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## The Effectiveness of Protocols When Pre-Service Teachers Engage in Online Collaborations: An Exploration.

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**Abstract:** Graduate teachers in Australia are expected to engage with their peers to expand their professional learning. Learning to use protocols – or structured professional conversations – provides pre-service teachers with opportunities to achieve this expectation. In this paper we explain how pre-service teachers during an extended practicum used protocols to participate in synchronous online discussions using the Blackboard Collaborate learning platform. The pre-service teachers were surveyed about aspects of the protocols and the platform on which the interactions occurred. Protocols appear to be well-suited to assisting synchronous discussions using Web 2 technologies as they ensure everyone has equal time to discuss, present and receive feedback about their work in respectful and efficient ways. This preliminary research provides opportunities for further investigation of pedagogical approaches to use with pre-service teachers when they are required to utilise online platforms when they are away from the university for extended periods of time.

### Introduction

The succession of inquiries in Australia related to teacher education such as *Top of the class: Report on the inquiry into teacher education* (Parliament of the Commonwealth of Australia, 2007, p. vii), and more recent announcements by federal government ministers (Garrett & Bowen, 2013), emphasise the importance of high quality teaching in schools, and provide a range of ongoing challenges for pre-service teacher educators in the preparation of teachers. In the Australian State of Victoria, a Parliamentary Committee investigated ways in which teachers engaged in professional learning and found that teachers learning from each other in school settings was the most common way in which this occurred. The Committee considered that this was most effective when teacher learning occurred collaboratively rather than individually (Parliament of Victoria Education & Training Committee, PVETC, 2009). This finding aligns with an expectation of the Australian Institute for Teaching and Schools Leadership (AITSL), that graduate teachers are able to engage professionally with their peers in order to “analyse, evaluate and expand their professional learning both collegially and individually” (AITSL, 2011, p. 4).

A strategy promoted by the Victorian Department of Education and Training (DE&T, now known as the Department of Education & Early Childhood Development, DEECD), advanced the use of “professional conversations” as one of several effective professional learning models that contribute to the development of the school as a learning community (DE&T, 2005). The Parliament of Victoria Education and Training Committee (2009) also nominated professional conversations as a way in which school-based professional learning could be better conducted (PVETC, 2009, p. 70).

In a pilot study into pre-service workforce education conducted for the Victorian Department of Education and Early Childhood Education (DEECD) in 2011, teacher-mentors found collaboration between themselves and pre-service teachers to be a highly valued aspect of a practicum experience. According to Professor Vaughan Prain, La Trobe University's manager of the study, both teacher-mentors and university staff in the study had concerns about aspects of conducting these collaborations online. They expressed a need for greater efficiency of the instructional platforms, as well as a need for clear protocols when interacting on them. Prain concluded that "the strategy [for online support of pre-service teachers on teaching practicums] remains aspirational rather than fully realised" (personal communication, September 27, 2011).

In this paper we explore the effectiveness of using protocols as examples of structured professional conversations to promote online collaboration amongst a group of pre-service teachers. The particular teacher education course in which these pre-service teachers were enrolled had previously focussed on face-to-face learning contexts with some opportunities for online interactions. Synchronous online discussions was a new element to be introduced into the course and the teaching staff—the authors of this article—were keen to ensure that these online discussions were purposeful and meaningful learning experiences. Subsequently, the pre-service teachers were invited to provide feedback on the synchronous online discussions. To assist with our exploration, in this article we initially consider the literature related to protocols and professional learning, communities of practice and online collaboration, as well as providing context for our exploration and the research methods employed. We then discuss the findings that emerged from the responses provided by the pre-service teachers, along with a consideration of the limitations of the study and identification of future research possibilities.

## Protocols and Professional Learning

According to the Australian National Schools Network (ANSN) and Coalition of Essential Schools (USA) (CEUSA), a protocol is "...a formal structure for looking collaboratively at student work samples to improve pedagogy and classroom practice" (ANSN & CESUSA, 2001, p. 9). The use of protocols—or structured professional conversations as they are also known—provides pre-service teachers with a means by which they can practise reflection, both individually and collaboratively (ANSN & CEUSA, 2001). At the heart of working with protocols is an expectation that the norms of behaviour will be honoured, namely: adopting a sense of responsibility in and for the group; attending to others and listening; co-operating in good faith; aiming for consensus decision-making; confronting problems respectfully; not allowing put downs; accepting where others are at, and suspending judgements (ANSN & CEUSA, 2001).

Defined by Martinez-Miller and Cervone (2008, p. 23) as "accepted or established codes of procedures or behaviours in any group, organization or situation", protocols enable groups of teachers to work together, solve problems and improve their practices (City, Elmore, Fiarman, & Teitel, 2010). Various protocols have been developed to assist teachers in problem-solving, planning, learning on-the-job, and to focus on students' work (McDonald, Mohr, Dichter, & McDonald, 2007), and increasingly, protocols are being seen as effective, professional learning tools in schools (ANSN & CESUSA, 2001; Easton, 2009; Martinez-Miller & Cervone, 2008; McDonald, et al., 2007). When used in schools, protocols are premised on the assumption that all teachers are learners and therefore have much to learn from one another, which is the notion that also underpins the Victorian Department of Education and Training's (2005) *Seven principles of highly effective professional learning*. As part of the pre-service teacher education program in which we were involved, we familiarised our pre-service teachers with working in professional learning teams (using

perspectives provided by the likes of Johnson, 2003), and also introduced them to protocols as a legitimate tool to prepare them for their future life in schools.

### **Communities of Practice and Online Collaborations**

Classroom learning environments – whether real or virtual – are complex places (Prcevich, Kervin, & Ferry, 2007), and new technologies are bringing about changes in teaching and learning as power shifts away from the teacher to the learner (Edwards & McKinnell, 2007). Human interaction is common to both real and virtual interactions and has the potential to meaningfully engage learners (Northcote, 2008) and provide challenging learning experiences for them (Keamy, 2010) collaboratively as well as individually (Hiltz, 1994).

‘Collaborative learning experiences’ are frequently aligned to the concept of communities of practice, which has been part of the social learning landscape for a number of years. The social learning that occurs in a community of practice involves members learning to relate to each other; learning to be part of a joint, negotiated enterprise; and learning to share specialised terminology and technical resources (Wenger, 1998, 2006). Consequently, we move in and out of various communities of practice over time, and this also applies to the transition from face-to-face to virtual instructional settings. As Sofo (2010) reminds us:

Virtuality is becoming the norm, the habitual way of working and learning. Work is ever more seen as collaboration which in turn is increasingly treated as a relational activity. Performance is becoming more deeply team based.... Working virtually signals a paradigm shift based on the use of new communication and social interaction technologies (p. 129).

Mehlenbacher, Miller, Covington, and Larsen (2000), in an attempt to compare how students learnt in a Web-based course compared to a traditional face-to-face course, concluded that there was no significant difference in students’ learning between the two environments. Swan (2003) too, reached the same conclusion, and explained that learning occurs in online environments as a consequence of three overlapping interactions: students’ interaction with peers; with the content, and with the instructor. Where there were difficult or negative interactions, she observed, learning was less likely to occur, however learning was likely to increase when explanations and course materials were clear, well structured, and accompanied by an instructor’s high expectations of success. Brennan’s (2003) research into the provision of online learning in the vocational education and training sector supported Swan’s observation. Brennan’s comment about blended delivery—the mix of online and face-to-face delivery—is particularly pertinent to the study being reported here: Both teachers and students preferred a ‘blended learning’ approach that captured the best features of flexibility and mixed these with the social interactions of the classroom (Brennan, 2003, p. 41).

In relation to collaborative learning in online environments, which is germane to this article, concerns about interpersonal interactions have lingered for some time. Early literature about working in online environments, such as that by Tsui (2001) and Jarvenpaa and Leidner (1998), pointed to the potentially limiting effects of students being concerned about aspects of trust (such as others reading their messages), as well as having concerns about technical issues and the reliability of the technology. When Kuypers (2009) investigated team building in an online environment with a cohort of undergraduate nursing students in a regional university where the students had received most of the prior instruction in face-to-face settings, she observed that students “felt some anxiety in trying to communicate with each other and [with] facilitators in the online group environment” (Kuypers, 2009, p. 61). She concluded that many of the students saw the completion of assessable on-line activities

as having a higher priority than the actual group processes undertaken to complete them. Our utilisation of protocols as the learning tool to guide synchronous discussions, we considered, would require the participants to concentrate on group processes in the manner articulated by Hrastinski (2008):

In synchronous discussions, the e-learners felt that they worked together, because they were confident that someone would respond to their ideas, and they did not feel restricted to discussing only course content...Synchronous communication may be used to better support personal participation, inducing arousal and motivation, and increased convergence on meaning, especially in smaller groups (p. 505).

### **Context for the Study**

The pre-service teachers who participated in this study were enrolled in a two-year (three semester) graduate entry teacher education program. In semesters one and two of their course the pre-service teachers participated in mainly face-to-face learning contexts with some opportunities for online interactions. During this period of time we introduced protocols in parts of the coursework subjects as well as adopting protocols for debriefings that followed each of the three supervised teaching practicums the pre-service teachers undertook in schools settings. When utilising and becoming more familiar with protocols during these sessions, the pre-service teachers learnt to draw upon skills of reflection that had been introduced and reinforced throughout their program (utilising the works of Brookfield, 1995; Churchill, et al., 2011; Holly, 1997; Schön, 1991).

In the final semester of the course, the pre-service teachers participated in a 50 day unpaid internship (including the completion of a small research project) in a school. Whereas face-to-face interaction was the main mode of course delivery for the pre-service teachers in semesters one and two of the program, during the internship phase in the third semester, the group instructional interactions with the pre-service teachers occurred via online instruction in which the Blackboard Collaborate (2011) platform was used. Two formal online interactions took place with pre-service teachers during their internship. While the structure and sentiment of most protocols are consistent, they can be varied depending on the purpose of the interaction. Having considered the focus and different learning intentions of each of the online interactions we had planned, separate protocols were adapted from the ANSN and CESUSA (2001) for use in each of the synchronous discussions. In the first online interaction, a Tuning Protocol was used to help the pre-service teachers discuss and fine-tune their research proposals that they would subsequently be submitting to the university prior to commencing the research component of their internship.

A summary of the Tuning Protocol as it was used on Blackboard Collaborate is provided in Table 1, and three things should be noted: first, that this interaction took place approximately 10 days into the internship in order to ensure the pre-service teachers did not run short of time to actually conduct the research; second, that the roles were rotated so that each person made a presentation about their proposed research and contributed to the others' presentations, and third, that the participants were required to circulate their draft research proposal to the other members of their triad two to three days prior to the Blackboard Collaborate session.

The Tuning Protocol took 45 minutes to work through in the online session that lasted a total of 90 minutes. The first half of the session was spent attending to housekeeping arrangements associated with the internship, as well as providing an opportunity for the participants to exchange social niceties with each other and for us to attend to a small number of technical issues. Prior to the commencement of the protocol, we reiterated the purpose of the protocol, revisited the ANSN norms of engagement (such as adopting a sense of responsibility and accepting where other participants were at), and refreshed the types of

feedback that the pre-service teachers had used previously and which were to be used in the Tuning Protocol. The participants' attention was also drawn to the countdown timer they could see on their screens as a means to time their contributions according to the structure of the protocol.

**PRESENTATION: (3 minutes)**

The presenter goes through the draft research proposal they have circulated to the listeners prior to this meeting.

**CLARIFYING QUESTIONS: (2 minutes)**

Listeners have an opportunity to ask clarifying questions that seek to clarify aspects of the presentation that they have just heard.

**PAUSE FOR REFLECTION: (1 minutes)**

This is to allow listeners to write down feedback they would like to provide to the presenter.

**WARM FEEDBACK: (2 minutes)**

Participants call attention to aspects they think are especially strong; recognise the acknowledgement of problems and issues by the presenters ask for more detail on something they think is important.

**COOL FEEDBACK (NOT CRUEL): (2 minutes)**

Listeners pose questions that make them wonder, want to know more about, or that they are confused about.

They may also share concerns, raise issues or other ideas that they think are worth exploring etc.

**HARD FEEDBACK: (2 minutes)**

Listeners provide feedback to the presenter, drawing upon their knowledge of the research process, in general, and action research, in particular. This feedback reflects deep thinking about the topic.

**RESPONSE AND OPEN CONVERSATION: (3 minutes)**

This is an opportunity for the presenter to respond to the questions and comments provided by the listeners.

**FEEDBACK ON THE PROCESS: (brief)**

This is an opportunity for all three members to have an open discussion to debrief the process.

**Table 1: Summary of the Tuning Protocol adapted for use on Blackboard Collaborate.**

In the second formal interaction (summarised in Table 2), which occurred approximately 40 days into the internship, the pre-service teachers participated in a Success Analysis Protocol so that they could better understand why it was that an aspect of their teaching had been a success. This was timed to occur so that the pre-service teachers would have had adequate time to reflect on some of the successes that they had had in their teaching during the internship.

The Success Analysis Protocol took 54 minutes within an online session of 90 minutes duration. The lead-up to this protocol was similar to the previous protocol, however we also showed the pre-service teachers images from the DE&T (2005) publication, *Professional learning in effective schools*, to reinforce that both professional conversations and online learning were legitimate aspects of professional learning for teachers.

<p><b>1: IDENTIFY A SUCCESS (2 minutes).</b> Write a short description of a success in some arena of your professional practice. Describe the specifics of the success. <b>Answer the question: “What made this different from others like it that I have had?”</b></p> <p><b>2: PRESENTER DESCRIBES THE SUCCESS (4 minutes).</b> The first presenter tells the story of his or her success, in as much detail she s/he can remember.</p> <p><b>3: LISTENERS ASK CLARIFYING QUESTIONS (2 minutes).</b> The listeners ask clarifying questions about the details of the success in order to fill in any information the group needs to be helpful to the presenter.</p> <p><b>4: GROUP REFLECTS ON THE SUCCESS STORY (6 minutes).</b> Group members make comments about what they heard the presenter say, and offer insights and analysis of the success by providing warm, cool and hard feedback.</p> <p><b>5: PRESENTER REFLECTS (4 minutes).</b> The presenter reflects on the group’s discussion about what made this so successful. The group then discusses briefly how what they have learned might be applied to all of their work.</p> <p><b>DEBRIEF PROTOCOL.</b> What worked well? What would we do differently next time? Might this work in the school we’re in?</p> <p><b>RETURN BACK TO THE LARGE GROUP.</b> Each small group shares with the large group the factors that contributed to their respective successes. The large group looks for trends, and then discusses <i>what it would mean to consciously create conditions that lead to success.</i></p>
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**Table 2: Summary of the Success Analysis Protocol adapted for use on Blackboard Collaborate.**

Our intention had been to also facilitate a large group discussion at the end of this protocol in which we wished to explore how the pre-service teachers might use this protocol in their current school settings, but the longer time spent on this protocol meant that time did not permit us to have this discussion.

## Exploring Protocols Using Online Surveys

In this study we utilised the Blackboard Collaborate platform and while we had considerable experience in using this platform in other university courses in which we taught, the development and use of protocols in an online environment was new to us (though we would later find that Dunlap (2009) had developed a number of protocols for use in online discussions). It proved to be a relatively straightforward process of organising, in advance, whole-group meeting spaces as well as break-out rooms simply by having the pre-service teachers nominate on the university’s learning management system the times for which they were available and the groups into which they intended to work.

The pre-service teachers were required to notify their mentor teacher of these times to ensure that there were no barriers to their participation and we also undertook a trial-run with the pre-service teachers accessing the platform (but not using the protocols online) prior to the commencement of the internship and while they were on-campus. This also doubled as an opportunity to trouble-shoot any technological difficulties that they might have experienced with the audio equipment that they had brought to the session.

Insights gained by discussing our proposed approach at a faculty-level research seminar (Keamy & Selkrig, 2011) and at an international conference as part of our own action research project (Selkrig & Keamy, 2011) informed us about what to develop in our instructional materials (McPherson & Nunes, 2004). We subsequently dedicated time in the pre-internship face-to-face briefing to explain to the pre-service teachers that they would be invited to participate in an online survey as a summative process to consider the effectiveness of using protocols in a virtual environment. Being mindful themselves of the need to conduct research in an ethical manner, the pre-service teachers were advised in the briefing session that ethics approval to conduct this research had been gained from the relevant university committee. We also alerted them to the types of statements and questions they would see on the surveys should they choose to complete them, which reflected advice given to us by

conference delegates who had been concerned that the pre-service teachers needed some prior exposure to the language we would be employing in the online survey. We were also able to reassure the pre-service teachers that Web-based surveys were considered the most widely used internet research tool (Hewson, Yule, Laurent, & Vogel, 2003), and because internet-based research procedures “give results comparable to non-Internet procedures” (Hewson et al., 2003, p. 44).

The items in the survey were adapted from Easton’s (2009, p. 29) *Rubric for evaluating the effectiveness of protocols*, and addressed the following dimensions: how the participants worked with the protocols; the processes they used to make the protocols work more efficiently; how they balanced the tensions that sometimes exist; how they ensured the protocol was safe for themselves and for others; the extent of reflection and deep learning; and the role of debriefing following the protocols. We also included a specific prompt so that we could gauge pre-service teachers’ reactions to interacting on a virtual platform, as opposed to how the participants used the protocol.

Three days following each online protocol – the amount of time adjudged by us to allow for reflection about what had transpired during the protocol session – all pre-service teachers were sent an e-mail in which they were provided with a “simple and non-threatening” message (Singh, Taneja, & Mangalaraj, 2009) in which it was made clear that responses would be anonymous, and regardless of their responses (or non-responses), there would be no impact upon their university marks. The pre-service teachers were invited to follow a hyperlink in the e-mail that was sent to their university e-mail addresses in order to avoid the e-mails being filtered as spam if they were sent to private e-mail addresses (Singh et al, 2009). The hyperlink in the e-mail led to an online survey housed on Survey Monkey (2011), which included a combination of Likert-scale and open-ended prompts where the pre-service teachers could make comments about how they worked with the protocol and the extent to which the protocol assisted their learning. Participants had a limited – though adequate – time period of one week in which they could complete each survey, after which the data were downloaded, analysed and interpreted as described in the following section.

Of the forty-six pre-service teachers in the cohort, all participated in the first session and all but one participated in the second session. A total of nine pre-service teachers completed the surveys: seven responding to the Tuning Protocol survey and seven responding to the Success Analysis Protocol survey. This meant that twenty per cent of the pre-service teachers completed each survey, which is lower than the response rate of 30% for Web-based surveys estimated by Sue and Ritter (2007, p. 8).

The likelihood of technological error in the way the responses were completed and submitted by the participants was also noted, because one of the participants in the second survey indicated that s/he had responded to the first survey, though there was no record in the survey data of this having been the case.

The Likert-scale responses from both surveys were downloaded from Survey Monkey and then tabulated so that the responses for the Tuning Protocol sat alongside the responses for the Success Analysis Protocol. This allowed for comparisons to be made—looking for similarities, differences, silences, consistencies and inconsistencies—as the same response criteria were used in both surveys. The open-ended comments the participants made were collated manually into a single table for both surveys and for each dimension (how the participants worked with the protocol, how they balanced the tensions that existed and so on) prior to interpretation.

In the following section, interpretative comments are made and are arranged according to the six dimensions that were being explored with the pre-service teachers, plus a seventh, which related to the suitability of collaborating on an online platform. Not all of the participants made open-ended comments, but where they did, they chose the following pseudonyms when they made comments during the survey/s: Ayla, Cardinal, JB, Phoenix and

Toews. The comments made by these pre-service teachers appear in the discussion that follows.

In constructing our findings we remind the reader that our focus is on making some sense of what the pre-service teachers said about their experience of protocols and the materials presented here are based on the responses submitted on Survey Monkey. We were able to participate with pre-service teachers in the online discussions that occurred in Blackboard Collaborate, although we were not in a position to record their conversations as the platform does not have the capacity to record breakout room conversations. Further, we were unable to take notations during the online session as we did not have ethics approval to gather this type of data as the pre-service teachers would not have been anonymous to us, and because we felt that they may have responded differently in the online groups if they considered their dialogue was being monitored for research.

## **Discussion of Findings**

In this section of the article we present the findings arising from the mixed method study we conducted. We have chosen to weave the quantitative and qualitative data together and to convey the findings using a narrative approach.

### **Working with the protocols**

The participants were invited to reflect upon the presentations they made and questions they posed during the protocols. In the Tuning Protocol three of the seven participants reported that they were engaging actively with the process of asking questions of others and explaining their proposed research, with the same number of participants being able to think about the questions they would ask of their own research proposal as a way of informing the questions they asked of others. In the Success Analysis Protocol, the participants reported a more evenly distributed range of responses, with the highest proportion indicating that they were able to think about the questions they would ask of their own success as a way of informing the questions they asked of others.

A possible explanation for more of the participants reporting a more sophisticated approach to their own work and how they might use it to inform the questions they asked, may be that they felt that there was more at stake – and therefore a greater justification for spending time thinking about their approach – in the Tuning Protocol than for the Success Analysis Protocol. This, we speculate, is because the feedback would eventually contribute to the mark they received for their research project. Participation in the Success Analysis Protocol, on the other hand, may have been seen as simply ‘sharing a good news story’, with no obvious connection to, or influence upon, final assessment results.

### **Processes Used to Make the Protocols Work Effectively**

The participants reported upon how they worked with the two protocols and the processes they adopted in order to make the protocols work for them. When using the Tuning Protocol, six of the participants indicated that they adjusted the protocol but it is Ayla's comment that provides a hint as to why that may have been the case when s/he said "Having some people not ready for the protocol...". While each participant was required to circulate their draft research proposals to others in their group several days prior to the online discussion happening, some of the participants had apparently not done this. This was not entirely unexpected, given our prior experiences with pre-service teachers on practicum who would prioritise their school-based work over the work required by the university. What is interesting in Ayla's comment, however, is that in the small group of which s/he was part, the participants opted to concentrate on process-related aspects of the project that "[helped] them to come up with questions for their action research".

In the Success Analysis Protocol three of the participants reported that they were engaging with the protocol and made individual adjustments during the protocol, with the same number of participants indicating that they adjusted the protocol along with others in the group. Whereas the participants were required to circulate their draft research proposals prior to the Tuning Protocol taking place, the same preparatory work was not required for the Success Analysis Protocol; the pre-service teachers could simply come to the session and present their success story and listen to others' presentations, without having any prior knowledge.

Perhaps due to the perceived higher stakes associated with the Tuning Protocol—which had the potential to inform a particular assessment task—the participants decided that in order to make the process work, they would need to adapt the protocol, particularly when not all participants had done the required preparatory work. While needing to adapt the protocol might be seen as a frustrating experience for participants, it could also be viewed as those within the small community of practice being prepared to take responsibility for their own learning and acting flexibly as a group when in an online situation.

### **Balancing Tensions**

This category of responses deals with how participants struck a balance between talking and listening, as well as balancing both individual and group learning. The tensions that may exist in trying to strike a balance are also explored. The participants' responses are identical for both protocols, with two of the seven participants not being aware of any of these tensions; one being aware of the tensions though seeing some benefit in having these tensions, and four realising there were tensions but who nevertheless enjoyed participating in the protocols.

Both Ayla and JB provide some additional insight into how the participants in their groups proceeded, and have made comments that point to there being a sense of respectfulness and trust that existed amongst the group members, and a preparedness to 'sit in the silence'. As we noted at the time of using the protocols, when we dropped into the different virtual breakout rooms, there would occasionally be periods of silence, but we had not been troubled by these silences because we had been able to monitor the extensive microphone activity and text messaging to others in the groups that was occurring beforehand (something that is possible to notice on Blackboard Collaborate).

These interactions suggested that the silences were a transient feature of the interaction and nothing to be unduly concerned about. If the participants were working with each other in a face-to-face setting, however, it is possible that the participants may have felt it necessary to replace the silences with talking, so it is possible that being prepared to 'sit in

the silence' was a natural consequence of working on the particular platform we used. Silence is also accepted when working with protocols as there is recognition that silence might be required for participants to collect their thoughts.

### **Safety**

In the previous section, the focus was on how the participants recorded dealing with the tensions that can occur when working in a protocol in an online environment. Here, the concern was for the safety of participants, for there can be risks associated with participating in a protocol, such as how a participant may feel when they are voicing their own opinion and are the sole focus of attention whilst this is happening. When participating in a virtual environment, this experience can be highlighted, particularly as the participants have no immediate feedback to rely on, such as the ability to read body language, or to know the cause of prolonged pauses or times of 'sitting in the silences' mentioned previously.

The participants have demonstrated previously that they adapted the protocols as they needed to. The participants in both protocols were mindful of the risks that they were all taking, with six of the seven participants in the Tuning Protocol and five in the Success Analysis Protocol indicating that they were actively working to "making sure it was safe for everyone". Whilst uncertain as to whether everyone in the group had mastered the skills of giving feedback, it was clear to Alya that everyone had equal time, which is one of the key points of working within protocols. JB added that even though their group needed to make adaptations, they did it in a "non-threatening and constructive way".

### **Reflection and Deep Learning**

Providing opportunities for pre-service teachers to learn about their own learning is a key aspect of teacher education programs, and the responses to this item reflect a broader spread than in most of the other categories in this study. With reference to the Tuning Protocol, the majority of the participants (four of the seven) indicated that they acted individually when it came to reflection and thinking deeply, whereas only one of the participants indicated that they had worked with others in their group to push their thinking deeper and to take the dialogue to a deeper level. Two other participants – one in each category – variously described themselves as either having followed the Tuning Protocol rather superficially or having occasionally stretched themselves to push the thinking deeper.

The distribution of responses relating to the Success Analysis Protocol suggests that the majority of the participants (four of the seven) were more able to reflect upon what others had said and to engage in deeper thinking with this protocol than with the Tuning Protocol. This, in part, may relate to the focus of the Success Analysis Protocol, where the participants were talking about something with which they would have been highly familiar (i.e. an aspect of their own teaching) and which they would have already routinely considered as part of their reflective practice. In other words, they were able to draw upon a past event in the Success Analysis Protocol, rather than something that may happen in the future in the Tuning Protocol which linked to an assessed research project.

Again, Ayla and JB provided some useful insights: Ayla revealed the strategy that s/he used to ensure she could track others' responses, which in turn led to Ayla drawing upon the collective feedback to deepen the conversation about the draft research proposal. JB, when referring to the Success Analysis Protocol, pointed to the apparent contradiction that participants may feel when they are asked to provide cool or hard feedback to another's success, effectively stating: it's their success, what right have I got to question this?

What this might be revealing, however, is that the participants may have focused on the words “Success Protocol” rather than “Success Analysis Protocol”. If the protocol were only concerned about providing a platform for participants to share a success, then asking others to provide cool or hard feedback may well have seemed illogical. Given the protocol was intended to be an analysis of what made the activity successful (so that the participant might be able to replicate the approach – if not the activity – in the future), then it would be reasonable to expect that others could provide cool and hard feedback, especially as they had built up some expertise in providing these types of feedback over the period of the course they were studying. It is also possible that we may have inadvertently slipped into a shorthand version and referred to this protocol as the ‘Success Protocol’, and although the analysis of the success was uppermost in our minds, the messages we were conveying to the pre-service teachers may have countered what we thought we were trying to achieve with this protocol.

### **Debriefing**

According to the majority of the seven participants, they were much more likely to engage in the debriefing in a limited way when it came to the Tuning Protocol. When it came to the Success Analysis Protocol, three of the seven participants indicated that they were able to focus on their learning by spending some time at the end of the protocol to discuss the content as well as the protocol’s effectiveness. Two of the seven participants indicated that they continued to discuss the content of their success in the time allocated in the debriefing, and the seventh participant reporting they approached the debriefing in the same way as the majority of the participants approached it for the Tuning Protocol. That more of the participants were able to step aside from the Success Analysis Protocol itself and discuss the content covered and effectiveness of the protocol may again reflect that this protocol was being used to focus on something concrete that had already occurred. From the participants’ perspective, it may have been easier to separate the activity from the process used to analyse it than what it was when attempting to do this for the Tuning Protocol. The Tuning Protocol may have seemed like an abstraction about an intangible event that would play out in the future (as considered previously).

### **Participating in Protocols on a Virtual Platform**

The participants who made open-ended comments about what it was like to use the protocols on Blackboard Collaborate referred to the value of the Tuning Protocol as an easy way to gain collective points of view, with Ayla noting that it “[ensured] everyone got equal time to talk & help”. Ayla also added that “If people physically couldn't get together then Blackboard Collaborate was great. But face to face is much easier & better for physical (especially facial expression) cues.” Toews wrote that s/he believed the protocol was suited to the Blackboard Collaborate session because “As people were not in the same room it was an easy way to discuss and get everyone's point of view regarding our respective research assignments.” Phoenix recounted how s/he not only enjoyed the Tuning Protocol, but that s/he had also used it with one of her own senior classes. Having the allocated time forced her “to dig deeper with questions I was asking and feedback I was giving. I find it difficult to offer constructive criticism to peers and this protocol helps me to do this.” These comments by Phoenix indicate that protocols had had a positive impact, to the extent that s/he had already adopted these approaches.

Similar comments were also made about the Success Analysis Protocol, with Phoenix reflecting on the hard day teaching in a school context that s/he had had prior to going online,

saying "...remembering and talking about my success made me feel more positive about my overall internship experience. Cardinal remarked that s/he felt this protocol "...went a lot better than the previous session [because] the protocol is easier to use and makes more sense. It flows better and I liked that". Even though giving constructive criticism to someone else's success was considered by both Phoenix and JB as sometimes being difficult, Phoenix commented that

There was a moment when I felt that one of the successes being discussed was not really that great but I did not want to hurt that person or ruin their "successful experience" so I danced around it a bit by asking how it would work in other contexts. It was difficult for me to do this whilst trying to be sensitive to the person at the same time. However this protocol is easier in a virtual session as opposed to face to face - I would not be able to give cool or hard feedback face to face to the same extent I can do it virtually (Phoenix).

JB made an observation that suggested s/he did not feel like s/he was a slave to the protocols, remarking that "The protocols were not strictly followed by the participants however we attempted to follow the protocols. We were able to follow the first protocol more closely, however we had difficulty giving each other cool or hard feedback using the success (second) protocol. The feedback we gave to each other on the success protocol was constructive and encouraging and welcomed by each participant."

## Conclusion

One of the clear strengths of participating in the online teaching sessions, as expressed by several of the pre-service teachers who did participate in this study, was that the protocols provided a clear structure to guide the conversations, and importantly, ensured everyone had equal time to make their presentations and to provide feedback to other participants about their work. The absence of protocols in online environments, as Professor Vaughan Prain had indicated following the pilot study into pre-service teachers on practicum (pers. comm. Sept. 27, 2011), had been a cause of concern for teacher-mentors and for university staff, but, it would appear the pre-service teachers in our study found that protocols offered structure, certainty, and opportunities for feedback. According to a number of the participants, some of the feedback that occurred during the small group sessions, while it may not have been directed at them, offered them ways of thinking about their own work, which of itself indicates the potential that the protocols have for professional development.

The pre-service teachers in our study reported finding ways to adapt the protocols that they were using in order to achieve their purposes, and this arose when not all participants had undertaken the preparatory work leading up to the online sessions. This preparedness to adapt existing protocols suggests that the pre-service teachers were able to take responsibility for their own learning, but perhaps even more important, is the realisation that they were honouring the norms of engagement (ANSN & CEUSA, 2001) when working with protocols; they were not simply changing the processes to cut down on time, and made it their business to work with each other in trustful, respectful ways in a community of practice.

Participants' safety when working with the protocols on the online platform was something that was important to the pre-service teachers, and reference was made to ensuring that questions and feedback be made in a non-threatening and constructive manner, with several of the participants suggesting they found it easier to provide constructive criticism in a virtual setting than in face-to-face interactions. There are two associated thoughts that need to be raised in relation to this: the first is that this particular group of pre-service teachers had already had an intensive twelve months of study with each other in which they had frequent opportunities to work in a range of groupings with other pre-service teachers. They therefore had a good sense of who they could be working with by the time it came to working virtually

with each other in small groups, so their preparedness and ability to make constructive criticisms in an environment in which trustful relationships exist, will have been informed by their experiences in the face-to-face environment.

A further point that needs to be raised is one that was not articulated by any of the participants but which nevertheless needs to be considered, and that is the trusting respectful relationships that we had made with this group of pre-service teachers. Because of our own commitment to ensuring that our classrooms – virtual and real – were supportive learning environments, it is very likely that the pre-service teachers respected not only our choice of learning activities, but appreciated that we would not expose them to risky or threatening activities.

The major limitation of this study was that a small number of pre-service teachers opted to participate. This did not come as a surprise to us given our extensive experiences with pre-service teachers and our realisation that their dominant concern whilst on teaching practicums of any sort, was the work that they were doing in their schools. This issue is not insurmountable. However, the right for pre-service teachers to feel that they can speak openly, and anonymously, without their combined or individual comments drawing any negative consequences on their assessment, remains a major consideration.

While partial conclusions can be drawn from this study, the open-ended comments that the participants made offer valuable insights into future utilisation of protocols on Web 2 platforms. Feedback from the pre-service teachers who undertook the surveys suggests that structuring their conversations via the use of protocols enabled – and required – all participants to have a say and also assisted some of the participants to be more honest than what they may have been able to be in face-to-face settings. Several participants also commented about their ability to reflect upon the work that they had been doing on their extended practicum. If, as some of the pre-service teachers indicated, it is necessary for them to be instructed using virtual means, then the structured conversations that the protocols required were well-suited to synchronous discussions using Web 2 technologies.

This research provides insight for further opportunities to investigate pedagogical approaches for pre-service teachers when their prior interactions with lecturers are predominantly in face-to-face mode yet they are required to utilise online platforms at times when they are away from the university. The personal interactions that can readily occur and the trustful relationships that develop between lecturers and their students in face-to-face teaching settings, combined with the regular incorporation of critically reflective practice into the education of pre-service teachers, have the potential to make the transition to virtual learning a relatively easy process. The exploration that we have conducted leads us to believe that there is potential for further development – at both the practical and theoretical levels – in this field. Better understanding the use of protocols for professional conversations, and the preparation for participating in these conversations in online environments, has the potential to make this a realisation rather than merely an aspiration.

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