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Workplace-Based Practicum: Enabling Expansive Practices

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Abstract: Effective pre-service teacher education integrates theoretical and practical knowledge. One means of integration is practicum in a school workplace. In a time of variable approaches to, and models of, practicum, we outline an innovative model of school immersion as part of a teacher preparation program. We apply Fuller and Unwin's (2004) expansive and restrictive conceptual framework of workplace learning to a case study of an immersive practicum experience to discuss themes of participation, personal development and institutional arrangements in relation to school-based practicum. Enablers and constraints are identified for our immersion model of workplace-based practicum. Based on the data analysis a number of implications for structuring an expansive practicum learning experience are outlined.

Practicum as Workplace-Based Learning

Practicum, based on our memories of three decades ago, was a simple matter of duplicating our supervising teachers' efforts and listening respectfully to proffered advice. Now it is accepted that effective pre-service teacher learning incorporates the integration of knowledge from both university and workplace experiences (Darling-Hammond, 2012). As teacher educators we know that achieving this integration is not always straight forward, as it requires a coherent and shared conception of teaching and learning by academics and school based teacher-mentors (Deed, Cox, & Prain, 2011; Hammerness, 2006). In addition, the pre-service teacher, tasked with developing practical knowledge about teaching and learning, must balance diverse and contradictory opinions, approaches and frameworks emerging from prior experience, teacher educators, mentors, other teachers and peers (Deed et al., 2011; Griffiths & Guile, 2004).

There is a concerted international effort to improve the quality of pre-service teacher preparation programs. In Australia, a Victorian Parliamentary Enquiry into the Suitability of Pre-service Teacher Education Courses reinforced the need for pre-service teachers to be immersed in schools and other learning environments throughout the course of their studies (Education and Training Committee, 2005). Recently, a discussion paper in Victoria identified that universities should focus more on heightening the practical dimensions of teaching among pre-service teachers through improving the integration of practical experience into the structure and substance of teacher education courses (Department of Education and Early Childhood Development, 2010). Darling-Hammond (2006) identified that well integrated and coherent programs have a strong relationship between course and practicum that reflects and reinforces key ideas that build toward a deeper understanding of relationships between teaching and learning. This is illustrative of international trends towards more intensive school placements for pre-service teachers based on stronger

university – school partnerships (Paine & Zeichner, 2012). Further evidence from the United States (Cochran-Smith & Zeichner, 2009; Darling-Hammond, 2010) and the United Kingdom (Furlong, 2005; Training and Development Agency for Schools, 2008) reinforce the shift toward more formalised arrangements between universities and schools supporting the immersion of pre-service teachers in school workplaces.

However, perhaps reflecting the difficulty of real-world implementation of theoretical models, there remains a perceived disconnection between what happens in the real workplace and what is taught in university courses (Billett, 2009; Hammerness, 2006; Korthagen & Kessels, 1999). Nevertheless, practicum provides the primary opportunity for pre-service teachers to learn about, and in, the workplace, including testing ideas about their emerging teacher identity. Succesful learning occurs when the pre-service teacher has the opportunity to apply their knowledge or skill in a work context. Darling-Hammond (2006) and others suggest that effective pre-service teacher education programs create strong links between school-based experience and formal coursework using a pedagogical framework that emphasises integration of the two contexts.

Billett (2009) explains the integration of knowledge from university and school-based contexts as a dynamic socio- personal process of constructing personal knowledge of teaching practice that provides the basis for becoming a teacher. Guile and Griffiths (2001) suggest that workplaces need to give consideration to how they frame and support learner's interaction with expert practitioners. In addition, workplaces need to be aware that students need to learn in ways different to those employed in a university setting (Griffiths & Guile, 2004). Furthermore, learners may tend to engage in practices in the workplace that serve their own needs, engaging for instance in ways that either ensure survival, enhance their own career opportunities or create a pragmatic path of least resistance. These are examples of how learning in workplaces cannot always be formally determined or executed and that strategic means of getting through an experience successfully may not always be equatable to the purposes of either university or school. While the workplace provides a variety of opportunities, activities, and interactions for the learner to engage with, it is the individual's abilities to interact with available workplace activities and interactions that makes the difference (Billett, 2004).

Our purpose here is to apply a framework of expansive and restrictive workplace learning to identify the enablers and inhibitors of pre-service teacher preparation with a focus on the integration of university and school-based learning. A number of implications are outlined as a means of structuring the practicum learning experience. We hope to raise issues and questions that contribute to current dialogue among teacher educators about effective pathways and models for contemporary pre-service teacher preparation.

Expansive Workplace Learning Practices

Pre-service teacher learning outcomes are shaped through the interaction, enactment and regulation of social practices in the workplace. Workplace interactions between pre-service teachers and their peers, mentors, and university staff members, as well as teaching and learning tools and artefacts, contribute to the learners' capacity to perform and learning arising from that performance. Darling-Hammond (2010) makes it clear that pre-service teachers need to learn specific knowledge, strategies, tools and concepts that she refers to as a "wisdom of practice". While there are differences in activity and knowledge type between university and school-based learning, there is also a "sameness and continuity in the sense that within discontinuity two or more sites are relevant to one another in a particular way"

(Akkerman & Bakker, 2011, p. 133). A concern with pedagogy, for example, is one similarity between university and school, yet characterised by differential contextual application.

It is something of a broad brush to identify university and school experience as the only two sites for learning about becoming a teacher. Individual pre-service teachers are also likely to draw upon formal and informal sources and contextual experiences including personal experiences of schooling and employment, the perspectives of peers in the teacher preparation course, research via professional literature and websites, membership of special interest groups, and interactions with other significant persons encountered during their life. This demonstrates the inherent complexity of learning about being a teacher, including developing expertise in application of formal pedagogical knowledge; and provides a rationale for our attempt to identify mechanisms that provide support for the integration of formal and workplace learning.

Here we are concerned with learning interactions that occur to enable pre-service teachers to negotiate and make meaning from their practicum experience in order to build professional knowledge (Korthagen, Loughran, & Russell, 2006). Billett (2004) argues for a focus on both situational affordances for workplace learning, and the individual's abiity to determine how they participate and what they learn from their experience. Balancing opportunities to temporarily engage in teachers work while simultaneously being a learner and seeking and applying expert guidance provided are key processes when framing learning through the experience of work (Billett, 2004).

Learning about being a teacher during practicum is a multi-faceted process of individual negotiation within a complex and contested working environment. The pre-service teacher's own involvement in the learning process implies a need to build and afford a critically reflective capacity within both school and university learning culture (Niemi, 2002). Fuller and Unwin's (2003a, 2003b, 2004) concept of the expansive and restrictive continuum of learning provides a way of understanding links between the quality of pre-service teacher learning and the school context as a workplace, where certain conventions and practices are perpetuated to ensure the continuity of traditional cultural practices. Although the notion of expansive and restrictive participation in workplace activities was originally developed as a conceptual framework to examine apprenticeships in the UK, we propose it as a useful framework for conceptualising the potential of the school workplace as a learning environment.

Fuller and Unwin (2004) argued that organisations who offer diverse forms of participation are more likely to foster a greater depth of learning. They argue that the disparity in opportunities to learn have implications for an individual's workplace learning, suggesting that an expansive approach is likely to contribute to learning by affording opportunities to reflect on practice; improving capacity to imagine and experience long-term careers; and the opportunities to develop and extend workplace identities through participation in varied communities of practice (Fuller & Unwin, 2003b). Fuller and Unwin (2004, p. 126) identify three types of learning opportunities that underpin an expansive learning environment: (1) opportunities for engaging in multiple and overlapping communities of practice at and beyond the workplace; (2) access to a multidimensional approach to the acquisition of expertise through the organisation of work and job design; and (3) the opportunity to pursue knowledge based courses and qualifications relating to work.

The expansive lens provides a means of analyzing how students are translating the multiple meanings and perspectives encountered in numerous formal and informal contexts (Fortuin & Bush, 2010; Garraway, 2010). The opportunities for pre-service teachers to develop and practice expertise is likely to be enhanced when they are afforded horizontal, cross university and school-based boundary activity, professional dialogue and enquiry and problem solving experience. For example, research by Tsui and Law (2007) makes clear that

effective learning is likely when teachers and teacher educators engage in learning through using problem-solving processes that cross through domain and contextual boundaries. This is coherent with Engeström and Sannino's (2010) argument that it is essential for educators to engage in collective knowledge generation by expanding and penetrating existing boundaries. Teacher preparation models need to go beyond simple notions of transferring domain knowledge and consider more holistically the complexity and uncertainty of developing and applying expertise in contemporary teaching and learning environments (Eraut, 2004). Expansive learning environments allow for crossing university and school boundaries, providing pre-service teachers with workplace experience opportunities beyond traditional restrictive models that may be characterized by perceptions of limited opportunity for criticism, experimentation and reflection. An example of expansive learning could be cross-domain collaborative projects between pre-service teachers, teachers and teacher educators (Gorodetsky & Barak, 2008). Our argument is that the learning potential of practicum is a function of shared practices that can be characterized as expansively oriented (Ellstrom, 2001).

Case Study Context

A case study (Yin, 2009) of pre-service teachers is used to illustrate the themes from the expansive and restrictive workplace learning framework. The group of twenty pre-service teachers that make up this case study were involved in an immersive practicum experience, involving practicum placement for two days a week, trialed by La Trobe University's Graduate Diploma of Education (Secondary), Bendigo program in 2011. This was called the 'P2' program, referring to the two-day a week model of practicum. The P2, or immersive, model was funded by the Victorian Department of Education and Early Childhood Development's (DEECD) School Centres for Teaching Excellence (SCTE) project. The key practicum objective relevant to this paper was the integration of the pre-service teacher practicum experience with the university courses by more closely linking theory and practice.

Based on the three types of learning opportunities that underpin an expansive learning environment as identified by Fuller and Unwin (2004), the purpose of this case study was to identify how the immersive practicum experience afforded opportunities for engaging in varied communities of practice at and beyond the school placement; working in multi-disciplinary teams including university and school-based experts; and increasing knowledge and skills related to the work of teachers.

School	Number of Pre-service teachers	Teaching method combinations of team members	Number of Pre-service teachers surveyed
A	4	Mathematics-Science, Chemistry-Biology, Business Studies-Humanities, Psychology-IT	4
B	6	Outdoor Education-History, English-Humanities, Psychology-Humanities, Visual Arts, Biology-Chemistry, Mathematics-IT	6
C	7	Psychology-History, Mathematics-Physics, Science-Geography, Business Studies-IT, Biology-Science, History-Humanities, English-Media	5
D	5	Mathematics-Physics, LOTE(Indonesian)-Humanities, Biology-Science, English-History, Visual Arts	4

Table 1: Number of Pre-Service Teachers at Each of the Four P2 Schools

Four Years 7-10 government secondary schools were involved in the SCTE in 2011. The number of pre-service teachers at each of the four schools, their gender, and their teaching method mix, are shown in Table 1. The pre-service teachers ranged in age from 22 to 60, with the majority of them in their 20s. These government Years 7-10 secondary schools provided a contemporary and innovative workplace context for the immersive practicum project. Each school has been recently rebuilt on an open-plan, flexible learning spaces design. A typical school of 600 students has four large community or neighbourhood buildings, each home to approximately150 students. While a variety of learning space configurations are possible, students generally worked in neighbourhoods of up to 100 students. Pre-service teachers were placed into these school neighbourhood settings in cross-disciplinary groups of 4-7 pre-service teachers with at least 4-5 mentor teachers. This model contrasts with the traditional use of a block-mode practicum where one pre-service teacher works with one-two mentor teachers in a traditional classroom of 20-25 students over a number of weeks. The majority of university based classes were held on Monday and Tuesday, and the practicum component operated on Thursday and Friday.

As with all practicum placements, there was an emphasis on building practical knowledge about teaching and learning, working with teaching mentors in a school-based setting and linking teaching and learning theory with pedagogical models. While not explicitly trying to emulate an expansive learning model, a number of elements were incorporated into the design to enhance the integration of university and school-based learning. These included a heightened awareness at both university and school level of local priorities and issues; deployment of multi-disciplinary teams into learning neighbourhoods; a teacher inquiry project involving pre-service teachers, teacher mentors and university resources; and support to use the ICT networks and systems used by schools. In order to support pre-service teachers to work in a team-based teaching and learning context, mentors and university staff had to prepare and adapt planning and communication and to review strategies to support immersion into team-based teaching environments. Further, to prepare pre-service teachers for work in flexible open and virtual learning spaces, consideration had to be given to formal learning about pedagogical approaches to teaching and learning, personal learning approaches, including personalised learning approaches, one to one learning through technology, curriculum differentiation, teaching and learning in flexible learning spaces, and interdisciplinary teaching and team approaches to teaching.

The P2 pre-service teachers were involved in a half-day data collection workshop at the end of the practicum. Focus group interviews were conducted to collect data on the practicum experience. The research adopted a case study approach incorporating focus group data collection (Yin, 2009). 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; Yin, 2009). Based on Fuller and Unwin's (2004) model, three inter-related analytical themes were devised to support our framing of schools as sites of expansive workplace learning. These themes were (1) opportunities for engaging in varied communities of practice at and beyond the school placement; (2) accessing multi-disciplinary teams and university and school-based experts through the pre-service teacher practicum experience; and (3) opportunities to increase knowledge and skills related to the work of teachers. The pre-service teachers were asked to identify the enablers and constraints for each of these three analytic themes. In the findings these three analytic themes are reported under their own sub-headings. It is interesting to note that the themes from the enablers and constraints responses to each analytic theme could be thematised similarly. As a consequence an ordered hierarchy could be generated for each analytic theme, from most enabling to most constraining theme, by quantifying the difference between the number of enabler and constraint responses for each theme (these are shown in the Theme column of each table as

(<number of enabler responses>+, <number of constraint responses>-). We acknowledge the limitations of this ordered hierarchy, however, this process allowed a broad quantification of the enabling/constraining nature of each theme.

Findings

Despite their inter-related nature, the findings from the three analytic themes' are presented separately. Where overlap occurred the thematic responses have been placed in the most appropriate section.

Opportunities for Engaging in Varied Communities of Practice at and Beyond the School Placement

Pre-service teacher responses to the enablers and constraints to the first analytic theme were analysed and thematised. The results of this process are shown in Table 2. The themes are sorted based on the number of enabler and constraint responses, consequently the theme in the first row of Table 2 is the most frequently reported enabler down to the last theme in the table which is the most frequently reported constraint. Table 2 indicates that a community of practice emerged during work related meetings and informal interactions, including extra-curricular activities, within the placement neighbourhood. Conversations and interaction tended to be with mentors and other staff members within the discrete neighbourhood. The likely intention of a meaningful and complex learning conversation was somewhat mediated by the lack of time available, and a perception of a lack of mentor availability or engagement at two schools. This provides a challenge to an assumption that a 'neighbourhood' model of placement will offer a degree of supportive and collegial interactions, afforded by co-locating a team of mentors and pre-service teachers.

Theme	Enablers	Constraints
Meetings (32+, 11-)	Subject meetings (17 responses) Staff meetings (9) Mentor meetings (3) Professional Development (2) Multi-disciplinary meetings re students (1)	Teachers not sharing ideas with other teachers (1) Lack of mentor commitment/ engagement (6) Lack of communication re meetings/times (2) Mentors not sharing ideas or participating in team (2*)
Neighbourhood segregation (29+, 14-)	Grouped offices leading to impromptu meetings and conversations with staff (10) Own P2 group leading to impromptu discussions (8) Lunchtime/morning tea conversations (8) Own room (3*)	Staff segregated into buildings that they do not leave (7) Isolated/segregated into one community (7)
Extra-curricular activities (13+, 0-)	Get to know other teachers and students through: other on-site school activities (7), sports days (5) and excursions (1)	
Observation (3+, 2-)	Observation/welcome to view a range of methods (3)	Limited observation of other subjects (1) Observing only and not teaching lessons (1)
Two-day practicum (2+, 28-)	Length of time for building relationships (1) Longer-term involvement (1)	Discontinuity/limited to 2 days (13) Not many meetings/activities run on Thurs/Fri (8) Not enough time at school (4*) and many interruptions (1) – leading to excessive Mon-Wed expectations (1), family/work issues (3*), and little follow-up (1)

* Multiple responses came from only one of the four schools

Table 2: Thematised Responses to the Analytic Theme 'Opportunities for Engaging in Varied Communities of Practice at and Beyond the School Placement'

Constraining practices identified by pre-service teachers related to the part-time and bounded nature of the placement. For example, being located in only one neighborhood meant being segregated from the rest of the school. Communities of practice can only exist if members have the capacity to engage on a professional level within that community. Some students perceived a power differential between teachers and pre-service teachers, meaning a reduction in capacity to participate in communities of practice. Students also perceived that school organization was sometimes complex or chaotic, exacerbated by a sense that there was a lack of planning or review time with mentors. Poor communication between school staff members and pre-service teachers was another constraining practice. Pre-service teachers also perceived some neighborhood teams as disorganized and dysfunctional. Students also identified the difficulties of meeting other teachers or taking part in activities beyond their neighbourhoods.

> Being in different neighbourhoods it is difficult to get together and meet/interact [with] other teachers outside the neighbourhood (Respondent from School D).

> Have not had a lot of opportunities to engage in activities beyond classroom as nothing runs on the days I'm there (Respondent from School B).

Inevitably, practicum means workload and stress issues related to the complex and dynamic nature of teaching and learning. Perhaps as a result of this, the placement of the students in multi-disciplinary teams in each of the school neighbourhoods, for the most part, fostered a strong 'esprit de corp.' Students tended to meet and plan together, and share their

successes and failures. When students were able to share the same preparation space in the community this was particularly evident. A number of pre-service teachers commented on the value of the open plan office space that allowed quick and easy access to mentors and each other. Where mentors were open and receptive this worked very well allowing for clear communication, timely feedback and collegial support.

Despite the difficulties, access to mentors and other experienced workers in the open-plan office environment was considered to be highly advantageous, facilitating increased access and communication between pre-service teachers and teaching staff. Pre-service teachers involved themselves in, and could listen to, professional staffroom discussions that contributed to their professional learning in the workplace. Attendance at subject domain planning meetings was also highly valued; many of the pre-service teachers in the early days of the practicum and prior to entering the schools identified themselves as Method teachers (Maths, Science, English, etc.). The Domain meetings provided the opportunity for them to meet with other like "subject specialists' that validated their teacher identities.

Accessing Multi-Disciplinary Teams and University and School-Based Experts Through the Practicum Experience

Pre-service teacher responses to the enablers and constraints to the second analytic theme were analysed and thematised. The results of this process are shown in Table 3. The themes are sorted in the same way as described in the first section of the findings. There was general recognition that 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). This can be seen in the access to support staff, the P2 team, university staff, and teachers access themes in Table 3, all being listed as enablers. The constraining practices again were related to the part-time practicum and a lack of organisation and communication. There is a need for a wide range of diverse perspectives to inform the development of pre-service teacher thinking about teaching and learning.

One means to formally achieve social learning within a distributed expertise environment was the teacher as researcher project. This was an iterative and expansive process that included working in a community of practice, observation, information gathering, analysis, exploration, questioning, reflection and application of ideas. Pre-service teachers had to identify a local problem, usually related to neighbourhood or school priorities. Then pre-service teachers worked as a multi-disciplinary team to access, review and generate a range of ideas to inform a practical response to the issue.

The blend of practitioner and researcher perspectives encouraged the seeking, sieving and translation of different knowledge sets; contributing to thinking and practice change (Cochran-Smith & Lytle, 1999). Collaborative inquiry involving teacher peers, learning coaches, and other colleagues, including university researchers, was intended to introduce wider perspectives to the process of making sense of the classroom experience while retaining a focus on the original texture of the investigation (Fielding, 2004; Richardson, 1994).

Theme	Enablers	Constraints
Access to support staff (19+, 3-)	ICT training (13 responses) ICT support (4*) Lab Technician (1) Teacher Aides (1)	Could have been longer (1) Ultranet achieves little (2*)
P2 Team (6+, 0-)	Range of expertise in P2 team (6)	
University staff (6+, 0-)	Method lecturers (6)	
University Assignment (5+, 0-)	Teacher as Researcher (5) Accessing learning coaches (2*)	
Via meetings (8+, 4-)	Professional development sessions (5) Lunchtime meetings/informal get-togethers (2) Specialist subject meetings (1)	No school-based professional development (4*)
Access to teachers (11+, 8-)	Set planning time with mentors (8) Learning teams in neighbourhoods (3*)	Unclear directions or lack of time/attention, from mentors (6) – did not want to appear pushy or nagging (2*) Only accesses own methods (2)
Segregation (7+, 6-)	Shared staffrooms/observing teaching and discussion in offices with other teachers (7)	Limited to one community (5) Teachers did not use main staffroom (1)
2 day practicum (0+, 8-)		Difficult to access as lots does not occur on Thurs/Fri (4) Time – no time due to meetings/planning (3*) 2 day timetable limits PD (1)
Communication/ Organization (2+,11-)	Good email/ & tweeting communication (2)	Lack of organization/communication (10) Disorganised teacher teams (1)

* Multiple responses came from only one of the four schools

Table 3: Thematised Responses to the Analytic Theme 'Accessing Multi-Disciplinary Teams and University and School-Based Experts Through the Pre-Service Teacher Practicum Experience'

The participants deemed the teacher as researcher task to be a highly valuable process. The task achieved most of the stated aims of providing a means of responding to dynamic needs of teaching in new school contexts; assisting pre-service teachers develop a better sense of the breadth and depth of teaching and learning; drawing upon a range of perspectives as part of a collaborative school-based investigation; collectively constructing practical knowledge about teaching and learning and providing a critical lens for reflecting on teaching and learning.

Opportunities to Increase Knowledge and Skills Related to the Work of Teachers

Pre-service teacher responses to the enablers and constraints to the third analytic theme were analysed and thematised. The results of this process are shown in Table 4. The themes are sorted in the same way as described in the first section of the findings.

Overall, the students perceived a number of expansive practices that influenced the development of knowledge and skills. While pre-service teachers reported a wide variety of opportunities for engaging in varied communities of practice at and beyond the school, the greatest level of connection identified was access to the multi –disciplinary pre-service teachers' groupings. Multiple conversations formed a reflective commentary on teaching and learning, including those within a multi-disciplinary team, between pre-service teachers and

mentors or university staff, and between pre-service teachers and other school staff members. Being involved in school-based professional development, and completing the teacher as researcher assignment were other expansive mechanisms.

Theme	Enablers	Constraints
P2 Team (14+, 0-)	Collaboration with P2 peers/seeing other pre-service teacher approaches (14)	
Mentors/ teachers (18+, 8-)	Collaboration with mentor (12) Conversations with other teachers (6)	Need more mentor feedback/contact (4) Rigid mentor (2*) Teacher/CRTs unhelpful (2)
Equipment/ resources (14+, 4-)	Netbook (1), Learning Button (3*), Ultranet (1) Access to common resources, mentor resources (9)	Lack of unit /curriculum plans (2*) Ultranet issues (2)
Via meetings (8+, 0-)	Staff meetings (1), PDs (1) Student led conferences (4*) Attending planning sessions (1) Informal staff get-togethers (1)	
University staff/classes (6+, 1-)	Lesson Planning in method classes (4) Method lecturers (2*)	Lectures straight from textbooks (1)
Assignments (3+, 0-)	Teacher as researcher assignment (2*) Reflections (1)	
2 day practicum (4+, 2-)	3 days for preparation each week (3) More time to observe by coming in on another day (1)	Need to see full week (2)
Extra-curricular (3+, 1-)	Choir practice (3*)	Too many interruptions to teaching time (1)
Segregation (4+, 4-)	Going to other buildings to see 7-10 levels (2*) Talking to other mentors (office set-up) (2*)	Hard to see other communities/year levels (4)
Observations (8+, 9-)	Observations of other classes (8)	Hard to arrange observations of other communities (4) Not enough observation outside own method (4*) Timetable limits observation opportunities (1)
Organization (0+, 3-)		No induction (2) University timetable (1)

* Multiple responses came from only one of the four schools

Table 4: Thematised Responses to the Analytic Theme 'Opportunities to Increase Knowledge and Skills Related to the Work of Teachers'

Pre-service teachers require a range of knowledge and skills to work in school settings and especially for the planning and delivery of lessons. As can be seen in the following comments from pre-service teachers, teaching and learning on an initial practicum requires an understanding of classroom management, lesson planning, working in a modern school, working in a range of learning spaces, relationships and communication, engagement and motivation, working as a team, reflection on classroom experience, and coping with the demands of teaching. Others may be added to this list, but this is a general reference to the complex set of knowledge that must be accessed, translated and applied by pre-service teachers.

> Learning a number of different skills, planning, communication, verbal/non-verbal assessment, behaviour management, social skills development, effective teaching as

> well as knowledge in method areas, specific to year level teaching, working as part of a team (Respondent from School A).
>
> Where to get really good ideas and information, what students respond to… classroom management, confidence, talking to other people, time management, being proactive (Respondent from School D).

Although the complexity of the knowledge required to move from novice to expert teacher is acknowledged and readily identified, there is less agreement about the means of learning that knowledge. This is evident in the variance in the role of the mentor. Despite the emphasis on team-based placement and expansive practice, some respondents perceived that mentors exercised strict control over their activity.

Discussion

Drawing on the findings and our shared experience as mentors and teacher educators over the past two decades, we note that it is difficult to precisely bound and direct every practicum experience given the diversity of both pre-service teachers' abilities and school context affordances. Pre-service teacher learning experiences are inevitably both formal and informal, involving a mix of (un)planned and (un)structured moments. It is important to acknowledge that the primary focus of pre-service teachers immediately prior to and then during their first practicum may not strictly concern pedagogy (although this is the focus of much university and school attention), but emphasise coping with the anxiety and stress of being placed into a complex, dynamic and combative workplace environment. In addition, there is a need for pre-service teachers to control and manage student behaviour, employ communication skills using a range of media, manage peer and mentor relationships, resolve constant low-level conflict, develop collegial networks, and apply contextualy refined knowledge about adolescent learning and development. In short, responding and trying to exercise control over the unexpected and surprising tapestry of human nature within a confined and contested workplace. Then, after the initial shock of realising they are in fact part of the fabric of a contemporary school, pre-service teachers must develop their knowledge of curriculum, assessment and multiple teaching approaches to devise and apply learning strategies for individual students.

Although pre-service teachers come from diverse backgrounds and have variable experiences during their training, they are largely guided from novice to beginning teacher by "learning to practice in practice, with expert guidance" (Darling Hammond, 2010, p. 40). There is no clearly articulated structure for this learning, as it remains largely based on the tacit conventions of artisan apprenticeship. This traditional model of being told of tricks and tips while taking uncritical control of someone else's classroom appears to be restrictive. An expansive or distributed model assumes expertise is formally distributed across, although not limited to, university and school-based settings. This particularly includes the influence of peers, even those from other discipline areas.

Expertise is not only the sourcing and application of prescriptive knowledge, but the "constant and iterative engagement in constructing and reconstructing professional knowledge using various perspectives…" (Kelly, 2006, p. 509). This conceptualising of expertise focuses on developing the skills of critical and adaptive practice (Sternberg & Horvath, 1995). University staff members and school-based teacher mentors have a responsibility during practicum to help pre-service teachers apply ideas and generate new learning, and to make it clear how abstract teaching and learning concepts are connected and related to day-to-day practice. University and school-based expertise is therefore

conceptualised in terms of an active relationship with context specific practical knowledge (Schon, 1983). This characterisation of expertise as reflective and adaptive is coherent with an expansive model of workplace learning that is learner-centred (Darling-Hammond, 2012).

A number of implications are recommended as a means of structuring an expansive practicum experience. In order to provide opportunites for engagement in varied communities of practice at and beyond the school placement pre-service teachers should access and participate in a variety of staff meetings and team curriculum planning opportunities. Sufficient time and opportunities must be allocated for pre-service teachers to meet, plan and review with mentors. The findings strongly indicated that the two-day a week placement was restrictive rather than expansive, although some positive aspects were associated with the longer time-period within schools. This discontinuity was the greatest challenge identified by pre-service teachers. Being in the work place for only two days per week created issues with communication and impacted on pre-service teachers' planning and their ability to access mentors and meetings. The structure of practicum placement should allow some flexibility in terms of time. For example, a four day a week practicum over six weeks may be preferable to a five day a week practicum over five weeks.

In order to facilitate pre-service teacher access to team based social learning, drawing on both university and school-based experts during the practicum experience we suggest the use of multi-disciplinary teams of pre-service teachers, placed where possible in school neighbourhoods. The placement of pre-service teachers in multi-disciplinary team provided the opportunity to engage in professional development activities and meetings, enabling learning about the work of teachers across the school context. Access to support staff, particularly ICT, enabled the sharing of resources, and allowed for rich discussion and the ability for pre-service teachers to collaborate and observe different styles and approaches. These 'teams' are loosely defined, as they may only sit near each other and not teach together. The important aspect is the sharing and testing of ideas about emerging teaching practice. The teams of pre-service teachers should also be able to access teachers and other school support staff when needed to help them develop a view of teaching from multiple perspectives. As part of this approach, opportunities for ongoing dialogue with university lecturers should be a part of the structure of practicum, not limited to pre- and post-involvement.

To provide opportunities to increase pre-service teachers' knowledge and skills related to the work of teachers, universities and schools should identify a means of effective day-to-day conversational communication between pre-service teachers, mentors and university lecturers. One effective method identified in the data anaysis was the use of the teacher as researcher task. This task required discussion between university lecturers, mentors and pre-service teachers, with a focus on constructing practical knowledge of teaching and learning through critical reflection on practice. Various researchers have identified that pre-service teachers should develop expertise in methods of inquiry into local problems related to teaching and learning, thus preparing teachers who have the ability to draw on their knowledge of domain-based practice that can then be adapted to their own context (Cochran-Smith & Lytle, 1999; Darling-Hammond, 2010; Deed et al., 2011). To provide coherence, those providing expert guidance, either university academics or school-based mentors, need a shared understanding of each other's methods and expectations, and artefacts, objects or tools that relate to common processes including critical reflection and school-based inquiry (Akkerman & Bakker, 2011; Deed et al., 2011).

Utilizing the expansive framework to identify the enablers and constraints for the integration of university and school-based learning the study highlights a number of challenges and successes, which require further research. The success of a team-based

approach is a powerful and positive theme, how it works and the exploration of how to make it work more effectively requires further investigation.

The use of the Fuller & Unwin's (2004) framework has enabled us to characterise the learning experienced by pre-service teachers in what is a rapidly changing educational landscape. The analysis of the experience using this approach provides the opportunity to identify factors that improve the quality of a learning environment for members of the workforce community. The creation of opportunities for participants to acquire expertise is enhanced when participants are allowed substantial horizontal, cross boundary activity, dialogue and problem solving. This assertion is strongly supported by Engeström and Sannino (2010) who states that it is essential for educators to engage in collective knowledge generation by expanding and penetrating existing boundaries. Expansive learning environments allow for the crossing of community boundaries, providing pre-service teachers with workplace experience opportunities that support their professional development. This is in contrast to traditional restrictive models that are hierarchical, conservative and where participants have limited opportunity for criticism, experimentation and reflection. Research by Tsui & Law (2007) into expansive learning affirms that it is essential for teachers and teacher educators to engage in expansive learning through tackling ill-defined problems in boundary zones.

Concluding Comment

As we are very aware, based on our own experience many years ago on practicum, the quality of the pre-service teachers' experiences in the workplace shapes the richness of the learning outcomes. Learning is not reserved for particular settings and exchanges; it emerges from formal and informal moments, and intentional and unintentional exchanges. When a pre-service teacher engages in workplace activity they are doing far more than just undertaking a task. Knowledge creation and application in the workplace is predominately a social construction, engaging in workplace practices connects the pre-service teachers' thinking and acting to social sources. Learning associated with these processes arise through thinking and working in an everyday context reinforcing and refining what is already known.

We acknowledge the complexity of orienting workplace learning towards an expansive model of boundary crossing, interrogation of practice, and building justifiable knowledge and strategies that can be applied across diverse contexts. Participation in a workplace has the potential to incite real change in pre-service teachers' understandings and capacities.

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