

Developing Resources for Pre-service Teachers to Promote Online Teaching Support

Final report 2016

University of New England

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www.pstonline.info



**Pre-Service
Teachers Online**

Supporting Online Teachers

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List of acronyms used

BOSTES	Board of Studies Teaching and Educational Standards
DET	New South Wales Department of Education and Training
F2F	Face to face
ICT	Information and Communication Technology
IMPEL	Impact Management Planning and Evaluation Ladder
IWB	Interactive Whiteboard
KLA	Key Learning Area
LMS	Learning Management System
OLT	Australian Government Office for Learning and Teaching
PST	Pre-service teacher
SoE	School of Education (UNE)
TAFE	Technical and Further Education
UNE	University of New England
VPN	Virtual private network

Executive Summary

Over the last few decades there have been significant shifts in the ways students engage with both formal and informal learning. This has occurred through the improvements made in available technologies, the advent of new technologies and an increased popularity in the use of online learning spaces. Online learning spaces are particularly important for the distance education learning experience and the rise in virtual schools is a reflection of this. These schools and other online learning environments such as blended learning classrooms and School of the Air provide significant learning opportunities to deliver education opportunities to students who might otherwise be unable to pursue particular studies due to a range of factors such as isolation, mobility (such as with military families), health issues, disabilities, lack of qualified teachers in the area or emotional issues such as bullying (Roblyer, 2006; Toppin & Toppin, 2015; Vasquez & Straub, 2012).

As these changes in teaching and learning environments occur, it becomes increasingly important to reflect these new changes in teacher education courses. Teaching online presents the need for its own separate skillset in order to provide meaningful and rich learning experiences. This project was designed to support pre-service, as well as inservice, teachers in the development of this skillset.

The project, named Pre-Service Teachers Online, surveyed current pre-service teachers in 2015 about online teaching and found that they are, in the main, ill-prepared to meet the skill requirements of online teaching. While their teacher education programs assist them to use Information and Communication Technologies in the traditional classroom setting, solely online teaching is neither discussed nor practised. To assist in redressing this gap, the main output of the project is an open access website with a range of resources to foster learning about, and aid in, developing online teaching skills.

There are three main learning modules on the website (www.pstonline.info) exploring connecting with students and the provision of engaging and authentic learning experiences. The modules include short, informative videos from academics experienced in online teaching and its requirements. The videos are supplemented with a number of relevant readings and, where practicable, examples of applications that can be used to enhance online learning experiences.

This final project report provides an overview of the processes used to develop the website and also, in the appendices, examples of the surveys used which may benefit other institutions interested in replicating the project. There is also a more detailed report of the findings from these surveys.

The project team now hope to move forward into a larger cross-institutional project, in partnership with an education system, to further develop the website and to provide opportunities for pre-service teachers to practise online teaching.

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Chapter 1: Project Context

Introduction

It has been predicted that “by the end of the next decade, secondary schools will offer up to half of all courses in virtual formats” (Bull, 2010, p. 29). Indeed, in the United States of America, “virtual schooling is a fast growing option for K–12 students” (Kennedy, 2010, p. 21). Similar forays into virtual schooling are occurring in Australia, including New South Wales where the Connected Classroom program has been in place since 2008 (New South Wales Department of Education and Training, 2010), a selective virtual high school, *xsel*, accommodated students until the end of 2014 and a new 7-12 virtual high school, Aurora College, opened in 2015. These changes in education delivery in schools will necessitate a new approach to curriculum design with regard to teacher education and also re-definition of the use of information and communication technologies. To teach virtually requires a different set of skills from those that currently form the basis of most teacher education awards and Bull (2010) cautions that “for the most part, teacher education programs are not yet preparing pre-service teachers to teach in this [virtual] environment successfully” (p. 29). This Office for Learning and Teaching (OLT) seed project, christened Pre-Service Teachers Online (PST Online) soon after its commencement, was developed to address this perceived gap in teacher education.

Literature review

Online learning is increasing globally but research, teacher practices and learning design for virtual schooling is dominated by what is happening in the United States of America (USA). All 50 states in the USA provide some type of online learning opportunity for K-12 students and 26 states partially fund state-established virtual schools, with well over a million students learning online each year. Accordingly, the majority of research about online or virtual learning emanates from the USA.

In developing this project, the researchers drew on the currently available literature as to what constitutes best practice in online teaching. In Australia, there is very little written about such teaching in schools and it is necessary, for the Australian context, to draw on the literature around online teaching in higher education institutions (Downing & Dymont, 2013; Gregory & Salmon, 2013). The project was also influenced by, and built on, the 2009 OLT-funded project “The Learning to Teach Online” (McIntyre, 2011), designed to assist academics with online teaching. Resources developed by McIntyre (2011) provided background and context to complement the suite of resources created in this research.

A more specific bank of literature has emerged in North America, including not only research into school online teaching requirements (DiPietro, Ferdig, Black, & Preston, 2010; Murphy & Manzanares, 2008; Murphy, Rodríguez-Manzanares, & Barbour, 2011), but also the development of standards for teachers in online environments (International Association for K-12 Online Learning, 2011; International Society for Technology in Education, 2008).

The rise of virtual schools has raised an important discussion: the capacity of the teachers employed in these schools to deliver in an online environment. Miller and Ribble (2010) argue that not all teachers “have the skills or temperament to be online instructors. Just as some people are not destined to be classroom teachers, there are some who should not be online teachers as well” (p. 5). The literature makes it clear that teaching online necessitates a different range of skills from those currently covered in teacher education programs (Bull, 2010; Corry & Stella, 2012). It is generally argued that classroom management, including behaviour management, is one of the most important challenges for teachers and one of the biggest concerns of pre-service teachers (O'Neill & Stephenson, 2011; Peters, 2009). Initial teacher education programs deliver a range of units (subjects) designed to overcome these concerns by developing the requisite face-to-face skills. However, online teaching changes the dynamics and “necessitates a shift from a practice of controlling to engaging students’ attention” (Murphy & Manzanares, 2008, p. 1061). These researchers argue that there are contradictions in moving from face-to-face teaching in a conventional classroom to teaching online and that teachers “may benefit from opportunities to develop new skills, techniques and strategies” (Murphy & Manzanares, 2008, p. 1070).

This shift in focus has raised the concern that there is no systematic pre-service teacher education about online teaching (DiPietro, Ferdig, Black, & Preston, 2010) while “many teachers are transitioning from a traditional classroom to virtual teaching environments” (Richardson, LaFrance, & Beck, 2015, p. 19). DiPietro et al. (2010) argue that too little research has been undertaken into what constitutes good online teaching in the K-12 environment and that, while ‘best practice’ documents have been written, these: often neglect the unique skills of virtual school teachers, indicating the need for research that focuses on the instructional practices of K-12 teachers in virtual school settings. Lacking a body of research that focuses on the K-12 online arena, these documents also draw on research underpinning the instructional practices associated with post-secondary online settings (p. 11).

Furthermore, current teacher education programs “prepare individuals for traditional classrooms, and they do so in isolated silos of pedagogy, content, field experiences, and to a lesser extent, technology” (Archambault, 2011, p. 74). These programs focus almost exclusively on face-to-face teaching with technology being a tool for learning. Given that online learning is increasing in the K-12 sector, teacher education programs will need to adapt to prepare pre-service teachers for this new milieu (Archambault, 2011).

This project, in developing a resource to assist both teacher educators to teach new skills and pre-service teachers to understand these skills, has the capacity to begin to prepare new teachers for the realities of 21st century education (Partnership for 21st Century Skills, 2009) and thereby, in the long term, improve education opportunities for school age children.

Original project plan

This project was informed by Salmon's (2013) five-stage framework for developing online learning skills. The resources that have been developed as the main deliverables of this project have been staged in their complexity so that the pre-service teachers who use them can become increasingly confident in their knowledge and awareness. Salmon's framework commences with familiarisation, building on prior knowledge and experience, before moving into more complex areas. The resources follow this structure to assist the pre-service teachers, as this is sound adult learning procedure, and have been modularised to gradually build knowledge of appropriate skills. The modules will help to support not only pre-service teachers in the development of online materials, but more particularly with their understanding of how to teach both synchronously and asynchronously into school classrooms. The resources developed focus on support for the skills necessary to engage students in a virtual classroom. The original project plan consisted of three over-lapping phases which are outlined below.

Phase 1:

The first phase was to incorporate a more in-depth literature review to examine resources that currently exist to enhance online teaching and a critique of these for virtual school teaching. A website was also to be developed as a repository for the resources to be developed in Phase 2. The use of social media was to be incorporated onto the website and used for feedback and dissemination throughout the project.

Phase 2:

In this second phase, the team were to complete the critique of existing resources and catalogue those which could be modified for use by pre-service teachers. The team members would also catalogue any new resources which needed to be developed. This phase would then encompass the modification and development of a range of resources (text, video and interactive materials) and the further development of the website to host these.

Phase 3:

The third and final phase of the project was to be dedicated to finalising the website and the collection of feedback from invited pre-service teachers and academics as to the ease of use of the site and also the usefulness of the resources. This phase would also involve the writing of the project report for submission to the OLT. Findings of the project were to be shared with the sector in three ways: through workshops at both Armidale and Parramatta, where the technological resources would be demonstrated; via an online seminar (webinar); and also via a flyer about the website to be sent to all higher education institutions with initial teacher education programs.

Chapter 2: Project Approach

Phase 1: Pre-service teacher survey

Based on discussions in the initial team meetings, it was decided to add a phase to the original project plan. While the team still felt strongly that there was a need to prepare pre-service teachers for online teaching, it was felt that the first phase should be a survey of current pre-service teachers at the University of New England (UNE) to gauge their awareness of and readiness for virtual schools and online teaching. In this way, the team could respond to needs raised by the participants in their development of the project website and resources.

After UNE ethics approval (HE15-114) invitations to participate were sent to all 2015 enrolled students studying in initial teacher education degrees within the School of Education, UNE (SoE). This target audience all had current experience in online learning in a higher education context (some as solely online students), as well as their developing experiences in teaching/pedagogy to draw on. All students were invited in order to facilitate analysis across a range of factors: specialisation, age, gender, mode of study, location, and duration of study.

The project team chose to use Qualtrics as the survey tool because of its many affordances. These included:

- The ability to create a customised look for the survey;
- The privacy settings allowed which covered the confidentiality requirements of ethics;
- The ability to use a range of question styles;
- Provision of de-identified responses;
- The ability to send personalised email invitations and targeted reminders without the team knowing who received reminders (a confidentiality issue).

The survey began (see Appendix B for a full copy of the survey) with a range of demographic questions, followed by questions designed to gauge the participants' perceptions of their confidence, skills and experience in terms of online teaching. The final section of the survey asked the following open-ended questions:

- What factors do you feel are important in developing a positive online learning experience?
- What concerns would you have or challenges might you face if you were appointed to teach using online technology?
- How might you resolve these concerns or challenges?
- What resources do you feel you would need to help you in this area?
- Who might you need to provide assistance?

The findings are reported in the next chapter.

Phase 2: Building the website

The main output for this project was to be a website hosting a range of resources. This choice of output was decided on as it modelled the online teaching framework that the team would be presenting. An open website also enabled access to a wide audience who could progress through the resources at their own pace.

The hosting of the website needed to be cost effective, reliable and with an option for an extended length of time. The host was chosen on these parameters and the website will be hosted for 10 years from January 2015. The website domain name, pstonline.info, was chosen to be short, evocative of the project purpose and easy to remember.

A decision was also taken to develop a logo for the website and for all project information (such as on the Facebook page, conference presentations, etc.). The logo needed to represent the online aspect of the project and also make clear the project's purpose. It was also decided that the logo needed to be clear and clean so that it could be reproduced in a range of media and so that there could be recognisable variations to allow for instances when the full logo was too large. The final logo is shown in Figure 1, with its smaller variation in Figure 2.



Figure 1: Project full logo



Figure 2: Project smaller logo

To develop the website, the decision was taken to select open source software, WordPress and Moodle, because of their customisation capabilities, zero cost, range of features and online support community. As free platforms they also model their features as easily accessible learning tools available to teachers.

WordPress, an open source blogging platform, provided a useful, uncluttered 'homepage' to present our project. We were able to theme and customise the website to include our logo and clear menu of project goals, dissemination, links and contacts (see Figure 3 – home page of the website).

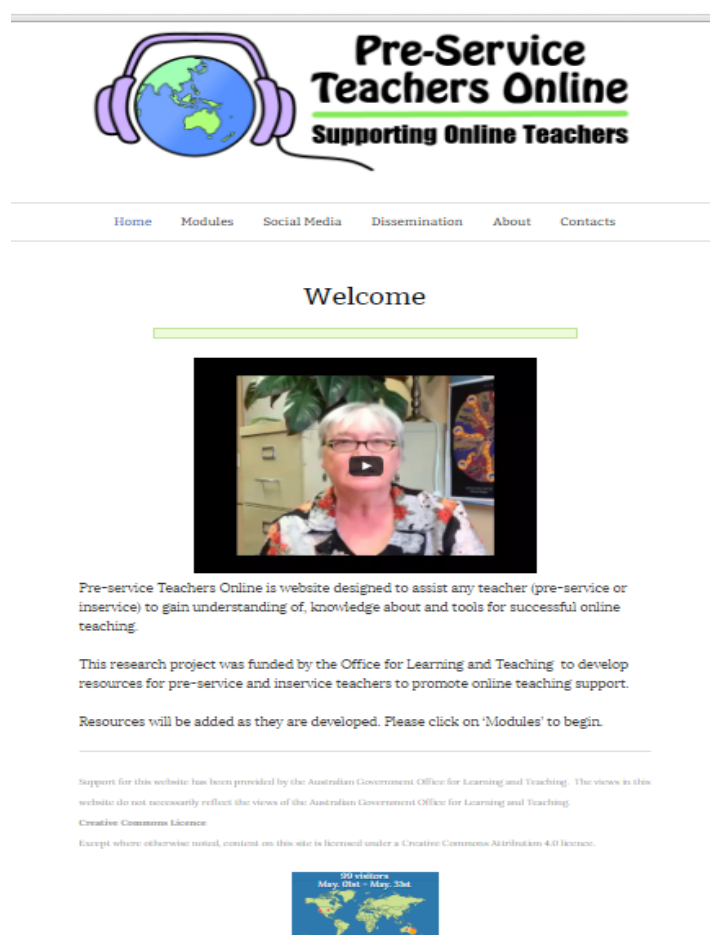


Figure 3: PST Online home page

Moodle, an open source Learning Management System (LMS), provided a customisable suite of learning tools with which to build the learning modules. It provided the opportunity for visitors to access these modules without registration to the site, therefore keeping the site accessible to all. It also permitted the optional ability to register their own account if they wanted to track their progress through the topics, engage in reflective activities and earn badges demonstrating that they had engaged in modules in relation to teaching online. Moodle, as a LMS, is used by many universities, including UNE, as well as being often the LMS used in schools. This meant that Moodle had the advantage of being familiar for the designer, the project participants and many other visitors to the site. Moodle also allows access to rich analytics to track which pages users visit and how often. This could assist with further development after the project finished.

Overall, the website was designed to be as user friendly and accessible as possible. It was ensured that videos were playable across tablets and other smart devices, and subtitles and transcripts were included for increased accessibility.

Phase 3: ‘Talking Heads’

Originally it was planned that the project website would house a range of files that provided information about online teaching as well as activities that visitors could complete to enhance their learning. After re-visiting the final report of an OLT project about online teaching in higher education (McIntyre, 2011), it was decided that short videos addressing a range of topics would be more engaging for visitors.

Creating videos and placing them on an open access website required an ethics variation which proved to be a time-consuming process. Because the videos were to be housed on an open access website for at least 10 years and the project was covered by a Creative Commons licence, both UNE’s legal department and copyright officer became involved in the development of the consent form as well as the ethics committee. Instead of a couple of weeks to gain ethics permission it took a couple of months with the draft consent form going backwards and forwards several times. Some of the concerns included personal and institutional IP, the application of the Creative Commons licence and that the content of the video was not breaking other copyright rules. The consent form content eventually was agreed upon and was signed off by the UNE ethics committee. The form can be found in Appendix C.

An email was sent to all academic staff of the SoE inviting them to participate in the video recordings for the project (Appendix D). The intention was to allow academics to choose topic where they felt they had some expertise and would be most comfortable talking about. Eventually five academics (plus the three members of the project team) became the ‘talking head’ videos included on the website.

The videos were recorded using an iPad to avoid the need for an expert with a video camera. An iPad was also less intimidating for the person being videoed. Videos also took place in the academics’ offices providing a known, and therefore more relaxed, environment.

The videos were edited, with the inclusion of a short introduction identifying the project, and then were placed on YouTube which can only be accessed via the website. The videos were also transcribed and the transcripts included on the website for greater accessibility, and further accessibility was provided by including subtitles on the videos.

Phase 4: Developing other resources

The videos, serendipitously, divided into three main themes: resources for teaching online, making connections online, and activities for online teaching. A decision was made to use these themes as the main modules for the website, with readings linked to the specific theme being included in the same Moodle block as the respective videos.

The themes of the video blocks were also able to be mapped against the responses made by the survey participants in terms of their needs and concern. The participant comments are attached in Appendix E, divided into the three themes that frame the resources.

Each of the three blocks also included a reflective activity which visitors can complete if registered. Completion of these activities results in the award of a digital badge, with another badge awarded for completion of all three activities (see Figure 4). The intent of the badges is being able to demonstrate that engagement around the topic of online teaching has occurred. It is not a credential to demonstrate any level of competence.



Figure 4: Badges awarded for completion of activities

The three main learning modules are supplemented by several other Moodle blocks. These are:

- Introduction
 - This block is designed to present an introduction to the concept of virtual schools.
- Frameworks, Standards and Guidelines
 - This block contains links to a range of frameworks/standards for online teaching.
- Professional Development possibilities
 - Links to some professional development that is available.
- Prior OLT project with useful information
 - A link to the OLT Learning to Teach Online project (McIntyre, 2011).

It is intended that as more resources are developed and/or found that these will be added to the website.

Chapter 3: Project Outputs and Findings

In this chapter there is discussion of three main themes. The first of these is the survey findings prior to building the website. There is then a discussion of the website and its resources and lastly a report of the feedback from attendees at a workshop run at the end of the project to gain further insights into what might be needed.

Survey data findings

While the main output for this project is the website, the findings from the survey undertaken prior to building the website also provide an important output. Virtual schools are relatively new in Australia, although there is a long tradition of School of the Air, and the survey highlighted the lack of knowledge of these schools as well some interesting attitudes to teaching in such schools. The findings have been reported at two conferences - through a refereed abstract at AARE 2015 and a refereed paper at ascilite 2015 (Grono, Masters & Gregory, 2015) - and in a journal article (Masters, Gregory & Grono, 2015), but are reported here in a condensed version as they provide insight into the need to pursue online teaching skills in teacher education. These findings also informed the development of the website.

An interesting finding in the data was that participants reported being relatively confident and knowledgeable about their teaching in an online environment. The respondents were asked in question 3B (see survey in appendices) to rank their experience, knowledge and confidence with respect to a range of common teaching skills, but in terms of online teaching rather than face-to-face (f2f). Figure 5 shows percentages within these rankings.

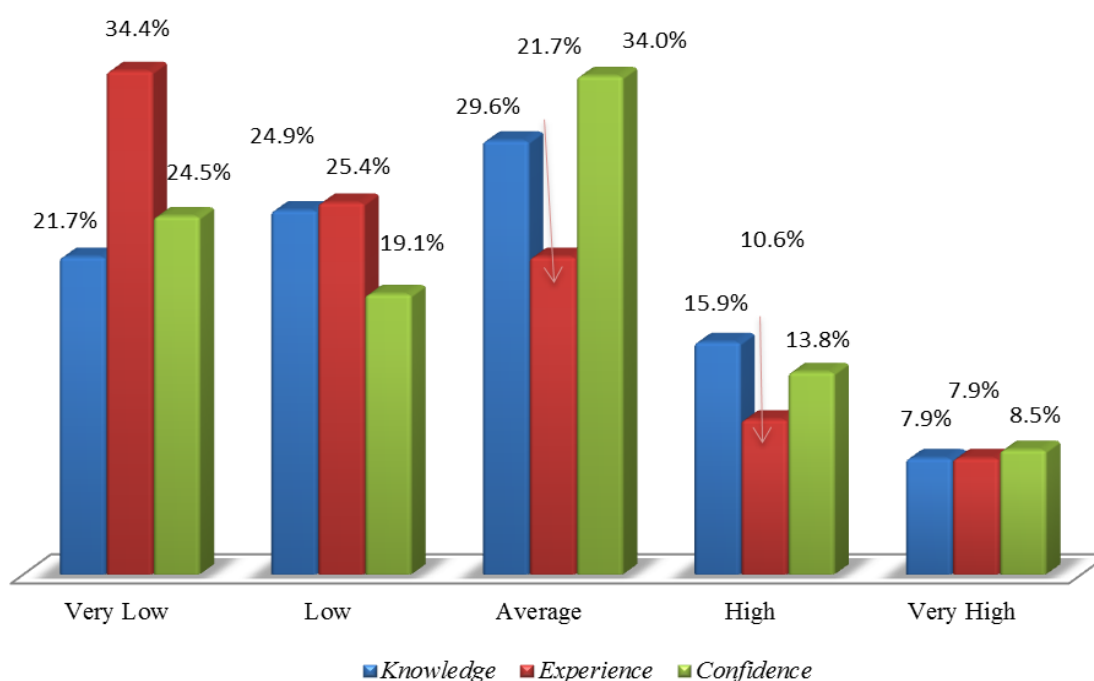


Figure 5: Perceptions about skills in observing and engaging in a virtual classroom

From Figure 2 it can be seen that participants rated themselves quite highly in relation to confidence and knowledge. Fifty three point four per cent (53.4 per cent) of participants rated their knowledge about the skills needed in virtual classrooms average or above while they reported their confidence to use such classrooms at 56.3 per cent in the same range. The rating of experience in virtual classrooms for the same range drops to 40.2 per cent, but this is still a surprisingly high percentage from participants who have no experience of online teaching. While these results were perplexing, based on 68 per cent of respondents still being in the first half of their degrees, analysis of the open-ended comments from the survey made these percentages more comprehensible.

All of the participants, as UNE students, are very familiar with online learning as all students, both on- and off-campus, access some of their materials online. In analysing the open-ended questions, it became apparent that the participants had drawn on their personal experience of online learning to answer the questions. Rather than considering the questions in terms of K-12 virtual schools and teaching online, many participants responded about online learning in higher education as evidenced by the following comment:

Online learning requires effective time-management skills because you will be doing all other work: house chores, baby sitting, cooking, cleaning and you still need to be up-to-date with the lessons, lectures, forum activities and discussions. Therefore, managing time while studying off-campus is a challenging skill for online learning (Participant 17)¹.

This response demonstrates some of the limitation of the survey and this is discussed further in Chapter 5.

Manual coding was used for analysis of the open-ended questions and four themes emerged from the data: engagement, technology, development of community/relationship, and teaching skills. The analysis of these themes concentrated on the first two open-ended questions: the factors that participants felt were important for success in online teaching; and the concerns or challenges they felt they could currently face. These questions were considered the most useful for the development of a relevant and useful website. The breakdown of responses in these areas is shown in Table 1.

Table 1: Percentage of themed responses

	<i>Engagement</i>	<i>Technology</i>	<i>Community/ Relationship</i>	<i>Skills</i>
<i>Factors important for a positive online learning environment</i>	15%	48%	20%	17%
<i>Concerns and challenges in teaching online</i>	6%	50%	25%	19%

¹ The reported participant number is assigned by Qualtrics covering all participants who began the survey and can, therefore, be a higher number than those reported as completing any section.

The results demonstrate the overwhelming concern about technology, which is not unexpected. It is also important to note that participants were able to present more than one factor or challenge so technology was frequently mentioned with other issues. While the use of the technology was raised as a major concern, the participants also commented on the appropriate use of technology as a learning tool as shown in Table 2.

Table 2: Concerns about the use of technology

<i>Lack of experience and concerns about online security and behaviour</i>	<i>Challenges of effective teaching with technology</i>
Concern for “mutual respect in online etiquette” (Participant 4)	“Appropriate and effective tools” (Participant 83)
Concern about “having a good understanding of all available technology” (Participant 122)	“Using different technologies that are interesting and exciting to the end user” (Participant 5)
Lack of “experience with learning environment and technologies available” (Participant 129)	“Amenability of digital platforms to customisation for catering to the diverse abilities and interests of students” (Participant 163)
“The main concerns I would have in teaching this way is my lack of experience in using the programs and tools required to teach effectively” (Participant 3)	“The ability to find appropriate educational websites that help the student to learn but also allow them to ask questions (not just websites that give answers to everything)” (Participant 5)
“Technical knowledge - if something fails, I can’t just revert to type and teach the lesson without technology” (Participant 37)	“Ensuring the lesson is not an excuse to use technology, rather technology enhances the learning of the students and the lesson” (Participant 109)

A strong emphasis in the data was on reducing isolation online, making connections, and ensuring student engagement. It was felt that this could be more difficult in an online environment in comparison to the traditional face-to-face classroom. Participants drew on their own experiences of online learning and then extrapolated for virtual schools. Table 3 presents a selection of these comments.

Table 3: Challenges in online teaching

<i>Online teaching challenges</i>
The ability to ensure that students don’t feel alone and isolated whilst using on-line technology to learn. As a student myself this can be a very hard hurdle to overcome (Participant 5).
Developing some sort of relationship with students would be hard (Participant 6).
One of my concerns is that it might be difficult to get to know the students compared to the chance you have in a real classroom (Participant 19).
Connection to students. “Losing” students online (Participant 36).
Lack of face to face contact removing the personal element (Participant 37).

A more complete list of participants' responses is available in Appendix E. These responses were crucial to the development of the major output of this project; the PST Online website.

The project website: www.pstonline.info

As outlined in the previous chapter, the website developed for the project is an open learning resource accessible anytime from anywhere. Its domain, [pstonline.info](http://www.pstonline.info), is short and easily remembered. The logo (Figures 1 and 2) provides a consistent design across the website, publications, social media, and badges, reflecting the theme of the project.

The home page of the website contains a short (1.22 minutes) 'welcome' video, explaining the project and what can be found on the website. The video is preceded by two frames indicating firstly the project (Figure 5), and then the project team and acknowledgement of OLT support (Figure 6). The same two frames are used for the videos in the modules.

Welcome



Pre-service Teachers Online is a website designed to assist any teacher (pre-service or inservice) to gain understanding of, knowledge about and tools for successful online teaching.

Figure 5: Video introductory frame

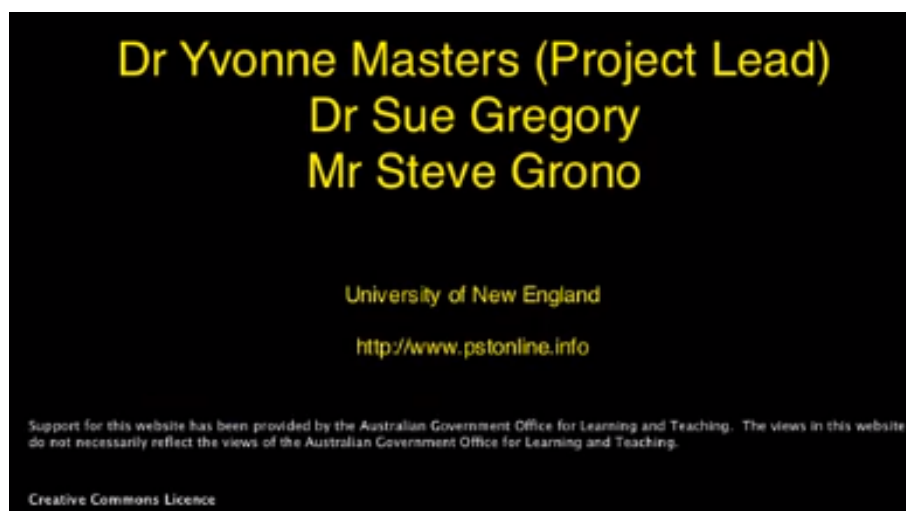


Figure 6: Video acknowledgement frame

A decision was made to have the home page uncluttered and easy to navigate. Apart from the logo and the welcome video, the home page then only contains the standard acknowledgement of the OLT, a 'live' clustr map showing monthly numbers of visitors and

an easy to navigate toolbar (see Figure 3). The toolbar has links to a comments page (Contacts), information about the project (About), Dissemination, links to Social Media and the Modules.

About

The 'About' page was included to give a brief introduction to the project and to the project team. This page links to the abstract used on the OLT page to describe the project and will later link to the final online report.

Contacts

The 'Contacts' link allows visitors to request further information or to leave a comment. The comments box is moderated by one of the project team before becoming publicly available. The decision was taken to adopt a moderator role to avoid phishing comments given that the website is open. During the project development time there have been two such comments from people seeking to have contact about 'improving' the website. These comments were not published.

Social Media

The project has a presence within three social media: Facebook, LinkedIn and YouTube. The 'Social Media' home page link leads to the live URLs for each of these (see Figure 7).

Social Media

Facebook

Pre-service Teachers Online: <https://www.facebook.com.au/preserviceteachersonline>.

LinkedIn

Pre-service Teachers Online: <https://www.linkedin.com/grp/home?gid=7016340>.

YouTube

Pre-service Teachers Online:
https://www.youtube.com/channel/UCB_HeCL2pgmzgFQP-tsKUpw

Figure 7: Social media links

The YouTube channel hosts the 'Talking Head' videos and is only accessible via the relevant modules. Facebook and LinkedIn are open publicly.

Dissemination

The 'Dissemination' link has been included to direct visitors to publicly available information. This will include links to journal articles, conference proceedings and other presentation material. The intention is to add to this page over time as more dissemination occurs. It is acknowledged that there are other forms of dissemination such as SoE seminars and magazine (see Chapter 4), but these are not freely accessible.

Modules

The 'Modules' link moves visitors from the WordPress website to a Moodle site that has been developed as a repository of resources (see Chapter 2). The link to the modules is only available via the PST Online website, but the Moodle site is then open to the public with optional registration. The introductory page in the Modules link outlines the choice that visitors have to register an account, but all modules are accessible without registration by clicking on the 'Click to view modules' link. This then brings up the module page (see Figure 8).

The screenshot shows the 'Pre-Service Teachers Online' Moodle page. The header features a logo of a globe with headphones and the title 'Pre-Service Teachers Online'. Below the header is a breadcrumb trail: 'Home > Modules > Modules > PST-Online'. On the left sidebar, there are two sections: 'MY LATEST BADGES' which states 'You have no badges to display', and 'RECENT ACTIVITY' which shows 'Activity since Friday, 20 May 2016, 8:25 PM' and a link to 'Full report of recent activity...'. The main content area is titled 'Introduction' and contains two sections. The first section, 'What are virtual schools?', includes a link 'Defining a 'virtual school'' with a description: 'An exploration of the term 'virtual school''. The second section, 'Virtual schools around the world', includes a link 'Researching Virtual Initiatives in Education' with a description: 'This website looks at virtual schools around the world and some of the initiatives in this area.'. Below this, there is a section titled 'Resources for preservice teachers to support online teaching' which includes a 'VIDEO CHATS' subsection with a link 'Resources for preservice teachers to support online teaching' and a description: 'Here you will find three YouTube 'video chats' discussing ways to support online teaching'.

Figure 8: Module page

Visitors to the site can navigate through the modules at their own pace and in the order of their choosing.

As described in Chapter 2, there are three main modules focused on skills, supplemented by the other modules previously described. The three main modules are:

- Resources for pre-service teachers to support online teaching;
- Connection online;
- Using online activities in pre-service teacher education.

Each of these modules contains relevant 'Talking Head' videos, as well as readings.

Resources for pre-service teachers to support online teaching

This module contains videos designed to introduce participants to virtual schools and some of the resources that can be used as online teachers. The three videos are:



Getting to know your students (Dr. Yvonne Masters)

This video discusses the importance of getting to know students and the use of two free software applications that can assist in this process when in an online environment.



Virtual worlds for engaging activities (Dr. Sue Gregory)

Virtual worlds are used by some schools as a means of engaging online learners. This video discusses the uses of virtual worlds.



Planning your activities (Stephen Grono)

In this video, activities for online teaching are discussed from the viewpoint of the need to both carefully plan and sequence the activities.

The videos are accompanied by a table of free applications that can be used for a range of activities. The table provides the URL for ease of access and also a brief description of the application's use (see Figure 9).

Flickr	Image storage and sharing site.	https://www.flickr.com/
Google Apps for Education	Google docs, spreadsheets, presentations that can be shared with others virtually and collaboratively work together at the same time on documents.	https://apps.google.com
iTunes	Organise and purchase music, movies and TV shows.	http://www.apple.com/au/itunes/
Padlet	This application can be used to do a range of things: have students introduce themselves, brainstorm a topic, ask questions, upload pictures.	https://padlet.com/
Pinterest	Visual discovery tool to find ideas for various projects.	https://au.pinterest.com/
Remind	Combination of sticky notes and a class newsletter. Enables reminders (via email, phone, or mobile device) and to an entire class.	https://www.remind.com/

Figure 9: Example from a table of applications for use in online teaching

The module also contains an activity where registered participants can complete a reflective exercise on their engagement with and understanding of the content of the module. In this module the question is: What resources might you use in your online teaching to promote student engagement? Applying a principle of 'gamification', it was decided to award a badge for participating with the site content as a form of 'micro credentialing'.

Connection online

Making connections was one of the issues raised in the pre-service teacher survey and was one of the main challenges discussed in the responses. This module was designed to address this concern and the three embedded videos discuss this aspect of online teaching.



Meaningful online activities (Associate Professor Linley Cornish)

This video examines the requirement for online activities to make connections between students and also to be authentic learning.



Building relationships (Dr. Brenda Wolodko)

Building relationships is an important skill for any teacher, but this can be a challenge for online teachers. Different ways to help build relationships are discussed in this video.



Promoting group work (Dr. Jennifer Charteris)

Group work provides collaboration between students and is one method for building relationships. This video explores how group work can be fostered online.

As with the other two main learning modules, this module also contains relevant readings and a final reflective exercise with the question: In what ways might you make connections with and between students in online teaching?

Using online activities in pre-service teacher education

The third module draws on the experience of three academics from the Learning and Teaching team in the SoE. They reflect on the activities they use online in pre-service teacher education, activities which can be replicated in online classrooms.



Maintaining interest online (Kathryn Jenkins)

In this video there is a discussion as to how to maintain engagement and interest when working in an online environment. This was another challenge raised in the pre-service teacher survey.



Building a community of practice (Dr. Jennifer Charteris)

Communities of practice are a way in which students can remain engaged in their learning, but such communities require specific protocols, particularly in an online environment. This video looks at how such communities might be established.



Social media connecting students (Dr. Charles Kivunja)

The use of social media can form connections between students and is often something with which students are familiar. In this video one example of the use of social media to connect online students with others who study in a face-to-face environment is explored.

Again there are relevant reading and the reflective question for badging is: What activities might you use as an online teacher?

Findings from a feedback/dissemination workshop

The final findings of this project are the results of a feedback/dissemination workshop held after the development of the website. Students from the teacher education programs were invited to a workshop after gaining ethics approval for a variation. The workshop was designed to firstly disseminate both the results of the survey and also the website to those able to attend. Secondly, the workshop was used to gather feedback on the website to provide necessary information for refinement and further development of resources. The participants were asked to complete a short feedback survey (Appendix F).

Nine pre-service teachers attended a workshop at the UNE Future Campus in Parramatta, NSW. These students attended on a Friday evening and were people who lived close to the campus and were able to attend. There was one pre-service teacher studying to be a primary teacher (specialising in ICT education), one studying to teach ICT/Science in secondary schools, three Mathematics/Science teachers, and four were studying to become inclusive education specialists. All were appreciative of the opportunity to attend the workshop as they felt there was a need to understand how to teach online.

The inclusive education teachers felt it was important that they know how to teach online because their students were those who appreciate the opportunity to learn with a 'level playing field': that is, they (their future students) were not judged by their peers because their peers did not know of the disability that they had.

The science teachers felt that being able to teach online was important so that they could demonstrate experiments that could be harmful to undertake in a face-to-face environment. They also felt that there were many resources available that could demonstrate different scientific experiments better than they could through the use of YouTube of University YouTube, or TeacherTube.

Although the number of participants in the workshop was low, it is evident that they believed online teaching skills are important for their teaching careers and that they appreciated being able to find out more about online teaching.

Chapter 4: Project Impact and Dissemination

Outline of project impact using the IMPEL model

This is a short outline of the impact and dissemination of the project using the Impact Management Planning and Evaluation Ladder (IMPEL) model (Hinton, 2014). The details are discussed in the sections below the table.

Table 4: Impact and dissemination using the IMPEL framework

1. Team members	• Recognition of project members through an invitation to speak at the UNE Teaching and Learning Week 2015.
2. Immediate students	• In 2015 all pre-service students were invited to participate in a survey. This made them aware of the growth in online teaching and virtual schools, something which the survey showed they had not been aware of before. • In 2016 all students were invited to a dissemination and feedback workshop reinforcing their awareness of the project and its issues.
3. Spreading the word	• There have been two conference presentations, each with participants from several Australian universities present. • A journal article has been published in the International Journal of Learning, Teaching and Educational Research • A seminar was presented to the SoE.
4. Narrow opportunistic adoption	• A new unit is being developed on digital pedagogies for inclusion as an elective in SoE teacher education programs.
5. Narrow systemic adoption	• -
6. Broad opportunistic adoption	• By keeping the website up to date and adding more resources, the pstonline.info site should generate more traffic over time, particularly as it is picked up from search engines.
7. Broad systemic adoption	• -

Website impact

The website was launched, with minimal content, mid 2015 when the pre-service teacher survey was distributed. Gradual development occurred over the next few months. To permit tracking of website visits, a live Clustr map was included on the site in November 2015 although Google analytics provides details from the inception of the website. The analytics for visits to the website are shown in Figure 10 and reveal not only the number of visits, but also the country from which the visits were made. The majority of visits recorded were new visits (93.25 per cent) with the majority from the United States of America.

Country ?	Acquisition		
	Sessions ? ↓	% New Sessions ?	New Users ?
	3,378 % of Total: 100.00% (3,378)	93.25% Avg for View: 87.09% (7.07%)	3,150 % of Total: 107.07% (2,942)
1. United States	927 (27.44%)	98.71%	915 (29.05%)
2. (not set)	855 (25.31%)	100.00%	855 (27.14%)
3. China	200 (5.92%)	97.00%	194 (6.16%)
4. Australia	172 (5.09%)	38.37%	86 (2.10%)
5. Japan	132 (3.91%)	99.24%	131 (4.16%)
6. Russia	102 (3.02%)	24.51%	25 (0.79%)
7. France	101 (2.99%)	90.10%	91 (2.89%)
8. Brazil	95 (2.81%)	100.00%	95 (3.02%)
9. United Kingdom	84 (2.49%)	100.00%	84 (2.67%)
10. Germany	71 (2.10%)	100.00%	71 (2.25%)

Figure 10: Google analytics of visits to the website from its inception

A different section of the analytics also show that there was considerable traffic in July 2015 which was just after the survey was sent to pre-service teachers.

Conference dissemination

In late November/early December 2015 two conferences were attended with accompanying presentations about the project and introducing the website. Two team members attended ascilite 2015 in Perth and both presented and submitted a refereed paper to the conference proceedings (Grono, Masters & Gregory, 2015). The third team member presented at AARE 2015 in Fremantle after submission of a refereed abstract. Both presentations were well-attended and the Clustr maps for November and December show a distinct spike in access from Western Australia (the presentations were both given on December 1st) indicating that there was impact from the presentations (Figures 11 and 12).



Figure 11: Clustr map of website visits November 2015



Figure 12: Clustr map of website visits December 2015

School of Education dissemination and impact

An important aspect of dissemination has been raising awareness in the SoE of the project and also of the survey results. The first dissemination was in October 2015 when there was an opportunity to advertise the project in the SoE bulletin “edited”. In the October edition we briefly reported on the purpose of the project and the general survey findings, and also extended an initial invitation to be videoed (Appendix G). We eventually had five academics agree to be videoed.

A seminar was also presented to the SoE at the end of the project (Appendix H) to provide more detailed feedback on the pre-service teacher survey and to present the website. The discussion after the presentation centred on the different skills required to teach online from face-to-face. There was also discussion of the need for pre-service teachers to be formally taught about digital pedagogies as there is often a need for this in rural areas.

The impact on the SoE can be demonstrated by the start of development of a new unit on digital pedagogies, to be included in teacher education programs as an elective, within two days of the seminar. This unit will be available to pre-service teachers from 2017.

Journal dissemination

One journal article has been published to date based on the purpose of the project, the pre-service teacher survey and the start of the website content (Masters, Gregory & Grono, 2015). The decision was taken to publish in the International Journal of Learning, Teaching and Educational Research (IJLTER) as this is an open-access journal with a Creative Commons licence.

Chapter 5: Project Successes and Limitations

Successes

The project team considered that there were four major successes of the project, as outlined:

1. The project has delivered the output outlined in the original application: a website with resources to assist pre-service and in-service teachers to teach online. As reported, the website is open to anyone, anywhere and is self-paced.
2. The project has raised awareness of the development of virtual schools and of the need to gain expertise in digital pedagogies.
3. There has been a range of dissemination strategies including conference presentations and a journal article as outlined in the original application.
4. There has been a significant impact in teacher education at UNE as a new unit (subject) on digital pedagogies is being developed, as a result of reporting of the project, for implementation in 2017.

The successes of the project were the result of the project team working closely across all aspects of the project. It was a small team with all members belonging to the SoE. This made meeting easier than might be possible with larger numbers and from diverse environments. However, the processes adopted by the team are replicable for larger projects and can assist with maintaining the impetus of project development. These processes included:

- Regular meetings;
- An online repository for all documentation about the project accessible to all team members;
- Regular contact via email between meetings;
- Shared responsibility for dissemination.

Limitations

There were four major limitations outlined by the project team. These were as follows:

1. The project was conducted on a small scale at one institution only (UNE). While significant data was collected in the survey and there have been academics willing to be part of the video aspect of the resources, replication across institutions will enhance the website.
2. Two of the team members had changes to their roles at the start of 2015 which changed how their time was able to be allotted. This resulted in delay in the website being populated with content.

3. The development of resources was delayed by the time taken for ethics approval for the 'Talking Head' videos. The need to seek advice from both Legal Services and the Copyright Officer delayed the project significantly.
4. The delays caused by changing roles and ethics approval had a knock-on effect in terms of feedback/dissemination workshops. UNE has a trimester system and in the SoE trimester 3 is solely online. The delays meant that students were unavailable for the workshops until 2016. This further delayed the project.

The delay limitations impacted the project in terms of time, but the project deliverables have still been met. The limitation of the small scale is addressed in terms of the planned future directions as discussed in the next chapter.

Chapter 6: Future Directions

Although the website is live and populated with a range of resources, there is scope for further development. As discussed, the mapping of the pre-service teacher survey responses (Appendix E) helped to frame the current modules on the website. Over time, these responses will be used as the basis of future content, both new modules and additional sub-sections in existing modules in order to cover each area of need identified.

An important direction is the intent to develop a follow-on project that will be a cross-institutional project in partnership with the New South Wales Department of Education and Training (DET). The new project would be to involve pre-service teachers practising their online teaching skills, based on the resources of this seed project. This new project will be dependent on finding new avenues of funding support and also the co-operation of the DET and other higher education institutions.

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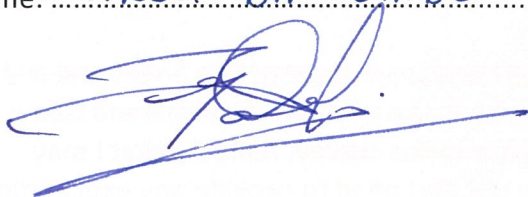
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Appendix A: Certification

Certification by Deputy Vice-Chancellor (or equivalent)

I certify that all parts of the final report for this OLT grant provide an accurate representation of the implementation, impact and findings of the project, and that the report is of publishable quality.

Name: GREG BALCOMBE Date: 6/6/2016

A handwritten signature in blue ink, appearing to read 'Greg Balcombe', with a long horizontal flourish extending to the right.

Appendix B: Pre-service teacher survey



PST Online Phase 1 Survey Participant Consent

- I have read the information contained in the Participant Information Sheet and any questions I have asked have been answered to my satisfaction. I understand that participation is voluntary. I agree to participate in the survey, realising that I may withdraw at any time without consequence nor do I need to provide any explanation if I decide not to participate or to withdraw at any time.
- I agree that research data from the survey gathered for the study may be published using a pseudonym.
- I agree that I may be quoted using a pseudonym.
- I understand that I may be contacted for participation in a later workshop only if I consent to this at the end of the survey and that completing the survey does not mean that I have to agree to attend such a workshop.

Please complete the consent process below.

* Click below the button to give consent to completing the survey. Please note that not providing this consent will send you to the end of the survey and you will not be able to re-enter the survey.



This project has been approved by the Human Research Ethics Committee of the University of New England (Approval No. HE15-114, valid to 18.5.16). Should you have any complaints concerning the manner in which this research is conducted, please contact the Research Ethics Officer at the following address:

Research Services
University of New England
Armidale, NSW 2351
Telephone: (61 2) 6773 3449
Facsimile (61 2) 6773 3543
Email: ethics@une.edu.au

Participation in this survey is voluntary. Completing and submitting this survey gives your consent to this part of the research. If you do not wish to participate in the research, please leave this site and do not continue any further.

Thank you for continuing and moving on to complete this survey. As explained on the first page, this survey is voluntary. The survey should take approximately 15 minutes to complete. Questions marked with an * require an answer. Should you decide that you do not wish to continue participating at any time during the survey, close your browser and the data will not be saved. Once you reach the end of the survey and click the 'done' button, your answers will be saved and will be visible to the research team.

Thank you again for assisting us, Yvonne Masters, Sue Gregory and Stephen Grono

A: General Questions

*QA1: Name (included to allow us to follow up anyone interested in the feedback and/or participate in workshops):

*QA2: Age

Under 21

21 to 25

26 to 35

36 to 45

46 to 55

56 to 65

Over 65

*QA3: Gender

Male

Female

QA4: My place of residence when not attending university is:

Rural – living on land/property

Rural Town – less than 5000 people

Small Regional Town/City – 5000-18000 people

Small Non-Regional Town/City – 5000-18000 people

Regional City – 18000-50000 people

Non-Regional City – 18000-50000 people

Regional Major City – 50000-250000 people

Non-Regional Major City – 50000-250000 people

Capital City – 50000++ people

*QA5: Course enrolled in:

Bachelor of Education (Primary)

Bachelor of Education (Early Childhood/Primary)

Bachelor of Education (K-12)

Bachelor of Special Education (Primary)/Bachelor of Disability Studies

Bachelor of Education (Secondary Arts)

Bachelor of Education (Secondary Business)

Bachelor of Education (Secondary Mathematics)

Bachelor of Education (Secondary Music)

Bachelor of Education (Secondary Science)

Master of Teaching (Primary)

Master of Teaching (Secondary)

Other, please specify

QA5.1 If Other, please specify

*QA6: Academic Year (eg. Year 1, Year 2, Year 3 or Year 4 of your course):

QA7: How many years have you attended university (include the total number of years for all previous courses, e.g., if you were part time, it may have taken you 8 years to complete a 3 year course - therefore the number required here would be 8)? [Please insert a number]

B: Specific questions regarding your personal perception about ICT skills that may be necessary for online teaching

*QB1: How would you rate:

	Very high	High	Average	Low	Very low
B1a Your skill level with respect to ICT in general prior to commencing your current course?					
B1b Your skill level with respect to ICT now?					
B1c Your knowledge level with respect to teaching online prior to commencing your current course?					
B1d Your knowledge level with respect to teaching online now?					

*QB2: How often do you use the following tools (technology/applications)? Tick the category that is applicable to you at the moment. If you don't understand a question or have not heard of the tool please select N/A.

	Daily	Several Times a Week	Several times a month	Infrequently	Never	Not Applicable (N/A)
The Internet in general						
Smartphone						
Social networking (e.g. MySpace, Facebook, Twitter)						
Online conferencing tools (e.g. Skype, Google chat, Firefox Hello)						
Networked Games (e.g. World of Warcraft, Maple Story)						
Other 3D Games						
Virtual Worlds (e.g. Second Life, Active Worlds, Open Sim, Club Penguin, Barbie World)						

QB3: Please rate your current perception of your preparedness for teaching across online environments in the following areas (on a scale of 1 to 5: 1=very low; 2=low; 3=average; 4=high; 5=very high).

	Your knowledge of					Your experience in					Your confidence in				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
a. lesson presentation skills.															
b. providing clear instructions to students.															
c. skills in structuring a lesson.															
d. skills in observing and engaging around the virtual classroom.															
e. responding to unexpected occurrences.															
f. behaviour management skills.															
g. understanding the perspective of students.															
h. developing self-confidence as a teacher.															

C: Your views on the challenges of and the needs you may have for online teaching

*QC1: What factors do you feel are important in developing a positive online learning experience?

*QC2: What concerns would you have, or challenges might you face, if you were appointed to teach using online technology?

*QC3: How might you resolve these concerns or challenges?

*QC4: What resources do you feel you would need to help you in this area?

*QC5: Who might you need to provide assistance?

* Q8: Would you be willing to participate in a workshop (Armidale or Parramatta)

Yes

No

If YES, please indicate which session/s you would be willing/available to participate in (it is anticipated that these will be held in August/September, 2015):

Armidale am

Armidale pm

Parramatta am

Parramatta pm

Parramatta evening

Q9: Email address (so that we can contact you in relation to a workshop)

Q10: Would you like to receive a copy of the final report, when it becomes available in December 2015?

Yes

No

Appendix C: Consent form for academics to be videoed

Release and Consent Form	
[Project – Online Resources for Pre-Service Teachers to Promote Online Teaching Support – Office for Learning and Teaching Grant]	

UNE Staff Member	Name Address Telephone Email
Presentation	Title/Description <i>[eg: presentation made [insert date] on [insert topic] at UNE]</i> and includes any accompanying content such as PowerPoint slides
Purpose	Educational purposes, including developing online teaching resources for pre-service teachers

TERMS

I, the Presenter, hereby:

(a) agree that the University of New England:

- (i) may record the Presentation (including my image, voice, name, biographical material or other information concerning me) ("**the Recording**") on any media for visual and/or audio reproduction for the Purpose;
- (ii) may use, publish or reproduce the Recording ("**the Publication**") on any media for the Purpose, including making it available on a public website with open access;
- (iii) may edit the Recording prior to use, publication or reproduction at its sole discretion and may use all or any part of the Recording as it considers appropriate for the Purpose, however is not obliged to use any part of it;
- (iv) owns all intellectual property rights including copyright and all other rights in the Presentation, the Recording and the Publication upon creation
- (v) will hold the Recording and any edited versions for such period of time as it considers reasonable for the Purpose; and
- (vi) will not make any payment to me for the Presentation, the Recording or the Publication.

(b) warrant that:

- (i) I have all the rights necessary to make the Presentation, to permit the Recording of the Presentation to be made, and to authorise the Recording to be made available publically online;
- (ii) I have delivered the Presentation and authorised the Recording of the Presentation and Publication on a voluntary basis;
- (iii) I will receive no payment for the Presentation, the Recording or the Publication;

(iv) no third party's intellectual property rights will be infringed by being included in this Presentation; I have obtained permission for and acknowledged the source of any illustrations, diagrams or other material included in the Presentation of which I am not the copyright owner;

(v) the Presentation does not contain any material that is untrue, defamatory of any person, misleading or deceptive nor will it constitute an invasion of privacy or amount to the violation of any right of publicity or other rights of any third party;

(vi) by giving the Presentation I will not breach any obligation of confidentiality to any third party;

(vii) I consent to any act or omission which may infringe my moral rights in the Presentation, the Recording and the Publication;

(c) acknowledge that the Commonwealth will apply a Creative Commons Attribution-ShareAlike licence (see: <http://creativecommons.org/licenses/>) for any public release of the Presentation, the Recording and the Publication.

Signature of Presenter Date/...../2015

Name of Presenter (please print):

Appendix D: Invitation to academics to participate



Dear xxx,

As you know, we (Sue Gregory, Stephen Grono and Yvonne Masters) are conducting an OLT research project that is designed to provide resources to assist pre-service teachers to develop online teaching skills. This has been seen as important with the growth of K-12 virtual schools. There is a brief introduction to the project on our project website (pstonline.info), but please understand that we are currently still building the website.

One of the resources being developed is a set of short (2 - 3 minute) 'talking head' videos on aspects of online teaching. As an experienced academic in the online environment and with demonstrated expertise the team is asking if you would agree to participate. You may care to speak about one of the following topics or you may also feel that you could talk about a topic that we have not mentioned. Most virtual schools have synchronous, as well as asynchronous, sessions with the school students so particular topics that are being considered are (in no particular order):

- engaging/motivating students online;
- personal delivery in an online environment;
- maintaining attention;
- catering for diversity;
- planning an online lesson;
- conducting an online discussion.

If you have any questions please do not hesitate to contact one of the team. We would love you to be involved and the consent form is attached for you to complete if you agree. The team will then be in touch to organise a videoing time in late November/early December.

Could you please respond to the invitation with the consent form?

Regards,

Yvonne

Appendix E: Mapping of pre-service teacher survey responses to modules

Theme 1: Resources for PST to support online teaching

1 Maintain engagement online - engage and motivate online

- Student engagement and motivation
- Feel part of online community, not on own - inclusion, involvement
- Reduce the perception of distance in distance learning
- Safe learning environment - non judgmental
- Feeling of progression, pacing
- Feels personalised, with contact plus positive feedback and encouragement
- Ease of navigation, visual appearance and quality of materials
- Opportunities to be active contributors in environment
- Inclusive, engaging, individualised
- Understanding, availability, support

Online engagement strategies

- Q&A time
- Small group tutorials / virtual classroom
- Forums where students interact, comment on work
- Engagement with like-minded peers
- See what others are doing
- encourage peer support
- One to many plus one to one contexts
- Humour, interest, engagement
- Student-support, lecturers, peers

Engagement (concerns)

- Keeping student attention
- Engagement
- Avoiding boredom for students
- Knowing students keeping attention
- Behaviour management
- Assess prior knowledge
- Track how learners are coping with lessons
- Reading ALL instructions, not skipping
- Aiming content at varied levels to cater
- Identify and correct misconceptions
- How to differentiate / individualise online
- Responding in encouraging ways
- Check understanding / gaps
- Student progress tracking
- Identify struggling students, cues

- Keeping on task
- Encouraging forum communication
- Comfort and alternates to social media

2 Use / Integration of technology

- Confidence in programs / tools for effective use
- Training plus support for tools
- Technologies interesting / engaging to student
- Ability to download all content easily for offline use
- Clear navigation, clear access to help
- Technologies support any computer / device user may have
- Audio - professional, clear, focused on and aware of audience
- Impacted by internet speed of user? Consider technology at different speeds

Using technology (concerns)

- Lack of experience in this format - programs and tools to teach effectively
- Computer skills, computer reliability - for both teacher and students
- Finding appropriate educational websites to learn plus ask questions
- Network / internet reliability (including rural)
- What technologies available / how to use
- How to best integrate
- Download speed and varied content
- Backup plans and what do to when technology fails
- Technology expert available at short notice to fix issues
- Coaching and practice for teachers
- Professional development availability, support to learn technology
- Best formats, e.g. audio-visual materials, for students
- Dissemination and preferred format for students
- Student support with technology and logging in
- Slow internet vs virtual classroom / video streaming
- Technology requirements, budgets

Technology skills

- Would need collaboration - Googledocs, Edmodo
- How to set up online teaching forums
- One way - teacher only delivers weekly resources, so hard to assess progress
- Ability to chat spontaneously, as in classroom
- Constructing lesson plans and assessment tasks within online format
- Advice and practice to effectively teach online - apply current learnings to online situations
- Online teaching skills and strategies
- Podcasts, visuals, video creation
- IWBs, Notebook and tablets in classroom situations
- Classroom wiki groups or chat rooms

- Social media, OER, online courses
- Technology to enhance learning, not just excuse to use technology
- Online teaching not addressed in current degrees in detail
- Extension of distance education by hard-copy through post

3 Content must be clear

- Content - thorough and informative / clear and concise
- Clear in what you're teaching
- Accessibility of resources
- Clear / concise instructions plus expectations / intentions
- Multimodal - slides, diagrams to understand
- Audio / visual media, readings, videos, interactive activities, live lectures
- Clearly structured / scaffolded info
- Learning space easy to navigate
- Easy access to supporting documents, online books/resources
- Variety of tasks and formats (articles/video/images) and tools - support
- Currency of materials and information
- Alternate explanation methods. Can choose what suits best
- Cheat sheets for future reference
- Clear links, description and purpose of resources/readings plus link to topic
- Knowledge of content, ICT, audience, audience needs
- Assignment examples
- Inviting and simple

Theme 2: Forming connections online

1 Building relationships – Engage as a teacher

- Timely access to teachers / phone, email, skype
- Personalise - know who lecturer is
- Opportunity to chat, be available - forum, virtual classroom, skype
- Frequent interaction with students - forum / news
- Active online, responding directly to student conversations
- Feel connected
- Timely feedback, e.g. 1 day forum / emails
- Rapport / relationship, ask for feedback
- Follow up after answering questions to ensure understanding

More relationship

- Lecturer availability
- Active participation
- Knowledge of online teaching - what is it, purpose, how it works, confidence, ability to use
- Communication skills
- Hands on experience in use of online teaching
- Facilitator - promote interaction and collaboration
- Gauge where students up to

- Time management - online time frames
- Not seeing and interacting with students face to face
- Avoiding isolation for students
- Relationship building / getting to know students
- Teach the technology requirements / clear instructions
- Knowledgeable in subject area
- Remaining available over extended time
- Privacy - both teacher, student
- Online skills, making sure course not impersonal
- Class sizes
- Policy and code of conduct, inappropriate use, safety
- Support - administration, professional development, access to other teachers/staff
- Not knowing who's online at different times
- Lack of F2F contact removing personal element
- Amount of time required to develop / deliver content
- Assessment for learning
- Copyright
- Translating tone and tact online
- Finding resources suited to learning outcomes
- Keeping current with best technologies and practices
- Miscommunication - responses viewed by all, instantly
- Not understanding instructions, difficulty communicating
- Timely and meaningful feedback methods
- Ensuring all students get communication / announcements

2 Differences from F2F and addressing this

- Cannot respond to visual / non-verbal cues
- Teacher still needs to fulfil social, emotional and intellectual needs of students
- How experience differs - including remote settings where access can be disjointed/interrupted
- Cannot see students to see if they understand
- Require good internet speed

Assessment online

- Structured assessment which contributes to meaning making
- range of modes and formats, not just written essay types
- outcomes of learning experiences valid and accurately reflected through medium

Clear online expectations / etiquette

- Mutual respect in online etiquette - respect and consideration
- Quick/helpful response times
- Encourage involvement
- Clear in meaning

3 Resolving challenges

- Ask questions

- Quality lessons, on topic
- Clear training to gain skills and confidence
- Organisation, schedule
- Incorporate practical stuff students can use afterwards
- Regular email follow ups
- Online search - google, YouTube, MOOCs
- Explore and test technology before use
- Strategies to avoid exposure to personal info
- Trial and error
- Practice in test environment
- Video / video conference for intonation, body language in communication
- Outline expectations and requirements prior
- Mechanisms to gauge student engagement
- Online presence / engagement
- Positive ongoing feedback
- Give students helpline to call, enough time to prepare
- Construct lessons that ensure tech enhanced, not just added on
- Explicit teaching of online forum etiquette - bullying, put downs
- Ensure links working prior, test
- Establish PLNs - e.g. Edmodo teaching groups
- Require regular student updates/feedback - forum, email
- Forums, online chat, skype
- Opportunities to catch up with other students nearby - study groups
- More engaged through forum contribution
- Virtual classroom / video conferencing - allow F2F , inclusion
- Resource collection for online & classroom teachers
- More interactive activities - structured, easy to interact with
- Have times for one on one talking - not just school goals but life experience and goals too
- Techniques to interact meaningfully with students online
- Communication – Second Life, Skype, online forums
- Practice and seek knowledge from experienced teachers
- Online tutorials / support staff - professional development on providing online teaching
- Read and research subject areas, find resources
- Set times for 'on-campus' resources - workshops, tutorials, texts
- Take online courses - for both content and approach / uses of technologies
- Seek feedback from peers, others and students
- Get student perspective - log in as a student
- Scheduled times to be in chat session, attached to learning space
- Tap into support network of online school. Talk to others. Complete professional development.
- Ensure information conveyed easily, topic notes clear to find and use
- Participation other than via forum discussion? Ensure students engage / respond - e.g. quiz

- Student support materials on technology issues (playing / recording media)
- Active engagement and participation requirements to formatively assess understanding and engagement levels
- Engage professionals to teach teachers how to best use technology
- Varied assessment, spread out through unit
- Facilitate team / group work to deliver responses or work and assess contributions individually
- Live lectures - opportunity to ask questions and participate in discussion
- Chat sessions to share info and have 'guided' tutorials
- Multimedia resources, not just text / readings
- Publish contactable times
- Personal reflection
- Training and channels of communication
- Encouraging, positive approach to responses and feedback
- Backup plan - materials online for later catch-up, F2F , repeat sessions
- Screen communications (forums, responses)
- Set but frequent times to check emails and forums, and respond. E.g. twice daily instead of 24/7 expectation
- Redirect open ended questions to get feedback - e.g. where issues are ICT skill vs understanding and communication
- Hard copies of step by steps for executing procedures and solving problems
- Seek examples of online teaching e.g. School of the Air, Broken Hill
- Regular online contact, social chatter / lots of mini sessions to check knowledge
- Interactive tasks, group work, timely communication
- Policy for engagement with specific outcomes
- Specific tools for subject areas - e.g. mathematics
- Minimum system requirements, but aim for free and platform agnostic tools
- Supplement with alternative and additional resources
- Explicit technology training and sessions, as well as content
- Build FAQ section, encourage peer responses (but monitor for accuracy)
- Structure to avoid having to 'look' for appropriate info
- Place to 'check in' could provide way to assess student progress
- Frequent small assessment tasks
- Planning and preparation. Clear lesson plans, open any required pages and materials
- Take time to get to know students and interests / skills
- Observation / instruction - webcam writing tasks, watch progress (virtual classroom / VPN / collaborative documents)

Theme 3: Online teaching activities [used in PST education]

1 Built to support flexibility

- Flexibility
- Student time management, learning space
- Adapt content to suit learners needs / direction
- In class materials available online – catch-up, reflect, repeat
- Opportunities to practice

- Price considerations for any resources

2. Finding help / support networks

- IT department
- Someone experienced - in teaching, in programs
- Other teachers
- Professional development
- Friends, support network
- Someone targeted, for specific and appropriate programs
- Parents
- Employer / school
- Students themselves. Including home schooled / distance students
- IT programmer
- BOSTES, DET, TAFE
- Online forums
- School mentors
- Media training experts. People with broadcast experience
- Online resources, YouTube, Udemy, google

3 Helpful resources

- Latest ICT - access, knowledge, support
- Training on ins and outs of online teaching
- Time management
- Learning about interactive programs: Second Life, video conferencing software, etc
- Lesson plans
- Videos of online lesson being delivered, including interactions with students
- Hardware - laptops, webcam, headphones / reliable internet connection
- Professional development - internet safety, how to interact with students on internet, how to make online lessons successful
- Support network - Peer network, manuals, courses, IT assistance
- Access to forum of experienced and beginner teachers of online teaching
- Collection of useful, peer reviewed online texts
- simpler way of gaining qualifications or knowledge in area of online teaching
- Resources outlining techniques and strategies for ICT and online teaching, including guides for programs used and collaborative wikis
- Content management system
- Training on ICT tools available to undertake online teaching / tools that can create different activities and assessments
- Additional staff to share time and engagement requirements - feedback, marking, support
- Educational resources - DET, YouTube, iTunes
- Outlines of how to include more online strategies into teaching, explaining how to incorporate devices well
- Clear view of what ICT expectations are regarding teaching in real and online classrooms
- Compatible resources per KLA

- Online tutorials
- Conceptual, reusable, high quality content that involved learner choices and journey
- user-friendly, well-catalogued, easy to locate
- IWB training / access
- Interactive connecting technology access - e.g. Connect, Skype, etc
- Mentoring and examples from experienced teachers in online environment – convey subject, personal approach
- How to structure lessons, how to engage students, what sort of technology is used, classroom management techniques, troubleshooting technology issues
- Basic - intermediate IT skills training, training in online teaching and lecturing
- Print material as well as online material - downloadable content for offline viewing (for both accessibility and as resource, e.g. printables)
- Support person to contact
- Access to programs to learn and practice before use in classroom
- Way to see who accessed essential information, to help assess student progress, check right information is getting to students (analytics)
- Prompts to students specifically not accessing materials (intervention plans)
- FAQ book and tutorials from previous beginning teachers

Appendix F: PST Online feedback survey



PST Online Feedback Sheet

1. *How easy did you find the website to use?*

Very easy
5 _____ 4 _____ 3 _____ 2 _____ Very difficult
1

2. *How useful did you find the website?*

Very useful
5 _____ 4 _____ 3 _____ 2 _____ Not at all useful
1

3. *What would you like to see changed on the website?*

4. *What would you like added to the website?*

5. *How easy did you find the resources to understand/use?*

Very easy
5 _____ 4 _____ 3 _____ 2 _____ Very difficult
1

6. *How useful did you find the resources?*

Very useful
5 _____ 4 _____ 3 _____ 2 _____ Not at all useful
1

7. *What would you like to see changed in the resources?*

8. *What would you like added to the resources?*

9. *Any other comments?*

We sincerely thank you for your participation in the workshop and hope that you found it interesting and useful.

Yvonne, Sue and Stephen

Appendix G: Early dissemination in School of Education bulletin



Trimester 2
October 2015

Updates and information
across the School of
Education at LINE,
encompassing teaching
and research in early
childhood, primary,
secondary and
tertiary education.

'Developing Resources for Pre-service Teachers to Promote Online Teaching Support' – an OLT Seed Project

Dr Yvonne Masters, Dr Sue Gregory and Mr Stephen Grono

We are currently working on our OLT project, building a website and developing online resources to assist pre-service teachers develop their skills for teaching online. We feel that this is important as it has been predicted that “by the end of the next decade, secondary schools will offer up to half of all courses in virtual formats” (Bull, 2010, p. 29). Moves into virtual schooling are occurring in New South Wales where a new 7-12 virtual high school, Aurora College, opened this year, 2015. It is argued in the literature that teaching online necessitates a different range of skills from those currently covered in teacher education programs. Online teaching changes the dynamics and “necessitates a shift from a practice of controlling to engaging students’ attention” (Murphy & Manzanares, 2008, p. 1061). This project has the capacity to begin to prepare new teachers for the realities of 21st century education (Partnership for 21st Century Skills, 2009) and thereby, in the long term, to improve education opportunities for school age children.

The first phase of the project was a survey for pre-service teachers to ascertain their perceptions of their preparedness for and the challenges of online teaching. The results were interesting as a large proportion of the participants felt that they were confident with teaching online and had good knowledge about it. When the responses were analysed more closely it became clear that many participants were discussing how academics needed to teach online for the benefit of their students rather than discussing themselves as online teachers of school age students. The survey led us to a deeper belief that there needed to be something to help guide pre-service teachers.

When asked about concerns and challenges, technology clearly, and expectedly, rated as a major issue. However, the participants did pinpoint issues that we had already considered such as student engagement, communication in an online environment, catering for diversity and ascertaining prior knowledge. We are hoping to have a range of short videos on the website where academics experienced in online teaching talk about these issues.

We would really like volunteers for the videos. We are aiming to begin videoing at the end of October and the videos would only be 2 - 3 minutes. Please contact any one of us to offer assistance and we will send you a consent form.

Bull, G. (2010). The always connected generation. *Learning and Leading with Technology*, 38(3), 28–29.

Murphy, E., & Manzanares, M. A. R. (2008). Contradictions between the virtual and physical high school classroom: A third-generation Activity Theory perspective. *British Journal of Educational Technology*, 39(6), 1061–1072.

Partnership for 21st Century Skills. (2009). 21st century learning environments. Washington DC.

Appendix H: School of Education Seminar



PST Online: Developing resources for online teaching in virtual schools

Dr Yvonne Masters
Dr Sue Gregory
Mr Stephen Grono

Wednesday
18 May 2016, 1 – 2 pm
Room 224-Education
Building

Please feel free to bring your lunch

All interested are welcome to attend

Virtual schools have been established around the world, including in Australia, and pre-service teachers need to be prepared for this alternate teaching medium. Unlike blended learning in the classroom, virtual schools have no need for physical classrooms, and students can be geographically distant from both each other and the teacher. Exclusively online teaching changes the teacher/student dynamics and new skills, techniques and strategies need to be developed. We received OLT funding to establish a website for pre-service teachers with resources to assist in developing online teaching skills. In this seminar we report on a survey conducted with pre-service teachers that provided the underpinning for the website development. We will also present the website that has been developed.

School of Education (SoE) Seminar Series