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Article

Linking theory and practice during a high school practicum: case study of preservice history teachers in Quebec

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Keywords: history teaching, practicum, didactics, high school, pedagogical content knowledge

- We need to understand how future teachers make sense of theory and practice during a didactics course and a practicum field experience.
- Different assignments can show us how future teachers think about history teaching and teaching practices.
- Theoretical links are superficial and relate to the nature of assignment even though future teachers demonstrate a progression in their view of teaching practices
- We need to ensure greater coordination between partner schools
- Different assignments foster different modes of reflection on practice and we must encourage this variety.

Purpose: This article presents a case study exploring how future teachers combine scientific knowledge and practical knowledge during a history didactics course and practicum field experience in history teaching in Quebec high schools.

Design: Through a thematic analysis of the written assignments submitted during the practicum and conceptual maps designed as part of the didactics course, links between theory and practice are highlighted.

Results: Future teachers' referring to different types of knowledge depends on the expectations specified for each written assignment, and shows discourse with little critical distance. However, the concept maps show a more complex representation of teaching practices which can be explained by both the didactics course and the experiential and practical knowledge gained through the practicum.

Implications: This composite of experiences puts initial teacher training into perspective along a continuum that requires consolidating university expectations and varying school practices. Closer collaboration is needed between the different actors involved in both theoretical courses and practical training.


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1 STUDY CONTEXT

1.1 The Quebec context

Quebec is a province of Canada. Each provinces have a different school system and teacher education program. In Quebec, to become a teacher, one must complete a four-year university program aimed at mastering twelve professional competencies or skills (Quebec Ministry of Education, 2001), composed of alternating courses in the discipline of specialization (like history or geography), didactics, and pedagogy (evaluation, class management, adolescent development, etc.). This training also includes a minimum of 700 hours of field experience, spread over four annual internships. These internships take place in various school environments (private or public school, specialized needs or regular classroom, teaching history or geography, etc.) the aim being to actualize theory into practice and to develop a professional identity (Ministry of Education, Leisure and Sport, 2008). During every internship, teacher students are evaluated through classroom observations by one experimented mentor teacher and one university supervisor. The university supervisor evaluates as well written reports or assignments. Those evaluation are based on the twelve professional competencies referring to professional actions and attitudes determined by the Quebec Ministry of Education (2001) for competent teaching such as good planification skills, time and class management or content knowledge mastery. The structure of preservice teacher training alternates between two environments: partner schools for field experience with an experimented teacher (at least 5 years of service), and the university where students are taught the foundations of the teaching profession. This alternating contexts approach is meant to be integrative, because it supports the embeddedness of the university context and the context of professional practice, all while fostering reflexivity about the profession and teaching practices (Vanhulle & al., 2007). However, Quebec universities each design their own teacher training curriculum, course offering and field experience structures, often without consulting the partner schools (Leroux & Portelance, 2018). This means, internships could range from one week to twelve weeks with different assignments and evaluation tools.

In addition, several researchers have observed obstacles and resistance to practical training in the context of field experience both in Europe and in North America (Altet & al., 2013; Korthagen & al., 2006; Pillen & al., 2013). These problems might be explained by the tension, or opposition, between professional practical knowledge and the theoretical knowledge taught at university. Student teachers seem to recognize the usefulness of their initial theoretical training, but at the same time express the superiority of practical knowledge developed by practicing teachers, as well as displaying limited use of theoretical knowledge (Gervais & Leroux, 2011; Guibert, 2013; Sjølie, 2014; Wæge & Haugaløkken, 2013). In fact, some student teachers appear to navigate through disruptions and reconstruction of their teaching practices during their field experience in order to respond to the tension between practice and theory (Malo, 2011). This opposition between

practice and theory seems nonetheless insufficient to explain the equivocal appreciation of initial training by future teachers (Chaubet & Gervais, 2014; Korthagen & al., 2006). Increased collaboration between the partner school community and the various participants during university and practical training could be one possible solution to these problems (Leroux & Portelance, 2018).

1.2 Research objective

Successful preservice teacher training is hence not a simple matter of applying or juxtaposing disciplinary, pedagogical or didactic content within the practical training field, but rather of linking, integrating practical experience together with theoretical knowledge. The goal is therefore to promote student assignments or practical training opportunities that make it possible to articulate and reflect on the relationship between theory and practice, while giving student teachers the opportunity to express themselves in regard to their learning and professional development (Chaubet & Gervais, 2014; Mena & al., 2017). This theory-practice connection must therefore be explicit in university courses and field experience.

The research presented here is broadly concerned with the how student teachers connect theory and practice, and more specifically, with the relationship between history didactics courses and secondary school environments. This choice is rooted in the fact that didactics research appears to show little interest in practical training, while history teaching presents epistemological issues which may help explain a variety of teaching practices by student teachers during field experience (Boutonnet, 2018; Jadouille, 2020; Vansledright & Reddy, 2014). In other words, history requires that both students and teachers adopt a specific disciplinary way of thinking, which is not innate, and which must be developed through classroom activity dedicated to its practice (Wineburg, 2001). It is therefore necessary to focus on practical training in order to gain a greater understanding of how student teachers perceive history as a discipline and a school subject, as well as focusing on the teaching activities which they find useful for developing historical thinking. Our objective for this article is to describe how future teachers use theory and practice to reflect about historical thinking and education in the context of alternating practical field experience in secondary schools and history teaching methods (didactic) class.

2 THEORETICAL FRAMEWORK

2.1 Historical thinking and epistemological postures

Historical thinking mobilizes specific intellectual skills in order to give meaning to the past and to develop a critical perspective on historical knowledge. These skills can be defined in several ways, according to current theoretical models, and appear to develop

unevenly in students (Lee & Shemilt, 2003; Seixas & Morton, 2013; van Drie & van Boxtel, 2008; Wineburg, 2001). There is a particular consensus among the authors of these models on the importance of asking questions, analyzing a variety of historical sources, taking several perspectives into account, and understanding historical contexts. However, several studies have also shown a significant relationship between classrooms activities planned by teachers and the latter's prior dispositions, often based on varying conceptions of the historical discipline (Bouhon, 2012; Boutonnet, 2015; Demers, 2012; Jadouille, 2015; Kohlmeier, 2003; Reisman & Fogo, 2016).

These conceptions are expressed because of variable epistemological postures, which depend on how individuals conceive the historical discipline, the transmission of historical knowledge, or the possibility of interpreting knowledge. In fact, some research results have shown that some individual epistemological postures may vary and progress if learning activities allow it (Demers, 2012; Maggioni & al., 2009; Nokes, 2014). These latest studies illustrate three epistemological postures that correspond to disciplinary paradigms in history: 1) the *positivist-copier stance* views history as always true and affirms that it must be memorized as presented to us during a lecture; 2) the *disciplinary-borrower stance* recognizes that history can present different narratives, even contradictory ones, but requires the discovery of the correct narrative among a series of converging documents; 3) the *critical-criterialist stance* recognizes that history is a construct based on different interpretations, biases, or perspectives, and that it is necessary to criticize, distinguish and assess them on the basis of scientific criteria.

The epistemological postures described above formalize teaching practices which can also vary. Our previous observation of history teaching practices in secondary schools shows that teachers favor certain types of activities or certain uses of teaching material that correspond to these postures (Boutonnet, 2015). For example, a copier stance teacher will focus on the direct transmission of a single narrative to be memorized and structured in class notes, without regard to different historical perspectives. In addition, teaching practices in several international contexts tend to focus on certain activities structured around a single narrative, generally presented in a lecture format and supported by documents whose purpose is to illustrate discourse rather than putting it in perspective (Boutonnet, 2015; Jadouille, 2015; Nokes, 2014; Reisman & Fogo, 2016; Tutiaux-Guillon, 2006). These practices consolidate an unambiguous, linear, and positivist representation of history that falls within the copier stance and sometimes the borrower stance.

It is in fact surprising to find similar postures or discourse among student teachers who already adhere to a positivist teacher-centered logic despite their ongoing university training (Boutonnet, 2018; Jadouille, 2020; Monte-Sano, 2011; Reitano & Green, 2013; Vansledright & Reddy, 2014). However, those studies also show that several student teachers modify their postures or their practices as a result of their university training. The problem persists: how can we explain that some students training to be history teachers change their postures while others do not?

2.2 The theory-practice relationship

You don't become a teacher in one day. Teacher development is complex and must go through different trajectories sustained by differentiated phases drawing from initial training, goals, experiences, social expectations, etc. (Fessler & Christensen, 1992; Huberman, 1989). Teaching is a practical act, but also a reflexive one, because it requires planning, modifying, and adapting planned activities in accordance with the curricular orientations and the needs or difficulties of students. This reflective practice is fueled by experience in action and by post-action critical feedback in order to identify solutions to the problems encountered (Korthagen & Kessels, 1999; Schön, 1983/1991). This reflective practice is generally presented in the form of an iterative cycle alternating between a practical phase and a reflective phase. These phases are sometimes confused and are even unconscious for experienced teachers. This is, moreover, one of the aims of field experience in schools: to allow student teachers to experiment with teaching practices and critically reflect on the experience with the support of experienced practitioners who can explain their own practices. At the university level, this support takes place in the context of courses or seminars which make it possible to explicitly review field experiences and reflect on them through the lens of disciplinary, didactic, or pedagogy course content.

While the integration of theory and practice should be made explicit in university courses and field experience (Chaubet & Gervais, 2014; Mena & al., 2017), the methods for doing so vary. Whether through written reflections, structured discussions in a seminar, or a field experience report, linking theory to practice will vary in form. In addition, the sources of knowledge invoked to reflect on one's practice are also diverse and are not perceived in the same way by the people involved in the field experience. For example, Shulman (1987) identified seven sources of knowledge which structure teaching practices: knowledge derived from subject-specific content or academic content; general pedagogical knowledge; pedagogical (or didactical) content knowledge; curriculum knowledge; knowledge of learners; knowledge of educational contexts; knowledge of educational aims and purposes. More recently, Buysse (2011) proposed dividing this reference knowledge into five categories: scientific knowledge resulting from scientific research and theorizing; academic knowledge which is based on scientific knowledge, but is simplified and sometimes implicitly invoked in lectures; prescriptive knowledge bringing together curricular texts or institutional orientations (i.e. from a ministry, a university or a school); knowledge from practice, consolidated by experience and often transmitted in the form of advice or maxims to be applied; popularized knowledge found in mass media (professional journals, blogs, magazines, etc.) which simplifies the previous types of knowledge.

In an iterative cycle of reflection on one's practice, this knowledge intersects and occupies a diversity of postures depending on the importance given to different types of knowledge. In Sjølie's research (2014), student teachers tend to devalue the role of theory as abstract, or even unnecessary. Scientific and academic knowledge is considered lesser than the experiential and practical knowledge accumulated during field experience.

While this observation echoes those from several studies on the subject in different contexts (Chaubet & Gervais, 2014; Guibert, 2013; Korthagen & al., 2006; Wæge & Haugaløkken, 2013), Sjølie also identifies functions attributed to theory, which are dependent on the importance given to experiential and practical knowledge: theory can feed practice (“from practice looking-up to theory” (2014, p. 739), theory can structure practice (“from theory to practice” (2014, p. 740), or practice is sufficient in itself. We deduce from this research that theory is not simply rejected, but that it holds a special status if the student teachers find a practical utility for it. It hence appears necessary to design teacher training programs which not only take into account and confront student teachers’ epistemological postures, but also make theory more accessible and transferable to practice. This article proposes to examine the relationships student teachers establish between the didactic theory and their practices in order to better understand the theory-practice relation and its effect on their teaching practices.

3 RESEARCH DESIGN

This research objective is part of an exploratory project. Presented here are partial results from a case study (Yin, 2009). This study is exploratory, in part because it relies on a relatively small-scale group of participants and aims to describe a phenomenon rarely explored from a didactic perspective. In addition, case study design allows for an in-depth analysis of both discourses and epistemological postures of student teachers. We recruited five voluntary second- and third-year students undertaking their field experience in high school history teaching, which they were completing in conjunction with a history didactics course I was teaching. Those students were not selected for their backgrounds or sociodemographic characteristics: the only criteria to participate in the study was to take my course and to do field experience during the same semester. All the recruiting and data collection was done anonymously and independently by my assistants so I wouldn’t know which of my students would partake in this study. The mentor teacher and the supervisor for the field experience didn’t participate in this study and assumed their usual roles. Our research team worked on the anonymized data the following semester once assessment and grades submitted was completed for the field experience and didactics course. The course and the field experience are divided into blocks during a regular four-month semester in order to facilitate the back-and-forth between the university and professional practice (see Table 1). To succeed in their field experience, students must submit written assignments outlining their reflective practice, as well as undergo classroom observations for assessment purposes by a mentor teacher from the field and a university supervisor.

As a professor and researcher, we have developed and taught a didactics course that not only addresses didactic content in history teaching (ie. historical conceptualization, problematization, and causality), but also confronts students’ epistemological postures by examining essential questions relating to history teaching, through the use of various scientific texts (book chapters or peer-reviewed journals). These ask: how is history constructed? How can different perspectives be taken into consideration? How can

historical narrative be presented? How are didactic resources used to teach history? To successfully complete the course, students must submit various assignments, including work directly related to their field experience, by planning and conducting classroom activities aimed at analyzing historical documents with high school students. One of the usual assignment in that course is to elaborate a concept map at the beginning and at the end of the semester to reflect about their practices and their use of theory (especially didactic theory).

Several data collection instruments were used in this research to elucidate student teachers' discourse, practices, and epistemological postures. These data sources also make it possible to triangulate the data and refine the study of each case by analyzing them on comparable units of analysis (Yin, 2009). Each student constitutes a case in its own right, constructed through several data sources: interviews, written assignments, concept maps, association exercises, etc. For the purpose of this article, we refer exclusively to 1) concept maps (n = 2) pertaining to history teaching and developed by students at the start and at the end of the course¹, and 2) to mandatory written assignments (n = 6) submitted during their field experience (and assessed by the supervisor). The required written assignments include: a field experience project of approximately five pages, in which the student teacher presents his educational aims, and identifies objectives to be achieved during their field experience (n = 1); a series of reflective texts of about one page relating a significant event for the student teacher and what has been learned from it (n = 4); a field experience report of about ten pages on the achievements and knowledge gleaned from the field experience, written from a reflective perspective on professional development (n = 1).

Table 1: Timeline of data collection for each participant

First Block (4 weeks of class September)	Second Block (1 week of field experience October)	Third Block (3 weeks of class October)	Fourth Block (4 weeks of field experience November)	Fifth Block (2 weeks of class December)
Concept map 1 (n=1)		Field experience project (n=1)	Significant event analysis (n=4)	Field experience report (n=1) Concept map 2 (n=1)

With the written assignments we applied the five categories of knowledge sources developed by Buysse (2011) to identify which scientific sources were used and how: academic, pedagogical, practical, prescriptive and popularized knowledge. We also distinguish pedagogical scientific knowledge (i.e., classroom management, evaluation, learning theories, etc.) and didactic scientific knowledge (conceptualization, problematization, historical thinking, historical causality, etc.) so we can identify knowledge from the didactic course and pedagogical knowledge from their general

education program. The coding units were selected with a binary system²: is there a *direct citation* with APA6 referencing standards (citation within quotes or inferring from a source with an author between parentheses) or an *indirect citation* (no quotes or author are cited, but theoretical concepts are used)? With this binary system, it was easy to identify knowledge sources and usually when a direct citation was made we found didactic or pedagogical scientific, prescriptive and popularized knowledge and when an indirect citation was made we found academic or practical knowledge. We also added a second coding layer to identify the medium used: book, chapter in a book, scientific article, professional article, blogs or general websites, etc. We based our analysis of the concept maps on a method previously used in research examining conceptual changes in high school history student teachers (Reitano & Green, 2013). This method analyzes the general structure of the concept map (hierarchical, linear, circular, etc.) and the relationships (unidirectional or bidirectional arrows connecting the concepts) that exist between the different labels used by the students to represent their pedagogical or didactic knowledge. The coding was submitted to an inter-judge reliability assessment, concluding with a minimal 80% agreement threshold.

The limitations of the research presented here are first linked to the small sample, which does not allow for the generalization of findings to other equivalent contexts. That being said, the case study design ensures rigorous data triangulation, which allows for an in-depth analysis of each case and inferences rooted in both theory and data. In addition, the data collected is self-reported by the student teachers at the time of collection, which does not imply their postures or their discourse are fixed or permanent. Thus, their postures or discourse may have since changed for a variety of reasons.

4 FINDINGS

4.1 Concept maps

Student teachers' illustration of history teaching utilized different conceptual organizations at the beginning and at end of the course. Indeed, Table 2 first shows that the density of the concept map tends to increase for three participants. For the latter, more labels are incorporated in the second map, and this systematically leads to a more complex prioritization (two to five additional levels) of labels. In fact, one can see that the maps also change in type and structure for four of the five participants. In general, we note that the university course and the field experience lead to significant changes, including a denser and more complex representation of teaching practices. That being said, we can observe stable elements that are evoked in their maps: Louis mentions the critical analysis of documents and problematization at different levels of his maps; Samuel mentions problematization in both his maps; Jeanne rather emphasizes, with variations

from one map to another, the use of course materials; Jacques presents an operational model of teaching with precise steps in both his maps; Albert organizes his maps around two poles which distinguish teacher action by placing it on one side of the map, with student action on the other.

Table 1: Density and type of concept maps by case

	Map Density		Type of Map	
	Map 1	Map 2	Map 1	Map 2
Jacques	10	25	Linear hierarchical: each label connects one to the other from left to right	Complex hierarchical: two poles connected with bidirectional arrows organizing labels into subgroups from one to four lower levels
Albert	10	19	Circular: Labels are usually interconnected in a circular shape and have only one level	Complex hierarchical: four poles are interconnected with bidirectional arrows and each have subgroups at a lower level
Jeanne	10	21	Linear hierarchical: each label is linked one after the other from top to bottom	Complex hierarchical: two poles meet towards the center with an interrelation of labels at the central level
Louis	18	7	Circular: Labels are generally interconnected in a circular shape and have up to two levels below for some labels	Linear hierarchical: each label is linked one after the other from top to bottom
Samuel	10	8	Complex hierarchical: each label connects one after the other from top to bottom, but with two branches that meet	Complex hierarchical: each label connects one after the other from top to bottom, but with three branches that meet

If we compare the two maps, new elements emerge that could be attributed either to didactic knowledge developed within the university environment, or to the field experience. First, university courses appear to influence course planning. Indeed, Jacques, Jeanne, Samuel or Albert place emphasis on elements such as knowledge of the curriculum, previous knowledge or the interests of the students, which structure their planning. Moreover, in his last map, Jacques specifies several planning levels with the general didactic situation, the assessment task, and the activities included in the general

didactic situation. Also of note is the addition of techniques (iconographic analysis, intellectual operations) or specific types of teaching material (maps, textbooks, timelines). As such, Jeanne mentions the possibility of working with different types of didactic material which "can be used together or not, as contradicting sources or not". These labels were the object of different activities as part of the didactics course, so it's a comforting thought that students do integrate knowledge from their university courses. However, Louis doesn't really change his representations and even switches from a circular concept map to a linear hierarchical map with fewer labels. At the beginning of the course, his map organizes teaching around the study of concepts and problems and at the end of the course, his second map still includes problematization but in a more linear and systematic way than the first map. We should note that while conceptualization and problematization were two important dimensions of the didactics course, they were already present in Louis' map at the start of the course. The course seems to have consolidated and refined representations of the importance of problematization in history teaching: questioning, formulating hypotheses, studying documents from a critical perspective, etc.

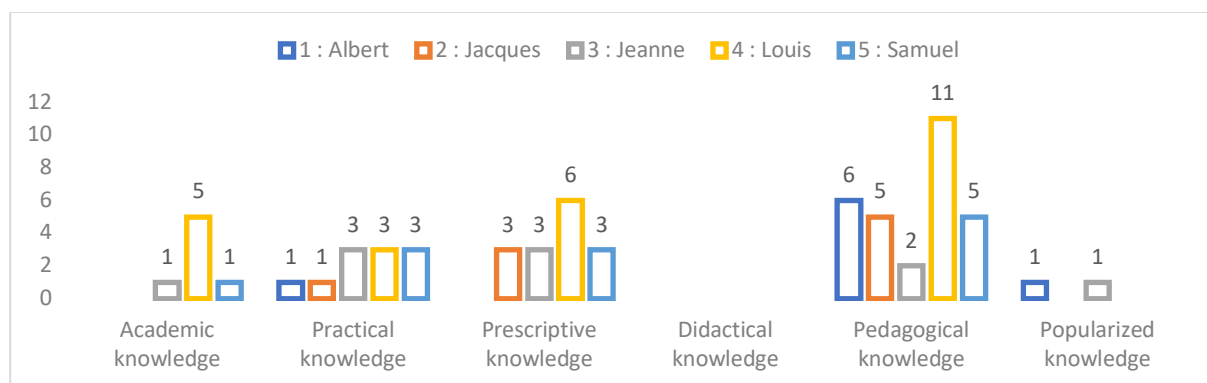
The field experience also seems to modify certain elements of the concept maps analyzed. We attribute these changes to practical class experience, as they were not part of the content covered in the didactics course. Though we don't necessarily find this aspect in all maps, it is noticeable in Jeanne, Samuel, and Albert's maps. These three students refer to the grade 10th³ provincial standardized test in their last maps. This test is consistently placed in a prominent position with an arrow drawn from the exam to the act of lesson planning. Since this exam determines whether students graduate high school, practicing teachers feel additional pressure for their students to succeed. This largely structures their teaching practices, as reported in several research studies on secondary history teaching in the Quebec context (Boutonnet, 2015; Demers, 2012; Moisan & Saussez, 2019). Beyond pressures surrounding the exam, Albert is concerned with making his course more concrete or practical, which is probably due to his field experience, by specifying that it is necessary to refer to "concrete situations" and a "real knowledge application". Jacques and Louis' field placements were not in grade 10th, and they do not present many new elements in their last maps, except perhaps for the new labels assigned to the didactics course.

4.2 Written assignment

The first assignment submitted by student teachers pertained to their educational aims and professional development objectives, with regard to the twelve professional competencies required by the Ministry of Education (MÉQ, 2001). We observed (see Figure 1) that participants mainly call upon or refer to two types of knowledge: pedagogical scientific knowledge (29 occurrences), which refers to scientific writings in the educational sciences and to prescriptive knowledge (15 occurrences) which falls under curricular or ministerial orientations⁴. Participants

particularly refer to pedagogical scientific knowledge from books devoted to classroom management, with 19 occurrences out of 29. Other more varied sources dealt with adolescent development, stress or anxiety, and only two sources were quoted to support educational aims (developing critical thinking or student autonomy). Jacques refers to only one book on classroom management, though he quotes it on five different occasions, whereas Louis has the most references (n = 11), which include two books on classroom management. Prescriptive knowledge falls under the ministerial framework of twelve Professional competencies for teacher training (MÉQ, 2001), which is not surprising, since student teachers must formulate objectives explicitly pertaining to this framework. Practical knowledge (11 occurrences) refers to previous field experiences, and academic knowledge refers to concepts without explicit references (7 occurrences) notably on cooperative work, socio-constructivism, or student motivation. Louis' map, which expressed the wish to plan classroom activities relating to problematization in history, was noteworthy. These various references could be considered as didactic scientific knowledge, but since there is no explicit reference to texts, we classify them as academic knowledge.

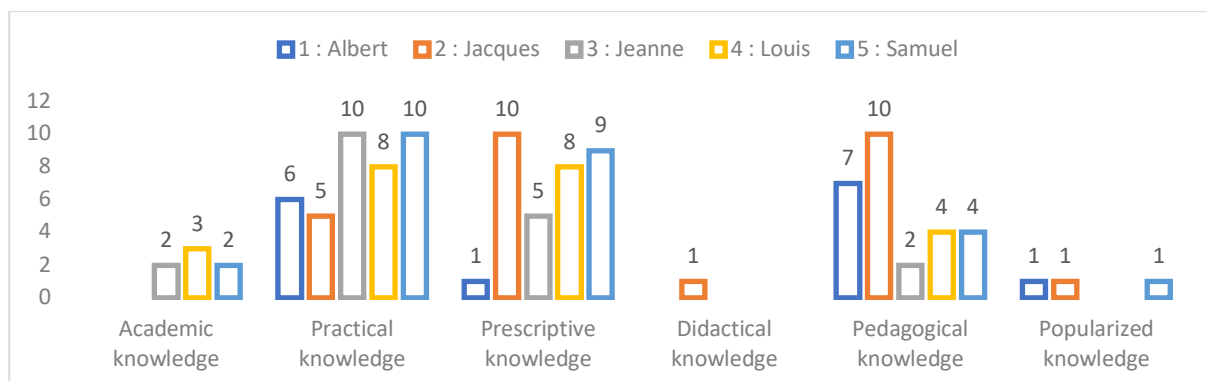
Figure 1: Field experience project sources of knowledge



Our study's second step is a series of short texts (approximately one page) where student teachers relate significant events which occurred during their field experience. These events were formally discussed with the mentor teacher during a meeting, after which the texts were written. Figure 2 shows that practical knowledge is the most often invoked (34 occurrences out of 40) with some references to academic or scientific knowledge. It is worth noting that all participants approach practical knowledge in a relatively similar way in each of their texts, and almost systematically refer to advice given by their mentor teacher: "my mentor teacher advised me to ..." or again "following the discussions, I realized that...". Jacques is the only one who refers to pedagogical scientific writings and he does so in two separate texts to fuel his reflection and go beyond the simple discussion with his mentor teacher.

Figure 2: Reflective texts source of knowledge

The third assignment presented a critical summary of student teachers' field experience (ten pages or more), in regard to the objectives set in the first assignment, combined with practical experiences. We observed a significant increase in the use of different types of knowledge in all cases. First, practical knowledge (39 occurrences) is most often linked to significant events during the field experience, and allows for reflective feedback by identifying practical learning (ie. establishing a routine, clarifying instructions, questioning students, etc.) and solutions for a future field experience (ie. better preparation of class notes, better organization of their schedule, remaining constant in their interventions with students). Second, prescriptive knowledge (33 occurrences) falls exclusively within the framework of professional competencies (MÉQ, 2001). As was the case for the field experience project (first assignment), criteria for the critical summary required explicit links with professional competencies, which explains a high number of occurrences. Third, scientific pedagogical scientific knowledge (27 occurrences) once again stands out with numerous references to books on classroom management (the same as in the first assignment, 7 occurrences) and in particular to a book on academic motivation (6 occurrences). The other references are various scientific articles on anxiety, student engagement, or learning styles. Albert and Jacques seem to center more of their thinking on scientific references (7 and 10 occurrences, respectively) than on practical knowledge (6 and 5), while the opposite trend is true for Jeanne, Louis, and Samuel. Infrequent recourse to academic knowledge is significant (7 occurrences): Louis includes it on three occasions, notably through the didactic notion of problematization, while Jeanne and Samuel refer to learning styles or academic motivation (one of which is a reference to university course grades). In addition, we note that the only didactic scientific writing referenced among the assignments analyzed was not one which was mentioned in the didactic university course.

Figure 3: Field report sources of knowledge

A qualitative analysis of reference to knowledge shows that a large majority of references to scientific knowledge are direct, with a quote within quotation marks, followed by the page number. Student teachers demonstrate a rather superficial integration of the reference, which is used to support their point and illustrate a lived experience. In fact, hardly any critical distance is manifested in relation to these scientific references, and rarely is a theory challenged or modulated as a result of practical experience. Other scientific references are indirect, and present citations naming only the author and the date in accordance with APA 6 referencing standards. Although this type of referencing employs a reformulation of the words of the cited authors, once again they are essentially used to illustrate lived experience or to validate practical learning: "according to (such author), I note that ..." or "I was inspired by theories of (such author) to establish...". In general, it should be emphasized that these references meet the requirements of written work and the assessment criterion to establish links between theory and practice: "Numerous and relevant theory / practice links throughout the work". Indeed, no requirements pertaining to critical dimensions or a varied number of references or types of references are specified in this assessment criterion. Students therefore seem to limit themselves to meeting minimal expectations while demonstrating relatively superficial reflection on their teaching practices.

5 DISCUSSION AND IMPLICATIONS

Findings of this study appear to differ according to the data collection instrument used. On the one hand, the concept maps reveal a complexification and densification of student teachers' representation of teaching practices, especially in connection with the didactics course. This generally corresponds to a *borrower stance*, as several sources or teaching methods are used, but are prepared and organized by the teacher. On the other hand, the written assignments make practically no reference to didactic scientific knowledge implying the didactic course was not so successful or useful. Indeed, a greater importance is given to practical knowledge, followed by pedagogical scientific knowledge, particularly as it relates to classroom management. Written assignments do not really allow for the inference of epistemological postures, because the discourse is essentially centered on

managing the class and does not seem to concern itself with didactic questions related to historical content or specific cognitive exercises (with the exception of Louis, who systematically addresses problematization in history). That being said, we could infer that the need to control a classroom full of adolescents is reminiscent of an early survival mode (Fessler & Christensen, 1992; Huberman, 1989) for student teacher and a securing traditional way to teach with a teacher who lectures and students who passively listen or take notes. In a way this traditional way can be found in a *copier stance* where a single historical narrative must be passed on without considering multiple perspectives.

To our own understanding, these two observations are not so much contradictory, as they are complementary. Above all, this demonstrates the need to continue research with instruments supporting data triangulation. More specifically, these observations indicate that professional development is complex and brings together different types of knowledge in authentic practical reflection (Korthagen & Kessels, 1999). Rather than opposing theory and practice, it appears essential to strengthen the dialogue between different types of knowledge, experiences, and above all types of student assignments that support different avenues of reflection. This variety of learning activities seems to allow students with a variety of disciplines, and classwork integrating several types of knowledge must be promoted.

Even if practical knowledge seems to predominate in written assignment, as is the case in various previous studies (Guibert, 2013; Korthagen & al., 2006; Wæge & Haugaløkken, 2013), we nonetheless observe a notable effort by participants to integrate scientific knowledge, especially in the last assignment, which is longer. As with Sjølie's (2014) research, references to theory remain superficial and tend to illustrate practical experience rather than putting it into perspective. It is therefore a reflection with a precise direction, "from practice looking-up to theory" (Sjølie, 2014, p. 739), but which is embodied differently with concept maps. We should consequently continue to explore new spaces for discussion and vary our expectations in the types of assigned classwork in order to better confront epistemological positions and teaching practices in university courses and field experience (Chaubet & Gervais, 2014; Mena & al., 2017). Nonetheless, we can definitely assume that nor the concepts maps nor the written assignments shows signs of a clear *critical stance*. This could be an issue and we should plan for more activities during field experience and university courses that foster critical perspectives. We also think it's a normal issue if we take into consideration professional development trajectories that would eventually shows a more complex and critical stance if it's sustained by more training during a career.

The influence of the course and the field experience environment seems significant in professional development and for linking theory and practice. This is consistent with research conducted by Reitano and Green (2013), who observed conceptual complexification for most of their participants. Although this latest research only analyzed concept maps interspersed with a three-week field experience (compared to five or six weeks in our cases), our study shows an adaptation of teaching practices reinforced by the

school environment, particularly in connection with the preparing for provincial standardized tests (Boutonnet, 2015; Demers, 2012; Moisan & Saussez, 2019). If the course has a notable influence on labels relating to planning, use of techniques or of various didactic materials, some labels are exclusively dependent on the context of the field experience which varied from one student to another. In addition, the significant use of practical knowledge in all types of required assignments once again indicates the importance of the field experience. It seems apparent to us that teacher training programs must continue to offer a variety of school contexts so that preservice teachers develop a professional identity which is more open to different teaching practices.

However, teaching is also experienced through several constraints that restrict the ability and autonomy of teachers to vary their practices. Some research has focused on teachers' or student teachers' agency in their daily practice (Boutonnet, 2019; Phelan & Hanse, 2018; Priestley et al., 2015). These studies note that agency is situated within a particular context, both systemic and local, that it depends on beliefs, epistemological postures, or social expectations that formalize discourse and practice. Student teachers' status is also unique, if not to say precarious, as expectations are greater and many, demanding that they be a teacher; a university student and a student teacher all the same time (Jorro, 2011). It becomes a question of emerging professionalism which cannot be confined exclusively to initial training, even if it is experienced in two environments, at the university or in the school environment. This emergent professionalism is a springboard, because teachers who continue to question their practices and their aims experience more varied practices, when it is experienced within collective movement of training during their career (De La Paz & al., 2011; Lund, 2018).

Our plea is simple: to continue the dialogue and coordination between universities and schools, and above all, to recognize that the teaching profession is situated along a continuum which requires that both initial training and continuing training be critical and supported through a variety of classroom activities and assignments offering opportunities for reflection. We must therefore secure the financial and political means to ensure critical reflection on teacher discourse and practices, without denigrating individual experiences, be they practical, academic, or scientific. The key is to remain attentive and recognize each other's expertise in their journey, because only through mutual recognition can interpersonal solidarity be possible (Honneth, 2013).

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ENDNOTES

¹ The instruction for drawing concept maps was: "How is history taught? Indicate the materials or methods used as a conceptual map." The students completed the task individually, used a blank sheet of paper, and were free to use any concepts they wanted.

² Two types of quotes are generally used. A direct quote features an excerpt from a source enclosed in quotation marks with the author, date and page in parentheses. An indirect citation is a paraphrase that refers to the source by citing only the author and the date in parentheses.

³ In Quebec, students at the secondary level receive a secondary school diploma which requires passing the compulsory provincial examinations in various disciplines including tenth grade history (Secondary IV, when students are 15-16 years old).

⁴ The first most cited book (11 occurrences) is Archambault and Chouinard (2016), titled "Towards an educational management of the classroom", followed by (5 occurrences) Thompson (2012)' "Classroom Management in High School: A Practical Guide" and (3 occurrences) of Gordon (1979)' "Effective teachers. Teach and be yourself".

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