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What Skills Do I Need to Teach Online? Researching Experienced Teacher Views of Essential Knowledge and Skills in Online Pedagogy as a Foundation for Designing Professional Development for Novice Teachers

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What skills do I need to teach online? Researching experienced teacher views of essential knowledge and skills in online pedagogy as a foundation for designing professional development for novice teachers

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ABSTRACT
As e-Learning continues to dominate educational services globally, the domain of online pedagogy continues to expand, and teaching in online, blended and hybrid classrooms now considered an essential element of teacher education in the many parts of Europe, Canada and the US. As a result, the need for professional development of higher education teachers has never been greater. An important precursor to designing effective teacher preparation programs is to establish what novice teachers need to know and do to be successful in virtual teaching spaces. The idea that professional development for online teaching needs to focus on instructional and communicative skills, not just the technology skills, is reinforced throughout the literature. This large international qualitative study was designed to investigate and explore the perceptions of experienced teachers of the skills and knowledge deemed essential for online teaching and the capacities they perceive as most important for effective e-Learning. Transformative learning theory formed the foundational theoretical framework for this study. The research problem identified was the lack of practitioner voices on the challenges that novice teachers experiences in their transition to online teaching and the perspective changes that happen when they reconsider their pedagogies. Results indicate that teachers need to transform their pedagogy when teaching in virtual spaces and this includes new roles, modes of interaction and discovery of engaging ways of teaching online that increase connectivity and interaction with students. Implications for professional development and practice in higher education are examined.

KEYWORDS: e-learning, online, professional development, transformative learning, virtual environments

1. INTRODUCTION

The literature review is organized in order to provide insights into current thinking on online pedagogy and the challenges, skills and knowledge required to teach online. Online learning represents one of the key growth areas across

all areas in the adoption of web-based technology to provide educational services (Means, Toyama, Murphy, Bakia, & Jones, 2010). Teachers who are new to online pedagogy need to develop particular skills and face the challenges of how to best deliver learning experiences to their students in a medium which requires a distinctive pedagogy. A newcomer to online teaching where there is no co-presence has to rethink how to plan and to teach differently, sometimes described as "ways of thinking and practicing" (Entwistle, 2005), or "rules of engagement" (Shulman, 2005). Often the knowledge held by professionals is tacit or craft knowledge, and may be difficult to explicate (Otteson, 2007:41). The present research was motivated by the need to make explicit teacher thinking and description of the invisible understandings they have about online pedagogy. The study invited experienced teachers to reflect on, and articulate what effective online pedagogy consisted of in practice. The rationale for the study is the recognition that teaching online requires skills, pedagogies and specialised knowledge against a background of societal and technological change, though a slower pace of change in academic practice is common (Bonk, 2009; Picciano, Seaman, Shea & Swan, 2012);). Though online and distance education continues to expand, there is limited consensus on the skills and knowledge required for effective online pedagogy, or the implications for practice arising from social media used in the service of learning (McLoughlin & Lee, 2010). Kreber & Kanuka (2006:121) comment that because … "results of studies showing that higher levels of learning are not easily achieved in online courses, there is an imperative to advance our understanding of how to facilitate effective online learning activities". Hence this study sought to investigate perceptions experienced teachers' of the competencies and knowledge required by novice teachers when making the transition to online teaching. The research questions were as follows:

1. What are experienced teachers' views of the skills and knowledge required to teach effectively online?
2. What evidence is there that teachers undergo perspective transformation when they transition to online teaching?

2. THEORETICAL FRAMEWORK

Researchers have found that role change and transformation of practice is required when teaching online (Laat, Lally, Lipponen & Simons, 2007). A consistent theme in the literature is that the affordances of technology may require teachers to adopt new practices, pedagogies and mindsets (Coppola, 2002). The multimodal nature of virtual spaces mean that teachers need to change as "they can no longer rely upon sensory and expressive skills to establish and maintain relationships with students" (Major, 2010).

Transformative learning theory therefore provides a rich framework to analyse practitioner perspectives on how teaching online differs from face-to-face. The foundation and rationale for adopting Mezirow's transformative learning theory (Mezirow, 1978; Mezirow & Associates, 2000) is the notion that learning and teaching in virtual environments requires rethinking of professional practice, and to a change or modification of teacher practice (Figure 1). Today, online teaching can occur asynchronously or synchronously and may be either fully online, blended with face-to-face teaching or combine elements of campus-based and hybrid forms of instruction. Teachers new to this mode may experience frustration, anxiety and confusion as they embark on a new learning journey as e-teachers. Going beyond content delivery, teachers must become a "guide on the side" who scaffolds and coaches, and often this demands a change in teachers' skills and pedagogies, with a consequent rethinking or transformation of professional identity and role. There are several features of the online environment that require teachers to adopt new practices, to step back from their directive roles and instead become facilitators of learning. Thought leaders for this perspective are Garrison and Anderson's (2003) ideas of creating immediacy through social and cognitive presence, and consideration of the learner as an active member of a community of practice (Rovai, 2002). Jewitt (2008) signals that online learning is different and argues that online pedagogy requires "a framework for re-thinking learning from a multimodal perspective in order to explore what real difference the use of new technology can make for learning" (p. 2). These perspectives indicate that eLearning is in constant change, and is dynamic, adapting to new social media and emerging social and educational constraints. Researchers tend to agree that virtual teaching spaces require a constructivist pedagogy, the development of distinct facilitation skills and new communicative practices (Guasch et al, 2010).

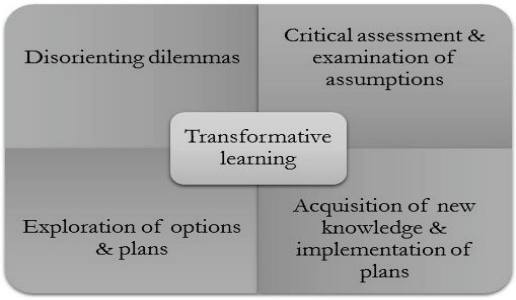

Figure 1: Mezirow's (1978) stages of transformative learning

3. METHODOLOGY

This international study adopted a qualitative multiphase research methodology (Strauss & Corbin 1998) across three higher education settings, two in Australia and one in the USA. The research was designed to investigate the skills and concepts deemed essential for online teaching, especially focusing on those perceived as most important for novice online teachers, and whether teachers had undergone perspective transformation when adapting to online teaching. This international study was based in Australia and the US, with participants drawn from 58 university teachers from different disciplines who had experience in online teaching. Phase 1 of the data collection entailed teachers engaging in critical reflections written over a period of several months in journal format. Table 1 shows the number of participants from 2 Australian Universities and one US University.

Institution	Completed responses
US University 1	17
Australian University 1	15
Australian University 2	26
TOTAL	58

Table 1: Number of valid responses to the reflection questions based on teachers from 3 Universities (N58

Teachers were asked to reflect on and write responses to the following prompts:

- From your point of view as an online teacher, what have been the major concerns or challenges that have been uppermost in your mind over the past month, about online or blended learning and teaching and/or online course design?
- What typical questions, if any, have you asked, or have been meaning to ask other faculty or students, about online learning and teaching or online course design?
- What understandings, if any, have you developed over the past several months/years, about online learning and teaching or online course design?
- What successes/concerns if any, have you experienced over the past months, about online learning and teaching or online course design?

The second phase of data collection entailed semi-structured focus groups to achieve data triangulation. Ten Australian higher education teachers from 2

universities, all with over 6 years' experience of online teaching and 5 American teachers participated in semi-structured focus groups. Questions asked were:

- What are the main challenges of teaching online?
- What skills are essential in online teaching contexts?
- What changes in pedagogy do you consider essential for teachers new to e-pedagogy?

Participants were informed about the goals of the study and the process followed the procedures of ethical data collection for both stages. Data collection took place from August to October 2016 and each focus group discussion lasted for approximately 60 minutes. l. During the focus groups, teachers were encouraged to talk openly about their experiences and views. To analyse data from a transformative learning perspective, Mezirow's theory (1991) was applied to determine whether experienced teachers had shown perspective transformation in their online pedagogy and if so, how this changed their skills and perspectives. This theoretical framework provides a deep and comprehensive way to understand how adult learners examine their beliefs when confronted with dilemmas and professional demands and then shift or change their views, expectations and beliefs to incorporate new ideas, values and practices (see Figure 1).

Steps taken for data analysis for each phase followed the qualitative data analysis approach of Miles & Huberman (1994) as a framework for coding and thematic analysis by following these steps:

1. *Data reduction*: the transcripts are coded and themes identified but the context and meaning are preserved
2. *Data display:* Analysis is progressed by using diagrams and charts
3. *Drawing conclusions:* This process is ongoing while coding and reduction take place. Table 1 shows initial codes identified in the reflective questions and in the focus groups.

4. RESULTS

Results for phase 1, based on reflective questions are displayed in Table 2. The responses to reflective journal questions from participants from three higher education institutions were analyzed for the purposes of identifying_skills and concepts for online and how approaches to pedagogy were transformed when teaching online. Some of the participants were lecturers and some were academic developers. All had experience as online teachers and course designers within a tertiary education context. As well as providing data to

enable the research team to identify key skills that experienced online teachers developed, the data also provided evidence of the skills the participants developed and the challenges they faced.

Challenges and concerns	Pedagogy	Theme
➢ Online teaching is different ➢ Lack of visual cues ➢ Online lacks the synergy of face-to-face teaching ➢ Online teaching is not relational	➢ Need to humanize the learning environment, personalize interaction by using multimodal technologies	Challenges and changes when teaching online
➢ Lack of interaction ➢ Strategies from face-to-face do not work online ➢ Students lack confidence and skill using technology	➢ Allow for choice and flexibility ➢ Know the affordances of the technology ➢ Provide help guides for students, be available to troubleshoot ➢ Use discussion boards for peer interaction	Enhancing connection, humanizing the learning space and participation
➢ Students not familiar with virtual teaching ➢ Students lack self-regulation skills ➢ Students focus only on assessment, do not interact at deep level	➢ Be clear about expectations about participation ➢ Encourage self-regulation through choice Use focused communication, learn to moderate discussion	Managing expectations
➢ Students not engaged in tasks ➢ Quality of interaction is limited-procedural mostly ➢ Students may have learning difficulties but remain invisible	➢ Personalise the learning environment by getting to know students ➢ Monitor student progress, provide individual feedback	Building relationships and engaging students
➢ Online teaching is not relational ➢ Difficult to know if students are progressing ➢ Less teacher control in online contexts, so monitoring learning can be challenging	➢ Use narrated lectures to create teaching presence ➢ Provide audio briefings for assessment ➢ Use focused communication, learn to moderate discussion ➢ Be online frequently and respond to emails	Creating teacher presence both social and cognitive
➢ Time and workload to develop courses ➢ Advance preparation is necessary ➢ Need know-how is the best technologies for the pedagogical purpose	➢ Designing relevant and interesting activities ➢ Creating advance organizers for students ➢ Use multimodal resources to convey concepts and meet learning outcomes	Designing and structuring the online program

Table 2: Emerging codes and themes from phases 1 & 2 of data collection

According to the results in Table 3, the skills with the highest scores were technological skills for eLearning, student engagement and achieving high

quality teaching and learning. Each of these nine categories displayed indicators of questioning current assumptions and seeking skills to transform practice. This is reflected in comments such as

- How do I personalise teaching to suit who I am teaching?
- How do I best communicate with students?
- Online can be fragmented so how can I develop a sense of place and connectivity?
- How can I engage students more deeply in the learning process through quality interactive discussion forums?
- How might I enhance the quality of the feedback provided to distance students?

1	Distinctive nature of online pedagogy	9	7	23	15	**32 (59.3)**	**22 (40.7)**
2	Student engagement	11	6	27	11	**38* (69.1)**	**17 (30.9)**
3	Online communication	7	9	21	17	**28 (51.9)**	**26 (48.1)**
4	Relationships and getting to know students	9	8	26	12	**35 (63.6)**	**20 (36.4)**
5	Identity as a teacher	9	7	21	17	**30 (55.6)**	**24 (44.4)**
6	High quality learning and teaching	11	6	25	13	**36 (65.5)***	**19 (34.5)**
7	Humanisation of the online environment	7	10	28	10	**35 (63.6)**	**20 (36.4)**
8	Sense of place, connection	6	10	22	16	**28 (51.9)**	**26 (48.1)**
9	Technical skills for effective e-learning	11	5	33	5	**44* (81.5)**	**10 (218.5)**

Table 3: Summary of responses to reflective questions

When participants were asked to respond with to a Likert-style scale from 1 (low) to 10 (high) about nine areas relating to online teaching concerns, the highest areas of concern were technological concerns (81.5% of participants reported concerns), student attrition (69.1% of participants reported concerns) and high quality learning (65.5% of participants reported concerns). Results for phase 2- Focus groups show that experienced staff expressed major concerns in engaging students and establishing connections through personalisation of the environment (Figure 2).

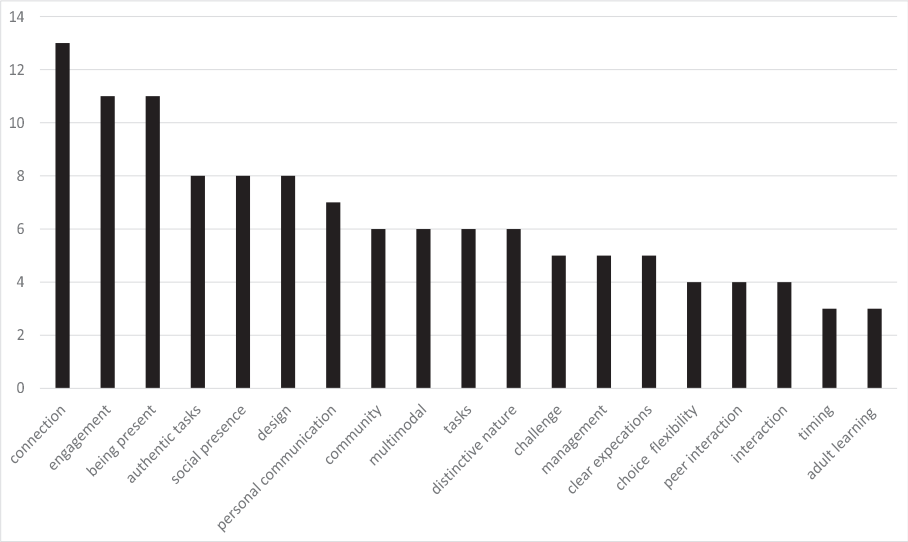

Figure 2: Concerns of teachers regarding online pedagogy

Comparing the data gathered from the teacher reflections (Stage 1 and the focus groups (Stage 2) common themes emerged. Both data sets (focus groups and reflective questions) showed teachers had undergone challenges and perspective transformation as they learned how to teach online. These transformations related to skills required to teach online, professional identity and the teacher's role in a virtual environment. Figure 2 shows areas and skills where teachers revisited their practice and questioned their pedagogies. Engaging with and connecting with students were most common.

5. IMPLICATIONS/DISCUSSION

This paper focuses upon the results drawn from an international study where qualitative data gathered from reflective journals and focus groups discussion to investigate teacher perceptions of essential skills in online teaching and how the demands of virtual environments evoked professional transformation. The results and sample size are small and therefore limited, but nevertheless they add to the literature on changes in higher education teachers' beliefs and practices required for online pedagogy. Some indicative statements of professional transformation are as follows:

- Teaching presence is different from on-campus presence, but both require interactive elements.
- Online teaching requires facilitating interaction, not simply presenting content.

- So, in online learning, preparatory design is vital because of this fact: in face-to-face teaching, if a disaster happens, we can fix it, but online, you don't even know that disasters are occurring!

6. CONCLUSIONS

In this research, experienced teachers voiced concerns, perspectives and insights regarding the challenges and skills required to teach online. There was agreement across both phases of data collection that online pedagogy was different, and that it pushed teachers with new ways of thinking about what effective e-pedagogy means. Overall, responses indicated that teachers had to rethink their identity and role significantly, acquire new skills and learn to cope with virtual students and online technologies. By adopting the theoretical lens of Mezirow's transformative learning theory (Mezirow, 1978) data revealed that participants had taught online had undergone perspective transformation (Figure 1) and had to develop new communicative and moderation skills to engage and personalize teaching. While the results support the recommendations of Laat et al (2007) and Guasch et al (2010), they are limited. The principal practical contribution to research is the need to enable teachers to reflect on their learning experiences when commencing or planning to teach online and to provide targeted professional support based on identified needs. Further research on how practitioner perspectives change through teaching online would provide more insights into improved professional development to induct novice teachers into online pedagogy.

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