IMPROVING STUDENT TEACHING TO BETTER INTEGRATE THEORY AND PRACTICE

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ABSTRACT. This article focuses on the relationship between coursework and field experience, theory and practice. Guided by Korthagen et al.'s (2006) fundamental principles for teacher education, an alternative student teaching structure was tested at the Université du Québec en Outaouais (Canada) in the Fall 2016 term. An online survey was conducted to elicit feedback on how this structure helped enhance the link between theory and practice, according to student teachers, mentor teachers, and teacher educators. Results show the structure offered student teachers the opportunity to reinvest learning in both theory and practice and to discuss the tensions between the two, which represented a significant moment in the program's development.

AMÉLIORER LES STAGES POUR MIEUX INTÉGRER LA THÉORIE ET LA PRATIQUE

RÉSUMÉ. Cet article aborde les liens entre les cours théoriques et les stages pratiques. S'appuyant sur les principes de Korthagen et al. (2006) au regard de la formation initiale à l'enseignement, une modalité alternative de stage a été expérimentée à l'Université du Québec en Outaouais lors du trimestre d'automne 2016. Un sondage en ligne a été mené pour recueillir des rétroactions sur la manière dont cette modalité de stage a contribué à favoriser les liens théorie-pratique. Les résultats indiquent que cette modalité a donné aux stagiaires l'occasion de réinvestir leurs apprentissages dans l'un ou l'autre des contextes de formation, puis de discuter des tensions entre la théorie et la pratique, ce qui représentait une belle avancée dans le développement du programme.

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Teacher education reform implemented in Quebec, Canada during the 2000s increased the length of initial training from 3 years to 4 years, requiring a minimum of 700 hours of practical training in schools (Ministère de l'Éducation du Québec, 2001; Ministère de l'Éducation, du Loisir et du Sport, 2008). This change underscored the value of practical training and, along with that, the role and contribution of mentor teachers (MTs) in the education of future teachers — a term that we use interchangeably with "pre-service teachers" or "student teachers" (STs). Despite these curricular changes, many teacher education institutions continue to struggle with the ever-persistent gap between theory and practice (Hennissen et al., 2017).

Professional experiences (whether called practical training, field experiences, student teaching, or internships) tend to be highly valued by student teachers; they typically view them as the most relevant and important component of their program (Mena et al., 2017). However, practical training is not free from challenges. For instance, student teaching often includes hours of observation of "how an experienced teacher teaches and manages a classroom" (Brown et al., 2015, p. 86), but this step is sometimes skipped or truncated. Moreover, STs are not always well prepared to make a relevant observation and may lack observation skills (Young & Bender-Slack, 2011a). Or, as Cuthrell et al. (2016) note, STs generally observe from a student's lens rather than from that of a future teacher: "A novice teacher candidate may see the practice but not recognize the thought processes behind it or, conversely, may hear the thought processes without seeing the actual practice. One may be visible; the other may be hidden" (p. 7). In line with this idea, an obstacle encountered by MTs is that they do not always know how to explain the thought processes and knowledge developed in the course of their teaching experience, which is often referred to as tacit teacher knowledge. As Buchanan (2020) suggests:

> One of the major challenges of tacit teacher knowledge that isn't explained, is that [STs] may not have access to the ways that practicing teachers negotiate, internalize, adapt, and merge various perspectives on learning and purposes of schooling. Without the explication available, they often make assumptions based on what is immediately visible, or draw from their own experiences as a student. Instead of opening up their understanding to the situated nature of education and the complexity of teaching and learning, this causes them to look for simplistic solutions to complex problems. (p. 84)

Consequently, STs must be taught to develop their observation skills (O'Leary, 2014; Star & Strickland, 2008; Wragg, 2002; Young & Bender-

Slack, 2011b) and, specifically, to observe from a teacher's perspective rather than a student's lens (Cuthrell et al., 2016). Further, they must be supported to develop the ability to question their MTs and reflect on their own practice (Buchanan, 2020). How might a teacher education program accomplish these goals?

"Theory is part of teacher education, but it is not embedded in teaching practice and not anchored in the actions of pre-service teachers" (Hennissen et al., 2017, p. 314). Coursework within a teacher education program is often perceived as overly theoretical and largely irrelevant to teaching practice (Sjølie, 2014). Buchanan (2017) indicates that "pre-service teachers experienced their training as fragmented, and pieced together their teacher identity through a process of bricolage, which made it difficult to develop cohesive teaching philosophy" (p. viii). For STs, "the different program components were not tightly coupled, or linked together" (Buchanan, 2020, p. 82). In line with other researchers (Koerner et al., 2002; Darling-Hammond, 2000; Korthagen & Kessels, 1999), she suggests that STs need support in developing that cohesiveness by exploring tensions and relationships between theory and practice.

Many teacher educators have tried to find new and effective ways to bridge the proverbial theory-practice gap in order to better support STs. The idea of *embodiment*, highlighted by Ord and Nuttall (2016), could be one alternative. As applied to teacher education programs, this idea entails organizing "prospective teachers' experiences so they can *integrate* and *use* their knowledge skillfully in the classroom" (Ord & Nuttall, 2016, p. 360). Knowledge needs to be translated into "genuine understanding," that is, within situations of action (Ord & Nuttall, 2016, p. 361). This requires that student teachers integrate both theory-into-practice and practice-into-theory, in a bidirectional perspective, whereby theory and practice both become equally essential, complementing one another (Legendre, 1998; Vivegnis et al., 2022).

To meet these challenges, the Université du Québec en Outaouais conducted a large-scale revision of all its teacher education programs, including practical training. The implementation of the revised program began with a new cohort in September 2015 and has been subject to ongoing assessment since that time. We wanted to inquire into the benefits and challenges related to the changes implemented and, specifically, how they contribute, or not, to mitigate the gap between theory and practice.

STUDY CONTEXT

The Université du Québec en Outaouais, where the authors worked as researchers and teacher educators, is a regional university in the province of Quebec, Canada, serving approximately 8,000 students spread over two main campuses: the city of Gatineau (Outaouais region) and the city of Saint-Jérôme (Laurentides region). From 2011 to 2014, the Department of Education conducted a major review of its programs (bachelor's degrees in teaching) based on "fundamental principles for teacher education programs and practices" as defined by Korthagen et al. (2006), whose theory is explored in the following section. One purpose (within the revised program) of alternating theory with practice was to further integrate the two forms of training rather than treat them as parallel activities (Vanhulle et al., 2007).

The student teaching structure for the second and third years of our teacher education programs was reorganized to take better advantage of the observation period required in student teaching. Instead of 5–6 intensive and consecutive weeks at the end of a 4-month academic term, the internship took place during the term and was divided into two phases: a) a teaching stage of 1 week devoted mainly to classroom and MT observation, and b) a teaching stage of 4–5 consecutive weeks (after 3–4 weeks of university) devoted to classroom teaching responsibilities (e.g., planning, teaching, and evaluating). The present study focuses on the second internship (lasting 5 weeks in total), as first tried out in the Fall 2016 term in two programs: a) the bachelor's degree in kindergarten and elementary education (BDKEE), and b) the bachelor's degree in secondary education (BDSE). Table 1 presents the term schedule including coursework and student teaching weeks.

Our article focuses on how the alternative student teaching structure contributed to enhancing the link between theory and practice, according to the perceptions of the actors involved.

TABLE 1. *Fall 2016 term schedule*

Week	Coursework – University	Student Teaching – School
1 (September)	X	
2	X	
3	X	
4		X
5	X	
6		
7	X	
8	X	
9		X
10		X
11		X
12		X
13	X	
14	X	
15 (December)	X	

Note. The 6th week consisted of a study break for student teachers.

CONCEPTUAL FRAMEWORK

Korthagen et al.'s (2006) fundamental principles for teacher education provided valuable and relevant recommendations for the revised program. The present article discusses four of these principles (Principles 1, 2, 3, and 6 from Table 2). The main goal of the alternative student teaching structure was to discover new ways to establish meaningful relationships between all those involved in student teaching (Principle 6). This principle, intending to build close connections, requires a concrete understanding of the reciprocal impact of theory and practice. This close cooperation takes into account "three different perspectives simultaneously: ... the individual learning to teach, ... the teacher in a school, and ... the teacher educator in the university setting" (Korthagen et al., 2006, p. 1034). The structure also purported to recognize Principle 1, highlighting that learning to teach implies constantly juggling contradictory demands. To acknowledge the complexities of practice, furthermore, teacher education needed to move beyond the assumption that teaching consists solely of applying theory directly into practice; rather, it required helping student teachers reflect on their practice in

order to learn from their experience. As a result, we needed to especially focus on the learner (Principle 3) rather than on a disembodied curriculum, and to adopt a perspective of knowledge that is not pre-existing, but rather created by the learner (Principle 2).

TABLE 2. *Korthagen et al.'s (2006) fundamental principles for teacher education programs and practices*

Principle 1	Learning about teaching involves continuously conflicting and competing demands.
Principle 2	Learning about teaching requires a view of knowledge as a subject to be created rather than as a created subject.
Principle 3	Learning about teaching requires a shift in focus from the curriculum to the learner.
Principle 4	Learning about teaching is enhanced through (student) teacher research.
Principle 5	Learning about teaching requires that those learning to teach work closely with their peers.
Principle 6	Learning about teaching requires meaningful relationships between schools, universities, and student teachers.
Principle 7	Learning about teaching is enhanced when the teaching and learning approaches advocated in the program are modeled by the teacher educators in their own practice.

The alternative internship structure also relied on the idea of integrative alternation[1] between theoretical and practical training (Bourgeon, 1979; Pentecouteau, 2012). Many teacher education programs are designed to integrate an alternation structure, which involves successive learning periods between being in the training institution and being in schools (Chaubet et al., 2019). In such a structure, these periods can simply coexist, an arrangement which can be characterized as *juxtapositive alternation* if they are completely independent from one another, or as *associative alternation* if they are in some ways related (Bourgeon, 1979). For example, program structures where intensive student teaching takes place at the very end of the training, or at the end of a coursework year, could be associated with either of these two types of alternation. On the other hand, *integrative alternation* implies interdependence between academic and school contexts (Bourgeon, 1979; Vanhulle et al., 2007). From that perspective, internships are spread out in blocks and interrelated to coursework, thus offering a greater opportunity to promote and enhance interactions between different training spaces and times. According to Maubant (2007), this view is a dialectical one. It could lead to a new way

of articulating theory-to-practice, which has traditionally been dominated by the "technicist" view that teachers incorporate into their practice theories learned during training (Tardif et al., 2012). Our own perspective is that since both theory and practice have specific features as well as respective limits, both are essential to teaching, are complementary to one another, and should be considered from a dynamic interaction perspective (Legendre, 1998) and in a dialectical view (Orland-Barak & Yinon, 2007). From this angle, theory does not precede or overrule practice, or vice versa. Rather, they are interdependent and both needed; they are in dialogue with one another.

These ways of conceiving teacher education, however, may involve important changes in how STs view theory. We recognize that for many STs, MTs, and teacher educators, theory is often associated with university coursework learning. Nonetheless, according to Sjølie (2014), STs should consider theory as not only acquired (and of sole use) in the university setting, but as embedded within teachers' actions. In this article, we consider theory as "grounded in research knowledge" (Ord & Nuttall, 2016, p. 356). However, this change in perspective calls for sufficient support from teacher educators to meet challenges, discuss tensions, and transfer learning.

> [Even if STs often beg for] more specific advice and instructions on how to deal with difficult situations … the MTs try to get the students "to that phase" where knowledge is not seen as absolute, where it is possible to give a clear answer to every problem. Then the mentor does not figure as simply a teacher, but as a partner in the debate. (Svojanovsky, 2017, p. 343)

A number of authors highlight that, in the process, STs will face many tensions, especially when there is a gap between training environments and if the two contexts confront each other (Kaddouri, 2008). Those tensions need to be explicitly addressed and analyzed (Svojanovsky, 2017), with the support of MTs, university supervisors (USs), university professors (UPs), and lecturers (ULs; Darling-Hammond, 2000; Korthagen & Kessels, 1999). Vanhulle et al. (2007) consider that teacher identity building could benefit from crossing the alternation spaces, as long as strategies are deployed to overcome the tensions (rather than ignore them, at the risk of one of the training spaces being rejected or sidelined).

The alternative student teaching structure was therefore designed to create "spaces for dialogue between students and [all their] educators and for a shared responsibility for learning" (Sjølie, 2014, p. 734).

METHODS

This study was undertaken using an interpretative and descriptive approach, as our aims were to understand and describe the perceptions of the participants in relation to a relatively circumscribed phenomenon (Fortin & Gagnon, 2016).

Sample

An online survey was emailed at the end of the fall term (December 2016) to all STs, MTs, USs, UPs, and ULs involved in the experiment. In total, 94 persons participated in the survey, 61 from the Gatineau campus and 33 from the Saint-Jérôme campus. Table 3 depicts the distribution of participants according to roles and programs.

TABLE 3. *Participant roles and programs*

Roles	BDKEE (/78)	BDSE (/19)
Student teacher (/56)	48	8
Mentor teacher (/16)	12	4
University supervisor* (/17)	15	5
University professor (also doing research)* (/6)	5	3
University lecturer (only teaching coursework)* (/5)	5	1

Note. * = Can intervene in both programs.

Data collection

The survey included closed (yes/no responses with optional comments) and open-ended questions. Table 4 presents the overall themes of these questions. The specific questions addressed to each group (i.e., according to their role) are provided in the section on results.

Data analysis

Regarding the closed questions (1–5), we calculated the frequency for each answer (yes or no). For optional comments and open-ended questions (6–10), we employed an emerging thematic coding scheme (Paillé & Mucchielli, 2012) that allowed us to identify the main ideas developed by the participants. In view of this article's focus on exploring the links between theory and practice, we selected specific closed questions and optional comments to illustrate certain answers. In addition, the analysis of open-ended Questions 6, 8, and 9 provided an overview of the alternative experiment.

TABLE 4. *Overall themes of the survey questions*

In general, we wanted to know ...	Question Type
1) if the coursework helped prepare STs for the first student teaching week.	Closed
2) if field observations were used in the courses.	Closed
3) if the student teaching context was considered in the courses.	Closed
4) if learning that occurred in one context (university or school) was reinvested in the other.	Closed
5) if tensions between theory and practice could be discussed in both contexts.	Closed
6) how participants experienced this new student teaching structure.	Open-ended
7) how participants experienced round trips between the university and the school.	Open-ended
8) the advantages of the new structure.	Open-ended
9) the challenges or limitations of the new structure.	Open-ended
10) participants' suggestions for improvement.	Open-ended

Note. The alternative teaching structure was referred to as the "new" teaching structure in the survey.

RESULTS

To describe the three perspectives from Principle 6, Questions 1–6 present the perceptions of learners (STs), teachers in schools (MTs), and teacher educators (USs, UPs, and ULs). Analyses were then performed to identify the advantages, challenges, and limitations of the alternative student teaching structure (Questions 8–9), integrating perspectives from all participants, to highlight the main aspects considered most important by a majority of participants.

Participants' experience of the alternative student teaching structure

Student teachers

First of all, as Table 5 illustrates, it seems clear that the majority of ST participants felt the alternative student teaching structure gave them the opportunity to reinvest (i.e., to newly apply) some course learning in the student teaching context (Question 4a). As a BDKEE ST indicated: "I was able to reinvest notions I learned during my courses on the teaching of [French] language and literature."2 Similarly, one specified that these links were made with another course, "particularly the learning I acquired in

the didactics of mathematics." Another BDKEE ST stated that "by putting into practice certain notions acquired in class, I was better able to understand the subject."

TABLE 5. *Student teachers' answers to closed questions*

Questions	BDKEE (/42)	BDSE (/8)
1. Did the courses help you prepare your observation week at school (Week 1: Student Teaching)?	Yes: 24 No: 18	Yes: 5 No: 3
2. Were the field observations you made in the classroom reinvested in the courses?	Yes: 23 No: 19	Yes: 4 No: 4
3. Was your student teaching context taken into account in the courses?	Yes: 20 No: 22	Yes: 6 No: 2
4a. Were you able to reinvest some of your course learning in your student teaching context?	Yes: 40 No: 2	Yes: 8 No: 0
4b. Were you able to reinvest some of your student teaching learning in your coursework?	Yes: 21 No: 21	Yes: 5 No: 3
5a. Were you able to discuss some of the tensions between theory and practice in your student teaching context?	Yes: 34 No: 8	Yes: 7 No: 1
5b. Were you able to discuss some of the tensions between theory and practice in your coursework?	Yes: 36 No: 6	Yes: 6 No: 2

Note. All questions were freely translated from French to English for this article.

STs also had the opportunity to discuss the tensions between theory and practice (Question 5). An ST from the BDKEE program explained how the tensions were discussed at school: "The reality we face in student teaching is far from what we learn in theory. I realize we're told a lot of things at university, but many ideas still have drawbacks." For another ST, some tensions had been addressed in a university course: "The exercise books were a tension. Teachers used a lot of them in classrooms." However, some STs pointed to a lack of openness on the part of MTs or teacher educators (USs, UPs, and ULs) during these discussions, as one from the BDSE program admitted:

> I could discuss theories learned at university with a few teachers, but I quickly realized that most weren't ready for change. I was lucky to be able to try some techniques in the classroom. I seldom spoke to teachers about my pupils' learning [in school].

At the opposite end, a BDKEE ST described how they felt about discussing the tensions in the university context:

> We don't dare criticize in university courses since UPs and ULs cherish their theories, although these are sometimes difficult to apply in class with pupils. I support the theories learned at university, but there's actually a big difference between today's teachers and those of tomorrow, with regard to teaching approaches.

Thus, it appears that the gap between theory and practice was addressed, but not necessarily discussed in depth.

Participants were more divided regarding the preparation of observation week in courses (mainly during the seminar course;[3] Question 1) and the reinvestment of observations in courses (here again, mainly during the seminar course; Question 2). According to one BDKEE ST, "observation tools prepared in the seminar course were very useful and guided my observation week." On the other hand, another ST explained that "except for the seminar course, we didn't say much about our observations."

Some STs questioned teacher educators' willingness to consider the student teaching context in their courses (Question 3) or the reinvestment of student-teacher learning in coursework (Question 4b). As for the student teaching context, some BDKEE students claimed it was taken into account in the required academic work and assignments, but less so in the course content: "In [UPs or ULs'] teaching, our student teaching context was not really taken into account. Since this was different for each student, it would have been impossible anyway." Another one added: "In fact, ULs and UPs don't necessarily use our student teaching experience to customize their [teaching, for instance, when we give our points of view about what we observed in student teaching]." Similarly, it appeared that STs discussed their student teaching in courses, but some did not feel there was a genuine reinvestment (Question 4b), as explained by a BDKEE ST: "Not so much … We talked about student teaching, but nothing was necessarily reinvested in my opinion."

Table 6 presents categories of answers (positive, nuanced, negative) to the open-ended Question 6 about how the participants described their overall experience of the alternative student teaching structure. Most STs expressed a nuanced opinion. The majority appreciated the observation week, the time between the two stages of student teaching that allowed for better preparation, and the opportunity to build connections between theory and practice, as illustrated by this BDKEE ST:

> I enjoyed having an observation week for student teaching and then coming back to university to prepare for it. I really built connections between theory and practice. I taught activities we prepared at university. I think the structure of this second student teaching is well-designed.

Another one stated that the structure offered a concrete application context: "I appreciated having a break between the two stages because it gave us a concrete context for applying our coursework."

TABLE 6. *Student teachers' answers to open-ended Question 6 ("How would you describe your overall experience of the new student teaching structure?").*

Answer Categories	BDKEE (/42)	BDSE (/8)
Positive	6	1
Nuanced	21	2
Negative	15	3

However, some mentioned that the workload was too heavy considering the intensive coursework (although this tends to be the case in every term integrating student teaching). A BDSE ST specified: "I liked that we had a month at university between observation week and actual student teaching to prepare. But the workload from intensive coursework and student teaching combined was too heavy. I was exhausted and it affected my health." They also said it was difficult to move from the school to the university, which involved a change from one role (student) to the other (ST), as well as entailed creating and maintaining a bond with their pupils, as indicated by this BDKEE ST:

> The experience had both good and bad. The courses between the two stages of student teaching allowed us to build connections between theory and practice and plan lessons at university. On the other hand, it was more complicated to create and maintain a bond with pupils during student teaching.

Mentor teachers

MTs' answers to closed questions are presented in Table 7. Although some stated they were unaware the STs they were mentoring had reinvested course learning in the student teaching context and vice versa (Question 4), most gave positive, and sometimes nuanced, answers. A BDKEE MT explained: "She [one ST] had lessons to teach in certain subjects, and she relied heavily on her university courses for the content knowledge and what research said about it." Another one added: "[Yes,] but she often commented that reality is very different from theory."

TABLE 7. *Mentor teachers' answers to closed questions*

Questions	BDKEE (/12)	BDSE (/4)
4a. Did the student teacher you were mentoring reinvest course learning in the student teaching context?	Yes: 9 No: 0 Don't know: 3	Yes: 2 No: 1 Don't know: 1
4b. Did the student teacher you were mentoring reinvest student-teacher learning in the coursework?	Yes: 7 No: 0 Don't know: 5	Yes: 3 No: 0 Don't know: 1
5. Did you discuss tensions between theory and practice with the student teacher you were mentoring?	Yes: 12 No: 0	Yes: 4 No: 0

All said they discussed some tensions between theory and practice with their mentored STs (Question 5), as indicated by a BDSE MT:

> A lot: time management, respect for the program, deadlines, adolescent psychology: self-esteem, hypersociability, procrastination, motivation / demotivation, unfinished homework … . With socio-constructivism, it would take two years to see an annual school program.

According to some, however, the crux of these discussions was that practice teaching is more complex in reality than in theory and that theory is therefore difficult to apply. According to another BDSE MT: "It was very difficult for him to make the connections and see that reality sometimes differs from what we read in books. He was having a hard time making a distinction." These ideas may contribute to discrediting theory and replacing it with teaching experience alone.

Table 8 depicts categories of answers (positive, nuanced, negative) to Question 6 summarizing the ways MTs described their overall experience of the alternative student teaching structure.

TABLE 8. *Mentor teachers' answers to open-ended Question 6 ("How would you describe your overall experience of the new student teaching structure?")*

Answer Categories	BDKEE (/42)	BDSE (/8)
Positive	4	2
Nuanced	5	1
Negative	3	1

Overall, we note that the participants' opinions were somewhat mixed. Some described the advantages of the alternative student teaching structure. One BDSE MT highlighted the benefit of the structure for a better preparation: "[It went] well. It allowed my ST to prepare and show me her materials before [student teaching] started." In the same way, a BDKEE MT considered the advantages for observation and lesson planning: "I was better able to guide my ST for her observation. I lent her materials to start planning her lessons."

Other MTs pointed to the challenges they had to face. According to a BDSE MT, the period when the student teaching took place was exhausting:

> Since student teaching began at the end of a school term, the first two weeks were demanding for MTs: STs observed exams, and we then had to correct evaluations to make report cards while meeting student teachers to help them plan … . I didn't like this part of student teaching, because I found it exhausting.

A BDKEE MT made the same observation:

> I appreciated this procedure. However, mentoring a student teacher in November can be hard for an MT. We want to help our ST, but we also have to evaluate [our pupils] and prepare report cards and parents' meetings. I would start the student teaching in mid-October, not at the end of the month.

For another one, the main obstacle was the gap between the two stages of student teaching: "The period between observation week and the remainder of student teaching was long."

University supervisors

Table 9 shows that most USs felt they could discuss tensions between theory and practice with their STs (Question 5).

TABLE 9. *University supervisors' answers to closed question*

Questions	BDKEE (/15)	BDSE (/5)
5. Were you able to discuss tensions between theory and practice with the student teacher you were supervising?	Yes: 12 No: 3	Yes: 4 No: 1

They acknowledged the gap between coursework and practice and their role in bridging this gap, as indicated by this BDSE US: "There's a huge gap between theoretical training given at university (permissive classroom management, teamwork [that is valued]) and the reality in the field, and

this needs to be addressed." One participant (BDKEE, BDSE) asserted that certain STs were unable or unwilling to discuss these subjects and reflect on their practice: "That's one aspect I'm trying to focus on. However, some STs can't or won't discuss this aspect in depth."

USs' opinions of their overall experience of the alternative student teaching structure were largely positive or nuanced, as indicated in Table 10. In essence, many USs found it to be an enriching experience for STs. One BDKEE US explained: "I found this structure to be very effective and I noticed that STs were able to make very helpful observations." This BDSE US confessed that they preferred an intensive structure, but still noted some benefit for the integration of theory and practice: "I preferred the previous structure with the 5 consecutive weeks, but I noticed a difference for the integration of learning acquired in the didactics courses."

However, a few USs also highlighted some obstacles, such as the long delay between observation week and the remainder of student teaching, along with the time schedule for student teaching in the school calendar. One BDKEE US indicated:

> All in all, quite well, no snags or major difficulties. I found that observation week in late September was much more relevant for STs than in the previous student teaching structure, when it occurred during report card period (start of November).

Another one explained:

> I can see the importance of observation week. However, two MTs told me that STs didn't stay in touch with them in the weeks that followed. Another person thought there was too much time between observation week and the remainder of student teaching.

TABLE 10. *University supervisors' answers to open-ended Question 6 ("How would you describe your overall experience of the new student teaching structure?")*

Answer Categories	BDKEE (/42)	BDSE (/8)
Positive	6	3
Nuanced	5	2
Negative	4	0

University professors and lecturers

UPs' and ULs' answers to closed questions are given in Table 11. Almost every professor or lecturer who participated in the survey answered all questions positively.

TABLE 11. *University professors and lecturers' answers to closed questions*

Questions	BDKEE (/10)	BDSE (/4)
3. Were you able to take the student teaching context into account in your course?	Yes: 9 No: 1	Yes: 3 No: 1
4a. Do you feel the student teachers were able to reinvest some course learning in their student teaching context?	Yes: 10 No: 0 I don't know: 0	Yes: 4 No: 0 I don't know: 0
4b. Do you feel the student teachers were able to reinvest some student-teacher learning in your course?	Yes: 9 No: 1 I don't know: 0	Yes: 4 No: 0 I don't know: 0
5. Were you able to discuss tensions between theory and practice with student teachers?	Yes: 9 No: 1	Yes: 4 No: 0

They maintained that they took the student teaching context into account in their course (Question 3), particularly in the seminar course, as illustrated by this BDKEE UP/UL:

> As mentioned before, we made the link, in particular, between classroom observations and differentiated instruction. We also organized a round table in each course so each ST could talk about his/her context, learning, challenges, strengths, etc. The student teaching context is the heart of the seminar course.

For other courses, the student teaching context was considered in the academic work and assignments that were to be completed during the term. A BDKEE UP/UL specified: "I returned the academic work [evaluated with feedback] before intensive student teaching started so that students could integrate it into their planning if they wished." The only exception seemed to be the methods course on the didactics of the humanities, as indicated by this BDKEE UP/UL: "Very little. Few MTs teach [humanities] before 3rd grade and half of the cohort was in kindergarten [for their student teaching]."

According to UPs and ULs, STs were able to reinvest some of their course learning in their student teaching context, and vice versa (Question 4). One BDKEE UP/UL focused on the importance of observation for teaching: "I believe that students now see the importance of observation and its preparation. In my opinion, they would get a better idea of their pupils' specific needs by taking a more reflective view of their practice." According to another BDKEE UP/UL: "Several lessons/activities were reproduced during student teaching." On the other hand, one pointed out the contribution of the practical experience to realize the importance of differentiated instruction and to enhance discussions during the course:

> The student teaching experience allowed students to question their observation tool and be more critical of what was relevant. In terms of the classroom context, I believe the students were better able to grasp the relevance of differentiated instruction. Students' experiences helped enrich discussions during the seminar courses to the benefit of all the students in the course.

A BDSE UP/UL also witnessed these contributions: "Yes, I observed it during the presentations. They gave concrete examples."

Some stated that STs returned to their courses with experiences of, as well as complaints about, the gap between theory and practice, thereby providing an opportunity to discuss these tensions (Question 5), as highlighted by this UP/UL (BDKEE, BDSE): "Yes, they came back with many experiences and, especially, many complaints. The course also served to discuss the gaps between practice and theory." Another one (BDKEE, BDSE) indicated: "Several experiences were shared during the course and served as points of discussion and integration related to course content knowledge." Lastly, one BDKEE UP/UL used this interesting metaphor:

> In the last course, we looked forward to this aspect. Students used certain expressions to [highlight] this issue; one in particular caught my attention. Theory and practice affect each other like a kind of chemistry and, depending on the student teaching context, this can trigger expected or completely unexpected reactions!

As seen in Table 12, UPs' and ULs' overall experience of the alternative student teaching structure (Question 6) produced mainly positive comments. Again, one BDKEE UP/UL referred to the quality of observations that were made: "The experience seemed more relevant for STs' development. In my opinion, the observations made during the first week of student teaching led them to consider pupils' needs in a more concrete and relevant manner." Moreover, another BDSE UP/UL stressed

the better preparation for student teaching and the experience of a more authentic relationship between theory and practice:

> The link between theory and practice was experienced very positively and, I would say, authentically, since I've been in teacher education. Generally speaking, STs seemed better prepared and more confident about their lesson plans and teaching skills than in previous years.

Only one BDKEE UP/UL had a negative comment, as they observed a decreased motivation at the end of the term: "Student teachers lacked motivation when they returned from their student teaching."

TABLE 12. *University professors and lecturers' answers to open-ended Question 6 ("How would you describe your overall experience of the new student teaching structure?")*

Answer Categories	BDKEE (/42)	BDSE (/8)
Positive	7	3
Nuanced	1	1
Negative	1	0

Advantages and challenges, or limitations, of the alternative student teaching structure

Advantages

Table 13 highlights the nine key themes that emerged from participants' answers concerning the positive aspects of the alternative student teaching structure. For the sake of brevity, our discussion focuses on the three key advantages identified by over 35% of the participants.

About half of the participants highlighted the improved quality of preparation before student teaching, owing to the time available to STs between observation week and the remainder of student teaching. A BDKEE ST shared: "It's easier to integrate theory and practice. This formula gives us more time to prepare activities before the start of intensive student teaching." In line with this idea, one UP (BDSE, BDKEE) indicated: "Students are better prepared, they plan for real pupils; they're more involved in the pedagogical relationship since they have time to think about it. I have no doubt this facilitates the link between theory and practice."

In the same vein, another advantage was the observation period's contribution to informing STs' teaching practice, as was specified by this

BDKEE ST: "It allows us to notice many more details than we could with the previous formula. This formula provides the opportunity to get to know our mentor teacher and our pupils better and helps prepare us better for student teaching." From a BDKEE MT's point of view,

> observations are targeted (related to academic work). It gives the ST time to think about what she would like to do and experiment during student teaching (activities, projects, etc.). It also allows her to observe pupils' evolution over a longer period of time.

TABLE 13. *Key themes identified by participants as advantages of the alternative student teaching structure*

Key Themes	Explanations	Frequency (*N* = 94)
Preparation for student teaching	Making it possible to better plan and prepare student teaching because of the delay between observation week and the consecutive weeks; improving quality of preparation before student teaching	45
Contribution of observation to student teaching	Optimizing the contribution of observation to informing student teachers' practice	39
Integrative alternation between theoretical and practical training; integration between theory and practice	Seeking a real integration of university and school, as well as theory and practice, to enhance teacher education coherence	37
Other	Other advantages	15
Contribution of reflective practice	Solving concrete, practical issues based on theory	8
Competence development	Enhancing competence development using both theory and practice; improving sense of self-efficacy	5
Support for transfer of learning	Optimizing support for transfer of learning	3
Identity development; overcoming tensions	Discussing tensions at university to foster identity development	2
Evolution of beliefs	Fostering positive evolution of beliefs; relating these to practice and theory with the support of MTs and teacher educators	1

Finally, the third main advantage was the integration of university and school, theory and practice, thus enhancing coherence. For a BDKEE UL,

the alternative student teaching structure was "an opportunity to build upon concrete and tangible situations. Real pupils, lesson plans designed for them, considering the specific and singular needs of a known context." Finally, a UP working in the same program highlighted many benefits related to the idea of a better link between theory and practice:

> Making the connection between theory and practice, relying on observations to do academic work, validating the didactical approaches discussed in courses during student teaching. Students are also more critical of the school environment when they teach and attend classes at the same time.

Challenges or limitations

Table 14 presents nine key themes that emerged regarding the challenges or limitations of the alternative structure. Our discussion focuses on the three key challenges and limitations identified by more than 25% of the participants.

The first challenge identified was the long delay between observation week and the remainder of student teaching, which can impact STs' integration into their school, as noted by this BDKEE ST: "The delay between observation week and effective student teaching is long. The bonds [with pupils] have weakened and it takes about another week to reintegrate the classroom." Another ST complained about the impression they had that the observations had to be redone at the moment they got back to their student teaching: "We have to do two observation weeks because the delay between the two stages is way too long, and it's hard to come back to university to do assignments and take exams."

The second challenge, related to the first, was that such a delay could create a discontinuity effect and interfere with the development of the emotional bond between the ST and their pupils. A BDKEE MT explained:

> As mentioned before, it's hard to know what will be done a month later. The ST feels a bit disconnected at that time. I think she has to rebuild bonds with pupils when she returns for the remainder of student teaching, which is a waste of time in my opinion.

TABLE 14. *Key themes identified by participants as challenges or limitations of the alternative student teaching structure*

Key Themes	Explanations	Frequency (*N* = 94)
Delay between observation week and the remainder of student teaching	Long delay between observation week and the remainder of student teaching, which can impact STs' integration in their school	42
Discontinuity and emotional bond with pupils	Discontinuous formula likely to interfere with development of emotional bond between STs and their pupils	25
Role conflict for STs	Role conflict for STs who are both students and STs due to round trips between university and school	23
Workload and exhaustion	Exhaustion of some STs because many assignments are due at the same time	14
Time of student teaching	Intensive stage of student teaching (4 consecutive weeks) starts the same time that pupils' report cards are due	13
Other	Other challenges or limitations	14
Link between coursework and student teaching context	Difficulties taking student teaching context into account during courses	8
Challenges related to observation	Lack of preparation for observation during courses; difficulties taking STs' observations into account during courses	3
Absenteeism/ presenteeism	STs miss courses to work on student teaching assignments or do them during the courses	1

The third challenge was the role conflict for STs, who are *both* students and STs due to round trips between university and school. This BDKEE ST indicated how they experienced the role conflict:

> It's very hard to go back to being a student when we return from student teaching and we're at the end of the academic term. With all the assignments for the student teaching and courses and exams, it's a lot at the same time.

Another one explained the heavy workload they felt:

> There are way too many round trips between university and school! What's more, it's not a good idea to come back to university for only two weeks [at the end of the term] to take final exams. We're tired from student teaching and we have to redo some assignments,[4] complete final assignments and take exams. This is way too much!

As this overview makes clear, while the advantages helped us reach our objectives, most challenges were mainly logistical — and thus amenable to being changed. We recognize, too, that other participants may possibly view some of these logistical aspects (e.g., delay between student teaching stages) as advantages (e.g., longer, better preparation time for student teaching).

DISCUSSION

Results show that the alternative student teaching structure fulfilled many of our expectations, which was already a significant development. It offered STs the opportunity to reinvest learning in both contexts, integrating theory-into-practice and practice-into-theory (Legendre, 1998), as represented by Principle 6. It also allowed STs to discuss tensions between theory and practice with their MTs and teacher educators, thus providing space for dialogue: Principle 1.

There are, of course, certain challenges to overcome. While almost all UPs and ULs felt they took student teaching into account in their course and allowed STs to reinvest their student-teacher learning in the coursework, STs had very divided opinions on this subject. We wonder if the wording of Question 4 may have influenced their opinions in some way. Courses cannot be totally restricted to their specific student teaching context, and the experience of each student is different. For example, in a mathematics didactics course in the BDKEE program, content knowledge must include all grade levels, not only that of the student teaching context. Another explanation may lie in STs' desire for specific advice and instructions about challenging situations they encounter (Svojanovsky, 2017), even as they may have been confronted with the fact that there are rarely quick fixes. As well, the comments of some STs and MTs reflect a possible belief that theory should be directly and easily applied to practice (Principle 1; Hennissen et al., 2017), a belief that may discredit theory in favour of experience. One important question to ask might be: Are STs and MTs sufficiently aware of the different roles theory can play in practice (Sjølie, 2014)? Moreover, STs and teachers sometimes rely on theory without being able to formally identify it (Caron & Portelance, 2017). Therefore, STs may require support for making their tacit knowledge explicit (Buchanan, 2020), even as MTs may need to do the same.

On the other hand, professional knowledge is more useful to teachers if it is rooted in a "born-in-action" reflection (Boutet & Villemin, 2014). This idea could be related to the concepts of embedded (Hennissen et al., 2017; Korthagen et al., 2006) or embodied knowledge (Ord & Nuttall, 2016).

Our results show that the student teaching context was taken into account in some academic work and that student teaching learning was discussed — or at least introduced — in courses, but we wonder if there was an actual shift in perspective on the part of teacher educators. Did STs really have the opportunity to create their own professional knowledge (Principle 2)? Did teacher educators shift their focus from the curriculum to the learner (Principle 3)? Do they realize they have an important, twofold role to play, namely: a) to help STs reflect on their practice in order to learn from their experience (Korthagen et al., 2006), and b) to help them discuss tensions and transfer learning (Buchanan, 2020; Sjølie, 2014)? And do they know how to do this?

Similarly, insofar as some STs pointed to a lack of openness on the part of either their MTs or teacher educators, we question whether the desired close cooperation between the schools and the university (Principle 6) has been achieved. For such cooperation to occur, MTs and teacher educators must acknowledge their respective expertise and value the contribution and complementary relationship of theory and practice. Results show that some MTs may actually be downplaying theory, whereas their role is to assist STs in bridging the gap between theory and practice. And USs must support MTs and STs in doing so. A study on student teaching challenges revealed that USs rarely mention this competency when their STs experience difficulties (Gagnon et al., 2018). USs have an important role to play in helping STs develop reflective ability, even, and perhaps especially, when they believe that certain STs have little interest in doing so. These competencies are expected for MTs and USs in Quebec (Portelance et al., 2008). However, what actually takes place during student teaching? And what are the possible implications for the training and professional development of MTs and USs?

The results raised other questions and challenges that we continued to grapple with. The student teaching schedule appeared to be a problem for certain participants, especially MTs. Some appeared to feel trapped between their role as a teacher focused on pupils' learning and their other role as an MT focused on STs' learning (Malo, 2018). However, if the second stage of student-teacher training began earlier, STs would be more advanced in their student teaching and would need to assume more responsibilities at the end of the school term, a situation MTs might also find inconvenient as it could prove more exhausting. As for the other participants, the distribution of student teaching weeks was ideal in that it allowed STs to observe key moments during a school year: "Because student teaching was in September and November, we had the opportunity to observe the start of the school year and the distribution of

report cards, along with parents' meetings, two fantastic elements of this formula" (BDKEE ST).

CONCLUSION

Results indicate that the alternative student teaching structure helped enhance the theory-to-practice and practice-to-theory link, particularly since many participants considered it a key advantage. This alternative structure offered STs the opportunity to reinvest learning in both contexts and discuss tensions between theory and practice, an indication of significant progress. As well, besides feeling better prepared for student teaching, STs stated they had greater support, as reflected in the comments of one BDKEE ST: "We rely on a context in the following courses where we can discuss our student teaching environment collectively, both the positive and negative aspects. We have better support."

In terms of changes made in the program based on the research, the delay between the two stages of student teaching was reduced to mitigate negative effects. We also insisted that STs remain in touch with their student teaching environment during this period. As for pupil observation, we found that STs needed to be reminded that the program is a work in progress and, as such, is never completely finished. Finally, regarding STs' workload, a BDKEE UP explained: "[Limitations] are the same as before, an intensive trimester leaves less time for reflection." To remedy the situation, we have organized meetings at the beginning and end of every term, bringing together all voluntary teacher educators. We discuss our coursework plan and make an effort to distribute assignments and exams at different times during the term to avoid, or at least reduce, STs' excessive workload. Nevertheless, as this article is being published, and in view of certain persistent dissatisfactions, the department has finally decided to return to a more traditional internship structure, albeit one that also entails certain challenges. Researchers on change management (Brabant et al., 2020; St-Vincent et al., 2022) recommend paying close attention to the resistance, concerns, and obstacles encountered during the process, something which is important to be sensitive to.

This article aimed to highlight the perceptions of the actors involved and those of STs in particular on teacher education program change. In the words of Korthagen et al. (2006): "Ironically, all over the world, candidates' voices are rarely used to ascertain whether their teacher education program achieves its goals" (p. 1035). The approach taken here was not only to hear their voices, but to consider them in the decision-making process as well (Sjølie, 2014).

Some of this study's limitations can be explained by the choice of survey, which was a matter of convenience given the constraints of time and resources. Perhaps individual interviews or focus groups with the actors involved may have produced a deeper understanding and made it possible to identify other ways of improving teacher education. Further investigation based on observing STs' practice while teaching would allow us to evaluate how they actually "*integrate* and *use* their knowledge skillfully in the classroom" to foster a "genuine understanding" of theory (Ord & Nuttall, 2016, pp. 360–361).

NOTES

1. This expression is freely translated from the French version (*alternance intégrative*).
2. All quoted answers by participants were freely translated from French to English for this article.
3. The seminar course is closely related to student teaching, insofar as its purpose is to help STs prepare for teaching, exchange with each other throughout the term, reflect on their practice, integrate theory and practice, and so forth. This course, generally offered to groups of 15–20 students, lasts 15 hours during the term (5 x 3 hours), while didactics courses last 45 hours.
4. This is uncommon for most students and may partly explain this student's excessive workload.

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