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**And if L. Wittgenstein helped us to think differently about teacher education?**

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## Abstract

This article outlines a broad research program (Lakatos, 1987) in cultural anthropology that has been conducted over the past fifteen years in the field of teacher education.

The core hypotheses of the program and their theoretical foundations, which are based on analytical philosophy (Wittgenstein, 1996), are first reviewed: the immanence of the subject through and in the experience of language, the assumption of individuation and subsequent subjectivization, and subjectivization as the process of following rules and/or carrying out the actions governed by the rules.

The theoretical advances in the study of subjectivization are then presented, along with the empirical research findings that show how the subjectivized individual in teacher education is constructed from and through learning rules.

The article concludes with an explanation of why it is important to expand this research stream on subjectivization, which is defined as a process occurring in and through actions governed by rules.

Key words: cultural anthropology, subjectivization, rules, subject, teacher education.

## **1. Introduction**

This article outlines a “research program” (Lakatos, 1994) that has been inspired essentially by the analytical philosophy of Ludwig Wittgenstein and developed over the past fifteen years in the field of teacher education. As part of a broad enterprise in “culturalist anthropology” (e.g., Bertone, Chaliès, & Clot, 2009; Chaliès, Amathieu, & Bertone, 2013; Chaliès, Bertone, Escalié, & Clarke, 2012) to study the construction of the subject in the context of professional education, the program grew out of a “core theory” (Lakatos, 1994) and its main theoretical hypotheses: (i) the immanence of the subject is revealed by and through language experiences (Chauviré, 2009; Proudfoot, 2009; Taylor, 1997), (ii) individuation leads to subjectivization (Laugier, 2010; Macherey, 2009) and (iii) subjectivization occurs by following rules and/or performing the actions governed by them (Butler, 1997). As in any research program, the studies as a whole seek to stabilize these “hard core” assumptions and extend them through new "auxiliary" hypotheses (Lakatos, 1994).

With respect to the theme of this collection of works, we present two of the theoretical hypotheses currently being explored in our research program, and they constitute the conceptual framework for this article. The original methodologies used in the empirical studies to (in)validate these hypotheses are then detailed. Last, these theoretical and methodological proposals are illustrated by a number of empirical results taken from studies in the field of teacher education.

## **2. Theoretical framework**

The two theoretical hypotheses were chosen because the empirical results thus far been suggest that they are appropriate heuristics for addressing many of the problems in teacher education today. A notable issue that deserves attention is how to effectively implement the principle of alternation between the sequences of education at the university and in the schools with the sequences of classroom work.

### **2.1. First theoretical hypothesis**

In this theoretical presentation, teaching someone (or being taught) how to teach means that the person will (learn to) carry out actions governed by “rules” (Wittgenstein, 1996, §§145-242)

and/or (learn to) identify those actions that the community of teachers considers as exemplifying the rules of their profession. These rules have nothing to do with the “situated normative experiences” (Lähteenmäki, 2003) that are accepted by the community as rendering each teacher’s actions intelligible, anticipatable, and evaluable (Livet, 1993). They instead carry the weight of authority as standards of correct practice within the community. Yet applying the rules can in no way be dictated, as every teacher who follows them is free at any moment to deviate from them, transgress them, or even refuse to follow them (Descombes, 2004). For preservice teachers (PTs), these rules are a kind of experiential “grammar,” not yet fully mastered but useful in helping them to recognize and/or judge how well their actions (Berducci, 2004) conform to professional prescriptions (Clot, 2008). Nevertheless, this experiential grammar is certainly not the be-all and end-all, to be learned and interiorized as a precondition to being able to teach day after day. It is instead an “arbitrary reality” (Searle, 1998) composed of a complex system of endlessly shifting rules, constantly overwhelmed by the singularity of the situations and unexpected circumstances of teaching. What makes teacher education activities difficult from this theoretical perspective are the two registers of meaning and the heterogeneous, relatively autonomous actions.

(i) The first register of meaning is related to the emergence of normative capacities, which reveal “in some respects” the professional skills that make it possible to reduce dissimilarities between singular situations and see the “family resemblance” (Wittgenstein, 1996, §§46-49, §§67-73). Situational regularities can be identified and the teacher is able to consider the circumstances as meaningful with regard to a system of rules that is being “played out” at a given instant and a given context (Le Du, 2004). At this level, the normative capacities that have been developed let the teacher sample the lived experience, identify it as being more or less emblematic of the teaching profession, and make judgments on the pertinence, correctness or meaning of the actions being observed or carried out (Descombes, 2004).

(ii) The second register of meaning is related to carrying out the actions that “significant others” (the other members of the teaching community) consider satisfactory and meaningful in an established context. In this register, reflexivity is a kind of self-presence (Legrand, 2005) that mobilizes neither symbolic representations nor clear awareness of what the actors are in the midst of doing. The meaning of an event becomes “transparent” only at the moment where it is

apprehended in the course of action. Action is thus “governed by rules” (Wittgenstein, 1996, §219).

In this conception, alternation can be characterized by the activities in which each PT deploys a dual register of reflexivity (Ogien, 2007).

(i) In classroom teaching situations, PTs are engaged in situated interactions with students and make decisions based on prereflexive consciousness. They carry out actions governed by rules, with these rules being “inherent” to action (Ogien, 2007). Preconscious rules can nevertheless be the object of reflexive activity in post-lesson training. These rules are indeed potentially sayable either because they were learned in earlier reflexive training or because learning them has occurred implicitly within a community of practice (Lave & Wenger, 1991) through nonverbal interactions and/or informal alignments with the observed practices of other teachers (Rogoff, Matusov, & White, 1996).

(ii) In other situations, PTs are engaged in dialogic activities or interactions whose object is classroom teaching as part of teacher education. The activities have characteristics that approach the idea of “consciousness as liaison” (Vygotski, 2003) wherein the PTs use a register of reflexivity on the order of “apprehending the inherent” (Ogien, 2007). In the course of these interactions, both verbal and nonverbal, they carry out actions of “following” the work rules, which enable them to identify, describe, comment on, and analyze lived experience. They thus act in accordance with the rules that are, at a given instant, both conscious and sayable because they have been learned in earlier reflexive training and through dialogic re-elaborations. Teacher education at the university and/or in the schools (e.g., during post-lesson interviews with the cooperating teacher (CT)) mainly call on this register of reflexivity. In order to understand the outcomes and limitations of this register, certain characteristics should be detailed.

## 2.2. Second theoretical hypothesis

In order for PTs to engage in reflexive thinking about their classroom work, they first need to learn the rules so that they can correctly assign meaning to their experiences – that is, meaning in line with the expectations of the teaching community. Theoretically, learning these rules requires that the university supervisors (USs) or CTs engage in “ostensive teaching” (Wittgenstein, 1996, §6) by which they teach the meaning of those experiences considered as exemplary of the work

rules. A US or CT will indeed judge a PT's action as inadequate by referring to the rules that structure the meaning of the teaching profession and that thus serve as yardsticks for measurement. For each of these experiences, judged and/or taught, the US or CT creates "meaningful links" (Bertone et al., 2009) that associate (i) a language experience that names a fact or action, (ii) examples that are described, shown and/or demonstrated, and used as samples or emblematic examples, and (iii) the results that are usually associated or expected in the teaching community. The meaningful links taught by the US or CT can then become real "benchmark" experiences (Williams, 2002) as PTs interact in the training situation and/or act in the classroom. They are able to build on these samples of exemplary experience to give meaning to and judge observed events.

This step is nevertheless not sufficient (Bertone, Chaliès & Flavier, 2009), and theoretically the US or CT must next engage in a new activity of supporting the PTs as they begin to follow the rules (Chaliès et al., 2013). Through this support, the US or CT not only makes it possible for the PTs to carry out the expected actions (e.g., by arranging the work situation), but they also and above all ensure that these first steps in following the rules lead to the usually associated and expected results. Only by observing these results will the PTs be able to relate a practical work intention to a rule that was taught (Cash, 2009), and this connection is far from obvious: the intention to obtain the result cannot logically precede the expected action, prescribed by the US or CT but hitherto unknown to the PT, both in its execution and in its positive or negative outcome. It is thus by correctly following the rules that were taught and observing the expected results in the classroom that the PTs complete their learning and can develop professionally and subjectively within the rules (Nelson, 2008). During these first efforts at rule following, the US or CT "monitors" compliance and intervenes, if necessary, with "ostensive explanation" (Davis, 2009). This is accomplished by multiplying the examples described, shown and/or demonstrated so as to remove any possible misinterpretation (Chaliès et al., 2012). It is only at this point, when the rules have been learned, that the PTs can free themselves from the control of the community members. They are now able to build a system for interpreting the rules (Winch, 2009) that authorizes an "extended" use of the meaningful links outside of the original situations in which they were learned. This extended use is based on the identification of a "family resemblance" between the circumstances of the current situation and those of the original training situation. From these meaningful links, the PTs are finally able to organize a complex network of

similarities, “understand” the new situation as it unfolds, and ultimately succeed in producing activities consistent with community expectations – all while gradually freeing themselves from the control of the teaching community. In these situations, the US or CT helps the PTs to engage in highly personal instances of following the rules and to experiment with their original meaning (Butler, 1997) so as to be optimally equipped to adapt them to the ever-shifting circumstances of teaching.

### **3. Method**

Essentially the same methods are used for all the studies in the research program (Bertone & Chaliès, 2015). In all cases, four successive steps are respected.

#### **3.1. Step 1: Establishing the research conditions**

In this step, the researchers (Rs) (i) define a new hypothesis derived from the core hypotheses of the research program and (ii) select a field of potential study. They thus formalize a new hypothesis from the results of previous work. They then identify a professional education program as a potential field of study, and they proceed to an inventory and review of the international literature in the field of study.

#### **3.2. Step 2: Establishing the research-working conditions**

In this step, the Rs meet with the actors (US, CT and/or PT) in the selected program to present the hypothesis and the field of study. At this time, they are attentive to the actors’ concerns or “requests for assistance.” The Rs and the actors then agree to engage in (in)validating the hypothesis and finding solutions to some of the concerns.

#### **3.3. Step 3: Data collection and processing**

For each study, two types of data are collected and transcribed verbatim.

(i) “Extrinsic” data, usually audio-video recordings, are collected at each stage of the study using a video camera and a wireless microphone worn by each actor.

(ii) “Intrinsic” data are collected from the audio-video recordings of self-confrontation interviews (SCIs) conducted by an R with each actor at the end of each step in the program. These interviews

are conducted to reconstruct a posteriori the rules learned and/or followed during situations of training and/or teaching. All interviews follow the same protocol. The interviews are semi-structured and the R encourages the actors to talk about the meanings they attributed to the observed actions and any judgments that were made. By asking for clarification or provoking controversy, the R further invites them to substantiate these judgments. Last, the R invites them to talk about the results they had expected from the actions being viewed.

The data are processed so that each actor's activity, its evolution over time, and the articulation of all actors' activities (US, CT and/or PT) can be analyzed at each stage of the study. To achieve this, a four-step procedure was built (Chaliès et al., 2010).

(i) The extrinsic and intrinsic data are transcribed verbatim and then decomposed into units of interaction. These units are delimited by the meanings that the self-confronted actor attributes to the events being viewed. A new unit of interaction is created every time the subject of the meaning attributed by the actor changes.

(ii) For each unit of interaction, the elements supporting the meaning attributed by the actor are then identified. By convention, these supporting elements correspond to all the circumstances mentioned by the actor to explain to R how to arrive at the same meaning – that is, by following the same rule for the events of the viewed training situation.

(iii) For each unit of interaction, the rule followed by the actor to understand and judge his or her experience is then formalized. By convention, every rule is labeled from (a) the subject of the meaning attributed by the actor, (b) all the circumstances mentioned by the actor to support this meaning, and (c) the results observed and/or expected. To minimize R's interpretations, each rule is labeled using vocabulary close to that of the actors.

(iv) A double synchronic and diachronic grammatical inquiry is then conducted. The synchronic investigation compares the rules followed and/or learned by the actors during the same step and the diachronic inquiry traces the historicity of the rules followed and/or learned by every actor over the entire training program. By convention, two actors are assumed to be following the same rule if the object of judgment, some of the supporting elements and the associated results are identical.

### 3.4. Step 4: Progress of the research program

The progress of the research program is assessed by the empirical results. The overall results are organized in line with the initially defined auxiliary hypothesis. If the hypothesis is validated, it is incorporated into the program and it will serve much as the earlier hypotheses did: as the starting point for defining a new hypothesis. Otherwise, it is rejected.

## 4. Empirical illustration

### 4.1. Elements of contextualization

The two theoretical hypotheses and the methodological choices detailed above are illustrated by empirical results from a study whose principal characteristics can be summarized as follows. In this study, the hypothesis was the following: *The PT has to follow rules that need to be learned. This compels the educators to engage not only in ostensive teaching of the rules but also in supporting the first efforts at following them.* To (in)validate this hypothesis, the educational component under study was the traditional situation of a CT and PT in the public school system (For a review see Chaliès, Cartaut, Escalié & Durand, 2009). This situation was modeled on the notion of educative mentoring (Feiman-Nemser, 2001), which theoretically mitigates the separation between training (meetings of the CT and PT before and after lessons) and teaching. The collaborative mentoring in each PT/CT dyad comprised four successive steps over two consecutive weeks. Each mentoring sequence occurred once per trimester of the school year:

- Step A: The CT observed the PT's lesson;
- Step B: After the lesson, the CT and PT assessed the lesson and planned the next lesson (co-preparation);
- Step C: This planned lesson was carried out by the CT and the PT with the PT's students the following week (co-intervention);
- Step D: After this lesson, the CT and the PT assessed it (co-assessment).

### 4.2. Empirical results

Two results are presented, chosen because they illustrate and validate the hypothesis of the study. They also suggest the need to reconsider the usual principle of alternating between training situations and suggest a new hypothesis related to rethinking the time of classroom work as a genuine time of training.

#### *4.2.1. Making the classroom a training situation on and of work: arranging the work so that the PT can simulate professional practice*

At the time of the co-intervention lesson (Step C), the PT and CT of Dyad 1 (subject: physical education) were standing in a corner of the gym to observe the students. They did not think that the students were doing what they had been asked to do during this badminton lesson (“*Score a point by hitting the shuttlecock with a downward movement [of the racket]*”). They were thus talking about the reasons for this difficulty and the possible solutions (Excerpt 1).

##### *Excerpt 1*

PT: So we need to review it (he mimes the action of hitting the shuttlecock toward the ground) because they (the students) are all like this (he mimes the action of hitting the shuttlecock upward).

CT: Yes.

PT: They’re hitting it from underneath, like this (he mimes the student’ action of hitting toward the ceiling)...

CT: So we need to show them!

PT: By holding the shuttlecock in front and we break the wrist to get under it from the bottom (he mimes the movement while speaking).

During the SCI, the PT justified his action with the CT. The excerpt that follows identifies the rule he followed during the lesson to engage with the CT (Excerpt 2).

##### *Excerpt 2*

PT: Here I’m practicing... with him (the CT) the points to review... I try almost to put myself in the situation.

R: You’re practicing with him, you mean?

PT: I’m listing (the actions to do) so I don’t forget anything... Break the wrist... somewhere in there, I sense that I’m going to have to say it (to the students)...

R: So you’re trying to prepare?

PT: Sort of!

R: You say, I’m practicing... can you explain that?

PT: Almost like I’m explaining (to the CT)... I’m trying to verbalize, to clarify what I want to say...So that afterwards I can say it to the students...And it’s something (verbalizing the instructions before giving them to the students) that he (the CT) does when we prepare together. When we were preparing (co-preparation of the lesson) he said it (what he would do) as if he were speaking to the students...

In this excerpt from the SCI, the PT gave the R the supporting elements that indicated his use of a rule: “*Prepare to tell the students what they have to do*” which meant placing himself “*in the situation*” as if he were already speaking to the students. He did this in front of the CT by “*trying to verbalize*” and “*practicing with him*” and “*listing*” what had to be delivered, “*as if he were explaining it.*” By following this rule, the PT expected to “*clarify*” and “*not forget*” the information he wanted to give the students during the demonstration.

Excerpt 2 provides access to the history of usages of this rule. The CT had initially taught the rule to the PT during the co-preparation of the lesson. The CT in fact revealed his own way of “*preparing to explain what the students needed to do*” by placing himself “*in the situation*” by simulation. The excerpt of the SCI that follows about the co-preparation meeting with the CT strengthens the idea that the PT started learning this rule during the co-preparation meeting (Excerpt 3).

*Excerpt 3*

PT: I listen to him (the CT). He builds the lesson directly here... I'm thinking that he's... When he's preparing the situation, he's already planning the instructions he's going to give the students...

R: Can you be more specific?

PT: He's letting the situation unfold there. He's preparing... In the way he prepares, he saves time and more than anything... He doesn't miss anything, he forgets nothing... Once on the field. Because while preparing, he's going to say... We're going to do... We're going to put them two on a court and then make them work on the wrist break... And he goes further than that... He says 'I serve, the other returns it'. Here, he's already... As if he were talking to the students.

R: And you?

PT: There I get it... how to prepare and be clear on the field... In fact, he practices... He already has a text prepared and he practices it. He worked out the instructions before giving them to the students...

Excerpt 3 informs on the quality of the articulation between the co-preparation and the classroom work in the collaborative mentoring situation. It shows that the PT “*understood how to prepare (the lesson) in advance to be clear while in class*” during the co-preparation. By observing the CT's actions and taking them as an example of what to do, he began the process of learning a rule that he then tried to follow in the lesson. The PT thus constructed a meaningful link between an experience that labels a professional practice (“*I'm thinking that he's... he's preparing the situation*”) and an experience that lets him sample a work action. The CT thus demonstrated a rule, or it was demonstrated without him quite being aware as he neither stated it nor deliberately

addressed it to the PT. Yet the PT followed this rule in the co-intervention lesson, both to elaborate his work and to interpret his classroom experience (“*I’m practicing the different points to make with him here... I’m trying to almost put myself into situation... As if I were explaining it to him... I try to verbalize, to clarify what I want to say... So that afterwards, I can give the instructions to the students*”, Excerpt 2). The co-intervention situation was therefore not merely a work situation for the PT. Because the CT was alongside him, the situation was in fact an occasion to follow the rule for the first time. Similar to and in continuity with the situation of co-preparation, it can be considered a real training situation for supporting the PT as he tracked the outcome of a rule learned in training. Ultimately, learning this rule exceeded the co-preparation and resulted in a self-prescription that organized his classroom actions while co-teaching.

#### *4.2.2. Making the classroom a training situation on and of work: arranging the work so that the PT can follow the rules*

During his SCI about the co-intervention situation (Step C), the PT of Dyad 3 (subject: mathematics) said that for the first time he had noticed that following a rule taught by the CT had had the expected results (Excerpt 4).

##### *Excerpt 4*

PT: Here, it’s working. They (the students) are listening.

R: It’s working?

PT: Well, here I’m lowering my voice in fact, and it’s pretty quick, they realize it... and they stop (talking).

R: And so?

PT: There it’s kind of relief. In my head, I say ‘finally! Oof, that’s it, it’s OK now, it’s done.

R: And you feel better?

PT: Totally... It took a while but I’m finally there.

R: But you were looking for what?

PT: Well, there, it’s a thing I’d been working on (with the CT) for a while now. To gain control, we work with silence.

R: Meaning?

PT: To make them (the students) listen to me I can raise (my voice) louder and louder, and they do the same. So the idea was to do this less. He (the CT) suggested that I speak more quietly to make them listen... They actually listen better when I keep my voice low... And that’s what happened there. They listened better... so there I had better control of them.

This excerpt documents the PT’s satisfaction with both his correct following of a rule taught by the CT (“*Manage the students*” stands for “*play with silence*” meaning “*speaking more quietly to*

*the students*”) and the result (they were “*more attentive*” and “*listening*”). The excerpt also indicates that “*it took time*” and required the PT’s repeated attempts to follow the rule in order to finally see the expected results and end this part of his learning. The question now is whether or not the mentoring situation contributed to his learning.

The following excerpt is taken from the co-preparation of the lesson. It illustrates the CT’s engagement in ostensive teaching of the rule (Excerpt 5).

*Excerpt 5*

CT: You don’t always want to talk like that, louder and louder. I don’t know if you realize it but you end up yelling... So in this case, to better manage the class... I would suggest you do the exact opposite. Get silence by silence. The idea is to play on your voice. You speak more quietly... And they are forced to stop, to listen up.

PT: Yes, but...

CT: It’s not easy. For sure... But it still works really well. You keep lowering your voice until they start listening. You make them become attentive...

At that moment, the CT was engaged in ostensive teaching of the rule (he deliberately addressed it to the PT). By doing so, he created a meaningful link between the statement (“*Manage the class*”) and the practices (“*play with silence*”, “*lower your voice*”) of the experiential circumstances that were clearly identified (“*you end up yelling*”). He also pointed out the results expected from following this rule (“*you make them become attentive*”). From this perspective, the CT helped the PT to become engaged in following the rule.

Two distinct steps in training emerged in the analysis of this case. The first is the CT’s verbalization of examples of the rule. Quite removed from the actual circumstances of the PT’s classroom work, this description alone can only guarantee the “tracking” of the outcome of rule following. The second step is the support to the PT in his classroom attempts to follow the rule. The excerpt of the PT’s SCI about this moment in the co-preparation sequence documents the developmental impact of Step 1 of training and indicates that the PT has constructed an “expectation” (Excerpt 6).

*Excerpt 6*

PT: Here it’s clearer. I know what I have to do.

R: Which is what?

PT: He (the CT) told me to stop trying to speak louder and louder... I have to try to lower my voice so that they listen more.

R: So there you have a solution. And before that there were no solutions?

PT: Yes. But I had to wait to see what would happen in class.

The excerpt from the CT's SCI about the co-intervention sequence documents the efficient training activity that allowed the PT to correctly follow the rule and observe the classroom effects (Excerpt 7).

*Excerpt 7*

CT: It's like before. I don't know if you saw but, well, for the instructions, every time he gives them to his group I try to be there. Just before, I actually left my group of students to be there (...)

R: Did you plan to help him that way?

CT: Yes, I tried to simplify those moments when he had to give the instructions... So there, I took a seat next to a couple of agitated students.

This excerpt illustrates not only the importance of supporting the PT in class, but also and above all the need to arrange the circumstances in which he would try to follow a rule he had just learned. The CT's engagement in managing the PT's students (by trying to be "*more present*" and by leaving his own group) "*simplified*" the task of "*giving instructions*". By showing himself and/or by positioning himself differently in the classroom ("*I took a seat next to a couple of agitated students*"), the CT calmed the class and thereby allowed the PT to follow the rule and, most importantly, to see the result of doing so.

## **5. Discussion**

The empirical results presented above validate the prediction of new developments linked to the hypothesis of the study. These results indicate that CTs should not stop at ostensibly teaching the rules and therefore that the hypothesis is good. CTs in fact need to complete ostensive teaching by "supporting the first steps of rule following" as soon as the PT is next in the classroom. Although certain aspects of the complexity of professional development (especially with regard to its temporality) will no doubt be overlooked, we nevertheless have chosen to focus the discussion on two points.

The PTs were able to self-address a rule learned in the co-preparation session or reflexive training while they were in the classroom because an "expectation" had emerged, but this resulted in a "resolved action" only because of the CTs' attentive classroom support. Two distinct training activities were notably identified: ostensible teaching (not deliberate) and ostensive teaching

(deliberate) of a rule. The observation that these activities were complementary and relatively autonomous suggests the specificity and limited contributions of training related to a reflexive system of meaning and the analysis of PT classroom experience. Although identifying a problem and prescribing a rule to resolve it favored the emergence of new capacities to “perceive” notable classroom events and to even “expect” them, ostensive training was not enough to transform the PTs’ power to act in the classroom. This result was previously reported (Bertone et al., 2009) but this time our in-depth analysis revealed something unexpected: new teaching activities emerged in ordinary circumstances and under real classroom constraints when an expert (the CT) was there to facilitate this emergence by arranging the circumstances. Satisfactory rule-following required more than the CTs’ mere presence in the classroom. Instead, the CTs played a very active role in ensuring the PTs’ success in following a rule and finding personal confirmation that the rule had indeed produced the effects usually expected by the teaching community. These results provide greater detail on the findings in the international literature that indicate that real changes in PTs’ classroom actions are only observed when their mentors’ work is intense and systematic (Miller-Rigelman & Ruben, 2012) and constructed within a reassuring and supportive community of practice (Roerhrig et al., 2008).

This “discovery” of results late in the training process about what a newly learned action can produce echoes the findings in a recent study (Rozelle & Wilson, 2012). These authors documented the effectiveness of PTs’ genuine imitations of their CTs after systematically observing them. They notably reported that these PTs reproduced the lessons to the point of giving the exact same explanations, examples and anecdotes, although their actions were (i) too rapid and (ii) too rigid to allow for any improvisation that would take into account their personal interaction with students. These actions, which Rozelle and Wilson called “carbon copies”, were considered satisfactory by the CTs. Moreover, when the PTs were no longer able to observe their CTs’ actions due to an increasing number of teaching placements, they managed to gradually free themselves from these expert models through a growing capacity to adjust their actions in the classroom.

Conceptually, these findings raise questions about CTs and the precise circumstances when switching from ostensive rule teaching to actively supporting PTs in the classroom is effective and relevant. Regarding the PTs, they raise questions about the shift from an initial capacity to

unambiguously “apply” rules to the capacity to handle multiple interpretations adapted to the particularities of each classroom situation.

In this regard, this study suggests that learning a rule can be considered as completed only when both registers of meaning (the inherent and understanding the inherent) have been constructed and “following the rules” is consubstantially associated with actions that are “governed by the rules”. This model of alternation in teacher education provides a detailed look at the nature of the interactions in training situations needed for the effective development of professional activity. It strengthens and clarifies earlier results on PT satisfaction with their teaching activity in the classroom and in training (Chaliès et al., 2013). Two phases appeared in the development of the PTs’ professional activity. First, the PTs acted in compliance with the rules, hesitant and shaky though this may have been. They were less driven by the desire to be efficient and clear, not having fully grasped the importance of this, and were more focused on “pleasing” their CTs. Sometimes, the PTs even thought that the advice they were trying to apply was irrelevant to their situation.

In this phase of learning the rules, the CTs’ arrangement of the PTs’ classroom situation and their help were crucial. Support in the classroom was not limited to simple note-taking and silent observation, but was an active co-intervention to bring about the expected results and thereby demonstrate the value of following the rules. Second, the PTs not only performed satisfactory actions (“resolved”) but they were able to shape and adapt them to the unexpected circumstances of new classroom situations. In this phase, the PTs felt free from the control of their CTs and training was done.

The results of this study do not support the conception of alternation in teacher education as a sequence of classroom visits and post-lesson interviews. Instead, they point to the need to carry advisory and teaching activities into PTs’ field work to ensure that they can “track” the outcomes of rule following in the classroom. In other words, this study suggests that PT education should be supported by specific activities that are arranged and implemented in the unique situations of training. This is undoubtedly at the heart of the complexity of supporting preservice teachers. The support must be considered as embodying the principle of “alternation” between learning the rules and interpreting them, and this within a framework of training programs broadly conceived along

the principle of “continuity” between teacher education in the university and/or in the school system and work situations that are more or less arranged.

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