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Enablers and Constraints in Achieving Integration in a Teacher Preparation Program

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Abstract: There is broad consensus that effective teacher preparation programs should enable pre-service teachers to integrate learning experiences at university and school. However, as noted in many reviews and studies, achieving this integration remains a significant challenge. In this study we aimed to identify factors that influence developmental coherence in pre-service teachers' learning in the first eight weeks of a one-year preparation program, entailing university-based and school-based experiences. The pre-service teachers were expected to integrate learning in both contexts as preparation for their first five-week practicum. Our study aimed to identify their judgements of the value of various components of the course in preparing for this teaching experience, as well as factors affecting their sense of learning integration. We found that their responses, while mainly positive about their program in terms of practicum preparation, reflected diverse needs and expectations. We conclude by outlining various implications for further effective integration of learning across both contexts.

Expectations of a Teacher Preparation Program

When asked to reflect after their first practicum on what was useful in their one-year preparation program for teaching at secondary school level, pre-service teachers made the following comments.

There was too much talk about theories of learning and not enough information on the practical side.

The theory I found excellent and very helpful as an underpinning to teaching.

Not once during the prac was I in the classroom and thought, aha, I did this in a tutorial.

The lectures linked very well with what I experienced on prac.

These reflections indicate the diversity of pre-service teachers' responses to the first 13 weeks of their teacher preparation program at La Trobe University, Bendigo, entailing eight weeks of a university program followed by five weeks of school-based practicum. These contrasting reactions also suggest that they have diverse expectations and needs about what their course could or should provide. Their comments also raise the question of what conditions, including program design and emphases, are most likely to support students integrating their learning across school and university settings.

Teacher preparation programs are regularly reviewed and refined, in part to ensure the quality of provision, in part to address concerns about their adequacy as professional preparation (House of Representatives Standing Committee on Education and Vocational Training, 2007; Ingvarson, Elliott, Kleinhenz, & McKenzie, 2006). Concerns focus on the currency and adequacy of the curriculum, problems with program coherence, and appropriate teacher skill development (Darling-Hammond, 2010; Ingvarson, Elliott, Kleinhenz, & McKenzie, 2006; Kelly, 2006; Zeichner, 2010). Suggested solutions include stronger partnerships between universities and schools, and more integration of learning between the two sites (Darling-Hammond, 2010; Eames & Coll, 2010; Grossman, McDonald & Ronfeldt, 2008; Koc, 2011; Zeichner, 2010). These reports and research studies have tended to focus on desirable features of program design rather than on challenges arising from the diversity of pre-service teachers' expectations, needs and capacities.

In this paper we report on a study that aimed to identify factors that enable developmental coherence in pre-service teachers' learning experiences in the first eight weeks of a one-year preparation program, entailing university- and school-based learning. In the La Trobe program, the pre-service teachers were expected to integrate learning in both contexts as preparation for their first professional experience. Our study aimed to address the following questions: (1) according to the pre-service teachers, how effective were various components of the course in preparing them for their first practicum? (2) what enabled and constrained their engagement with, and integration of, curricular content of the first eight weeks of the course as preparation for the first practicum? (3) what are the implications of these findings for future program development and effective teacher preparation?

The Literature on Effective Teacher Preparation

Teaching is demanding work characterised by complexity and contestability. The question of how best to prepare aspiring teachers has two key dimensions: the first is about designing affordances for effective learning about teaching and being a teacher; and the second is about explicitly supporting pre-service teachers as they assemble their own personal knowledge of practice (Darling-Hammond, 2010).

There is current systemic pressure to produce work-ready teachers and to improve teacher education (Billett, 2009; Hammerness, 2006). Despite recent calls for a factory model of on-the-job open-entry as a means of preparing teachers, the dominant model remains a mix of university- and school-based learning (Darling-Hammond, 2010). This model has been criticised for a lack of cohesion, a perception of disconnection between school- and university-based learning, and for not providing adequate skills to help teachers deal with the diversity of contemporary students (Darling-Hammond, 2010; Korthagen & Kessels, 1999; Zeichner, 2010). As noted by Billett (2009, p. 835), both sites for learning represent an "invitation to change" for pre-service teachers, but the outcomes of this invitation depend on what they construct from these experiences. Although individuals will interpret and assemble knowledge differently, a key question for teacher educators is how to improve the quality of these learning experiences and how to engage learners in a deeper manner with that experience (Billett, 2009).

Pre-service teachers often perceive university-based learning as formal, abstract, theoretical and far removed from the tips and strategies needed for survival in the classroom (Hammerness, 2006; Korthagen, Loughran, & Russell, 2006). However, isolated workplace experiences are often insufficient to enable deeper learning (Billett, 2009). For many pre-service teachers a key influence on their learning is their mentors. Mentoring involves providing support for developing practical knowledge, including effective teaching strategies, classroom management, pedagogical knowledge, professional decision-making, orientation to the school and classroom, and feedback and formal evaluation (Koc, 2011). While mentors may have considerable practical knowledge and contextual expertise, they may have limited ideas about teacher learning (Zeichner, 2010). Knowledge about teaching is not situated within one person but distributed over, and interacting between, a number of individuals within school and university contexts. This raises the question of what constitutes the context for teacher learning. Following Zeichner (2010), we view this knowledge as situated, web-like across academic, school-based and other contexts. While the classroom remains a powerful setting for learning about teaching, it can also create limited and uncritical knowledge that needs to be examined from different perspectives (Putnam & Borko, 2000). As noted by Billett (2009), universities and schools can offer opportunities for different kinds of experiences leading to different but compatible learning opportunities.

Korthagen, et al. (2006) argue there is a potential problem with the view that theory learnt at university is simply applied in schools, on the assumption that "expertise" about teaching and learning is naturally located outside the day-to-day practicalities of teacher knowledge. This is exacerbated when university-based knowledge is focused on how students learn and how to create conditions for learning, whereas the pre-service teacher is likely to be focused on controlling student behaviour and what content to teach. Further, while pre-service teachers take on the role of students at university, they are expected to be teachers while on practicum. This may lead to perceptions of a

gap between assembling and understanding ideas about teaching and learning, and applying them in practice (Calderhead & Shorrock, 1997). A tension may become apparent when school placement and university experiences are imagined as separate, even conflicting.

There is general agreement that improving knowledge about effective practice occurs when what is learnt on practicum is integrated with university-based learning (Eames & Coll, 2010). Insights are developed from both experiences, including managing the perennial tensions and questions about conflicting opinions and incomplete or overly prescriptive curricula (Ottesen, 2007). While practicum is a key component of learning to be a teacher, trying to make sense of the experience involves mixing diverse and contradictory opinions and frameworks that emerge from prior experience, teacher educators, mentors and other teachers and peers. Integration is part of the dynamic socio-personal process of constructing individual knowledge of teaching practice that provides a basis for becoming a teacher (Billett, 2009). The process of integration is not simple or linear as pre-service teachers become responsible for their own developing practical knowledge (Putnam & Borko, 2000; Yesilbursa, 2011).

Several themes emerge from these recent accounts of teacher education, focusing on creating productive learning environments, coherence between university and professional experience placement, and moving from novice to expert teacher. Productive learning environments at either university or school entail design and implementation of deliberate actions to enhance integration of learning and work (Ellstrom, 2001). Effective learning tasks include: opportunities for individuals to translate and enact formal pedagogical knowledge; feedback and reflection focused through clear goal-setting; formalised work processes, such as lesson planning; problem-solving and innovation that are modelled and practiced; and use of learning resources including time, knowledge and expertise to explore ideas about teaching (Ellstrom, 2001). Teacher education programs need to be coherent and developmental, underpinned by a conception of teaching and learning shared among academics and school-based administrators and mentors. Pedagogical approaches taught at university need to be applied during professional experience, and then reflected on in both school and university settings (Billett, 2009). Although reflection is a fundamental component of a productive learning environment, pre-service teachers may not understand what reflection is, or how it is useful, leading to minimalist descriptive reporting (Hammerness, 2006).

Conceptual ideas about teaching practice and structures to enable useful reflection can be provided in academic settings, with the practical setting affording a diverse range of authentic experiences. The question is how to draw upon the strengths of each context. An example of productive shared learning environments for teacher education is provided by Billett (2009), who suggested that universities prepare pre-service teachers for practical settings by: developing knowledge about teaching and learning; explicating how this knowledge will be tested during practicum; active engagement in mentor-

guided teaching and learning activities during school placement; and critical follow-up perspectives on the learning experience in the university context. This also illustrates the need for coherence between university and school-based placement. Meaningful relationships need to be in place between schools, universities and pre-service teachers (Korthagen, et al., 2006).

Darling-Hammond (2010) makes clear that pre-service-teachers need to learn specific knowledge, strategies, tools and concepts that can be applied during practicum, including knowledge of and methods of teaching literacy and numeracy. She refers to this as “wisdom of practice” (Darling-Hammond, 2010), involving the timely integration of academic and school-based experiences, where concepts and strategies are learnt and applied simultaneously. To achieve this, academics and mentors need a shared understanding of each other's curriculum and expectations. Mentors have a responsibility during practicum to help pre-service teachers apply ideas and generate new learning, and to make it clear how ideas about teaching and learning are connected and related. Mentors are key instigators of the integration of university and school-based learning experiences. Mentor and pre-service teacher interactions need to build a reasoned account of what happened and what could happen. They need to focus on building practical knowledge about becoming a teacher informed by theoretical perspectives (Ottesen, 2007), which implies a role for university-based educators in the mentoring process.

One significant way to build coherence is the shared university and school role in developing teachers' "repertoire of practice - along with the knowledge to know when to use different strategies for different purposes" (Darling-Hammond, 2006, p. 304). Coherence can be enhanced through a shared discourse community involving pre-service teachers, mentors and academics (Putnam & Borko, 2000). This implies a need to prepare pre-service teachers as classroom researchers and collaborators in order to draw on separate knowledges of practice that are then adapted by individuals to their own context (Darling-Hammond, 2006). This involves making sense of contextual challenges and new experiences that emerge during practicum and drawing upon different, including theoretical, perspectives to gain insights into implications for teaching practice (Korthagen, et al., 2006). This also entails working closely with peers, rather than seeing classroom-based learning as an isolated and intensely personal experience (Korthagen, et al., 2006). Darling-Hammond (2010) provides the example of using a summative project that may include a portfolio of lessons or student work, as a means to draw the threads of separate learning experiences together.

The movement from novice to expert teacher that commences during pre-service teacher education involves “... learning to practice *in* practice, with expert guidance” (Darling-Hammond, 2010, p. 40). Elbaz (1981) coined the term teacher's “practical knowledge”, referring to the complex knowledge teachers draw upon and reconstitute in their day-to-day practice. This includes knowledge of their subject, pedagogy, contextual and personal knowledge of what works, a practical knowledge of what and how to teach, and an

interactional knowledge about working in a context with colleagues and others. “Personal practical knowledge is in the teacher’s past experience, in the teacher’s present mind and body, and in the future plans and actions” (Connelly & Clandinin, 1988, p. 25). Teacher knowledge emerges from personal experience and provides practical reasoning for action and interpreting experience (Connelly, Clandinin, & He, 1997; Verloop, Van Driel, & Meijer, 2001). In this sense, teaching is not about applying theoretical ideas that others have established, but building a local and durable knowledge and argument for action (Verloop, et al., 2001).

Sternberg and Horvath (1995) suggest that an expert teacher can be differentiated from a novice by: the amount of subject and pedagogical knowledge they use to respond to their teaching context; the efficiency with which they resolve emerging problems during their teaching; and the insight they apply to devise innovative and workable solutions to teaching issues. This view of expertise is characterized by a dynamic capacity to adapt practice to local contexts, involving constant reflective monitoring and reinvestment of learnt professional practical knowledge and skills (Matthew & Sternberg, 2009). This implies a view that expertise is developed through the relationship between an individual teacher’s practical knowledge and specific contexts, moments, challenges and reflection (Schon, 1983). This is consistent with Korthagen et al. (2006) who argued that teacher education needed to emphasise how to learn from experience and how to build professional knowledge, based on a view of teacher knowledge as dynamic. The implication for teacher education is that expertise can be construed as the dynamic building of personal practical knowledge through the integration of numerous perspectives, including teacher research, with the purpose of adapting teaching activity effectively to specific contexts (Kelly, 2006; Swabey, Castleton & Penney, 2010).

Ideally, a coherently-designed school- and university-based pre-service teacher education program should afford opportunities for the pre-service teacher to integrate multiple insights to build a personal version of practical knowledge. However, pre-service teachers enter the course from diverse backgrounds and with a range of beliefs, expectations and capacities. We were interested in how to enhance this navigation process from novice to expert pre-service teacher, where the pre-service teacher balances individual and collective perspectives and experiences.

Description of Program and Participants

Pre-service teachers in this study participated in a school-based immersion program, known as the School Immersion Program (SIP) starting in February 2010, entailing half-day visits to five schools in the first five weeks of their university program, supported by an orientation program by La Trobe staff. The pre-service teachers then participated with individual teachers in a classroom-based orientation program for two weeks, leading to their first assessed professional experience. The pre-service teachers were encouraged to share experiences with peers and to identify effective teaching and learning sequences during this orientation in schools. As part of this project, they recorded observations and reflections in their practicum folders and on Pebblepad, and participated in a one-hour reflection session with university staff at the end of the first eight weeks. This session focused explicitly on links between school practices and content in the university course, with pre-service teachers encouraged to review the effectiveness of teaching and learning processes they had observed or enacted.

The SIP focused on expectations about the pre-service teachers' responsibilities, observations of classrooms practices, and skills required of teachers. Each of the five schools emphasised particular aspects of education in the SIP, with specific experiences in each school summarised in Table 1.

School	School Type	Year Levels	Program Summary
1	Primary School	Prep-6	Welcome and principal overview of primary education, followed by student led school tours, and three rotations of classroom visits to differing year levels. Student led forum to answer questions regarding primary school and transition to secondary school.
2	Junior Secondary College (Low SES)	7-10	Introduction and overview of school culture by assistant principal followed by participation in the teacher advisor program. Student led tours of school followed by participation on classes. Concluded with a teacher student forum.
3	Junior Secondary College (High SES)	7-10	Principal Talk on School initiatives and processes for student success, coordinator talks on on-line assessment and reporting and flexible learning spaces. School tour and classroom observations by student leaders followed by a reflection.
4	Independent Secondary School	Prep.-12	Introduction and overview followed by small group visits to tutor groups followed by student led tour and observation of classes (open invitation to all classes in school). Headmaster

5	Senior Secondary College	11-12	session on governance, culture and ethos of independent schools. Welcome followed by a student led school tour. Classroom observations of senior classes in method groups followed by a workshop led by assistant principal on the senior school system. Concluded with a visit to NET-school.
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Table 1. Summary of SIP Experience at Each School

In semester 1 the university-based course consisted of two core subjects and two method subjects. One of the core subjects aimed to develop knowledge of current learning theories and pedagogical practice and factors that impact on student learning. The second core subject aimed to develop an understanding of the principles and practices of effective learning and teaching as a comprehensive preparation for the first practicum experience. This second core subject was linked with practicum and incorporated practices for pre-service teachers to become reflective practitioners. The method subjects covered the knowledge and skills required to teach effectively in each teaching method.

The diversity of pre-service teachers' disciplinary knowledge is indicated in their breadth of methods areas as shown in Table 2. The repetition of data in Table 2, between Method 1 and Method 2 combinations, enables the reader to readily see the diversity of student methods and allows simple row-sums of the total number of students in each method.

There were 19 methods available in the course used in this study, and in 2010 students had selected 37 different method combinations. For example, for those students with English method, the second method was History (seven students), Humanities (one), LOTE (one), Media Studies (two), Physics (two) and VET (one). This suggests that the pre-service teachers will already have divergent understandings of effective teacher practices across, and possibly within, different subjects.

Conceptualizing Pre-service Teacher Learning in the Program

We conceptualize this learning in terms of a mix of cognitive and sociocultural perspectives on interactions between learners, resources and contexts. From cognitive perspectives, pre-service teachers need to develop resources such as mental models, schemas, organizing strategies and frameworks to learn through interacting with peers and students in school, using material and symbolic tools (Bruner, 1966, 2004). From sociocultural perspectives, participatory experience in authentic activities with appropriate tools is critical for learning (Cole & Wertsch, 1996; Vygotsky, 1978). Both perspectives acknowledge crucial reciprocities between active learners and supportive environments, including the role of teachers and lecturers in guided activity, and the key role of focused reflection on practice. Pedagogical

practices aligned with these frameworks and used in the course included: traditional lectures and tutorials with guided instruction, micro-teaching experiences with peers, role-plays, guided focus groups by university staff, informal discussion between school staff and pre-service teachers, and individual and group reflection sessions.

Research Methods

The research entailed a case study approach incorporating survey and interview data collection (Merriam, 1998; Yin, 2008). An on-line survey questionnaire using *SurveyMonkey* was developed to collect pre-service teacher judgements on the program. The survey included 12 items on a 5-point Likert scale covering key components of the course at La Trobe and in schools. The survey also contained open-ended questions inviting pre-service teachers to identify what they found most useful about the preparation program, least useful, suggested improvements, and scope for any further comments they wished to make about their experience of the program as practicum preparation.

		Method 2																				
		Biology	Business	Chemistry	English	Geography	Health	History	Humanities	IT	LOTE	Maths	Media	OE	PE	Physics	Psychology	Science	VET	Vis Arts	TOTAL	
Method 1	Biology			4			1					1					3	4			13	
	Business			1					3										2		6	
	Chemistry	4	1									2						2			9	
	English							7	1		1		2			1			1		13	
	Geography							1						1							2	
	Health	1															1				2	
	History				7	1			3				1				1				13	
	Humanities		3		1			3			3				3		3				16	
	IT											1							2	2	5	
	LOTE				1				3				1								5	
	Maths	1		2						1							4	1	1		10	
	Media				2			1			1										4	
	OE					1			3									1	1		38	
	PE														32						32	
	Physics				1							4									5	
	Psychology	3					1	1	3			1		1							10	
	Science	4		2						2		1		1						1	11	
	VET		2		1					2											6	
	Vis Arts																				19	19

Table 2. Chart displaying the diverse method combinations of the pre-service teachers enrolled in the Graduate Diploma of Education and the Bachelor of Physical and Outdoor Education.

Seventy-three pre-service teachers out of a cohort of 117 participated in the on-line survey after the completion of the five-week professional experience. Two one-hour guided reflection sessions were conducted by University staff with pre-service teachers in tutorial groups of 25, one at the end of the eight week program, and the other at the end of the professional experience. Interviews were also conducted by a research assistant with two focus groups (five and six pre-service teachers) at the end of the professional experience, with participants chosen on the basis of volunteers covering a range of teaching methods. The research assistant did not know participants prior to the interviews. The methods of data analyses followed principles outlined for qualitative case study research, focusing on identification of patterns in pre-service teachers' responses (Denzin & Lincoln, 2008; Merriam, 1998; Yin, 2008), leading to the development of themes in the light of relevant literature on teacher education. A Kendall tau-b test was applied to paired Likert responses from the survey to test for independence of responses.

The sample consisted of 24 male and 49 female pre-service teachers who came from two separate courses, the Graduate Diploma in Education (18 male and 37 female) and the Bachelor of Physical and Outdoor Education (six male and 12 female). In this sample over one-third (35.6%) of these pre-service teachers were between 26 and 60 years of age (age group 26-30: three males, six females; 31-40: 3 males, six females; 41-50: four males, one female; >50: one male, two females). These data were treated as a single data set as they were taught as a single cohort, with the only identifiable difference in course delivery being administrative.

Findings

Findings to the first question are presented in terms of pre-service teachers' judgements of the most and least useful components of the course as practicum preparation.

Pre-service teachers' perceptions of most effective course components in terms of professional practice preparation

Responses in the survey and interviews indicated strong endorsement of the curricular content in their university-based and school-based components of the first eight weeks of the course (refer to Table 3). The pre-service teachers strongly endorsed the SIP generally, with 80.9% of pre-service teachers agreeing or strongly agreeing that this part of the course was very useful. All the other elements had strong endorsement, particularly classroom visits in the SIP, and the Method subjects, with 73.5% of pre-service teachers agreeing or strongly agreeing that these subjects were very useful for practicum preparation. The aspect of the course in the survey that received the most modest endorsement was the first reflection session on links between university and school programs, with pre-service teachers responding as follows to the question of whether they saw this component as very useful: neither agree nor disagree (41.2%), agree (33.8%) and strongly agree (11.8%). This suggests that they were less clear about the purpose of this experience and its relevance to their first practicum. Subsequent comments in the interviews indicated that they were not clear about the purposes of the reflection session, and perhaps needed a clearer framework or focus to guide this reflective work.

Questions	Male	Female	Overall	%A and SA
I found the following components of the Dip Ed or BPOE (4th yr) program very useful for my preparation for the first practicum:				
School Immersion Program generally	4.1	4.0	4.1	80.9
School Immersion presentations by teaching staff at the schools	3.5	3.3	3.4	51.5
School Immersion classroom visits	3.9	4.0	3.9	77.9
Pre-Practicum visits with my supervising teachers	3.8	4.2	3.9	67.6
Professional Practice lectures	3.7	3.8	3.8	69.1
Professional practice tutorials including microteaching lessons	3.6	3.6	3.6	63.2
LMS Code of Conduct resources	3.5	3.1	3.4	50.0
LMS resources generally	3.8	3.1	3.6	61.8
Reflection session on links between university and school programs	3.5	3.1	3.4	45.6
Understanding Learning lectures	3.7	3.6	3.7	64.7
Other University subjects	3.9	4.0	3.9	73.5
I have found strong connections between the University and school-based components of the Dip Ed / BPOE program.	3.9	3.5	3.8	67.6

Table 3. Summary of Survey Question Responses

In Table 3 the gender differences in pre-service teachers' perceptions of the effectiveness of the various components of the course are minimal in most of the twelve questions. The greatest gender difference was in the rating of the *Learning Management System (LMS) resources generally*, where the males' average Likert score was 3.8 while the females' average Likert score was 3.1. Consistent with this is the male rating of the *LMS Code of Conduct resources*, where the males' average Likert score was 3.5 while the females' average Likert score was 3.1. These differences perhaps reflect a predictable male preference for the use of LMS technology compared to the females. A slightly higher male approval rating was noted for *Reflection session on links between university and school programs* and *I have found strong connections between the university and school-based components*. These responses point again to the diversity of pre-service teacher perspectives, and the need for the rationale and methods for worthwhile reflection on practice to be made more explicit.

In response to open-ended questions on the survey, pre-service teachers reported the following features as the most useful for their first practicum experience: (1) practical advice from Methods lecturers who were seen as credible current practitioners; (2) the use of case studies to identify and apply theories to practice; (3) micro-teaching lessons for practical experience in structuring a classroom experience; (4) visits to schools prior to practicum; (5) school immersion program; (6) the practicum folder that outlines in detail expectations of the practicum; (7) anecdotal information from all staff about past teaching experiences; (8) classroom presentations that simulated real-world working environments; and (9) diversity of approaches and strategies for teaching. These themes are more closely examined in the discussion related to data outlined in Tables 4 and 5.

These findings are broadly consistent with past research on teacher education that highlights the pre-service teachers' strong concern with practical considerations such as coping with classroom demands, and developing confidence in their new identities as teachers

(Darling-Hammond, 2010; Korthagen, Loughran & Russell, 2006). The pre-service teachers repeatedly commented on the value of insights into effective day-to-day practices that enabled them to understand and rehearse professional skills for the classroom. The following comments from the open-ended survey illustrate this perspective:

Little bits of advice given about how to act, and what you should be trying to do during the placement. ... I do think it was useful to have current teachers and past teachers giving their accounts of teaching.

The case studies in Understanding Learning were useful, and helped me to apply theory to a classroom environment. Discussion with other students was really helpful.

Learning the different approaches and strategies of teaching was very useful.

They appreciated access to the proven resources of their method lecturers, and found the micro-teaching of peers valuable because it allowed for effective self-assessment and appropriate planning.

Pre-service teachers' perceptions of least effective course components in terms of practicum preparation

While they were broadly positive about the curriculum and teaching/learning methods of the first eight weeks of the course, they also raised a range of concerns about various facets of the program.

The pre-service teachers identified the following in the open-ended survey questions as the least useful features of the course: (1) lack of sufficient examples on how particular theories from lectures and methods could be practised/applied to specific topics, lessons, student activities, and different school subjects; (2) the use of the e-portfolio program PebblePad (3) lack of sufficient focus on student behaviour management strategies in lectures and methods, with some tips from university staff considered either too blatantly obvious or extremely situational, and therefore not adaptable to a broad range of contexts. One pre-service teacher claimed that "if there could have been some actual classroom re-enactments of student control techniques, this would have been useful"; and (4) SIP school representative talks to groups of pre-service teachers felt like a "sales pitch".

Some felt that they were not provided with the necessary practical skills, or had difficulty linking the theory to the practicum:

Learning how to become a teacher and actually doing it are two completely different things. I felt unprepared for rounds.

Understanding learning, while interesting and of eventual use, really had little bearing on the practicum for me. I found the experience too full-on to apply the learning effectively. Perhaps this was my mistake.

Suggested improvements to the program included more scenarios, role plays, case studies, stories, videos of actual teaching, guided reflection on outcomes, such as "holding class discussion on what we might do in these situations". Specifically, several pre-service teachers mentioned a need for more guidance with student behaviour management.

Overall, pre-service teachers considered that the content of subjects and the teaching and learning experiences of the first eight weeks of their program provided an effective preparation for the practicum. However, they also considered they needed further opportunities to gain practical experiences around pedagogical and management matters. Their responses also indicated that some of the pre-service teachers were unconvinced, at this stage in their course, about the strong practical usefulness to the practicum experience of some theoretical discussion, and the benefits of theoretical reflection on practice.

A summary of the main features/themes from the open-ended responses to the questions regarding the features found most and least useful for their first practicum experience is presented in Table 4.

It is interesting to note that in Table 4 there were polar opposite opinions about the features that were considered most and least useful. What was considered most useful by some was counterbalanced by the opposite rating for others. For example the *theory in lectures* was considered most useful by 21 pre-service teachers while 22 considered *theory in lectures* to be least useful.

Feature/Theme from the open-ended response section	Number of pre-service teachers who mentioned the feature in the open-ended response section as:	
	Most useful	Least useful
Theory in lectures	21	22
Methods lectures, assignments and lecturers	14	9
Micro-teaching	14	8
School Immersion Program	12	7
Anecdotal information from staff and University staff in general	7	2
Diversity of approaches and strategies for teaching	6	6
Case studies and the related discussion	5	3
Practicum Folder	5	1
Visits to practicum school prior to practicum	1	0
PebblePad	0	13

Table 4. Summary of common themes rated as most or least useful

Each pre-service teacher’s response to the two questions regarding their perceptions of the most useful and the least useful aspects of the program as preparation for their first practicum were examined. For each pre-service teacher, responses to these two questions were mapped using Table 5. In Table 5 the numbers in each cell indicate the number of individuals who rated the column as most useful and the row as least useful. Table 5 illustrates the individuality of each pre-service teachers perceptions of most and least useful elements of the course to prepare them for their first practicum.

Table 5. Map of individual pre-service teachers’ perceptions of most and least useful aspects of the course from the two open-ended survey questions.

		Most Useful Aspects							
		Theory	Methods	Micro-teaching	SIP	Anecdotal & staff	Diversity	Case studies	Practicum Folder
Least Useful Aspects	Theory	4	5	4	3	4	1	1	1
	Methods	2	1	2	2	2			
	Micro-teaching	2	2	1	2			2	1
	SIP	5	1	2				1	1
	Anecdotal & staff	1		1					1
	Diversity	1	1			1	1		
	Case studies	3	2	1	1				
	Practicum Folder				1				
	PebblePad		5	3	1	2	1		1

Table 5: Fine-grained insight into the depth of difference in pre-service teacher opinions

Table 5 provides a fine-grained insight into the depth of difference in pre-service teacher opinions. For example, of the pre-service teachers who considered *Theory [in lectures]* to be the most useful aspect to prepare them for practicum, there were a broad range of aspects that each individual considered least useful. By reading down the column one can see the distribution of the pre-service teachers' corresponding least useful aspects: four considered aspects of theory in lectures; two considered aspects of the Methods lectures; two considered aspects of micro-teaching; five considered aspects of the SIP and so on. These individual perceptions of the most and least useful aspects of the course in terms of preparation for their first practicum highlight the need for a diverse range of experiences to be provided to the pre-service teachers in their training.

It is interesting to note that, for example, four students identified *Theory* as both the most and least useful aspects of the course. This may indicate that certain aspects of lectures, or even individual lectures, are perceived differently. For example, a single lecture may include information about both student management and learning. While the learning information may be perceived as useful, the student management information may not be regarded as relevant or workable. The usefulness of lecture material is likely a function of a variety of contextual, student and lecturer factors. Thus, not all lectures are regarded equally, and this is possibly subject to perceptual revision as key events, including practicum, either loom or recede from the student experience.

The 12 Likert scale questions covering the key components of the course that were reported in Table 3 were tested for independence using Kendall's tau-b. Kendall's tau-b revealed that 53 of the 66 paired question comparisons revealed no statistically significant correlations at the 0.01 level (on a 2-tailed test, N=68, with a Bonferroni adjustment to avoid inflated Type 1 error rates). These results can be interpreted as a statistical confirmation of the individuality of the pre-service teachers' perceptions of the usefulness of the different components of the program for their preparation for the first practicum. These results are also a statistical indication of the diversity of perspectives in the group.

Enablers and constraints on effective integration

Following the first practicum, two focus groups were held where pre-service teachers were asked to comment on their perception of the enablers and constraints of the various course components on effective integration of university and school-based learning experiences.

Several themes were identified in focus group data: (1) the value of induction into local curricula, pedagogy and school contexts; (2) applying teaching strategies and tools during practicum; (3) expert demonstration, guidance and reflection pre, during and post practicum; and (4) making a summative connection between theory and practice. Each of these themes is examined from the dual perspective of enablers and constraints.

Studying local school contexts through the School Immersion Program and the pre-practicum visits enabled the pre-service teachers to become familiar with local schools and gain knowledge about the breadth of school contexts. However, this immersion was often perceived as superficial with minimal observation of method-specific teaching and learning.

I think we wandered a bit too much - like maybe if we had been broken up into our disciplines a little bit more so that us in the Visual Arts could go and see how a teacher manages getting the paints out, packing it up, right through the whole class... (Female1, Group 2)

Although some pre-service teachers identified the provision of learning theory overviews in the core subjects as providing a framework for thinking about the way learning occurs, an equal number wanted more specific examples of the application of theory to their own class and subject.

I had been working teaching young people and adults but without any formal training... and I was desperate for the theory and the underpinning knowledge that I didn't feel I had. (F2, G2)

...because we had to be prepared to *practically* apply all that information, I wanted to know HOW to practically do it ... what would I do for presenting my method. (F2, G1)

While method classes allowed the focus on method-specific examples, processes and resources, there was still a demand for more specific pedagogy:

Our Maths Method was really good ... what he wanted to do I think was just pump us full of ideas and strategies that we could use to teach with - more than the actual content. (M2, G2)

With OE we actually haven't had any classes outside - not one - since I've been here - and the whole subject is OE ... and so I think that is SO FAR removed from what we are expected to be facilitating to the students - it's a little bit disappointing... yeah, my bag of tricks hasn't grown since I've been at uni. (F3, G1)

This confirms that isolated workplace learning, or preparation for placement that is not specifically usable, can limit the development of practical knowledge, as pre-service teachers spend more time on trying to make sense of what they are expected to create and apply. However, the pre-service teachers appreciated the opportunity to observe and interact with a number of practitioners, and hearing stories of authentic practice:

The constructivism stuff is so inspiring and I had read about it in the literature before doing this course and I didn't know how to do it - and I felt that what we've done in the lectures - it was so great to learn about it from people who knew what it was - it's a living tradition I guess you could call it. (M3, G2)

I really like being told stories - and I reckon more real life examples of good teaching and bad teaching and interesting teaching situations ... here's what this really good teacher did in this difficult situation. (M2, G2)

The pre-service teachers were more cautious about being asked to become reflective practitioners throughout the course. They recognised that there are three parts to becoming a teacher: university, practicum, and then your own classroom. Each of these is different, and it takes time to see integration of theory and practice. While the process of constructing personal

knowledge of teaching practice is not simple, it is important that reflective practice is explicitly structured, modelled and practiced by pre-service teachers.

I can see the merits of reflection but they don't really give us a lot to go on - like go off and reflect on your daily experiences - what the hell does that mean! (M2, G2)
While we were on prac it felt like it was two different worlds - but now I can see that they did relate to each other very well now that I've got a bit of perspective on it. (F2, G2)

Discussion and Implications

The pre-service teachers' divergent, though broadly positive, responses to the components of the program indicate that they do not want or need a narrowly prescriptive course that assumes they are an homogenous group in terms of entry knowledge, disciplinary expertise, and backgrounds. Given that lecturers in the academic program seek to develop pre-service teachers' capacities to recognize and cater for learner differences in their own students, it is reasonable that the teacher preparation program should expect and cater for individual differences in the pre-service teachers, and differentiate curricular experience and opportunities accordingly. In this regard, the pre-service teachers appreciated the provision of a broad range of school-based experiences as an initial approach to learning about current secondary schooling, with the course also providing opportunities for individualized research projects later in the program.

The findings suggest that pre-service teachers' integration of learning is influenced in this case by multiple factors. These are likely to include: the diverse past learning experiences and knowledge of these pre-service teachers and subsequent effects on their needs and expectations; the clarity of the course design across both settings; the degree of shared understandings of the roles of key participants including lecturers, mentors and pre-service teachers; and the opportunities for effective rehearsal, enactment and review of teaching and learning experiences.

However, despite the diversity of their preferences, the pre-service teachers generally favored an experiential epistemology, where they saw teaching as the acquisition of skills learnt predominantly through practice and/or simulation. Their responses indicate that this expectation was only partly met by their program. This suggests that the pre-service teachers in this case have only a partial understanding of what should or could be integrated across both sites at this stage in their course, and that there is a need to develop other understandings and professional skills and capacities. Given that integration, as noted by Billett (2009), is a socio-personal construction of the meaning and value of experiences at both sites, then only the pre-service teachers can achieve this synthesis, even if other stakeholders clearly influence this process.

Lecturers and mentors can contribute to this process through the clarity and coherence of the course design and its enactment across both school and university settings. This goal of program cogency can be achieved if both sets of participants recognize shared and different learning agendas on both sites, and make these links explicit to one another and to the pre-service teachers. The pre-service teachers' responses indicated that, on balance, they saw the program as coherent, even if the importance of reflection was not immediately clear to them. Our research is based on their responses to early stages of the program, and there is scope for further development of integrated understandings. Integration is a concept 'in-play' during the course, and possible tensions between the two learning environments are not easily resolved because of points of difference around the range of goals and scope of learning at each setting.

Our study has various implications for future program design and implementation. If the necessary knowledge and capabilities for teacher preparation can only be built through extensive, focused reflective practice, then this capability needs to be taught and practiced

more explicitly. Pre-service teachers need to have the value of reflection and personal meaning-making demonstrated at both sites. Given, too, the diversity of pre-service teachers' convictions about useful preparation and worthwhile teaching and learning strategies, they need many diverse opportunities to share and articulate experiences and preferences, and to develop understanding of the constructed and often contested nature of these strategies. They need to see integration as inherently valuable and as an explicit goal for their curriculum. So, too, should their lecturers and mentors.

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