analysis methods, Theureau, 2003) that consists of having student teachers relive and comment upon their own classroom activity, based on a video recording. The prefix “self” is used here because the student teacher is asked to produce a first-person narrative of what he/she was actually experiencing in the classroom situation being viewed.

3. **Other-confrontation.** A training modality (inspired by work-analysis methods, Mollo & Falzon, 2004) consisting of confronting student teachers with a classroom video of an unknown colleague, and asking them to comment upon the colleague's activity (an activity that they may or may not have experienced themselves). The prefix "other" is used because the student teachers are confronted with an activity that is not their own.
4. **Professional-trajectory follow-up.** A training modality (inspired by work-analysis methods — "course of life" — Theureau, 2015) where the student teacher chooses to view videos of colleagues' classes that are linked to his/her own current professional concerns, in order to extract new methods to test in class. The term *trajectory* is used because the student teachers are followed up over a long enough period to obtain feedback on whether or not changes have taken place.

Analyzing Video-Based Mentoring Situations

Partial summaries have been published reporting the results of several studies (Table 1) on video-based training approaches for NTs during their initial university education in various disciplines (science, biology, mathematics, French, and history). This research has attempted to uncover not only the effects of changes in the activity of video-viewing (whether one's own or a colleague's) taking place in an educational setting but, more specifically, the transformation processes themselves. These processes include giving up if rooting does not take place, self-protection, reassurance, renormalization, immersion-projection, beginnings of comparison, multireferenced interpretation sequences, such as "He" > "I" > "One/We," coming of awareness, replay of visual scenarios, self-prescriptions, emerging action potentials, and transformation follow-up (Flandin, Leblanc, & Muller, 2015).

Data were gathered in two ways. The first consisted of videotaping the activity of NTs in the situation targeted by the video-based training and then relating it to videotapes of self-confrontation sessions (Leblanc et al. 2012; Theureau, 2003) conducted after the fact with these same NTs (Leblanc & Blanes-Maestre, 2015). The second made use of videotapes of the video-training sessions, including the NTs' verbalizations, whether spontaneous or elicited by the researcher who was present (Leblanc, 2014c, 2015b).

In both approaches, the researcher's questions and prompts were aimed at getting NTs to verbalize their activity by guiding them in (a) describing their prereflective consciousness as they viewed the film of the lesson (their own or that of a peer), (b) explaining the point of view adopted about the observed situation (that of the teacher, the pupils, a given pupil, themselves as the teacher, etc.), and (c) proposing concrete approaches that they plan to test in their classrooms (self-prescriptions).

Based on the semiological framework of course-of-action theory (Leblanc, Saury, Sève, Durand, & Theureau, 2001; Theureau, 2003), the data analysis consisted of reconstructing the sequence of experiential units that were meaningful for the NTs, in order to characterize the phenomena underlying what was experienced during the viewing (of one or more videos). Notably, this approach was able to account for changes in the student teachers' emotions, concerns, mobilized knowledge, and in the modes of learning and development at play during the period of activity under study. Another aim was to (a) determine how the changes viewed during the video-training session were constructed and (b) follow up to see whether practical consequences of these changes were actually effected in the classroom (Leblanc, 2014c).

Table 1
Results of French Studies on Video-Based Training Approaches for New Teachers

Types of Mentoring	Study Participants	Training Groups	Data Collection	Publications
<i>Self-Viewing</i> Viewing a video of oneself and analyzing one's activity in front of others	3 NTs + 1 instructor	12 NTs + 1 instructor Professional guidance group	Video recordings Self-confrontation sessions for the study	Leblanc, 2014b
<i>Self-Confrontation</i> Being confronted with traces of one's own activity and explaining what makes the experience	4 NT + 3 tutors	Mentoring with 1 university or onsite tutor + 1 or 3 NTs	Video recordings Self-confrontation sessions for the study	Leblanc, 2014a
<i>Other-Confrontation</i> Analysis of a practice and/or mimetic engagement	4 NTs	Self-learning using Néopass@ction platform in the presence of a researcher	Simultaneous and interrupted verbalizations	Leblanc & Sève, 2012 Ria & Leblanc, 2012
	8 NTs + 3 instructors	20 NTs + 1 instructor (professional guidance group)	Video recordings Self-confrontation sessions for the study	Leblanc, 2015a; Leblanc & Blanes-Maestre, 2015, in press
	110 NTs + 1 instructor	110 NTs + 1 instructor, Lectures on professional development	Onsite "Oriented Activity" questionnaire + simultaneous and interrupted verbalizations	Ria, Serres, & Leblanc, 2010 Flandin, Leblanc, & Muller, 2015
<i>Professional-Trajectory Follow-Up</i> Constructing one's professional trajectory	2 NTs	Self-learning using Néopass@ction platform Once a month for 4 months	Simultaneous and interrupted verbalizations + experience feedback	Leblanc, 2014c, 2015b
	15 NTs	Follow-up in the field during the first year of classroom teaching	Observations + self-confrontation sessions for the study	Serres, Perrin, Leblanc, & Ria, 2012

Effects of Video-Based Mentoring Situations

Our approach to designing an *activity-oriented* educational tool (Ria & Leblanc 2011) was a concrete case of integrative alternation, in that it focused on topics critical for individuals entering into the teaching profession. We have shown that different ways of gaining access to professional experience (self-viewing, other-confrontation, self-confrontation, and professional-trajectory follow-up), either drawn from studies on work analysis (Mollo & Falzon, 2004; Theureau, 2003) or based on psycho-therapeutic approaches (Geffroy et al., 1980; Linard & Prax, 1984) can have a more or less favorable educational and projective impact on NTs.

Viewing Video and Analyzing One's Activity in Front of Others

The use of an educational tool that directly confronts teachers with video of themselves in front of a peer group and an instructor elicits strong affective involvement, generated by the fact of being watched and judged by an audience. The following excerpt presents an example: "I was apprehensive about having my colleagues see me, and that was apparent when we watched the video, where my arms are crossed and where I'm stressed out anyway" (NT in biology). The fear of being watched and perceived through the eyes of others, as expressed in "Seeing their faces when they see me ... here, I'm waiting to see what they think of it," triggered a self-protection process during the viewing and a group discussion. These moments are perceived as destabilizing, by both the actor in the video and his/her peers, as in the following excerpt: "Here, I sense how ill at ease Luc is I know that some questions will upset a person You're sort of being attacked, not attacked, but this is personal stuff and, here, I feel uneasy for him."

This situation, which is experienced as an ordeal, can lead to professional development only under certain conditions for the NT: (a) agreeing to treat one's own activity as any other, based on an extrinsic point of view that generates a feeling of strangeness toward oneself, (b) agreeing to be seen by others, (c) accepting guidance when verbalizing the implicit parts of one's activity, (d) putting feedback from others into perspective by identifying its degree of relevance, (e) distinguishing between professional changes that are to be undertaken and those that are already underway, and (f) giving oneself the necessary means for taking action in the near future.

In the light of the negative effects — such as discomfort, self-protection, concealment of difficulties, and the use of euphemisms — observed for this modality, in which NTs agree to have their teaching viewed by a group, the instructor must grant importance to establishing a supportive and learning-oriented community and must thoroughly think out the necessary conditions for setting it up. Learning the norms of proper conduct for engaging in a professional discussion, taking the time needed to create a climate of trust among the different actors (student teachers and instructors), and gradual progression from individual to collective viewing must all constitute key points in building a space where everyone can learn.

This training modality, called self-viewing, was inspired by therapeutic approaches to teaching (Geffroy et al., 1980). It consists of confronting participants with their own self-image so they can better grasp their own functioning based on the objective detection of their errors and shortcomings. It is aimed at helping the NT become aware of the psychological gaps between his/her own self-image and the image others have of him/her. The fact that the participants adopt an inside point of view brings the subjective dimension back into education. Challenging the instructor's role restores the learner's power to act. It

also makes it possible to take into account the role of the NT's body, which vehicles and reveals his/her cognitive and affective activity.

According to Watzlawick, Beaving, and Jackson (1972), exchanges between interlocutors are permanent — one necessarily communicates — and take place in one of two modes: digital or analogical. The digital mode refers to the words used and is based on an arbitrary semantic convention, the language. The analogical mode refers to the nonverbal (gestures, postures, facial expressions, appearance, personal space, etc.) and paraverbal (tone of voice, intonation, speech rate, etc.) facets of the exchange. This mode reveals more about the relational framework of an exchange, insofar as interpretations of the remarks made often rely on paraverbal features.

The body is ambiguous. As the vector of expression of one's affective state, it can reflect important discrepancies between discourse and postures. It also bears a double meaning: the meaning given to one's own experience and the meaning of how others will see that experience. By confronting a person with his/her own image, "the ambiguity of the body to the ambiguity of its self-represented image" (Linard & Prax, 1984, p. 3) is added, which considerably complicates the analysis. This raises the issues "of representing the self for oneself, and self-referencing, with all the discrepancies, distortions, confusions, and conflicts between object and subject, outer and inner, me and others" (p. 4; our translation). In going from the author of the situation to the principal subject, the person confronted with his/her own image becomes the observed object.

These methods, particularly when applied in front of a peer group, have a number of inherent risks that depend upon each teacher's profile — phenomena such as dropping out have been observed among fragile subjects, and defense mechanisms can emerge among the more resistant subjects. For Fuller and Manning (1973), videos as a tool have as many disadvantages as they do advantages for the learner; for Linard and Prax (1984), they may paradoxically be transformed into "tools-for-seeing-nothing" (p. 6). Unless certain conditions are met, they can be disruptive at the cognitive and affective levels. These conditional factors include the following:

1. The instructor's attitude toward image manipulation (aggressive manipulation or normative evaluation). In a situation of self-viewing in the presence of peers, the instructor, often unwittingly, may psychologically manipulate the image of the other person, who is insidiously prodded by the video (during the viewing). This happens, for example, when the instructor dwells on or repeats persecuting close-ups; focuses on mistakes, flaws, shortcomings, and lacks; or stops and backtracks, etc.). By way of this staging process, subjects may experience the situation as aggressive because it touches on their most intimate and sensitive areas. By critically observing a subject from the outside based on norms (didactic, pedagogical, professional, etc.), the instructor strengthens his/her role as an authority figure while at the same time amplifying this aggressive phenomenon by creating a dependent or defensive state in the subject.
2. The practical circumstances in which the video is used (whether it is optional or mandatory). Given the risk of shaking up the confronted NT's identity with a double self-image (the image seen on the screen and the internalized image corresponding to the person's past experiences), it is especially crucial not to force the student teacher to perform this potentially negative exercise. These risks are further amplified when the image is made available to the scrutiny of others (large group), especially since instructors often fail to pay attention to this dimension and NTs often conceal their discomfort or uneasiness. The instructor must, therefore, be sure not to use this modality without taking the necessary precautions. Clearly, "the more a subject is forced to rely on defense mechanisms

to protect him/herself, the less he/she will be able to stand back and perceive him/herself with lucidity” (Linard & Prax, 1984, p. 51; our translation).

3. The instructions given during the viewing (failure to provide a framework). Self-viewing without a specific task to accomplish may be anxiety-generating for persons whose identity-building process is more or less fragile and unstable. The more fragile the person, the greater his/her risk of developing a self-protection system that runs counter to self-analysis goals and self-distancing. A framework grounded on the ethical, relational, and methodological conditions of video viewing promotes gradual acceptance and appropriation of this type of task. The process must not only be discussed and agreed upon at the onset, but also, and especially, scrupulously applied during the actual unfolding of the self-viewing session.

Conversely, when these conditions are thought out in advance and respected, being confronted with one's own body image on the screen can help trigger positive rearrangements and restoration of one's self-image.

Self-Confrontation

Analysis of so-called self-confrontation sessions conducted by instructors who are experienced in this technique (Leblanc, 2014a) has shown that mediation aimed first at adopting and understanding the viewpoint of others helps curb the immediate and spontaneous tendency to produce normative judgments and prescriptions. This type of confrontation also limits the tendency of student teachers to protect themselves and conceal their difficulties and opens up a space where their professional experience can be more fruitfully taken into account. Such interview-like settings, either alone with a tutor or in a small group (at most two to four people), help strike a balance between leaving NTs in a state of anxiety in the face of their dilemmas or, on the contrary, ridding them of anxiety and the contradictions of teaching by reducing the profession to know-how or to simply applied rules.

One effect produced by this video-based experience is the possibility for an NT to get involved in reliving the classroom experience reactivated while viewing the video. Greater involvement in the past situation than in the present one is an important condition for being able to gain access to unconscious aspects of the activity, as illustrated by the following excerpt:

...[A pupil] is telling me that if we deflate the ball, the O₂ comes out and the nitrogen stays inside. So how can I show him that the O₂ [pauses], I mean that everything comes out, that the O₂ can't stay in there [pauses], and that's where I make an analogy with breathing, and in making the analogy, I'm saying something stupid, and if ever he makes the mistake of saying, “Yes but when we breathe we keep the oxygen and reject the nitrogen,” I say to myself, “You're going to have a hard time explaining it to him.” (NT in science)

This approach also allows for the verbalization of emotions, known to strongly orient a person's actions. Another effect is that the NTs' explanations point out their reasons for acting at each moment they deem significant. Documentation of classroom activity is achieved when teachers put part of their experience into words throughout the different facets of the activity. (The idea throughout the activity is to explicate whatever alerts the actor, what shocks him/her, as well as what he/she does, feels, and thinks. The different registers of activity pertain to actions, emotions, focal points, concerns, expectations, mobilized knowledge, and knowledge constructed in the very dynamics of the activity.)

Aware that the way in which they experience the classroom situation (their emotions, what they are trying to do at a given moment, why they are doing it, etc.) is not transparent, NTs spontaneously describe it in a manner that makes it intelligible to someone on the outside. This response is illustrated in an interaction between an instructor and an NT:

NT: She practically states the conclusion to our problem.

Instructor: And so what does that do to you?

NT: Well, I was afraid of that. I didn't think that one of them would come up with it directly like that...

The shock produced here by “the nearly ready-made solution,” proposed at the beginning of class, immediately generated two new concerns, one aimed at “leading the pupil to verify her idea, to have her find it by experimentation,” and the other aimed at “concealing, hiding her answer” from other pupils because the lesson would be considerably perturbed by her response.

This approach relies on the self-confrontation technique (Mollo & Falzon, 2004) inspired by work-analysis methods. It consists of showing the participant an audio-visual recording of his/her activity in the presence of an interlocutor and asking the participant to explicate, point out, and comment upon aspects of that activity that he/she thinks are significant (Leblanc et al., 2012). The interlocutor attempts to put the actor in a position and mental state conducive to this explication by leading him/her, first, to describe his/her actions (What are you doing here?) and focal points (What are you focusing on?). The interlocutor must also attempt to document the other components of the experience:

- The actor's concerns in the present situation (What are you trying to do at this moment?),
- The actor's expectations about how the situation will pan out (What outcome do you expect from what you are doing?),
- The knowledge mobilized, validated, invalidated, and constructed at the time (What was prompting you to act in that way at that moment?),
- The interpretations made of the situation (How did you see the situation at the time?),
- The emotions felt (And here, what emotions are you experiencing?).

Verbalization of the activity is made possible, thanks to the adoption of a suitable attitude by both protagonists, which implies that (a) the self-confronted NT, aware that the way each person experiences the situation is not obvious to others, attempts to explicate and explain what, at every step of the way, accompanied his/her observable actions, and (b) the person confronting the NT, while demonstrating empathy and excluding all judgments and scrutiny from the outside, helps with this inquiry and tries to understand the dynamics of the NT's activity. By way of this descriptive detour (Chaliès, Ria, Bertone, Trohel, & Durand, 2004) the NT and the instructor discover elements in the activity that were present in the situation but were not brought to consciousness, thereby building a new shared understanding. The following excerpt illustrates this effect (remarks of an NT addressed to a researcher following a self-confrontation session led by a tutor):

I think that an interview like that might be more productive, because at least ... when someone else tells us the story as he understands it, you always get the impression of wondering, did he really understand what you were getting at? But sometimes when you're presented with a fait accompli, the fact that what you're

saying is good and you can justify and explain why at that moment you were thinking, because there's the kid who does something stupid and you see him, or you're thinking about something else and you're not paying much attention to what he's saying, it makes room for a dialogue that is less [pauses] less like a dialogue of the deaf.

Analysis of a Practice and Mimetic Engagement

Generally speaking, the use of videos showing teaching practices other than one's own is a means of enhancing the attractiveness of the profession. It also increases reflection based on real-world practices, supports knowledge-building in the field, and promotes elaboration of a professional identity (Gaudin & Chaliès, 2015). This confrontation modality, called “other-confrontation” — where new teachers watch and comment upon videos showing the professional practices of unknown teachers — has two major merits. The first is the appropriation of methods and tools for analyzing the teaching practices shown in the video, which in turn, can be remobilized to analyze one's own ways of teaching or those of one's peers. Second, it allows NTs to get highly involved at the cognitive, emotional, and motivational levels. The reflective work triggered by viewing the activity of peers filmed in teaching situations that are the same as, or similar to, one's own, enables NTs to become aware that the problems encountered in their classroom are not related to their own personality traits but are typical of beginners in the profession.

This type of confrontation, void of risk, elicits comparative and critical reflection and reveals the tension that exists between what NTs do in their classrooms and what they would like to do. In turn, they can envisage realistic routes toward change, attainable within their current enactment dispositions. However, for this effect to occur, the video viewer must be shown a variety of typical kinds of NT activity of greater or lesser effectiveness (Leblanc, 2014b). Being confronted in an educational setting with the classroom activity of peers provides reassurance and encourages NTs to agree to talk about their own difficulties while at the same time reducing guilt feelings, as expressed in the following excerpt: “Somehow I found it reassuring to see that ... in fact, you get the impression that you're always alone in this type of situation ... and that's what I'm saying here, that I'm not the only one after all” (NT in science).

In the climate of trust that is generated in this kind of confrontation, comparative, critical thoughts begin to emerge, as in, “I was able to detect my own behavior, my habits I feel capable of reexamining myself, of assessing my weak points and strong points.” These discoveries can serve as a catalyst of the process of professional development, as illustrated by the following remark: “I was able to pinpoint some of my attitudes which, alone, I would have taken years to break down.”

Other-confrontation is also a source of learning, notably because it promotes the detection of relevant cues related to a specific classroom context and helps generate new interpretations of the activity being observed. The NTs' inquiries often end with the proposal of avenues for action that can be tested more or less directly in the classroom. The instructor's guidance is designed to help NTs put themselves in the shoes of their peers. As a result, they begin to question their own ways of doing things and how those ways might affect their pupils' activity.

Our work using other-confrontation tools (Leblanc & Blanes-Maestre, in press) has shown that a tension exists between the aims of the instructor's analysis and the spontaneous mimetic engagement of NTs. Mimetic engagement can be defined as the capacity “to count something as something else” (Schaeffer, 1999, p. 3). It calls upon various processes,

including identification, searching for and producing similarities between objects, and phenomena and activities involving comparisons of past and present situations experienced. At the same time, it also calls upon anticipation of and projection onto a future fictitious situation. In the following excerpt the NT's task was to fill in the first two items of an analysis grid provided by the instructor (Figure 1) after having viewed a classroom video. The NT spontaneously engaged in another activity not prescribed by the instructor, however: He puts himself in the shoes of the teacher on the screen. When detecting her "exhausted, worn-out look," he said, "So you say to yourself, hey, that could be me, you know." Engagement often captures all of an NT's attention, as in the following:

I'm not thinking anymore about the criteria, what's in the columns [referring to the analysis grid (Figure 1)] or what we're supposed to fill in, or why the teacher is reacting like that at that particular moment. I'm more like [pauses], if I were in her place... (NT in history)

Analysis Grid (for describing a particular moment in the classroom)			
Descriptive Narrative Breakdown Into Units In Time	Professional Points Identified and Referred Back to a model	Multireferenced Explanatory Hypotheses	Alternatives and Extensions

Figure 1. Analysis grid for describing a particular moment in the classroom.

It thus opposes the sensitive, self-centered experience of NTs, to the instructor's prescriptions (i.e., fill in the grid), as in the following: "The course deals with why the teacher reacts like that, why she's like that. We really have an outside view here. It's less, I find it less interesting, what we're doing here, than experiencing it in her place." Some NTs may become resistant to the analysis grid (Figure 1) — and to the mediation provided by instructors who do not take their self-centered point of view into account and who do not allow them to extend or utilize this mimetic beginning — despite how conducive this tool is to questioning and testing, by proxy, what it is to be a teacher.

The first point of caution in the other-confrontation modality — i.e., discerning where the NT's attention is directed — pertains to the meaning of the analysis, knowing that the NT's main concerns may lie elsewhere, as illustrated by the following excerpt:

Me, the analysis [pauses], I can understand, understand why we're doing it [pauses], but what it's for, I don't see it here. [pauses] I see it in "OK, this situation, I may come across it" [pauses] but not the analysis, I mean, it's more for putting oneself out there, because there is so little opportunity to be in the classroom.

Among the constraints regularly mentioned by NTs, class management (in particular, discipline and getting students to settle down and start working) seems to be the main difficulty. A third of NTs feel that the essential component of their profession is not so much imparting knowledge as it is disciplining the class (Guibert, Lazuech, & Rimbart, 2008). A step-by-step model of the enactment dispositions of NTs for handling students' entry into the classroom and getting them to start working (Ria & Rouve, 2010) can help illuminate the evolution of these high-priority concerns. The model identifies three dispositions for action, characterized in the professional trajectory of NTs, by (a) academic knowledge that is temporarily set aside, (b) academic knowledge that is circumvented for the purposes of personal economy, and (c) academic knowledge that is always legitimated.

The other point of caution concerns the potential distance of the teaching situation being analyzed from the NT's own experience, a gap that may be linked either to a difference in teaching level (experienced vs. beginner) or to a difference in educational setting (elementary school, middle school, high school, trade school, etc.). Because of these gaps between universes of experience, student teachers often fail to see anything in the videos that is usable in their own classrooms. This effect is illustrated by the following remark: "It's rare to project oneself into a classroom where there're only 20 pupils, they're all perfect, they all give perfect answers. It never works like that in class."

Navigating in the Community of Teachers

The transition to a new identity among individuals entering the teaching profession, which can be achieved using the approach we call "professional-trajectory follow-up," depends largely upon the teaching community. It can either contribute favorably by assisting novices and promoting their professional recognition, or split the community into factions and promote interindividual competition or even disillusionment, especially when the teaching community is young (Ria & Rouve, 2010). We define identity on the basis of two indissociable dimensions that must be taken into account jointly: the acquisition dimension (acquisition of knowledge, skills, professional know-how, etc.), and the participation dimension (integration into a professional community that provides rules and values; Serres, Perrin, Ria, & Leblanc, 2012).

To help NTs gradually become accepted in the profession, various video-based training platforms with instructor guidance have been developed (e.g., Néopass@ction [\[a\]](#), Banque de Séquences Didactiques [\[b\]](#)). Navigation in these environments, accompanied by group discussions, helps NTs build a path to their new identity, via a process of self-recognition in the videotaped activity of others, along with access to the significance of their professional know-how. During sessions with the researcher, the feasibility and force of conviction of the routes thus constructed are clearly revealed by the NTs' expression of newfound energy they will apply to teaching in the classroom. Their expressions fall in a continuum ranging from doubt to certainty and include the following:

1. Questions about the context of use, as in, "Then I wonder if it's possible to do it every time (...) or if I should keep it to, say, once a week, or uh to difficult hours only" (NT in mathematics).
2. Expressions of the need to adapt to another discipline, as in, "It could be quite good, uh, because I already have a video projector in my classroom ... but I'm not sure I can do it in math."
3. Remarks about the incompatibility of different goals. Faced with a classroom atmosphere that is disrupted by a large group of pupils, the solution consisting of regaining control by punishing the whole class with exercises may be considered unfair by certain pupils. In the following excerpt, the teacher wondered about the limitations of this route because she saw in it a potential contradiction between two goals, "regain control over the class" and "be fair to pupils who are not troublemakers": "I will, I can foresee exercises precisely in cases where ... precisely in cases where, well, a disciplinary measure has to be taken. So then, what bothers me a little, is the group aspect of it, but ..."
4. Enthusiasm for a way of doing things that appears immediately relevant and usable, as in, "It's true that it's a good idea to send three pupils up to the blackboard Yes, that might be very good. I should have looked into that sooner."
5. Plans spanning different time periods whenever the new methods have to be thoroughly thought out before being tested, as in, "What I'm going to change is the book bag as early as sixth grade, but I can do it right away, I mean right away."

I'm not going to wait until after vacation And then for eighth grade, in the fall, I'm going to try to, to call on pupils to do corrections while myself, I ... ”

6. The idea of experimenting with a single class, given the apprehension elicited by this new teaching modality and the need to test it before using it across the board, as in, “Since for now, it’s unknown, it’s true that what scares me a little, but uh, I mean, this is not, well, it's feasible in any case so one class out of four just to find out a bit about it, I mean, to make comparisons of what it has to offer.”

Our analysis of three “courses of action” of an NT (in mathematics) in a self-training context spread out over time via the video-training platform Néopass@ction (<http://neo.ens-lyon.fr/neopass>; Leblanc, 2014c) allowed us to reconstruct the evolution of her concerns and the professional tensions she was experienced in relation to the development of her professional experience in the classroom (Table 2). These tensions were uncovered during the viewing of videos that were meaningful for her because they were linked to her current professional concerns. The viewing triggered comparisons with the ways of others (verbalization of similarities and differences) and an emerging awareness of her own ways of doing things (brought out in descriptions of her concerns and expectations about classroom episodes, both imagined and real).

Table 2

Overview of the Main Professional Tensions Experienced and Reconstructed and Possible Changes Envisaged

Topics and Periods of the Year	Professional Tensions Constructed	Planned Self-Transformations Applicable to Her Own Classes
Beginning of classes Oct. 2011	Waiting for the class to calm down before asking students to sit down vs. quickly putting students to work.	Circulating through the rows during routine seating. Not staying backed up against the blackboard.
Authority Oct. 2011	Demanding silence vs. quickly putting students to work while accepting a greater amount of noise.	Starting class directly with the video-projector in order to capture the students' attention and get them moving.
Professional development Oct. 2011	Gradual, continuous building vs. having everything happen at key periods (Christmas, 1st yr).	Reinforcement of her initial point of view that professional development takes place gradually.

The teacher's primary concerns during October, that is, after 1 month of school, revolved around managing how pupils come into the classroom, her own position and authority as the teacher, and professional development. In December, her main concerns had evolved toward polishing up the routine of getting pupils to enter, settle down, and start working in a more disciplined and faster manner, anticipating and managing the troublemaking behaviors of certain pupils, and reflecting upon how one should act in difficult situations. By the end of January, she began to look at what the pupils were learning and to differentiate between how pupils should work at home and how they work in class.

A shift occurred at this point from concerns centered on the class as a group and herself as the teacher at the beginning of the year, to concerns focusing on the pupils and their individual difficulties after 6 months. These results converge quite well with the six phases of professional development proposed by Fuller (1970) during which the concerns of

teachers evolve, going from (a) concerns about oneself and being accepted professionally, (b) concerns about one's teaching skills, (c) concerns about one's relationships with students, (d) concerns about whether the students are really learning what they are being taught, (e) concerns about students' learning needs, and (f) concerns about the teacher's contribution in the face of changes in the students.

It is interesting to note that each of these concerns was made concrete by the platform's content (<http://neo.ens-lyon.fr/neoepass>; via the titles of the videos) and that the thoughts verbalized to the interlocutor were indicative of the tensions experienced by the NT, although they were ones usually shared by the teaching community. These different issues, delineated and situated temporally in the school year, were all resolved in the end by the teacher's self-elaboration of one or more self-modifications to be applied to her own classroom practices. We found a great deal of variation, both in the new teacher's degree of conviction in her planned self-modifications and in how strongly and at what time period they would be implemented if evoked.

In this type of professional-trajectory building, the guidance given by the instructors should help learners see themselves through the activity of their peers and should urge them to question themselves about their own actions and how those actions might affect their pupils' activity. Experienced as an aid that fits their current enactment dispositions, being confronted with videos of peers enables NTs, right from their first steps in the profession, to envisage realistic, attainable ways of changing. An important condition here involves proposing a variety of activities that are relevant to their current difficulties, whether typical of novice or experienced teachers, ones with which they can identify and compare themselves (Leblanc, 2014b).

Integrating an individual into a community, or social acceptance, takes place via a dual process of transindividuality; that is, individuation by way of the collective (Simondon, 1989/2007). Individuation is defined as a never-completed process by way of which an individual continues to change, a process that objectifies experience and one's relationship to oneself and to the outside world. The process of transindividuality happens either in an analogical manner through the activity of novices whenever the past and future of the concerned individuals coincide to a large extent, or in a nonanalogical manner through the activity of veterans, in which case the novices do not recognize themselves outright (Leblanc & Ria, 2014).

The first transindividuality process, among novices, allows them to see themselves as belonging to an emerging community of learners, and to get a glimpse of their potential to make realistic, attainable progress in keeping with their current ability to take action. This community corresponds to their in-group, which can be regarded as the subject's social body or social personality (Simondon, 1989/2007). The actions of peers shown in the classroom videos constitute a kind of feasibility proof for beginners just entering the teaching profession.

The second transindividuality process unfolds when NTs are confronted with a community of experienced teachers (ETs). This community expresses itself in different ways: (a) by commenting on the new teachers' practices in a more or less benevolent, critical, and constructive way (e.g., Néopass@ction), (b) by uncovering, during debates among colleagues, the compromises the ETs had to make to handle the typical problems of the profession (e.g., Néopass@ction), and (c) by having the ETs show and explain their ways of operating in their innovative practices (e.g., BSD). The ETs' comments (when they are not shared by the NT and their ways of acting (when they are broken down to a sufficient degree) help shift the NT's point of view from a self-centered one to an others-centered one, thereby offering new perspectives for interpreting the situations encountered, and

new practical avenues to explore. Alternating between videos of new teachers and videos of experienced ones paves the way to progressive integration into the working community, a transition that moves from the periphery (with novice activity as the preferential target) to the center (with more experienced activity and professional standards as the circumstantial target).

Progression Through Video-Viewing Modalities

Last, we propose a progression through the different video-viewing modalities utilized in teacher education, based on an analysis of the training options and the concerns of teachers as they enter into and move forward in the profession (Leblanc, 2015c; Leblanc, 2016). Other-confrontation and professional trajectory follow-up are more useful at the onset of teacher education, because they are easy to implement and noninvasive while at the same time they abide by the principles of real-world validity and immersion-based and reflection-based effectiveness. Self-confrontation in the presence of a small group — by virtue of its ability to reveal an NT's own activity and bring it to a conscious level — finds its place in the middle of a teacher-education curriculum, once NTs have stabilized a few ways of doing things (even if they are not yet aware of what those ways are) or whenever they are trapped by seemingly insurmountable problems. Having teachers focus on how pupils act, react, reason, and learn, is a complementary but essential route toward progress in developing teaching skills.

The other-confrontation modality exposing the typical experiences of new teachers seems to be the best one to use at the onset. It stays close to the experiences of NTs without forcing them to expose their own experiences to others. Seeing peers who are similar to themselves and through whom they can picture their own actions reassures them and removes guilt feelings as they become aware that the difficulties facing them are not individual but must be faced by the entire community of beginners. This prompts them to speak freely about their real teaching activity, which is rarely addressed in the more normative approaches that overload NTs with so many institutional, didactic, pedagogical, and professional recommendations. (A recent exploratory study compared two theoretical and pedagogical approaches based on videos: one called normative, the other called developmental; Gaudin, Flandin, Ria, & Chaliès, 2014).

NTs have a chance — without being required to do so as in work-analysis tools — to expose their own experiences, but only to the extent that they feel comfortable doing so. This kind of small-dose exposure creates a climate of trust among the protagonists and eliminates the risk of attacks on the NT's self-image like those often found in the self-viewing modality, where the person is alone at the center of the analysis.

Furthermore, this situation frees student teachers from the paradoxical position of being a *teacher who is learning*. Such a position often leads them to conceal any difficulties they come across, which is obviously counterproductive and impedes learning. By grounding our training approach in a model of professional development versus a model of expertise, we have made the analysis and learning processes bear on the principle of gradual entry into the teaching profession (or professional trajectory).

Finally, collective confrontation alleviates dramatization and enriches the analysis of the videotaped situations studied, thanks to interpretations of and exposure to a variety of experiences drawn from a wide range of teaching activities (that is, analysis of a practice). These considerations clearly suggest that training utilizing the self-confrontation modality guided by an instructor or a few peers, needs to be combined with collective other-

confrontation sessions that mix in various disciplines, educational actors, and types of schools.

The self-confrontation modality is used in the presence of a few peers to explore one's own activity. It provides a means of revealing the processes underlying a NT's activity. In this modality, NTs who are watching themselves are prompted to go over, in detail, what they were doing when they were doing it and clarify their more or less unconscious ways of acting in the classroom. This approach is more readily accepted after a few months of teacher education and student teaching in the schools. It cannot be implemented without the consent of the actor involved, which is easier to obtain when he/she has already watched other-confrontation videos of peers.

The engagement of NTs in this self-confrontation modality is conditioned by the feeling that others are truly interested in their own point of view, not foremost for normative or evaluative purposes, but to understand their teaching action and trigger change in it. Individual self-confrontation in the presence of peers is interesting from an educational standpoint (in terms of the comments proffered by the instructor and by peers), if and only if (a) the peers' remarks are controlled (by having their comments deferred to a later, group-analysis phase) so as not to cut off the verbalization process (which is not an easy task), (b) by putting every NT in the self-confrontation position, and (c) by setting up a framework of ethical and collective functioning that places priority on the confronted NT's viewpoint. This training modality, implemented with a small group during individual sessions, can then be reproduced with a larger group, once the confronted individuals have agreed to be put on stage and to collaborate in defining which of their ways of teaching are to be shared and submitted to group analysis.

Alternatively, other recent studies have broken away from observing the activity of teachers in order to focus on observing the activity of pupils, which they use as a starting point for teacher education and training (e.g., Rodgers, 2002). This approach is based on the premise that to develop professionally, teachers must understand how pupils think and learn. The strength of the reflective cycle proposed by Rodgers seems to rest, first, on its capacity to direct teachers' attention to what really happens in their classroom rather than to what they would like to happen and, second, on its ability to shift that focus to what the pupils are learning.

For Rodgers (2002), assessing feedback from pupils proves to be an essential step in understanding the gap between what the teacher *taught* and what the pupils *learned*. Having noted that few teachers take time to talk with their pupils about what they are learning, Rodgers made this the springboard for his approach to teacher education, aiming to have teachers develop their skills via a process of adjustment-in-action. In the course of his research experience, he noted that as students, teachers become more curious and also more aware of their own ways of learning, which further points out the merits of doing likewise with their pupils. This pupil-focused approach seems to be most useful when NTs have overcome their initial difficulties (revolving around handling the class as a group and getting pupils to follow instructions) and when they have become aware that every pupil is unique.

Rethinking the Use of Video-Based Teacher Training

In the light of the current growth of video-based training, we developed a conceptual contribution to the use of videos in teacher education, drawing from scientific studies conducted between 1965 and 2017. This conceptualization is structured around three axes

or organizing principles involved in the design, viewing, and utilization of videos in teacher education:

- Axis 1 Practices: the professional skills targeted by the training,
- Axis 2 Coaching: the type of self-referencing implemented during the guidance process,
- Axis 3 Professional Development: the main type of actor concerned by the desired changes.

Figure 2 shows a model of this conceptualization in the form of a “simplex” “The simplex is a tool for observing the work of a teacher [for our purposes here, the word *teacher* can be replaced by *instructor-developer*] in order to make it readable and understandable without freezing or reducing it in a simplistic manner” (Ria, 2014, p. 41; our translation). This model helps situate or rethink video-based training with respect to these three axes and can also be useful in analyzing the groundwork underlying the design of computerized video environments. The model brings out the most representative uses of video-based training, and describes different three aspects of teacher learning that may be complementary but may also be in tension: learning the more or less standard teaching skills and/or learning ways to analyze and understand the teaching activity; analyzing one’s self-image or verbalizing past experiences; and focusing on the changes brought about in teachers and pupils.

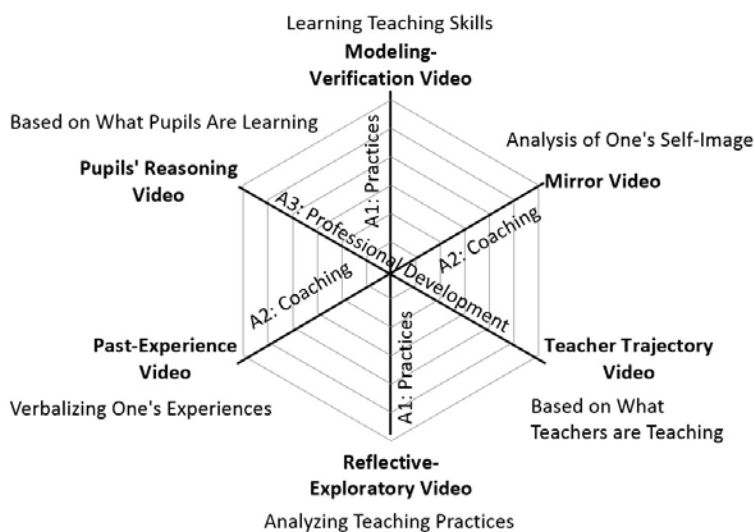


Figure 2. Model to aid in rethinking the use of video-based training for new and experienced teachers. [/caption]

Axis 1: Learning Teaching Skills and Analyzing Teaching Practices

Looking at how learning has been addressed in video-based teacher education over the past 50 years or so, two trends clearly emerge. The first one takes a normative approach and is aimed at making NTs observe and learn what to do in the classroom (Brouwer, 2011). We refer to it as the “modeling-verification” approach, whose purpose is to help the teacher achieve instrumental effectiveness by learning more of less standardized teaching skills,

whether grounded in institutional or didactic-pedagogical recommendations (i.e., in analyses of the so-called right way to teach).

Showing NTs videos of the best practices in a variety of circumstances of the teaching profession raises NTs' awareness of the diversity of approaches to teaching and learning and avoids demotivation (Gaudin et al., 2014). According to this approach, the primary advantage of video viewing is not its potential for developing NTs' reflective practices but helping them learn what to do in the classroom. The second trend takes a developmental approach and is aimed not at defining “good” and “bad” teaching practices (Santagata & Guarino, 2011) but at helping NTs to elaborate means of taking action by stimulating professional reflection (Brophy, 2004). We call this approach the “reflective-exploratory” approach, which consists of analyzing and striving to understand the organizing principles of the teaching activity by interrelating multiple experiences: those of fellow teachers (new or experienced) and one's own.

In the former approach, videos can serve as an initial model by allowing student teachers not only to dream and draw inspiration, but also to identify the proper teaching standards to be attained and to see image-based proofs that help them determine whether those standards are respected in simulated educational settings or in actual practice (e.g., the pioneering experiments in microteaching by Allen & Ryan, 1969). In the latter approach, the video serves as a mediator between oneself and others, acting as a basis for conducting group inquiries (e.g., Lussi Borer, Ria, Durand, & Muller, 2014). In doing so, it stimulates professional debates and facilitates the construction of anchor points for gradual entry into the teaching community (e.g., experimentation with other-confrontation, Flandin, Leblanc, & Muller, 2014). A recent exploratory study looked into the impact of video viewing on preservice teachers' activity using both of these approaches (normative and developmental; Gaudinet et al., 2014). Other researchers (Roche & Gal-Petitfaux, 2015) have studied the effects of a tool that helps students identify the bodily skills needed to act in the classroom (in physical education) and showed that video-based training sparked a sensory immersion allowing students to develop reflection processes, both individual (about bodily experience in the classroom) and collective (about professional rules).

Axis 2: Analysis of Self-Image and Verbalizing Experiences

In reaction to microteaching methods — which involve looking back at task execution and reproducing a teaching skill that does not focus on the filmed teacher's point of view — two trends have emerged over the years, both of which are aimed at letting NTs take the floor and have their remarks taken seriously. The first, which uses the Mirror Video, arose in the 1980s. NTs analyze their self-image and assess their difficulties (Linard & Prax, 1984). The second, which uses the Past-Experience Video, arose in the 2010s. The filmed teacher describes and comments upon his/her experience based on questions asked by an interlocutor (an instructor, a researcher, or another teacher) who helps the teacher verbalize the unapparent or obscure aspects of his/her activity (Leblanc et al., 2012; Leblanc & Veyrunes, 2012).

These two ways of confronting one's classroom activity based on a video (again, called self-viewing and self-confrontation, respectively) have given rise to some contrasting effects, depending on the conditions under which the interactive viewing takes place: Are the remarks made in the presence of a few peers who will be experiencing the same situation in the future, in the presence of a larger group of peers, or simply in the presence of an instructor? Is there an activity-oriented protocol for questioning the student teacher, a contract or convention agreed upon by the group and based on the ethical principles at play? The answers to these questions are important, because the effects on the discourse of the filmed teacher will differ accordingly.

Axis 3: What Teachers are Teaching, and What Pupils Are Learning

Two, more recent, trends study the use of videos in education, one focusing on the issue of teacher development and learning, the other, on pupil development and learning. The first, teacher-oriented trend inquires into and attempts to account for the trajectories of NTs within the profession. It uses the Professional-Trajectory Follow-Up Video and strives to enhance the enactment dispositions of NTs, not only in situations that are problematic for them and, therefore, represent risky periods, but also in frequently recurring situations.

Rather than claiming to reconfigure the professional situation of NTs on the basis of an expert model that is imposed and controlled from the outside (Ria & Rouve, 2010), this approach helps detect modifications that are manifest and significant in a given situation, by comparing the activity of a teacher after a few months of teaching with the activity of several NTs over a period of equal duration (a few months to 1 year) or with that of more experienced teachers (Ria & Leblanc, 2011).

The second pupil-oriented trend looks at changes in the behavior and reasoning of pupils confronted with a given type of task in a given discipline. It uses the Pupils' Reasoning Video and is grounded in the assumption that an analysis of pupils' activity is an essential lever for the professional development of their teachers. As an alternative, then, this approach refrains from observing the activity of teachers and directs attention to the activity of pupils, which then becomes the starting point for teacher education (e.g., Rodgers, 2002). The underlying assumption is that to develop professionally, teachers must understand how pupils think and learn.

Back in the 1980's in France, researchers working on pedagogical experimentation had already started trying to "reconstruct pedagogical action on the basis of observation of the activity of pupils" (Mottet, 1997, p. 91). Focusing on the analysis of students' activity helps transform NTs' concerns — which at first are centered on managing the class and on how to assume the mantle of a teacher — into concerns centered on teaching and the students (Rosaen, Lundeberg, Cooper, Fritzen, & Terpstra, 2008). Experiments need to be conducted not only to closely interrelate these two types of analyses in teacher education (focusing on students and focusing on the teacher), but also to describe, understand, and follow up on how this dynamic interrelationship between the evolving concerns and knowledge of students and teachers affects professional development.

Conclusion

In their book, *Images vidéo, images de soi: or Narcisse au travail* (Video Images, Images of the Self; or Narcissism at Work), Linard and Prax (1984) pointed out the need to "reintegrate into teacher and learner education that great forgotten thing that is the body and its imaginary" (p. 35; our translation) and to define the interconnection between "the experiences lived through, the concrete sensible" with "mental activity, the intelligence abstracted from knowledge" (p. 3; our translation). Today, this view has important implications, which we have reconsidered on the basis of recent work that has allowed us to understand and formalize the actual in situ activity of NTs involved in different types of video-based professional mentoring.

Reliance upon individual interview-like sessions (self-viewing, self-confrontation, other-confrontation) is seemingly indispensable — provided certain ethical, relational, and methodological conditions are met — not only for documenting what NTs experience during video-based training, but also for understanding the nature of the affective, cognitive, and motivational involvement of subjects. From a research perspective, these

investigations enable us to formalize and identify the typical characteristics of NTs; from an educational perspective, they enable us to foster professional changes that are judged more realistic from the NT's point of view.

Also, grasping professional development from longitudinal studies by detecting changes in NT engagement (i.e., surpassing dead ends, making transitions, and massive reconstructions; Serres, Perrin, Leblanc, & Ria, 2012) helps researchers gain further insight into the identity-building processes at play during such reconfigurations and opens up some promising pathways for teacher education (via professional-trajectory follow-up).

Other dimensions bear on the use of video-based training for new and experienced teachers that deserve discussion here, such as the limitations of videos as a tool, different forms of individual or collective grouping or their combination, the importance, orientation, and nature of instructor guidance (Leblanc, 2016) and the possible theoretical approaches applicable to analyzing videos of teaching-learning situations (Gaudin & Chaliès, 2015).

To conclude, we return to Linard and Prax (1984) with a quotation that foreruns a fully contemporary movement of ongoing self-viewing (notably by way of the book's subtitle "Narcissism at Work"), for better or for worse: "Instrument of conformization, surveillance, persecution, and formal notice or instrument of exploration, reflective learning, active observation, and self-genesis, a video is first and foremost a tool which, more than any other, sends a reflection of each person back to himself through the use that he makes of it" (p. 15; our translation).

End Notes

[a] An online educational platform developed by our research team (Ria et al., 2010). Plateforme de formation en ligne "Néopass@ction" de l'Institut Français de l'Éducation de l'ENS de Lyon. <http://neo.ens-lyon.fr/neo>

[b] The BSD (in English, Bank of Didactic Sequences) can be used to analyze practical cases of teaching in the elementary and secondary schools, based on precisely defined didactic issues or pedagogical methods: <http://www.reseau-canope.fr/bsd/>

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