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Views on and Practices of Integrating Theory and Practice in Teacher Education Programs in Atlantic Canada

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The need for and lack of integration of theory and practice in initial teacher education programs has been discussed as a central issue for teacher education. This article reports on a study that surveyed university-based teacher educators in Atlantic Canada on their perspectives regarding how theory and practice can be integrated, how they and the programs they work in integrate theory and practice, and what challenges they perceive for the integration of theory and practice in their own teaching and the teacher education programs within which they work.

Un enjeu central qui ressort des discussions sur la formation des enseignants est le besoin d'intégrer la théorie et la pratique dans les programmes de formation initiale. Cet article rend compte d'une étude impliquant une enquête auprès de formateurs universitaires d'enseignants dans le Canada atlantique pour connaitre leur points de vue sur les façons d'intégrer la théorie et la pratique, et sur les défis qu'ils perçoivent pour l'intégration de la théorie et la pratique dans leur propre enseignement et dans les programmes de formation des enseignants au sein desquels ils travaillent.

Introduction

The issues of integrating theory and practice in initial teacher education (ITE) have been discussed in teacher education scholarship around the world. For example, in Greece (Koutselinin & Persianis, 2000; Tsafos, 2010), Great Britain (Smith & Hodson, 2010), Israel (Eilam & Poyas, 2009), Hong Kong (Cheng, Cheng, & Tang, 2010), Australia (Allen, 2009), Finland (Maaranen & Krokfors, 2008), USA (Coffey, 2010; Zeichner, 2010), Canada (Falkenberg, 2010; MacDonald, 2010), and the Netherlands (Korthagen, 2001; Korthagen & Kessels, 1999). A range of suggestions were made for ways to integrate theory and practice in ITE (Darling-Hamond & Bransford, 2005; Korthagen, 2001; Leinhardt, McCarthy, & Merriman, 1995; and the literature referenced above).

The space available does not allow undertaking a thorough review of the relevant literature. For the presentation of our study, however, we draw on selected literature to argue for three major observations that we made engaging with the literature on the integration of theory and practice in ITE and that gave rise to the undertaking of our study. In addition, we will draw on relevant literature to help us make sense of the findings.

The first observation from the literature is that there are different understandings of what

the problem of integrating theory and practice in ITE is and that those differences are grounded in different notions of theory and practice as they are relevant to ITE. Probably, the most common use of the term "practice" in ITE defines "practice as that which contrasts with theory" (Lampert, 2010, p. 21). The most common implication of this understanding of "practice" for ITE is what Wideen, Mayer-Smith, and Moon (1998) have called the "traditional model of teacher education", where "the university provides the theory, skills and knowledge about teaching through coursework; the school provides the field setting where such knowledge is applied and practiced; and the beginning teacher provides the individual effort that integrates it all" (p. 160). In this traditional model, the problem of integrating theory and practice is understood as an *application problem* and the problem lies with the teacher candidates. On the other hand, if one subscribes to the notion that what teachers need is "practical wisdom" (*phronesis*) in an Aristotelian sense, as, for instance, Kessels and Korthagen (1996) and Phelan (2005) do, then the integration of theory and practice is not a problem of applying theory in practice, but rather a problem of helping teacher candidates develop practical wisdom (see Korthagen, 2001).

The second observation is that there are different proposals of how to address the challenge of integrating theory and practice and that those differences are generally grounded in a different understanding of what the integration problem is in the first place. To draw on the previous two examples to illustrate this observation, if the integration problem is understood as the problem to help teacher candidates apply theoretical knowledge appropriately in practical contexts (application problem), then integrating theory and practice in learning to teach means helping teacher candidates *linking* concrete teaching experiences with the theoretical knowledge learned on campus. Such linking, for instance, might be addressed through "practicum-type periods in schools . . . when students put into practice the concepts and theories explored on campus, target[ing] a range of standards against which students must demonstrate competence in order to proceed in the program" (Allen, 2009, p. 648). On the other hand, if the problem of integrating theory and practice is seen as the problem of helping teacher candidates develop practical wisdom, then learning to teach is not a matter of bridging acquired theoretical knowledge with practical experiences, but rather, developing practical wisdom *within* a practical context through reflection (see Korthagen, 2001).

The differences in understanding theory and practice in ITE and the problem of integrating theory and practice in ITE (first observation), as well as in the proposals of how to address the problem (second observation) reflect views of scholars writing on these issues. These scholars, though, are for the most part also teacher educators involved in ITE; they represent a subgroup of all teacher educators. Is the range of views and understandings by those scholars a reflection of views and perceptions of all teacher educators? Our third observation from the literature on the topic of the integration of theory and practice in ITE is that there are hardly any larger-scale surveys that inquire into the views of teacher educators more generally on the integration of theory and practice in ITE.

These three observations gave rise to our undertaking of the study we report on in this article and suggest how this study will contribute to the literature on the integration of theory and practice in ITE. The study surveyed teacher educators involved in ITE (third observation from the literature) on (a) their understandings and perceptions of theory and practice and the problem of integrating theory and practice in ITE more generally and within their specific program in particular (first observation from the literature); and (b) on ways in which they and their own programs do and do not integrate theory and practice (second observation from the

literature).

The contribution of our study to the literature on the integration of theory and practice in ITE is twofold. First, through the use of a survey, the study provides an understanding of the views of a *broader* group of teacher educators involved in ITE on their views and perspectives, beyond what is known about the views of teacher educators who publish on the issue. Second, Crocker and Dibbon (2008) suggest that "there has been little systematic pan-Canadian study of the structure or content of teacher education programs or the views of their main stakeholders" (p. 11). By inquiring into teacher educators' perception of their own and their ITE programs' ways of integrating theory and practice and by surveying teacher educators from all programs in one region of Canada (Atlantic Canada), our study fills one aspect of the lack of understanding identified by Crocker and Dibbon (2008): the views of one group of "main stakeholders" (university-based teacher educators) in one part of Canada (Atlantic Canada) on one aspect of ITE in Canada (the integration of theory and practice).

The Study

Focus and Objective of the Study

We reported on the first part of a larger, multi-year research project. The study inquired into the perspectives of teacher educators *in Atlantic Canada* on the question of the integration of theory and practice in their teaching, in their respective ITE program, and in ITE more generally. More specifically, this part of the larger research project was guided by the following research questions:

1. How is the problem of integrating theory and practice in ITE understood by teacher educators in Atlantic Canada?
2. What approaches and strategies are being adopted in teacher education programs in Atlantic Canada (courses and other program components) to support the integration of theory and practice in ITE?
3. How do teacher educators in Atlantic Canada assess their programs and their own success in integrating theory and practice in their ITE program and their courses, respectively?
4. What challenges do Atlantic Canada's teacher education programs and their instructors face in addressing the integration of theory and practice?

Atlantic Canada consists of the Canadian provinces of New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador, with 5 universities offering initial teacher education programs.

Study Design and Data

The data of the study consists of responses to an online questionnaire (Creswell, 2012, chapter 7) with 19 questions (see Appendix), which we designed in order to address the four research questions. The first 9 questions inquired into the instructors' professional background. Questions 10 and 11 inquire into instructors' views of the notions of theory and practice and their notions of integrating theory and practice in ITE, respectively (research question 1). Questions 12 and 17 ask about approaches and strategies which teacher educators and teacher

education programs use to integrate theory and practice (research question 2), and questions 13 and 16 ask how instructors assess the quality of their own and their programs' approaches to integrating theory and practice (research question 3). Finally, questions 14, 15, and 18 inquire into the challenges that instructors and ITE programs face in integrating theory and practice (research question 4).

With the exception of two Likert-type questions, questions 10-19 are free-response questions. This study makes use of the qualitative data provided by the responses to questions 10-19 (except question #12).[1]

Participants

Through the deans of all faculties of education in Atlantic Canada, we sent out invitations to all instructors in the ITE programs in those faculties to respond to the online survey. Based on numbers available to us from the five institutions, we estimated that the questionnaire was sent to about 220 teacher educators across the five institutions. Teacher educators from all five teacher education institutions responded to the survey, 35 in total, which is an estimated response rate of 16%. (We do not want to specify the response rate by university, because it might allow deriving the size and then the identity of some of the universities, as some of the data findings are linked to specific universities for which the number of participants is provided.)

Data Analysis and Validation

All data were inserted into a MaxQDA software file for analysis. Using coding procedures (Cresswell, 2012), responses to questions 10-19 of the questionnaire were analyzed and interpreted within MaxQDA.

The use of anonymous on-line questionnaire data limits the validation strategies available for our qualitative research (Creswell, 2007). We used two validation strategies: piloting to assess content validity of the questionnaire and the use of peer debriefing as an external check of the data analysis process. For content validation we selected a small group of faculty members at four different Canadian faculties of education and had them complete a draft version of the questionnaire with additional questions on the validity of the questions and an opportunity to provide general feedback on the items on the questionnaire. Based on the responses and the feedback provided, we created the final version of the questionnaire that we then used for the on-line questionnaire. Inter-rater reliability was used to validate the themes arising from the data analysis of the open-ended responses: themes from a first round of qualitative data analysis by one member of the research team were double checked by another member, and where discrepancies arose, the researchers discussed and jointly decided upon the final thematic analysis.

Findings and Discussion

Following an overview of demographic information of the study participants, this section responds to each of the four research questions outlined above by analyzing and discussing the respective responses by the study participants.

Table 1

Participants' Demographic Information

University	University 1	12
	University 2	8
	University 3	5
	University 4	5
	University 5	5
Appointment Type	Contract	4
	Sessional/part time	9
	Tenure track	22
Teaching Assignment	High school and Elementary program	12
	High school program only	8
	Elementary program only	3
	No response	12
Years in program	Min/max	1 year/40 years
(34 responses)	Mean/median	10.6 years / 7.5 years
Years in K-12	Min/max	0 year / 40 years
(33 responses)	Mean/median	17.2 years / 17 years

Participants

Table 1 provides an overview of demographic information of the 35 faculty-based teacher educators who responded to the survey.

As can be gleaned from Table 1, all five teacher education institutions are relatively well represented among the 35 participants with no less than five respondents from each of the five institutions. About two thirds of the respondents are tenure track faculty members, while the other third is made up of contract or sessional/part-time instructors. At the time of the survey, 20 respondents were teaching in a high school ITE program and 15 in an elementary program with 12 in each group teaching in both programs. The respondents represent a range of years working in their teacher education programs, from first-year instructors to veterans of 40 years teaching in the program with a mean/median time of 10.6 years/7.5 years in the program. Thirty-three of the 35 participants responded to the question about the time they have been working or had worked in the K-12 school system. Of those 33, only 3 had not worked in schools, and of the 30 that are or had, the mean/median time worked in the school system was 17.2 years/17 years, with a range from 4 to 40 years. Overall, the participants in the study represent as wide a range of teacher education instructors in Atlantic Canada as can be expected for the recruitment approach used for this study.

Understanding of Theory and Practice and Their Integration in Initial Teacher Education

Findings. There were two quite different ways in which theory in the context of ITE was

conceptualized by the participants. With one exception, their responses fell under one or the other notion that we identified from those responses. The most prominent notion–promoted by 21 participants–was the one of *theory as academic knowledge*. The following quotation is typical for this notion of theory in ITE, "Theory is comprised of knowledge about teaching and learning based on discipline inquiry" (#125-2)[2]. On the other hand there were five respondents who articulated the notion of theory as *a teacher's set of assumptions that guide her practice*. A typical example illustrating this notion is the following, "Theory always underlies practice, though often we are unaware/not conscious of our theories" (#127-4).

Participants' notions of practice in the context of ITE were more diverse than was the case for their notions of theory (about half of the participants did not comment on their notion of practice of ITE). Three main "perspectives" (those with more than one response) were taken by participants in their responses to the question what constitutes practice in ITE (see Table 2); 6 respondents wrote about practice in terms of where it happens; 7 respondents in terms of its relationship to theory; and 4 respondents in terms of what could be called the nature of practice. Table 2 shows those three perspectives, the conceptualizations of practice in ITE under each perspective, and the number of respondents for each of the conceptualizations. Considering all three perspectives and the most common conceptualization under each perspective, we can say that the following notion of practice in ITE emerges from the responses, *Practice is the application of theory in the act of teaching in schools*.

Tables 3 and 4 provide an overview of the categories of responses that participants provided as their beliefs about the integration of theory and practice in ITE. One group of responses spoke more to the relationship of theory and practice in ITE (Table 3) and the other group spoke more explicitly about the notion of integration in ITE (Table 4). While both spoke to the idea of integrating theory and practice in ITE, the way the idea was approached was principally different, so that we present the categories separately in Table 3 and Table 4, respectively.

Table 3 identified the three response categories we created to characterize the types of relationships between theory and practice in ITE participants mentioned. The two most prominent response categories (No. 1 and 2) express two quite different beliefs about the relationship of theory and practice in ITE. One group of responses could be classified as suggesting a hierarchical relationship between theory and practice with theory being foundational to practice (11 responses), while the other group of responses could be classified as suggesting a reciprocal dependency between theory and practice in ITE (9 responses). A typical response for the first type is, "There is a place for theory in all courses as a foundation for practice. Theory must inform practice and pre-service teachers must be encouraged to see

Table 2

Notions of Practice in ITE

Perspective	Conceptualizations	Number
Where the practice happens	Practice happens in schools	4
	Practice happens in both schools and university classes	1
	Practice happens in university classes	1
Seeing practice in relationship to theory	Practice as applying theory	6
	Practice as providing the context for theory	1
The nature of practice	Practice as the act of teaching	4

Table 3

The Relationship of Theory and Practice in ITE

No.	Categories	Number
1	Theory as foundational to practice	11
2	Reciprocal dependency of theory and practice	9
3	Practice provides the context for theory	3

Table 4

Understanding the Notion of Integration of Theory and Practice

No.	Categories	Number
4	Integration as applying theory	3
5	Integration involves addressing teacher candidates' assumptions/implicit theories	3
6	Integration happens within courses	6
7	Integration happens across courses and field experiences	3

theory in the classroom and how it is directly related to their practice" (#108-5). A typical response for the second type of response is, "Theory and practice are connected, and each is informed by the other. They are like 2 sides of the same coin" (#125-5). Responses in category No. 3 (3 responses) provide the counter perspective to responses in the first category. While responses in Category No. 1 focused on the role of theory for practice (theory is foundational to practice), responses in Category No. 3 focused on the role of practice for theory: practice provides the context for theory.

There were a number of other responses to the question about participants' beliefs about the integration of theory and practice in ITE that were less about the relationship of theory and practice and more about certain aspects of the notion of integration of theory and practice. Table 4 summarizes the response categories we created.

The first two categories (categories No. 4 and 5) speak to a particular understanding of the notion of integration. In three responses the respective participants understood integration in ITE as applying theory; in other words, to integrate theory and practice in ITE is here understood as providing the opportunity to apply theory in concrete teaching situations. While these responses express a certain perspective on the notion of integration, they are closely linked to the responses in category No. 3 (see Table 3): if integration of theory and practice means that theory is applied (in concrete practice contexts), then practice provides the context for theory to be applied. Responses in category No. 5 have an underlying understanding of theory as a teacher's set of assumptions that guide her teaching practice (see above). With this understanding, those responses suggested an understanding of integration as a way of addressing *teachers' implicit assumptions/theories* that guide their teaching practice (3 responses).

Responses that fall into the second two categories (categories No. 6 and 7) spoke less to conceptual understanding of the notion of integration and more to *where* integration happens. Six of the nine responses that fall into these two categories understood integration as what happens *within* the on-campus course teaching, while three responses suggested an

understanding of integration as something that happens across on-campus courses and field experiences.

A clear majority of participants subscribed to the notion of theory as academic knowledge within the context of ITE (21 of 26 respondents; 81%), while the group of respondents–as it appears from combining their responses–subscribed to the notion of practice in ITE as the application of theory (i.e., of academic knowledge) in the act of teaching in schools. These responses put the locus of theory in campus-based courses and of practice in schools, and they suggest a logically and temporally linear relationship between theory and practice, namely that theory–as the application of practice–comes logically and temporally before practice.

However, when participants were explicitly asked about the integration of theory and practice in ITE, most responses spoke (also) to the relationship between theory and practice, and what they said provided a more differentiated view on the relationship between theory and practice. While about half of the respondents who talked explicitly about this relationship (11) also expressed the relationship as logically hierarchical with theory being foundational for practice, almost as many (9) described the relationship as more of a reciprocal dependency, like in the image of the coin with the two sides of theory and practice.

Discussion. Overall, based on how the respondents spoke to their understanding of theory and practice and their relationship in ITE, the majority perspective is one that sees theory as academic knowledge and that sees a hierarchical relationship between theory and practice with theory being the foundation for practice and theoretical understanding developed in campus-based course work, and that sees good practice as the application of theory in teaching and practice being developed in school settings.

This majority perspective matches the view on the integration of theory and practice in the traditional model of teacher education (Wideen et al., 1998) mentioned in the introduction, which others have called the "theory-into-practice" perspective (Dillon et al., 2014, p. 97). From this traditional view on ITE–as is also reflected in the majority perspective in our study–"theory" is taught at the university for the purpose of "acquiring declarative knowledge and conceptual aspects of professional practice" (Leinhardt, McMarthy, & Merriman, 1995, p. 402), and "practice" is made possible in the practicum context for the purpose of putting "theoretical ideas about how to teach . . . into practice in the field experience under the supervision of a host professional" (Dillon, et al., p. 97).

This traditional "theory-into-practice" perspective has been criticized in the literature, because of "evidence . . . that integrating knowledge learning in the academy with knowledge learned in practice is neither trivial nor is it obvious how this integration should be accomplished" (Leinhardt, et al., 1995, p. 402). It has also been challenged on the grounds that "modern learning theory makes clear that expertise is developed within specific domains and learning is situated within specific contexts where it needs to be developed and from which it must be helped to transfer" (Darling-Hammond & Hammerness, 2005, p. 403). In other words, "practice" is not the place where theory is "applied" but rather the place where teaching expertise is developed, including "declarative knowledge and conceptual aspects of professional practice", as Leinhardt et al. (1995) have characterized "theory" in the traditional view of ITE.

Beside the majority perspective expressed by study participants there is a clear alternative perspective articulated in the responses by a relatively high number of participants. According to this perspective, theory and practice in ITE are in a more dynamic and reciprocal relationship. Theory in ITE is seen as something that underlies all practice, regardless of whether that practice is explicitly informed by "academic theory" or not; school-based practicum experiences

feed back into campus-based course teaching where practice is theorized; and practice not only happens in school settings, but also within campus-based courses.

While not all details are made explicit by respondents, this perspective on theory and practice and their integration in ITE seems to be closely linked to what Dillon et al. (2014) promoted as "theory and practice" approach to learning to teach, which has "the aim to reduce the dissonance that often exists between the two sites of teacher education" by helping teacher candidates "make sense of professional experiences during both the practicum and on-campus coursework" (p. 99). Here, teaching expertise is developed by "theorizing" practical teaching experiences, which requires the integration of learning experiences at both sites–practicum and on-campus course work–in order to allow for such theorizing of practical experiences. In this approach, theory and practice are not conceptualized as in the traditional approach (theoretical knowledge to be applied in practical contexts), but are rather conceptualized as ways of knowing that need to be integrated with a reciprocal influence to form the kind of "practical knowledge" that is considered at the core of what learning to teach is to be about. Such practical knowledge for teaching is developed not by "applying theory in practice" but rather by making sense ("theorizing") of practical experiences (Dillon et al., 2014; Korthagen, 2001; Leinhardt et al., 1995).

Perceived Integration of Theory and Practice at the Program and Course Level

Findings on the Integration at the Program Level. Participants were asked to indicate their agreement with the statement that their ITE program is doing a good job of integrating theory and practice for their teacher candidates using a scale of 1-5, where "1" indicates strong disagreement and "5" indicates strong agreement with the statement. Participants were also asked to provide a rationale for their scoring. All 35 participants provided a score with a *mean score of 3.54* and a *standard deviation of 0.769*, suggesting only a moderate variability across the mean. The score distribution can be gleaned from Table 5.

Sixty-three percent (22 out of 35) of respondents agreed or strongly agreed with the statement that their respective ITE program does a good job of integrating theory and practice for its teacher candidates, while 29% (10 out of 35) were neutral toward the statement, suggesting that in the overall judgment about their current ITE program a larger minority of participants did not see their program doing a good job in the integration of theory and practice for their teacher candidates.

This reservation, however, is not equally distributed across the five universities, as Table 6 suggests, which shows the score distribution by university.

Table 5

Score Distribution for Level of Integration at the Program Level

Score	Number
5	1
4	21
3	10
2	2
1	1

Table 6

Score Distribution by University (Program Level)

	# of score 1	# of score 2	# of score 3	# of score 4	# of score 5
University 1		2	6	3	1
University 2	1		2	5	
University 3			2	3	
University 4				5	
University 5				5	

In one case (university 1), two thirds of the participants from that university provided a score of 3 (neutral) or below, while in another case (university 3) the numbers for scores 3 (neutral) and 4 (agree) are almost equal. In the other three cases, all participants agreed with the statement that their program does a good job of integrating theory and practice for their teacher candidates (universities 4 and 5) or a clear majority agreed (71%), while the rest were neutral toward the statement (university 2). As those numbers suggest, only in the case of two universities (university 4 and 5) a clear majority of participants from those universities thought their ITE program does a good job in integrating theory and practice for their teacher candidates.

In addition to the scoring of the quality of the integration of theory and practice of their respective programs, we also asked the participants to provide a rationale for the score that they assigned to their program. Twenty-nine of the 35 who provided a scoring provided also a rationale (83%).

In 10 cases, a rationale for a lower score (3 or lower) was provided. Two types of rationales were provided: (1) no coherence within the program (no integration across courses, particular foundational and "methods" courses and/or no integration between on-campus courses and practicum); (2) no balance of theory and practice within the program (one respondent suggested that in his/her faculty tenure-track faculty members moved into the graduate course teaching, which moved the theorizing out of the undergraduate program; another suggested that students complain about too much theory).

In 17 cases, a rationale for a higher score (score of 4 or 5) was provided. The rationale for the one participant who strongly agreed that his/her program does a good job of integrating theory and practice argued that his/her program uses all the strategies the participant suggested as ways of integrating theory and practice in an ITE program, like having a dialogue with teachers and administrators, having large and short-term practica, and having projects that focus on application of theory to practice. It needs to be noted, that this participant was referring to a specialist ITE program in his/her faculty.

Ten of the 17 participants provided as a rationale a general impression that their respective program was doing a good job of integrating theory and practice without specifying what this general impression was based on. However, three other participants made reference to features of the program in their rationale for their higher scoring: good partnership with schools; the program overall promotes pedagogy that focuses on practice; and teacher candidates are encouraged to bring theory-focused course learning together with practice-focused field experiences. Two participants made reference to the integration of theory and practice in their

own teaching when providing a rationale for their respective program evaluation.

Discussion. Our study is limited to surveying teacher educators' *perception* of their teacher education programs and does not include a study of the programs' features itself. With this qualification and the acknowledgement that we do not have a representative sample surveyed, we can cautiously say that overall two-thirds of teacher educators in Atlantic Canada consider their programs do a good job of integrating theory and practice in their program. Of interest is the uneven distribution of this judgment across the different universities in Atlantic Canada. In order not to give away the identities of the respective faculties of education, we cannot interpret this finding beyond what we have said. However, the findings suggest that according to participants' perception, 2 out of the 5 ITE programs do not address the integration of theory and practice adequately.

The provided rationales match quite well with what literature on the integration of theory and practice in ITE suggests for quality teacher education programs. For instance, coherence across program components (Beck & Kosnik, 2006; Darling-Hammond, 2006), partnerships with schools (Darling-Hammond, 2005, 2006), and the bringing together of theory-focused course learning with practice-focused field experiences (Allen, 2009) are all supported in the literature. Those rationales and the accompanying literature would all serve well in the development of criteria for program reviews.

Findings on the Integration at the Individual Instructor Level (scoring). Participants were asked to indicate their agreement with the statement that in their course teaching they do a good job of integrating theory and practice for their teacher candidates using a scale of 1 to 5, where "1" indicates strong disagreement and "5" indicates strong agreement with the statement. Twenty-nine of the 35 participants provided a score, with a mean score of 4.10 and a standard deviation of 0.712, suggesting a very moderate variability around the mean. The score distribution can be gleaned from Table 7.

Twenty-five of the 29 respondents (86%) agree or strongly agree with the statement that they do a good job of integrating theory and practice in their course teaching. Only one respondent disagreed with this statement and two were neutral toward the statement. The score average is about 1.5 points (out of a total of 5) higher than the score average given to the program. Only in 2 of the 29 responses (9%) is the score for the program higher than the one for oneself; in 13 out of the 29 responses (45%) the scores are the same; and in 14 of the 29 responses (48%) the score for the program is lower than the one for oneself.

Table 8 shows that the scores at the individual instructor level are–with one exception–fairly evenly distributed across universities, compared to the distribution of scores at the program level (see Table 6). The one exception is the scores from participants from university 5, where

Table 7

Score Distribution for Level of Integration at the Individual Course Level

Score	Number
5	8
4	17
3	3
2	1
1	0

Table 8

Score Distribution by University (Instructor Level)

	# of score 1	# of score 2	# of score 3	# of score 4	# of score 5
University 1		1	2	3	3
University 2			1	4	1
University 3				5	
University 4				3	1
University 5				2	3

the majority *strongly* agrees with the statement that they do a good job of integrating theory and practice for their teacher candidates.

Discussion. Our study is limited to surveying teacher educators' *perception* of their own teaching and does not include a study of their teaching itself. With this qualification in mind and the fact that we have not a representative sample, we can cautiously state that the findings suggest a clear majority of teacher educators in Atlantic Canada believe that they are doing a good job within their course work of integrating theory and practice.

The substantial difference in scoring their own and their programs' contribution to the integration of theory and practice should not surprise and can be explained with the general self-bias phenomenon identified in social psychology, "When comparing ourselves to others, the general process is this: Frame the question (unconsciously, automatically) so that the trait in question is related to our self-perceived strength, then go out and look for evidence that you have the strength" (Haidt, 2006, p. 68).

Findings on the Integration at the Individual Instructor Level (strategies). In addition to scoring their own teaching in terms of the integration of theory and practice for their students, participants were also asked to describe the strategies and approaches they are using for integrating theory and practice. All 35 participants provided a response to the question. In 8 of the 35 cases the description of the strategies and approaches used were such that we were not able to identify the ways in which those activities would contribute to the integration of theory and practice. The responses from the remaining 27 participants gave us the following types of strategies and approaches to integrating theory and practice that are being used by the participants in their teaching (some participants provided several strategies or approaches, some of which fell into different categories).

Particular activities. Seventeen participants (49%) provided 18 responses that mentioned some form of activity that they use in their course teaching and that help their students integrate theory and practice. Three of the responses were more generic in nature, mentioning only that assignments are used to link theory and practice. The other 15 responses described specific class activities:

- discussions or projects that link theory with practice; e.g., using case studies, discussing what theory underlies what practice (8 responses)
- "applying" theory in lesson and unit planning (2 responses)
- designing teaching activities (2 responses)
- use of reflective writing on theory (2 responses)

- written summaries of journal articles on theory and on practice (1 response)

Referencing field experiences. Eleven participants (31%) said they routinely used some strategy that links course content with some form of teaching experiences in the field. For example, teacher candidates' practicum experiences, the instructors' own experiences in school classrooms, and, "Every topic, even those in my history of Canadian education course, is linked to students' practicum experiences" (#113-26).

Practice teaching as course activity. Five participants (14%) said that they use some form of practice teaching within their on-campus course teaching, like peer-teaching and role play; "I try and give my students opportunities to practice their teaching in my classes and I give them feedback" (#59-21).

Modeling. Five participants (14%) mentioned using some kind of modeling. For example, "I model many aspects of good practice" (#93-33). Three of the 5 explicitly mentioned using meta-analysis, where the instructor makes his/her own teaching subject of an analysis. For example, "I step outside what I do in the classroom to explain why I do certain things, often with reference to theory" (#118-27).

Guest speakers from the field. One respondent (3%) mentioned that he/she invites educators from the field as a strategy to integrate theory and practice in his/her course.

There were two responses in which participants reported on strategies and approaches that they were using to support the integration of theory and practice in ITE, not in the context of campus-based course teaching, but in the context of their role as faculty advisors in teacher candidates' practica. In both cases, respondents said that they tried to help teacher candidates link their current experiences in the classroom to their learning in on-campus courses:

During the supervision of their practicum, I ask them lots of questions about how they are integrating what they have learned. In their observation of the classroom teachers, I ask them to observe and make connections/comparisons between theory and practice (#115-24).

Discussion. Overall, participants use a range of strategies in order to integrate theory and practice in their course teaching. Those strategies are well supported by the ITE literature that is concerned with a closer integration of theory and practice in ITE. For instance, referencing field experiences in on-campus courses (Bullock & Russell, 2010); modeling (Darling-Hamond & Hammerness, 2005); case study approach (Darling-Hammond & Hammerness, 2005); and reflection on practice (Darling-Hammond, 2006). However, this observation is qualified by the fact that each of those practices is mentioned only by a relatively small number of participants as being part of their practice and that a number of practices identified in the literature is *not* mentioned as being used by participants in their own course teaching. The rationale for the latter point is partially addressed by participants' survey responses that we present and discuss in the next section.

Challenges to the Integration of Theory and Practice in ITE

Findings. Participants were also asked what they would like changed in their program to accommodate the integration of theory and practice and why (survey questions 14 and 15; see Appendix) and what ways they would like to help their students to integrate theory and practice but where currently not able to (question 18; see Appendix). We interpret their responses as an expression of *challenges* to the integration of theory and practice in their respective ITE program. Of the 35 participants, 3 did not respond to these questions, and 3 provided responses

that we interpreted as not fitting the questions. Following we present the responses by the remaining 29 participants. Some of those responses articulate sometimes only what the respondents would like to do or what the program should be doing to help teacher candidates with the integration of theory and practice, but not what challenges the respondent or the program faces so that those ideas cannot be implemented. We will present both the ideas of how their own teaching and the ITE program they are working in should be different and we were provided the rationale for why those ideas are not actually implemented.

The responses to questions 14, 15, and 18 identified problems and challenges that we clustered in the following categories (the label of the categories sometimes adequately reflect only some of the responses grouped together in that category; the subsequent elaboration on each category makes the range of issues within each category clear):

- problematic program structures and program elements (10 participants)
- course instructors not involved with teacher candidates' practicum experiences (8 participants)
- insufficient contact with teacher candidates in courses (7 participants)
- lack of program coherence and consistency (7 participants)
- course instructors with lack of K-12 school experiences (5 participants)
- lack of co-teaching with teachers from the field (4 participants)
- some types of assignment that meaningfully link theory and practice are not possible (2 participants)
- problematic admission process (1 participant)

Following, we elaborate on the first eight of these ten thematic categories.

Problematic program structures and program elements. Ten participants identified one or more ITE program elements or features of the program structure that they considered problematic. Five responses suggested that their programs' current structure hinders an (adequate) linking of course teaching with field experiences. Two of these responses suggested that teacher candidates could engage in an action research project during their practicum, but that their current program structure would not allow for such an inquiry project. A third response suggested that the practicum should be–but is not–integrated throughout the semester "in either the 'Sandwich' model (class/prac/class) or in the working part-time in schools/studying part-time in uni or some similar theory/prac model similar to apprenticeships and traineeships in countries like UK and Australia" (#77-21). Another suggested it being problematic that teacher candidates were not in school right from the beginning of their program, which would also require course instructors to re-examine their courses based on students' needs as they developed through their field experiences. The fifth response noted that the fact that the ongoing practicum experience during the semester and the course teaching are not synchronized in a way that would allow him/her to link course teaching with the on-going field experiences. Along the same line, a forth participant considered it problematic that he/she would not know in time what grade level the teacher candidates in his/her course would be teaching, so that he/she could prepare at least those who might particularly need it for their practicum experience.

Two other responses identified two features of the practicum component of their respective

programs as problematic; that the practicum is not timed right (the respondent did not elaborate on this further), and that the practicum experience is too short.

The remaining four responses considered program features linked to campus-based courses as problematic for the integration of theory and practice in ITE: a course schedule that is not flexible enough; the deletion of "practice-based courses" from the new program; that web-based courses do not allow hands-on demonstrations; and that foundation courses are not integrated with so called methods courses, suggesting to teacher candidates that "theory" (foundation courses) is separate from the practice of teaching (methods courses).

Course instructors not involved with teacher candidates' practicum experiences. Eight participants provided responses that spoke to the challenge to the integration of theory and practice in ITE that course instructors were not involved with teacher candidates' practicum experiences, in other words, the problem that, as one participant expressed it "the people who give them [the teacher candidates] a chance to experience the strategy are not the same people who help them discover the research" (#20-40). For 7 participants the problem was that course instructors were not also supervising teacher candidates during their practicum, while the eighth participant identified it as a challenge to the integration of theory and practice that course instructors do not have at least "periodic contact" with teacher candidates during their practicum, which, as he/she suggested, should be easily possible with modern technology, "With current technology, it should be possible for students to communicate regularly with their university instructors. I did this one semester a few years ago and it was extremely effective" (#20-40). Only 1 of the 7 participants provided a reason why as a course instructor he/she was not also involved with practicum supervision, "I have too heavy a teaching load and a research agenda; I would need to have some release time to be able to follow my students in the practicum experience in their classrooms" (#64-25).

Insufficient contact with teacher candidates in courses. Seven participants provided 9 responses that identified three types of teaching conditions that they considered problematic in providing the appropriate contact with teacher candidates to adequately address the integration of theory and practice in ITE. Six responses suggested that not having enough time with teacher candidates in their courses or in the program as a whole is a challenge. The following is an example of the reasons participants provided for why they think more time in the program was needed with teacher candidates:

> Another major factor is that we instinctually teach the way we were taught, so if we do not allow learners time and space to examine pre-existing and deeply embedded beliefs then they are likely to rely on traditional teaching methods regardless of what we say in university classrooms (#98-31).

The reason for more time in the program provided here is directly linked to the well-discussed issue of the apprenticeship of observation (Lortie, 1975). In one of the 6 responses, one participant suggested that the contact with teacher candidates to address the integration of theory and practice goes beyond just more time with teacher candidates in a course or in the program more generally. He/she suggested what Noddings (1992) has called a "continuity of people", "I would like to work with a group for the whole program so we could develop a strong sense of community and have time to reflect on a range of experience including internships and other classroom placements, (observations, etc.)" (#128-27).

Three responses identified issues with the integration of theory and practice within their own course teaching linked to class size, suggesting that smaller class sizes would allow for

relationship building with the students that would better facilitate the integration of theory and practice.

Lack of program coherence and consistency. Seven participants provided responses that pointed to a lack of program coherence and consistency as a challenge to the integration of theory and practice in ITE. While some responses commented on a lack of program coherence more generally (3 responses), some identified ways of addressing the lack of coherence and consistency: better communication/collaboration among course instructors (3 responses); better communication/collaboration between course instructors and teachers supervising teacher candidates in the practicum (1 participant); better matching of orientations toward teaching and learning between course instructors and teachers supervising teacher candidates in their practicum (2 participants); reducing the number of sessional course instructors (1 participant); and the creation and use of university-based laboratory schools (2 participants).

Course instructors with lack of K-12 school experiences. This category for responses identifying challenges to the integration of theory and practice in ITE includes responses by five participants that identified a range of issues that are all linked to the role of professors in ITE, of which their present and past experience with the K-12 school system is one such issue. Three participants suggest as a challenge to the integration of theory and practice that some professors teaching in ITE programs do not have direct experiences with the K-12 school system, either because they never taught in the school system (2 participants), or because they do not maintain connections with the school system (1 participant). The remaining 2 participants pointed to two features of the university system itself that present a challenge to the integration of theory and practice as far as the involvement of professors is concerned: that the university reward system (tenure and promotion) does not adequately value professors' involvement with school-university partnerships, and that professors are more and more drawn into graduate teaching (which might be by choice or by faculty need).

Lack of co-teaching with teachers from the field. Four participants considered it a challenge to the integration of theory and practice that teachers from the K-12 school system are not (sufficiently enough) involved in the course teaching, either through team teaching with the faculty-based course instructor (2 participants) or through a role in the course as guest speakers (2 participants). The respondents raised the concern that involving K-12 school teachers is not easy to arrange; "I would like it to be easier to access teachers from the school system who could come and share information in my classes" (#62-25). A collaboration like team teaching is simply not happening, although one participant said that in his/her program such team teaching happened in the past on occasion.

Discussion. A number of the challenges identified by the participants to the integration of theory and practice in their respective ITE programs match quite well-known features that are identified in the literature for *powerful* or *exemplary* ITE programs. For instance, with the conceptualization of an integrated ITE program from a social constructivist perspective in Beck and Kosnik (2006) and with the identification of common components of "powerful" teacher education programs in the USA identified by Darling-Hammond and her collaborators (Darling-Hammond, 2006).

Participants in our study identified a lack of program coherence and consistency as a major challenge to attempts to integrate theory and practice for teacher candidates. This importance of coherence and consistency within ITE programs is also emphasized by Beck and Kosnik (2006) and Darling-Hammond (2006). Beck and Kosnik (2006) considered "integration" a central theme of social constructivism (p. 24), and identified the following integrative strategies for

social constructivist teacher education programs: "developing a shared philosophy, forming a collaborative faculty team, integrating campus courses" (p. 27). Similarly, Darling-Hammond (2006) identified as common components of powerful teacher education programs in the USA to be "a common, clear vision of good teaching permeates all coursework and clinical experiences . . . well-defined standards of practice and performance are used to guide and evaluate coursework and clinical work" (p. 41).

The participants in our study also identified a lack of involvement of course instructors in teacher candidates' practicum experiences and program structures that hinder linking course learning with field experiences as major challenges to the integration of theory and practice in their programs. Linking course learning with field experiences is considered by Beck and Kosnik (2006, p. 24) as another integrative strategy for social constructivist programs. Similarly, such linking of course work and field experiences is identified by Darling-Hammond (2006) as a common component of powerful ITE programs as "extended clinical experiences are carefully developed to support the ideas and practices presented in simultaneous, closely interwoven coursework . . . strong relationships, common knowledge, and shared beliefs link school- and university-based faculty" (p. 41).

Linking theory and practice in ITE programs is identified as an important feature of powerful and exemplary ITE programs (Kosnik & Beck, 2009, p. 9), and a number of the participants identify central features of powerful and exemplary ITE programs that would link theory and practice in ITE but are missing or underdeveloped in their own programs. Again, our study is limited to the *perceptions* of features of ITE programs by teacher educators in those programs; with this limitation in mind, the findings of this study suggest that a number of core features of powerful and exemplary ITE programs–features that help with the integration of theory and practice–are not fully or at all implemented in some of the ITE programs in Atlantic Canada.

Conclusion

The findings of our study contribute (a) to the general discourse on the integration of theory and practice in ITE and (b) to the specific discourse about ITE in Atlantic Canada–keeping in mind that the study inquired into the *perspectives* of teacher educators who self-selected to take part in the study. In this conclusion section we want to briefly outline both contributions.

At the conceptual level, a "theory-into-practice" approach is prominent among participants. However, when it comes to identifying challenges to the integration of theory and practice in their respective programs, the responses by participants match well challenges suggested in the literature on a "theory *and* practice" view on ITE. For instance, the apprenticeship of observation challenge (Bullock & Russell, 2010; Darling-Hammond, 2006; Dillon et al., 2014), the problem of enactment (Darling-Hammond, 2006; Kennedy, 1999), and a lack of program coherence and consistency (Beck & Kosnik, 2006; Darling-Hammond & Hammerness, 2005). That distinction between theoretical conceptualization and educational practice invites more exploratory studies across jurisdictions and explanatory studies at the theoretical level.

The range of proposed and enacted approaches to integrating theory and practice in participants' course teaching provides empirical support for some claims in the literature that "many university educators have increased efforts to incorporate aspects of practice . . . in the curriculum through the use of cases, simulations, and practicums" (Leinhardt et al., 1995, p. 403). On the other hand, participants' overall satisfaction with their own practice and their

somewhat limited satisfaction with their programs' success in terms of integrating theory and practice suggest, first, that there is a mixed view on the existence of a "theory-practice gap" in ITE and, second, that addressing any existing theory-practice gap is seen as a problem more at the systemic or program-structural level than at the course instructor level. The former challenges claims about the existence of a "theory-practice gap" proposed in some of the literature (Cheng et al., 2010). The latter supports the conceptual literature that suggests a systemic and program-structural approach to addressing the integration of theory and practice in ITE (Beck & Kosnik, 2006; Darling-Hammond, 2005; Tom, 1997).

The findings of our study also contribute to the discourse about ITE in Atlantic Canada. As referenced in the introduction, Crocker and Dibbon (2008) suggest that "there has been little systematic pan-Canadian study of the structure or content of teacher education programs or the views of their main stakeholders" (p. 11). The findings speak to one main stakeholder group's views on the structure and approach in ITE programs in Atlantic Canada. Overall they find their respective programs satisfying in terms of integration of theory and practice, although there are some variations in satisfaction across institutions. This level of satisfaction, though, and the challenges that are identified by teacher educators suggest that this stakeholder group considers reform at the program-structural level as beneficial for addressing the integration of theory and practice in their respective ITE programs. Considering how important the question of integration of theory and practice is in the literature on powerful and exemplary ITE programs, the findings of this study can be of great benefit to any review of ITE programs in Atlantic Canada.

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Notes

1 For space reasons, we did not include the findings from responses to questionnaire question #12 in this article.

2 We are using this type of sequence of symbols to identify uniquely the participant and place in the survey response where the respective quotation came from.

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Appendix: Questionnaire

1. What is the name of your institution? **This question is required**
2. What is the nature of your appointment?
   - Sessional / Part-time
   - Contract
   - Tenure / Tenure-track
3. Please provide the following information regarding the course(s) you are teaching this academic year.

	Course Name	Course Number	Elective or Required Course
Course 1			
Course 2			
Course 3			
Course 4			
Course 5			
Course 6			

4. Please enter the type of program(s) in which you teach. For example, Bachelor of Education (Elementary), Bachelor of Education (Secondary), etc.
5. What type of program is this?
   - Consecutive (a bachelor degree required for admission)
   - Concurrent (education courses and subject/discipline courses are taken at the same time)

   If the previous question does not describe your program, please respond here.
6. Describe your area of expertise in teaching (particular curriculum subjects, philosophy of education, and so on)?
7. How many years have you been teaching in this teacher preparation program? (Please use a number.)
8. How many years have you been/were you a teacher in the K-12 school system (if applicable)? (Please use a number.)
9. What was/is your role in the K-12 school system (classroom teacher, principal, and so on)?
10. In your view, what characterizes theory and what constitutes practice in pre-service teacher education?
11. What are your beliefs about the integration of theory and practice in teacher education? What is your rationale for your beliefs?
12. What strategies and approaches **could** an Instructor use in working with teacher candidates to facilitate the integration of theory and practice?

13. The teacher preparation program in which I teach is doing a good job of integrating theory and practice for the teacher candidates.
    - Strongly disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly agree

    For the above question, please explain why you made that choice.
14. What should be changed in this program to accommodate the integration of theory and practice?
15. For the question above, describe why you think this.
16. I am doing a good job of integrating theory and practice for the teacher candidates.
    - Strongly disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly agree
17. Please describe the ways in which *you* currently help your teacher candidates with the integration of theory and practice.
18. Please describe ways in which **you *would like*** to help your teacher candidates better integrate theory and practice and why this is currently not possible for you?
19. Please use this space to relate anything else regarding the connection of theory and practice in teacher education.

Note: Space was provided in the questionnaires to participants for written answers.