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1 **Mentoring and building professional competences of pre-service teachers: theoretical**
2 **proposals and empirical illustrations**

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Mentoring and building professional competences of pre-service teachers: theoretical proposals and empirical illustrations

1. Introduction

In 2013, the French Minister of National Education established a national framework for teacher training, making training the centerpiece of the national pre-service teacher (PT) education program (Master's degree in Teaching, Education and Training). Although not completely original compared with earlier texts, this document set out two major priorities. First, the document clearly states that the aim of teacher training is to enable PTs to “acquire the necessary competences for their practice” in the teaching profession (Minister of National Education, Bulletin Officiel du 27 août 2013), and this is in no way an isolated institutional priority. It is part of a European and indeed worldwide (OECD 2018, European Commission 2004, 2005) movement to put the concept of competence at the heart of policies for teacher training. Second, the document further specifies that training programs should be based on the principle of “integrative” alternation, with school practicums integrated into university education. This principle emphasizes the importance of practicums as they provide a valuable opportunity for PTs to connect theoretical knowledge from the university with workplace practices (Mena *et al.* 2017).

It should nevertheless be noted that in practice these two priorities have never really been put into relationship. Moreover, a review of the research literature yields the same conclusion. Many studies have sought to optimize the implementation of the alternation principle in PT training. The findings to date suggest that the success of an integrative alternation principle would require an alternative model that “redefine[s] the school–university partnership” (Darling-Hammond 2006, Haymore Sandholtz 2002, Wilson 2006). The assumption here is that training by alternation can be optimized only if a “new form of professional learning” is instituted so that university supervisors (USs) and school cooperating teachers (CTs) are able to collaborate more closely (Mullen 2000), thus ensuring continuous support for the professional development of PTs. To achieve this, many proposals have been advanced and evaluated (For a summary, see for example: Authors 2009a). Some of the proposals have called for a complete transformation of the training model by removing the barriers traditionally erected between the universities and schools (Furlong *et al.* 1996, Johnston and Kirschner 1996, Johnston *et al.* 1996). This was the case, for example, with the professional development schools movement in North America. The primary objective of this movement

1 was to build organic collaborations between several schools and one or more universities in
2 order to create a new institution that could be deemed a true learning organization (Harrys and
3 Van Tassell 2005). In Europe, the initiatives have undoubtedly been more modest and
4 localized, usually calling for a shift in the “center of gravity in PT training” (Zeichner 2006)
5 from the schools to the universities and/or vice versa. Programs have nevertheless multiplied,
6 with CTs able to contextualize the knowledge delivered at the university (Davis 2006) and/or
7 USs able to integrate PTs’ professional classroom experiences into their theoretical teaching
8 (Tigchelaar and Korthagen 2004).

9 Paradoxically, although the concept of professional competence is the centerpiece of teacher
10 training programs, few studies have sought to determine the conditions that enable PTs to
11 build these competences. Among them, the most notable studies have investigated how PTs
12 build competence through their interactions with CTs (see for example: Clarke *et al.* 2014,
13 Rodrigues *et al.* 2018). Despite the finding that CTs have a significant impact on PT
14 competence building, what seems to be missing from the literature is the description of a clear
15 and explicit connection between the CT activities and the growth in new teachers’
16 competences. As noted by Moussay *et al.* (2010), how the support of CTs to PTs contributes
17 to increasing competence has remained vague and unclear. Although researchers have studied
18 the conditions for CT support to improve PT competences (Klug *et al.* 2015), they have not
19 given sufficient attention to the mentoring situation that underpins the mentoring activities
20 and have not proposed adjustments that might optimize the traditional mentoring situation to
21 facilitate competence building. Insufficient consideration of the dynamic relationship between
22 CT activities and the mentoring situations in which they are embedded is problematic,
23 because competence is fundamentally shaped by the real-life situations in which people learn
24 and practice (for a review: Avalos 2011). A nuanced understanding of mentoring activities to
25 make the most effective use of mentoring situations is therefore urgently needed. According
26 to Aspfors and Fransson (2015), untrained CTs often supervise PTs in traditional support
27 situations that do not prompt competence building.

28 The main purpose of this theoretical article is therefore to conceptualize the articulation of the
29 two priorities, which are (i) training organized according to the principle of alternation
30 between training sequences and professional classroom practice and (ii) the construction of
31 professional skills. To achieve this, the article is structured into three main parts. First, we
32 present an original theoretical framework for understanding the dynamics of PT competence
33 building as it relates to CT mentoring activities. Second, we present an illustration of this
34 theoretical framework based on empirical evidence. Third, we discuss the future possibilities

1 of applying this theoretical framework to arrange mentoring activities that might more
2 effectively build PT competences. To conclude, we present proposals to support the work
3 arrangements of CTs and USs to better train PTs.

4 5 **2. Theoretical framework**

6 This study was conducted as part of a much larger research program investigating
7 professional training from a cultural anthropology perspective (for more details see: Authors
8 2010, 2012, 2017). The main postulates that underpin this program and the theoretical
9 hypothesis tested in this study are presented below.

10 ***2.1. Construction of the subject in training: an experiential reading***

11 Within this program, the construction of the subject in training is considered to be a process of
12 “subjectivization” (Butler 1997) by and in the use of experiences that are holistic (with motor,
13 sensory and emotional components) and situated (experiences always come up against
14 situations and their complexity). In addition, these experiences are theoretically considered as
15 normative because they are necessarily learned and socially intelligible within a professional
16 community (Searle 1998). In other words, the process of subjectivization for a subject in
17 training is an experiential flow (Theureau 2015) that is partially enriched by certain situated
18 normative experiences. Always coupled with the situations in which it takes shape, this
19 experiential flow is by nature complex because it is enriched by diverse situated normative
20 experiences and more or less continuous in its development. Situated normative experiences
21 lived in training and developing even in other training and/or work experiences. Situated
22 normative experiences that are lived in situations other than training (e.g., professional or
23 social) may also potentially enrich this experiential flow. These experiences are essential to
24 facilitate the experiential flow within which trainees’ subjectivization develops. Hence, it is
25 critical that CTs support PTs as they develop a better understanding of specific situations
26 (Thompson *et al.* 2015) and, if necessary, that the CTs adjust these situations to make it
27 favorable for the PTs to develop from the situated normative experiences. In other words,
28 individuals always grapple with situations and their complexity. At the heart of this process is
29 the idea that trainees are “active learners” who exercise and develop reflexivity through
30 constant interactions with dynamic experiences in a situated context (Lave and Wenger 1991).
31 This conception is in opposition to the behavioral approach in which the focus is exclusively
32 on teachers’ classroom behavior rather than their thinking processes (Brophy and Good 1986).
33 This latter approach prescribes standard and “a”situated behaviors to improve teacher

1 competence, although this is problematic because teaching competence cannot be simplified
2 to a fixed descriptive standard (Roegiers 2007).

3 Despite the intrinsic complexity of each subject's experiential flow in training, especially
4 because of the diversity of factors that influence it (e.g., the training sequences at the
5 university), we have chosen to center our conceptualization on the three fundamental stages in
6 which CTs need to contribute to PTs' experiential flow and provide support. The ambition
7 here is to conceptualize how school-based CTs can implement the principle of alternation
8 between training sequences and classroom work in order to assist PTs in constructing
9 professional competence.

10 ***2.2. Constructing the subject in training: CT activities***

11 The first of these stages is "ostensive teaching" (Wittgenstein 1996) whereby the CTs
12 establish the meaning of each experience. During this activity, CTs explain the "meaningful
13 links" (Wittgenstein 1996) in which "work rules" are generated and then serve as "yardsticks"
14 for PTs to judge, interpret, and act correctly in their practice. For each meaningful link, three
15 necessary experiential components are theoretically associated (Authors 2009b):

- 16 (i) Labeling: this component assigns the meaning to SNEs;
- 17 (ii) Exemplifying: this component establishes the exemplary practice;
- 18 (iii) Resulting: this component generates the expected results.

19 All three components are essential in mentoring activity because they constitute the first stage
20 in which PTs become acquainted with the professional "grammar" and are cautiously
21 introduced to a system wherein all actors share the same meanings and rules (Wittgenstein
22 1996).

23 However, PTs will not become maximally competent if CT support ends with this first stage
24 of ostensive teaching of the situated normative experiences (Authors 2012). Therefore,
25 "accompaniment" is developed in the second stage. In this stage, the CTs engage in a new
26 activity of accompanying PTs as they practice the SNEs they have just learned in new training
27 situations or "arranged" experiential situations. During the process, CT accompaniment is
28 vital to ensure that (i) PTs follow the "rules" learned from the situated normative experiences
29 of the "ostensive teaching" stage so that they can progressively and cumulatively inform their
30 practices, and that (ii) these practices are associated with the expected results (Authors 2013,
31 2017). For PTs, by applying the "meaning" they initially constructed with their CTs from an
32 situated normative experience as a "standard yardstick" experience (William 2002), they will
33 be able to successively develop their normative capacities (Cometti 2004), including:

- 34 (i) Signifying new experiences by linking to the original situated normative experience;

1 (ii) Analyzing new experiences by comparing them with the original situated normative
2 experience;

3 (ii) Simulating the taught situated normative experience by performing it in an “arranged”
4 work situation;

5 (iii) Carrying out the taught situated normative experience in the context of “real work.”

6 Whether PTs practice the rules they learned from situated normative experiences in
7 experimental or real situations, CTs seek to ensure that these practices lead to the expected,
8 exemplified results. Only through the complete comprehension of these results can the PTs
9 perform in tune with the professional intentions of the situated normative experiences (Cash
10 2009). Only by correctly carrying out the situated normative experiences and understanding
11 the expected results can they gain insight from the original situated normative experiences and
12 continue to develop. This process thus leads to the third theoretical stage of “self-
13 development” after “ostensive teaching” and “accompaniment.” It is in this stage that PTs
14 completely grasp the rules taught by the situated normative experiences. At this point, they
15 can then stop imitating their CTs and establish their own systems for using the rules (Winch
16 2003) outside of the original situations (Authors 2017). During this process, CTs may engage
17 in “ostensive explanations” if necessary (Davis 2009) to resolve any misinterpretations about
18 the original situated normative experiences so that PTs can carry on the practices of the
19 situated normative experiences independently and acceptably for the professional community.
20 It may be argued that this supplementary guidance is not always necessary, but this indicates
21 that the process of building PT competence is not linear (Kiss 2012). Instead, the activities
22 around situated normative experiences are interrelated, and CT participation in support of PT
23 self-development can run through the entire process depending on the real-life needs.

24 On the other hand, PTs’ successful learning of situated normative experiences does not have
25 an “absolute negative sense” (Le Blanc 2002). SNEs cannot be simplified as demonstrations
26 of “rules” that trainees have to follow. They open the way for PTs to become subjectivized.
27 PTs are not passive learners – in contrast, they are transformative intellectuals (Kubanyiova
28 2012). They act cautiously and critically to negotiate, transform and harmonize what they
29 have gained from the situated normative experience with their self-constructed experiences.
30 Hence, instead of blindly following the “rules” of the learned situated normative experiences,
31 they are able to deviate from them to finally engage in the “excellent act of subjectivization”
32 (Butler 1997). In these developmental situations, CTs are again needed to accompany them so
33 that they are ultimately able to engage their normative capacity for interpretation. CTs may
34 thus help them to identify “familiar resemblances” (Wittgenstein 1996) between the

1 constitutive circumstances of the current situation and those that constitute the original
 2 situations in which the rules were learned. With the support of CTs, PTs then gradually
 3 recognize a complex network of similarities, understand new situations in progress, and
 4 ultimately manage to produce activities that meet the expectations of the profession, while
 5 they grow from what they were initially taught.

6 **2.3. Theoretical hypotheses**

7 On the basis of the postulates presented above, we present the following two-part hypothesis
 8 that is examined in this theoretical study:

9 (i) Professional competence is part of PTs' experiential flow that has been enriched by the
 10 situated normative experiences lived during training;

11 (ii) This complex and discontinuous flow is supported by a continuous series of training
 12 situations that enable PTs to gradually and cumulatively implement their normative capacities
 13 for meaning, analysis, simulated and real realization, and interpretation, starting from the
 14 initially taught situated normative experience.

15 This two-part hypothesis is empirically tested by a transformative training research design set
 16 up as follows.

17

18 **3. Methodology**

19 **3.1. Research design**

20 This study adopts the same methods that are used for all the studies in this research program
 21 (Authors 2015a). The overall research is conducted as follows:

22 (i) *Establishing the research conditions*: The researchers determine a new auxiliary
 23 hypothesis, which is derived from the principal hypotheses already formed and presented in
 24 the section above.

25 (ii) *Establishing fieldwork conditions*: The researchers identify the fieldwork location and
 26 the teachers (CTs and/or PTs) who might participate in the study. In meetings with the
 27 teachers, the researchers first present the object of the potential study. They then listen to and
 28 collect the teachers' concerns and co-construct with them a way to transform the field in
 29 which their work takes place such that it will be possible to validate or invalidate the auxiliary
 30 hypotheses that have been defined in advance. At the end of this step, transformative
 31 fieldwork is adopted.

32 (iii) *Data collection and analysis*: Audio and video data are collected via a video camera
 33 and wireless microphone. These data are the "extrinsic data" that will be further processed for
 34 the self-confrontation interviews, in which "intrinsic data" are collected. The interviews are

1 semi-structured, and the researchers encourage participants to reflect on their actions as they
2 watch the video and make judgments on their own (see 3.4. for more details).

3 (iv) *Scientific and technological progression of the research program*: The core postulates
4 serve as the theoretical framework to guide the analysis of the overall result. If the new
5 hypothesis is validated, it is incorporated into the principal theoretical hypotheses; otherwise,
6 it is rejected. More detail regarding these steps will be presented in the following section. As a
7 complement, the transformation of the professional field for the study is discussed with PTs
8 and CTs to consider disseminating the research findings to the community of practice.
9 Depending on the results, their arrangement is more precisely envisaged so that they can be
10 disseminated in an optimal form with both scientific and professional validation.

11 **3.2. Teacher training in France and fieldwork**

12 Teacher training in France comprises two distinct steps, in contrast to the training practices in
13 a number of other European countries. The first step for future teachers is to obtain a
14 Bachelor's degree. Once this degree has been obtained, national competitive exams are taken.
15 Those who succeed are accepted into a University Institute of Teacher Training for one year
16 of specialized training, during which time they have the status of pre-service teacher (PT). As
17 this pre-service training is limited to just one year, the training programs try to optimize this
18 time. They are organized according to the principle of alternating work/study based on the
19 assumption that there is a reciprocal impact between (i) training sequences for PTs, with CTs
20 in the public schools and/or with USs at the teacher training institute, and (ii) sequences of
21 practical work experience in the classroom. The latest reform (2013) gave greater importance
22 to classroom experience for PTs—which was defined as the “structuring element of
23 training”—and proposed a reorganization. For 50% of the time, the PTs' classroom work is
24 organized exclusively as a placement “with responsibility” for a class for a whole academic
25 year. They work only with their pupils. The CTs make regular visits (an average of 6 to 8
26 visits) to the classroom and engage in mentoring activities with the PT. Twice a year these
27 visits are conducted with the US. The other days of the week are devoted to training at the
28 university institute under the direction of USs.

29 The transformation of the field put into place to test the hypotheses (Authors 2015a) consisted
30 of ensuring that in each CT/PT dyad the CT would be able to engage in the activities
31 theoretically necessary to enable the PT to learn new situated normative experiences and
32 develop professionally. Each dyad thus implemented a five-step training sequence three times
33 a year (October, December, February) as follows.

1 - Step 1: The CTs observed their PT's lesson. On the basis of the observed needs, they
2 then responded with ostensive teaching of a situated normative experience in the post-lesson
3 conference;

4 - Step 2: The CTs invited the PTs to observe one of their lessons. The PTs had to identify
5 the moments corresponding to the situated normative experience and give their analysis. A
6 review with the CT took place in the post-lesson conference;

7 - Step 3: The CTs planned a lesson with the PTs, which was then co-taught to the CTs'
8 students. This was expected to provide the PTs with a "simulated" experience of the situated
9 normative experience. CTs and PTs then reviewed the lesson in the post-lesson conference;

10 - Step 4: The PTs planned a lesson with the CTs, and the PTs taught the lesson to their
11 own students. This was expected to provide the PTs with a "real" experience of the situated
12 normative experience. CTs and PTs then reviewed the lesson in the post-lesson conference;

13 - Step 5: The CTs planned different ways to use the learned situated normative
14 experiences with the PTs. If a PT requested it, he/she could be observed by the CT while
15 implementing the situated normative experiences. CTs and PTs then reviewed the lesson in
16 the post-lesson conference.

17 **3.3. Participants**

18 At the start of the new academic year, the researchers held an information meeting with the
19 USs responsible for training and various PT/CT dyads. The transformative program we had
20 envisaged was presented. After discussing the potential training benefits and constraints (e.g.,
21 in terms of time cost), a dozen PT/CT dyads volunteered to participate in this study. Of these
22 twelve, the researchers selected three with the USs' help. They were representative of most of
23 the dyads. Their main characteristics were as follows.

24 The PTs were between 23 and 25 years old. They were in a Master's program preparatory to
25 teaching History-Geography and French. At the end of their first year of the Master's, they
26 had passed the national competitive exam that qualified them to teach in French middle
27 schools (11 to 15 years). At the time of the study (second year of the Master's), they were in
28 charge of their own classes for the first time. They had already had 25 days of teaching
29 experience (ten days in a "condensed" placement and 15 days in a "spun-out" placement of
30 one day per week since the beginning of the school year).

31 The three CTs were experienced, with 13, 17 and 22 years of teaching experience,
32 respectively. They had volunteered to become CTs and had been selected by their school
33 principals. In the beginning of the school year, they had undergone training in the university,
34 mainly to prepare for their placement during the spun-out placements. On the first two days,

1 they had also been prepared by experienced USs to welcome the PTs into their classrooms for
 2 the "condensed" placements and to work with them in preparing lessons and evaluating the
 3 experience. On the third day, the researchers introduced the transformative support program
 4 under study and detailed its theoretical underpinnings. On this occasion, video excerpts
 5 showing the main advisory activities (ostensive teaching of the situated normative
 6 experiences, accompanying the PTs in "arranged" experiential situations, and accompanying
 7 the PTs in their interpretation of the situated normative experiences) were used to support the
 8 explanations, illustrations and analyses preparatory to implementing the program.

9 **3.4. Data collection**

10 During each phase of the mentoring activities, audio and video recording data were collected
 11 with the camera and an RF microphone. These were the "extrinsic data" to be further
 12 processed for the self-confrontation interviews, in which the "intrinsic data" would be
 13 collected. The participants were invited to review their activity and critically reflect on it. A
 14 total of 22 interviews per dyad, lasting from 30 to 40 minutes, were conducted and recorded
 15 (Table 1).

16 Insert Table 1

17 During these self-confrontation interviews, the researcher's objective was to access the
 18 intelligibility of the participant's activities "by being instructed" (Ogien 2007) by him or her
 19 as to their meaning. The self-confrontation interviews were therefore conducted to
 20 retrospectively reconstruct the taught, learned and even interpreted situated normative
 21 experiences through a method of formalizing rules that the participants followed (Authors
 22 2008, 2010). Through structured questioning, the researcher encouraged each interviewed
 23 participant to explain the meanings that were attributed to the observed actions, in addition to
 24 any judgments that might have been associated with them. By asking for details or being
 25 controversial – confronting the interviewee with apparent contradictions – the researcher
 26 encouraged the participant to substantiate the judgments. Last, he invited the participant to
 27 specify the results that had been expected from the observed actions.

28 **3.5. Data analysis**

29 The data were processed so that each actor's activity, its evolution over time, and the
 30 articulation of all actors' activities (CT and/or PT) could be analyzed at each stage of the
 31 study. To achieve this, a four-step procedure was adopted. The scientific validity of this
 32 procedure has been tested and published (see: Authors 2008, 2010, 2017).

33 The data processing steps are as follows.

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

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

9 (iii) For each unit of interaction, the rule followed by the actor to understand and judge his
 10 or her experience is then formalized. By convention, each rule is labeled from (a) the object of
 11 meaning attributed by the actor, (b) the set of circumstances evoked by the actor to support
 12 this meaning, and (c) the results that are observed and/or usually expected. Each rule is thus
 13 formalized as follows: [*Object of meaning* – is valid for or is equivalent to – *set of elements*
 14 *that are exemplify the meaning* – which obtains as a result – *set of results observed and/or*
 15 *expected*]. To minimize R's interpretations, each rule is labeled using vocabulary close to that
 16 of the actors;

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

23 (v) In the last step, the validity of the data processing is tested. Two researchers separately
 24 process the entire corpus. At the end of this process, they analyze the corpus together using
 25 their respective results. Successive comparisons are made and discussed until agreement is
 26 reached regarding: (i) the units of interaction, (ii) the objects of meaning and the set of
 27 circumstances used to standardize them, (iii) the formalization of the rules, and (iv) their
 28 categorization. In cases of disagreement, the result in question is rejected. Fewer than 5% of
 29 the corpus elements had to be rejected.

31 **4. Results**

32 The results indicate that our two-part hypothesis was enriching. They confirm that this
 33 hypothesis is theoretically valid for characterizing the competences built by PTs and the
 34 dynamics of this building through analysis of the CTs' accompaniment. As the results were

1 obtained in an exploratory case study, they will need to be validated by studies with larger
 2 samples. However, with the necessary precautions, we present here one of these results,
 3 selected because it is representative of the most frequently encountered dynamics of
 4 competence building, as well as of the activities undertaken by the CTs to support it. This is
 5 indeed the case for rules n°2 for Dyad 1, n°7 for Dyad 2 and n°6 for Dyad 3 (Table 2).

6 Insert Table 2

7 At a moment in a History-Geography lesson (February; Sequence 3 of training; Step 4) for
 8 Dyad 2, the PT's 5th-grade students are working in groups of four. The excerpt shows that
 9 they were asked to schematize the spatial organization of a seigneurie in the Middle Ages. The
 10 PT moves from group to group aiding the students in their work. In her self-confrontation
 11 interview, she says she is satisfied with the way she was helping the students to learn (Excerpt
 12 1 - Excerpt of self-confrontation interview about the lesson in Step 4):

13 *Excerpt 1*

14 PT: There, I'm helping them. It turns out well and I focus on learning.

15 Researcher (R): What do you think?

16 PT: That's why I was looking so it's not bad ...

17 R: Looking for?

18 PT: Not immediately answering their questions and not stepping in before they've had time to think.
 19 We had worked on it with F (CT). The problem is that they're waiting ... for me to do it for them. So
 20 helping them but only once they've already done something on their own.

21 R: So not too early?

22 PT: Yes, that's been the hard part so far. From the beginning, F and I have worked on it.

23 The analysis of this self-confrontation interview excerpt identifies the rule that the PT
 24 followed to signify what she did: [*"Help students learn"* is valid for or is equivalent to *"don't*
 25 *immediately answer their questions"* and *"help them but once they've already done something*
 26 *on their own"* which obtains as a result *"getting them to think for themselves"*].

27 Unfortunately, the analysis does not allow us to determine exactly when the situated
 28 normative experience formalized by this rule was actually learned. Yet it does indicate that
 29 learning this had been difficult (*"it's been the hard part"*) and required a lot of time (*"From*
 30 *the beginning, F and I have worked on it"*). A review of the stages prior to the sequence
 31 illustrates how the CT supported the PT in overcoming these difficulties and situates the
 32 circumstances that led to PT's learning this new situated normative experience.

33 During the co-teaching lesson of Step 3 in the same training sequence, the CT challenges the
 34 PT by observing that the students *"are not thinking"* because they *"sitting back"* and *"waiting*

1 *for*” her to do the work for them (Excerpt 2 - excerpt from CT to PT during the co-teaching
2 lesson in Step 3).

3 *Excerpt 2*

4 CT: E. (PT)! Be careful, they (the students) are sitting back, they’re not thinking ...

5 They’re waiting. It’s normal, you’re doing the work. They’re asking you questions ... Don’t answer right
6 away. This doesn’t mean that we’re not going to make them work.

7 PT: But we said we had to help them, get involved...

8 CT: So that they think ...

9 In her self-confrontation interview, the CT states that she’s “*uncomfortable*” because she has
10 noticed that her advice to the PT “*in fact, hasn’t been understood correctly*”. She therefore
11 “*has to go back over her advice*” even though they have been working “*for a while*” (Excerpt
12 3 - Excerpt of CT’s self-confrontation interview on the co-taught lesson in Step 3).

13 *Excerpt 3*

14 CT: There I’m uncomfortable. We had assigned groups and I see that they’re waiting for her to ...

15 R: Uncomfortable?

16 CT: What I asked her to do hasn’t been understood correctly.

17 R: Did you tell her?

18 CT: We said, once it was working, we have to get involved, really, to get them to learn. So here she
19 does that. But at the same time the students don’t have to think for themselves ...

20 R: And so ...

21 CT: I have to go back over the advice we’ve been working on for a while.

22 We organized things so she could follow it. We co-taught the class so she’d have the time ... It should
23 have been simpler ... And no, it’s not working out. But there I tell her so she can try again right away.

24 R: So you insist?

25 CT: Yes, to get involved but so that they think. So we don’t answer questions, we make them work
26 together ... Because they have to think first.

27 The analysis of this excerpt raises questions about the relevance of this situation to help the
28 PT to “simulate” the situated normative experience. The CT indeed emphasizes the
29 paradoxical nature of this training moment in the work situation. On the one hand, the
30 situation seems interesting because the co-intervention makes it possible to arrange the
31 working situation (“*We co-taught the class so she’d have the time*”) in order to facilitate it (“*It*
32 *should have been simpler*”). It also optimized training by closing the time gaps between the
33 observation time, advice giving, and its implementation (“*I tell her so she can try again right*
34 *away*”). Yet the CT also highlights the difficulty of arranging the work situation so that the
35 PT can engage in an appropriate “simulated” realization of the situated normative experience
36 and achieve the results that are usually associated with it. She has indeed tried to “*organize*”
37 the situation so that the PT “*could follow it*” but “*it’s not working out*” because the students

1 take advantage of the PT by letting her do the work for them. The analysis also reveals how
 2 the CT supports the PT, which can be described as ostensive explanation. During the co-
 3 teaching, the CT actually “monitored” the PT’s capacity to carry out the "simulated" situation
 4 following the situated normative experience. Detecting a misinterpretation, the CT has to “go
 5 back over the advice” they have been working for “a while”. To do this, she “insists” on the
 6 expected results of the situated normative experience while broadening the range of examples
 7 that can be associated with it. Finally, the situated normative experience explained by the CT
 8 can be formalized by the following rule: [*“Help the students to learn”* is valid for or is
 9 equivalent to *“get involved in their activity to get them working together”* and *“do not*
 10 *immediately answer their questions”* which obtains as a result *“make them think”*].
 11 Although each stage of the training sequence was implemented to help the PT to
 12 progressively and cumulatively engage – through the situated normative experience she’d
 13 been taught – in the various normative capacities that ultimately constitute a competence,
 14 misinterpretations were still noted during Step 3 questioning. A review of the two prior steps,
 15 with an analysis of the teaching and the CT’s accompaniment, provided elements of an
 16 explanation. A return to the post-lesson interview following the observation of the PT’s lesson
 17 (Stage 1 of Sequence 3) situated the moment when the CT ostensibly taught the situated
 18 normative experience, which was then the training object of Sequence 3 (Excerpt 4 - Excerpt
 19 of the post-lesson conference conducted in Step 1).

20 *Excerpt 4*

21 CT: What I also wanted to tell you is that you should help the students more in learning. Once you get
 22 them working, you have to go see the groups. Presenting and starting the work, that's not enough.

23 PT: OK.

24 CT: Really get involved with them in the work. Be there with them and don’t stay on the periphery ...
 25 The goal is that they think, with your help.

26 The analysis of this excerpt lets us situate the situated normative experience, which can be
 27 formalized by the following rule: [*“Help the students learn”* is valid for or is equivalent to
 28 *“get involved with them in the work”* which obtains as a result *“help them to think”*]. It also
 29 situates this teaching as engaged following an observation during the PT’s lesson (*“Be there*
 30 *with them and don’t stay on the periphery”*). When self-confronted with this excerpt, the PT
 31 confirmed that the CT’s advice was especially *“interesting”* because it was *“there to help her*
 32 *out of this difficulty”* and that she herself *“felt”* it during the lesson (Excerpt 5 - Excerpt of the
 33 PT’s self-confrontation interview about her lesson).

34 *Excerpt 5*

1 PT: It's interesting. It goes back to what I felt. It's started and you have to help them. This advice is to
2 help me out of this difficulty.

3 R: And you there?

4 PT: There I note it. I write down the most important thing to think about and then use it.

5 R: The most important?

6 PT: Get involved and don't stay on the periphery.

7 The analysis of this excerpt shows that the PT signifies her activity by following the rule:
8 [*Note the advice*] is valid for or is equivalent to [*write down the most important thing*]
9 which obtains the result [*think about it and use it*]. It also makes it possible to spot the origin
10 of the misinterpretation observed later in the PT's uses of the situated normative experience. It
11 appears that she signified only a part of the situated normative experience, in this case the
12 example constituting it. She specifies that she noted only [*the most important thing: get*
13 *involved and don't stay on the periphery.*] In other words, the PT signified only one
14 component of the situated normative experience after the CT's ostensive teaching and left
15 aside the expected result (*help them to think*), which constitutes it as such.

16 An analysis of the next step (Step 2 of Sequence 3) reveals that the CT's support to the PT
17 does not completely correct this misinterpretation. In the post-lesson interview, the CT
18 engages in help that apparently does not involve ostensive explanations, according to the PT's
19 observations (Excerpt 6 - Excerpt of the post-lesson conference in Step 2).

20 *Excerpt 6*

21 PT: It was interesting because from one group to another you changed your way of doing things. You
22 didn't go right away. As you told me, first they got organized and then you went over.

23 CT: This lets you see if they're working and it encourages them to think ...

24 PT: And you ask questions ...

25 CT: Yes, targeting those who are going to enrich the thinking.

26 The CT's SCI for this excerpt confirms that the main intention was to have the PT [*give an*
27 *account of what she was able to observe*] so that they could [*sort out what might or might not*
28 *be able to be exploited*] in class with her students (Excerpt 7 - Excerpt of the CT's self-
29 confrontation interview about her post-lesson conference with the PT in Step 2).

30 *Excerpt 7:*

31 CT: There the goal is to sort out what can and cannot be exploited. So I analyze with her ...

32 R: But it's not up to her to analyze?

33 CT: Yes, she tells me what she's observed and I help her. I say OK or not, based on what she tells me ...
34 and then if it's worth keeping it ...

35 The analysis of the self-confrontation interview excerpt shows that the CT follows the rule:
36 [*Analyze with the PT what's been done in the lesson*] is valid for or is equivalent to [*let her*

1 *give an account of what she was able to observe” and “confirm whether or not it is worth*
 2 *keeping” which obtains the result “sort out what can and cannot be exploited”]. She therefore*
 3 *does not try to ensure that the PT relies on the situated normative experience to use her*
 4 *capacities to signify and analyze what she was able to observe. She does not take the*
 5 *opportunity to monitor the PT’s uses of the situated normative experience and offer, if*
 6 *necessary, ostensive explanations to correct any misinterpretations.*

7

8 **5. Discussion**

9 This study was conducted within the framework of a research program (Lakatos 1994) in
 10 cultural anthropology. It explored the validity of a new “auxiliary hypothesis” in order to
 11 further stabilize the hard core of this program. The discussion thus does not seek to generalize
 12 the results. Nevertheless, these results validate the fruitfulness of the auxiliary hypothesis and,
 13 in this sense, open on two several directions for discussion: theoretical progress and practical
 14 implications.

15 **5.1 Theoretical progress**

16 *5.1.1. An experiential flow supports the process of competence building*

17 Consistent with most of the institutional literature that considers teachers’ competence to be
 18 part of a developmental process (e.g., European Commission 2005, OECD 2018, UNESCO
 19 2006), the results illustrate that building PTs’ competence is situated in their experiential
 20 flow. This finding is original because it suggests a distinction between the experiential flow,
 21 which is by nature situated and complex because it is always anchored in the training
 22 situations in which the PTs’ activities unfold, and the processes of building professional
 23 competences, which require that these situations be arranged and implemented in a
 24 hierarchical and continuous manner. They thus point to the usefulness of the hypothesis
 25 according to which PT competence can theoretically be equated to a part of the experiential
 26 flow supported by a series of training situations: the situated normative experiences that are
 27 taught and the gradual and cumulative reliance on one’s normative capacities for meaning,
 28 analysis, “simulated and real” realization, and interpretation.

29 Two theoretical reasons can be advanced to justify the contention that PTs’ professional
 30 competences cover only part of their experiential flow or, in other words, their process of
 31 subjectivization. First, other situated normative experiences, experienced in situations other
 32 than those of training (e.g., academic, social or professional), also necessarily contribute to
 33 this process. An example might be the PTs’ situated normative experiences lived in the distant
 34 past as students, with their teachers’ practices back then now supporting their own

1 professional activity. This was shown in a recent study by Rodrigues *et al.* (2018), who
2 demonstrated that student teachers tend to look back to their past school experiences to make
3 sense of their current situations in fieldwork practice. This is especially the case for the
4 normative experiences lived by PTs as students at the University Institute of Teacher Training
5 during US practice. Although many works have highlighted PTs' inability to build links
6 between the theoretical contributions delivered to the university and the practical experiences
7 lived in the schools (Darling-Hammond 2006, Korthagen *et al.*, 2006), these normative
8 experiences enrich PTs' experiential flow without them being fully aware of it. This brings us
9 to the second theoretical reason for justifying the observation that PTs' professional
10 competence covers only part of their experiential flow.

11 Reflexivity characterized as "the apprehension of inherence" (Searle 1998) – which for PTs
12 means training in practical skills and learning to "follow the rules" (Ogien 2007) in a
13 conscious and say-able way – is not the only regime of reflexivity engaged in training. In
14 many other circumstances, learners are engaged in an "inherent" reflexive system (Searle
15 1998) of "rule-governed" actions and meanings implicitly learned at work or in the classroom
16 through nonverbal interactions and/or informal alignments with the practices of other actors
17 (Billett 2009). The experiential flow of the PT is thus also enriched by situated normative
18 experiences that are not conscious or say-able because they have been learned incidentally.

19 *5.1.2. Competence as a dynamic process*

20 This conception of competence, which is only partial given the complexity of each PT's
21 professional development process, is nevertheless heuristic as it is "processual" and
22 "dynamic" (Bulea Bronckart and Bronckart 2005). It is in this sense similar to other theoretical
23 readings in the fields of work analysis and teacher training that equate competence with a
24 complex, dynamic and always contextualized process (Ericsson 2002, Nicolaou and
25 Constantinou 2014). It differs from readings that equate competence with a state: the result of
26 the more or less synchronous mobilization of various resources acquired in isolation and then
27 stored until needed, depending on the professional situation (Koster and Dengerink 2008).
28 This difference is all the more significant as this conception of competence is still dominant in
29 the field of teacher training (Willeghems *et al.* 2017). For example, it explains the adoption and
30 implementation of the principle of alternation that is structured around the reiteration of
31 acquiring unique resources (knowledge, skills and/or attitudes) in a training situation and then
32 using them in a work situation. Yet, separating the notion of competence from the traditional
33 sense of a set of prescribed resources (Smith 2005) and framing it as a dynamic experiential
34 flow are considerable challenges. Separation makes it theoretically possible to complement

1 the long accepted “integrative alternation principle” in PT training with greater emphasis on
 2 “continuity.” This would open new training possibilities for addressing the many difficulties
 3 associated with the principle of alternation in teacher training. For example, a number of
 4 researchers have pointed to the reality shock that PTs experience because of the discontinuity
 5 between what they learn at the university and what they actually experience in the schools
 6 (Allen 2009, Mai and Baldauf 2010, Zeichner, 2010). Although the principle of alternation is
 7 extensively applied in teacher education across the world, the problem of this discontinuity
 8 between practical work and training situations (Borko *et al.* 2008) or, more broadly, between
 9 the schools and the university (Haymore Sandholtz 2002, Wang and Odell 2007), is also
 10 widespread. The resources that PTs acquire in each of these situations require different types
 11 of effort and ultimately they remain fragmented and situated alone either in the university or
 12 the professional context (Hahn 2007).

13 **5.2. Practical implications**

14 *5.2.1. Rethinking mentoring activities in PT training*

15 This conceptualization suggests that PT mentoring needs to be thought about in a more
 16 specific and subtle manner. It is, for example, paradoxical that CT activity is still mostly
 17 limited to the post-lesson conferences following classroom practice, whereas CTs might best
 18 serve in the actual work situations in which competences are built (Delgoulet and Vidal
 19 Gomel 2013). As knowledge about teaching is tacit and not readily accessible, CTs would
 20 therefore serve as bridges, enabling PTs to access professional experience in real work
 21 (Feiman-Nemser 2001, Mena *et al.* 2017). Other studies have certainly suggested other kinds
 22 of mentoring situations in which CTs and PTs observe each other, co-teach, and/or co-analyze
 23 their own classroom practice or those of other experienced or novice teachers (Aderibigbe *et*
 24 *al.* 2018, Guise *et al.* 2017, Korhonen *et al.* 2017, Lu 2010). However, these situations have
 25 never been arranged within the framework of structured training scenarios that initiate and
 26 support the dynamic process of competence building, although this is where the main
 27 practical implication for CTs can be found. The conception of competence that we advance is
 28 in this respect heuristic. It opens up new possibilities for arranging mentoring situations that
 29 can be theoretically justified, as was the case, for example, for the training program that
 30 served as a support for this study. The results highlight the value of CT commitment to a
 31 range of mentoring situations that enable PTs to progressively engage normative capacities
 32 (Cometti, 2004) (i) to signify the ongoing training or work experiences on the basis of
 33 previously taught situated normative experiences, (ii) to analyze these experiences in
 34 comparison with the situated normative experiences, followed by the "simulated" realization

1 of the situated normative experiences in a context of training and/or classroom work, and last
 2 (iv) to realize the situated normative experiences in a work context that has not been arranged.
 3 In concrete terms, our results make it possible to formalize the practical implications so that
 4 CTs can optimize the process of alternation between training and professional practice and
 5 contribute more effectively to the construction of PTs' professional competences. First, they
 6 need to be equipped with a "professional frame of reference" (Authors, 2010) that is built with
 7 the USs and that formalizes the main situated normative experiences to share with the PTs.
 8 On the basis of this professional culture shared with the USs, who can also refer to this
 9 framework in their university training sessions, the CTs can then engage in implementing
 10 mentoring situations along a continuum to progressively build professional competences. In
 11 general terms, a training progression like the following might be considered and reiterated for
 12 each situated normative experience. Depending on the local circumstances (e.g., difficulties
 13 encountered by PTs), each situation could be considered over a shorter or longer period:

- 14 - Situation 1: After observing the actual needs during PT classroom practice, the CTs
 15 respond by ostensive teaching of the situated normative experiences during the post-lesson
 16 interview;
- 17 - Sequence 2: Based on the situated normative experiences that were taught, the PTs are
 18 invited to observe and analyze the classroom practices of their CTs or peers. This
 19 observational work is then discussed in a post-lesson interview with the CTs;
- 20 - Situation 3: In the CTs' classrooms and with their *in situ* assistance, PTs engage in an
 21 "arranged" realization of the previously taught situated normative experiences. This
 22 "adjusted" professional practice time is the completed with a post-lesson interview with the
 23 CTs;
- 24 - Situation 4: The PTs engage in carrying out situated normative experiences in their own
 25 classroom without being assisted. This "unarranged" professional practice time is observed by
 26 the CTs and is concluded with a post-lesson interview;
- 27 - Situation 5: After the PTs have learned the situated normative experiences, the CTs then
 28 accompany them in their interpretations as a support for their professional development. This
 29 training work is accomplished during the post-lesson interview.

30 5.2.2. *Rethinking articulation between the university and the schools*

31 The empirical findings provide original insight into the process of competence building in PT
 32 training. We conceptualized it as an experiential flow, and our findings reinforce mentoring
 33 activities and CTs' role in supporting this flow to build competence. Yet despite these
 34 findings, significant questions remain not only about the role of CT support within the

1 schools, but also about the overall training process, especially the issue of strengthening
2 university support to CTs. From the perspective of the “accompaniment” proposed within this
3 framework, a constant mentoring presence to give PTs full-time support from both the school
4 (CTs) and the university (USs) is utopian. However, the findings of this study emphasize the
5 importance of articulating training situations whether at the university or in the schools, with
6 CTs and USs closely accompanying PTs, alone or together. The results also underline the
7 need for articulation between the university and the schools (Jones *et al.* 2016). Partnerships
8 between CTs and USs are crucial to ensure effective and cooperative training situations
9 (Cartaut and Bertone 2009, Gardiner and Lorch 2015), as these partnerships will go a long
10 way in ensuring the “continuity” of competence building during the overall training process.
11 Technology offers other means to explore new possibilities for training situations (e.g.,
12 video), compensate for the absence of mentors, and/or collect data on their activities, thus
13 providing them with opportunities for future feedback and analysis (Authors 2015b).
14 In concrete terms, within the framework of a stronger articulation between the university and
15 the schools, the training program presented above could be optimized. For example, the CTs
16 could inform the USs of difficulties experienced by the PTs via an eportfolio. The USs would
17 then be able to proceed themselves to the ostensive teaching of the situated normative
18 experiences. This would bring about the construction of a culture common to all PTs. Using
19 video excerpts of classroom practices, the USs could also immediately engage the PTs in
20 observing and analyzing the contents on the basis of the situated normative experiences that
21 were taught. In addition, the USs could facilitate the "arranged" realization of these situated
22 normative experiences in the CTs’ classrooms. They could do this, for example, by having the
23 PTs carry out role plays at the university of what they will be asked to realize in the schools.
24 Last, based on the CTs’ observations of what the PTs have learned, the USs could accompany
25 the PTs in their interpretations of the situated normative experiences, again with the support
26 of video extracts. New solutions, which are sources of professional development, would then
27 be built collectively. These solutions could then be concretely tested by the PTs in their
28 classrooms with the help of the CTs.

29 **6. Conclusion**

30 This study tested the theoretical hypothesis that PT competence building is an experiential
31 flow that is enriched by a series of progressive training situations. Through a case study, it
32 reveals that PT competences are indeed gradually and cumulatively developed throughout
33 these training situations. Most significantly, the findings highlight the “dynamic” and
34 “processual” nature of competence building in teacher training, although this needs to be

1 confirmed in future studies. They also suggest that a shift in focus to building “continuity”
 2 would enhance the current “alternation training model” by connecting each training situation
 3 within the overall teacher training process. The scope of this study was limited because USs
 4 were not engaged in this fieldwork. Yet clearly, in order to rethink how CTs can better
 5 support PTs, structured support at the university level is vital. Therefore, further research is
 6 needed with the engagement of mentors from different culture systems working together to
 7 find new ways of optimizing training activities in the clear goal of supporting PT competence
 8 building.

9 In addition to these contributions to teacher education theory, this article offers food for
 10 thought and guidance for policymakers as they devise ways to optimize teacher training.
 11 Three areas for reflection appear particularly worthy of consideration: how to build a common
 12 professional culture for CTs and USs; how to encourage the construction of real training
 13 collectives by ensuring that CTs and USs are trained for the specific activities they carry out
 14 in these collectives; and how to ensure that schools truly become spaces for professional
 15 training, at the heart of which arrangements for the classroom work are conceived and
 16 organized. Only by responding to these concerns can policy decisions be made in the direction
 17 of creating "collaborative" and "interactive" training environments (Paris and Gespass 2001)
 18 that offer PTs, as well as CTs and USs, the conditions to develop professionally (Haymore
 19 Sandholtz 2002, Gilles and Wilson 2004).

20

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