Teaching conceptions and teaching context affect the enacted practice of online teachers

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Abstract: This study examined effects on enacted teaching practice in an exclusively online context within a large vocational education sector in Australia. A wide-ranging exploratory survey instrument was constructed with questions drawn from validated surveys and a review of literature in the field of online pedagogy. The study found that both teaching conceptions and teaching context affect enacted practice in this online vocational education teaching context. Notably, some of the teaching context factors investigated in this study were found to cause enacted practice to shift away from what these teachers perceived as good online teaching. This study contributes to our understanding of online teaching practices and what affects it.

Keywords: Online education, conceptions of teaching, vocational education and training

1. Introduction

Online education is one of the fastest growing fields of education across sectors (Richardson, Besser, Koehler, Lim, & Strait, 2016; Sun & Chen, 2016). However, that growth has brought challenges for institutions as they balance the tension between demand for online education with lower successful completion rates and lower student grades relative to those secured in traditional face-to-face teaching contexts (Capra, 2011; Drouin, Stewart, & Van Gorder, 2015; Gaytan, 2015).

Teachers are at the heart of online education, yet teachers are often unprepared for the online teaching environment and its fundamental differences from teaching face-to-face (Banas & Velez-Solic, 2013). Palloff and Pratt (2013) report that teaching online is more than knowing how to use technology or how to transfer materials to an online platform. Rather, teaching online requires different pedagogy and skills than teaching face-to-face (Terblanché, 2015); it is not something simply added to existing practice. Today's online teachers have little experience of the online learning environment (Niess, 2011), and previous studies have evidenced that knowledge of face-to-face teaching does not directly translate to knowing how to teach online (Seaton & Schwier, 2014; Terblanché, 2015). This means that not all teachers inherently possess the skills to teach online (Yen, Lo, Lee, & Enriquez, 2018) yet, as reported by Banas and Velez-Solic (2013), professional development for online teachers lags behind the growth of online education. Consequently, transitioning to online education can be confronting for experienced teachers as they struggle with becoming novices in the online teaching context (Redmond, 2011) and struggle to communicate their objectives and meanings online (Kearns, 2012). Furthermore, because online education requires a reconceptualisation of the teacher role (Rodrigues, Almeida, Figueiredo, & Lopes, 2019), teachers also go through a process of understanding what good pedagogy is within an online teaching context. Therefore, it is vitally important to understand clearly what a teacher conceptualises as good online pedagogy as this affects their practice, especially if they are coming from a face-to-face setting.

Conceptions of teaching are an indicator of what a teacher thinks they should do, or would prefer to do, in a teaching context (Clark & Peterson, 1986), and teaching conceptions are known to affect enacted practice (Conrad, 2012). Sun and Chen (2016) conceptualise good online pedagogy as characterised by constructivist, student-centred philosophies where facilitation of collaborative learning opportunities are valued. Practices associated with such pedagogy can be understood from Bain's description of '*what the best teachers do*' (2004) which has been updated for online education by Brinthaupt, Fisher, Gardner, Raffo, and Woodard (2011). Those works purport that good online

pedagogy is where teachers stimulate intellectual development, foster student engagement, and build rapport with students. Nine practices associated with those principles are presented in Table 1.

Table 1

Bain's 'what the best teachers do' (2004) with teaching practices updated by Brinthaupt et al. (2011) for online education

Category	Nine Online Teaching Practices
Stimulate intellectual development	Facilitate discussion forums where students explore concepts and develop deep knowledge together. Utilise technology for real-time engagement with groups of students. Utilise engaging tasks students will find interesting. Utilise a variety of technologies such as videos or podcasts.
Foster student engagement	Create a friendly, social atmosphere where deep learning is encouraged. Develop group cohesiveness, helping students work together for mutual benefit. Use discussion forums to facilitate social interaction between students.
Build rapport with students	Use introductory videos or other self-disclosure methods to humanise self to students. Consciously build rapport with each individual student.

An additional factor that affects enacted practice is the teaching context. The real or perceived needs, affordances, or limitations within teaching contexts can cause teachers to adapt their practice toward or away from their ideal (Eley, 2006; Samuelowicz & Bain, 1992). This means that different teaching contexts can result in a teacher enacting different practices (Lindblom-Ylänne, Trigwell, Nevgi, & Ashwin, 2006). Example teaching context factors that affect enacted practice within online education include teacher workload (Goldman, 2011), class size (Sorensen, 2014; Taft, Perkowski, & Martin, 2011), the discipline being taught (Arbaugh, Bangert, & Cleveland-Innes, 2010), and course duration (Akyol, Vaughan, & Garrison, 2011).

A final contributor to the enormous complexities within online education is that not all education sectors receive the same research attention. Much of the academic research undertaken to understand and improve online education is set within higher education contexts (Jaggars & Xu, 2013; Nguyen, 2015) and Australia's vocational education sector currently lacks research about how its teachers engage with technology for teaching (Chang, 2016). This is an important gap because vocational education and training (VET) is Australia's largest education sector (Atkinson & Stanwick, 2016). Known as VET, this post-school sector provides work-ready skills for employment within entry-level jobs and highly skilled professions (Productivity Commission, 2019). Future jobs growth in Australia requires 53% of occupation qualifications to be at VET level (Productivity Commission, 2011). As a critical contributor to Australia's labour market, to support widening industry demands VET must continue expanding (Wheelahan & Moodie, 2011). Importantly though, Reeson, Mason, Sanderson, Bratanova, and Hajkowicz (2016) report that a major enabler for VET to meet its current and future challenges is an expansion of online education.

As reported by Bliuc, Casey, Bachfischer, Goodyear, and Ellis (2012), VET is an already complex teaching context and the introduction of online education adds further complexity. VET is bounded by a competency-based-training (CBT) framework making it fundamentally different to other forms of post-secondary education (Fowler, 2017). Furthermore, like other education sectors, VET too has observed lower successful completion rates for students studying online (DET, 2016). Unfortunately, those lower success rates, along with reporting on parliamentary inquiries into VET, has linked unscrupulous VET providers with the inaccurate suggestion that online education is a poor substitute for face-to-face teaching (CEDA, 2016).

This study draws together the complexities of VET and the shift to online teaching by examining what online VET teachers conceive as good practice online and what shapes these practices

as the teachers move from conceptualisation to enactment. In investigating this, an exploratory survey was constructed to examine both teachers' perceived beliefs about online teaching as well as their perceived online teaching practices.

2. Methodology

To investigate the pedagogy of online VET teachers and what affects their enacted practice, a quantitative survey was designed and implemented. Questions for the wide-ranging survey were developed from reviews of online education and VET studies, as well as the incorporation of previously validated survey tool components. As an exploratory study, the focus of this survey was to establish what teachers believe to be good online teaching and how they perceive their enacted practice is affected by factors within their teaching context.

2.1 Survey Instrument

To investigate whether online VET teacher beliefs align with the nine student-centred online teaching practices that were presented previously (see Table 1 above), teachers were asked to rate the importance of these practices within online VET. The validated survey design of Owens (2015) resulted in a profiling of teachers teaching conceptions along a five-point scale from teacher-centred to student-centred. This approach was adopted here. Then, using the same nine teaching practices, teachers were asked in the survey to report their frequency of enacting those practices. This series of nine questions provided data on what practices teachers enacted more frequently than others. In effect, survey data was used to build a teacher profile of both teaching conceptions and (perceived) enacted practice. This data was analysed to identify any differences, similarities and nuances between the two perceptions. Separately within the survey, teachers were asked whether particular teaching context factors affect their practice.

2.2 Survey Participants

The VET teachers voluntarily participating in this survey taught exclusively online with no face-to-face teaching responsibilities within a large public VET provider in Queensland, Australia. They were purposefully drawn from an established team of 66 fully online teachers, teaching more than 40,000 online subjects a year. After survey piloting, and ethical approvals from the researcher's university and the host site, a survey token and weblink was sent to those 66 target participants. Of the 46 teachers who subsequently completed the survey, 76% were female, and 89% were full-time employees, ranging in age from 32 to 66 years ($\bar{x}$=51). Participants represented a variety of teaching experience ranging from 0 to 40 years face-to-face ($\bar{x}$=11 years), and 0.5 to 15 years online ($\bar{x}$=4.5 years). Six teaching disciplines were represented, and the largest group of respondents came from early childhood (33%) followed by business (28%).

2.3 Analysis

Survey data was analysed using the statistical software package SPSS. The survey featured Likert-type and Likert-scale questions that both utilise scales to capture a "belief, preference, judgement, or opinion" (Warmbrod, 2014, p. 31) of participants. Likert-type questions are single questions and were analysed here individually; Likert-scale questions are designed as a series and as such were analysed here through their composite result (Boone & Boone, 2012) achieved by calculating the mean-item score (Warmbrod, 2014). Many of the questions in this survey were categorical and ordinal. For analysis purposes, numbers were assigned to represent the answer options offered, however this did not indicate one category was better than another – all scale items were equally weighted (Warmbrod, 2014). Numerical values for negatively worded questions were reversed prior to analysis (Ary, Jacobs, Sorensen, & Razavieh, 2010; Warmbrod, 2014).

Non-parametric tests were utilised in the analysis because they do not assume the sample is normally distributed (Field, 2013) and are therefore ideal for small sample sizes, especially when

categorical and ordinal data is present (Pallant, 2016). The Wilcoxon Signed Rank Test was utilised to compare participants under two different conditions (Field, 2013; Pallant, 2016), such as when comparing conceptions of teaching and enacted practice responses. The results of this test were reviewed adjacent to Friedman Tests to confirm consistency of result. The magnitude of the effect was interpreted using Cohen (1998) as cited in Pallant (2016): 0.1 = small effect, 0.3 = medium effect, 0.5 = large effect.

Separately, the Kruskal-Wallis H Test is suitable for comparing differences between more than two groups by using ranks (Field, 2013; Pallant, 2016). It was utilised in this analysis when comparing participants by group such as by age, years teaching experience, or discipline being taught. Such analysis identified if, for example, participants with higher level teaching qualifications had similar answers within a question or question set. This paper reports only those results relevant to the topic and that yielded a significant result, seeking <0.05.

The internal consistency of the survey items were tested using Cronbach's alpha coefficient (Pallant, 2016). Scales reported in this paper were deemed reliable and have alpha coefficients of between 0.67 and 0.91. However, an acknowledged limitation of this study is its small sample size. The survey has internal validity in that it accurately measures what it was intended to measure (Cohen, Manion, & Morrison, 2011; Creswell, 2014). However, with only 46 useable responses, the findings are reported to be informative in nature and not indicated as generalisable or transferable across other online teaching contexts.

3. Results

Teacher demographics were tested to identify relationships with enacted practice, and no relationships were found. In other words, how teachers perceived the way they teach online was not affected by factors such as age, years of service, and teaching qualification. However, as presented next, enacted practice was found to be affected by conceptions of teaching and by factors within the teaching context.

3.1 Enacted Practice Affected by Conceptions of Teaching

The summated responses from teachers ranking the importance of nine student-centred teaching practices developed from literature found 71.7% of teachers aligned with the conception that good online pedagogy is student-centred. Three of the nine teaching practices within this set relate to student-to-student interaction and notably these practices were rated least important by the online VET teachers. This is illustrated in Figure 1, where the nine teaching practices are sorted highest to lowest mean. The three teaching practices at the bottom of the figure are considered least important by teachers, as indicated by the shorter blue line.
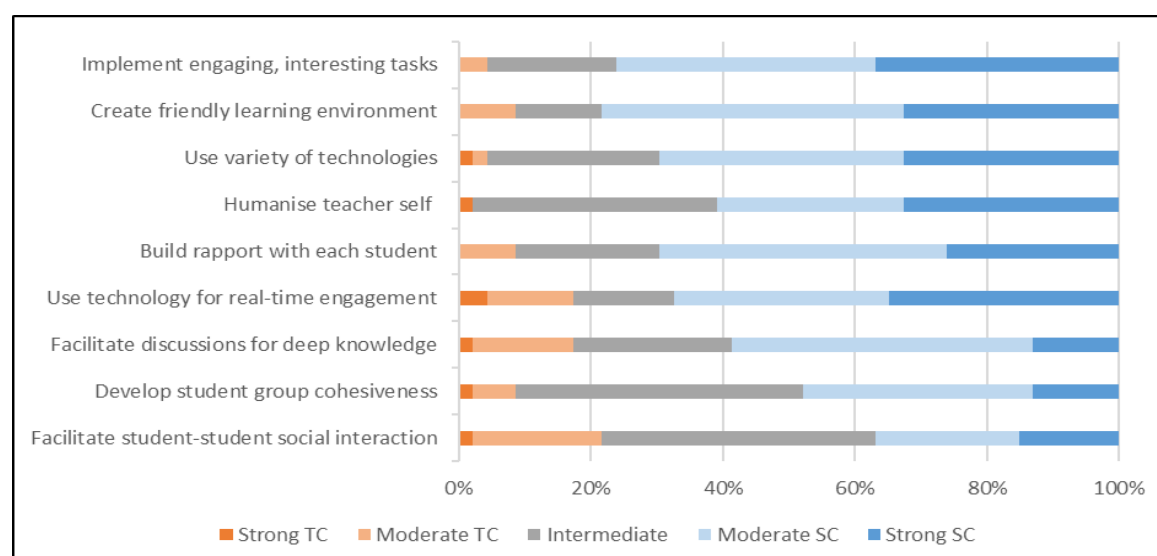

Figure 1. Conception of teaching responses, presented highest to lowest mean.

The summated responses for each teacher enabled them to be profiled as having either teacher-centred, intermediate, or student-centred conceptions of teaching. Differences between these three teacher profiles were then tested for their effect on enacted practice. Teachers with a student-centred conception of teaching reported a higher frequency (Md=27) of enacting the practice of using discussion forums to facilitate student-to-student social interaction than teachers with an intermediate (Md=14) or teacher-centred (Md=17) profile ($H(2) = 7.78$, p = 0.02). Teachers with a student-centred conception of teaching also reported a higher frequency (Md=26) of enacting the practice of creating a friendly, social learning environment than teachers with an intermediate (Md=15) or teacher-centred (Md=19) profile ($H(2) = 6.30$, p = 0.04). Finally, teachers with a student-centred conception of teaching reported a stronger desire (Md=25) for more training about how to effectively utilise technology to teach their discipline than teachers with an intermediate (Md=16) or teacher-centred (Md=14) profile ($H(2) = 7.42$, $p = 0.02$).

The summated profile of enacted practice was then analysed and compared to the conception of teaching profiles. As illustrated in Figure 2, enacted practice is less-student centred than teaching conceptions, and 45.7% of teachers were found to enact intermediate practice.
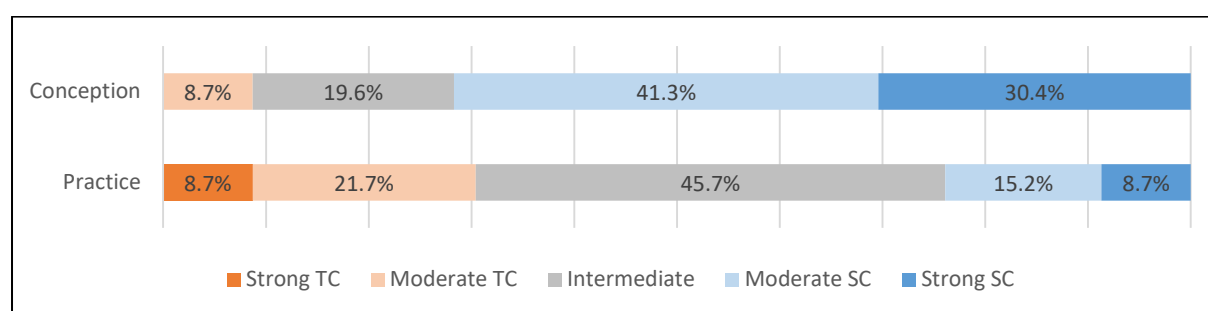

	Strong TC	Moderate TC	Intermediate	Moderate SC	Strong SC
Conception	8.7%	19.6%	41.3%		30.4%
Practice	8.7%	21.7%	45.7%	15.2%	8.7%

Figure 2. Comparison of conception of teaching profiles with enacted practice profiles.

The difference between perceived conception and practice for four question pairs was found to be statistically significant, with a large effect size (r=0.5). These practices are utilising engaging tasks, creating a friendly learning environment, developing group cohesiveness, and using technology for real-time engagement. Two questions resulted in a significant difference between conception and practice with a medium-to-large effect size (r=0.4). These are utilising a variety of technologies, facilitating discussions for knowledge development, and humanising self such as with introductory videos. The final two questions, facilitating discussions for student-student social engagement and consciously building rapport with students, reported no statistically significant difference between conception and practice.

Differences between conception and practice indicate that an external factor also affects the enacted practice of this sample of online VET teachers. As proposed in previous literature, factors within the teaching context can affect practice to be enacted that is different from conceptions of teaching, and this was investigated next.

3.2 Enacted Practice Affected by Teaching Context

In this section, eight teaching context factors were identified from literature and investigated in this survey of an online VET teaching context. Of those, five were identified as affecting enacted practice.

Teacher workload was reported by 66.7% of teachers in this study as *often* or *always* preventing them from enacting a teaching practice they believe would be beneficial. Teachers further reported that their three highest workload tasks are assessing student competency (marking assessments), providing direct assessment help, and doing administration. Teachers reported they would most like to spend more time actively facilitating learning and building rapport with students, and they would like to spend less time on technological issues and administration.

Both small and large class sizes were investigated for their effect on practice. 52.6% of teachers reported that small class sizes affect practice, however the reported nature of that effect is a mix of positive (31.6%), negative (7.9%), or both positive and negative (13.2%). In contrast, large class sizes

were reported by 58.8% of teachers as negatively affecting practice and 17.6% of teachers as both positively and negatively affecting practice.

Next teachers reported whether complying with the strictly enforced CBT curriculum affected their practice. Firstly, teachers reported that complying with CBT curriculum *sometimes* (51.2%) or *often* (14.6%) prevented them from enacting a teaching practice they believe would be beneficial. Secondly, teachers reported that complying with CBT curriculum *sometimes* (46.5%) prevented teaching a concept they believe is important for their students to learn.

The number of students per teacher in this study ranged from 10 to 310 students ($\bar{x}$=131) and the number of students per teacher was found to have an effect on one conception of teaching indicator and one enacted practice indicator. Teachers with >175 students were more likely than teachers with less students to agree that with the student-centred conception that students should be helped to learn for themselves rather than be told ($H(2) = 7.70$, p = 0.02). Teachers with <75 students were more likely than teachers with higher student numbers to report more frequently enacting the student-centred practice of using technology to engage with students in real-time ($H(2) = 7.55$, p = 0.02).

Analysis of data identified that the discipline being taught affects enacted practice. I.T. teachers were more likely to report a higher frequency of using discussion forums to facilitate student-student social interaction ($H(5) = 11.26$, p = 0.04), of using technology for real-time student engagement ($H(5) = 22.00$, p = 0.00), and for getting students to participate in online discussions ($H(5) = 12.42$, p = 0.03). Justice and government teachers were more likely to report a higher frequency of facilitating discussion forums for students to explore concepts and develop deep knowledge together ($H(5) = 12.63$, p = 0.03). Accounting teachers were more likely to report a higher frequency of ensuring students are well skilled in the subject competencies ($H(5) = 17.16$, p = 0.00).

Teachers in this study reported being responsible for teaching between two and 57 online classes at any one time ($\bar{x}$=12). Enacted practice was not found to be affected by the number of classes per teacher.

Literature has previously reported that professional development is lacking for VET teachers and is not always relevant for online teachers. These perceptions are not supported by this group of online VET teachers who *agreed* or *strongly agreed* that professional development is regularly available (73.9%), that it is relevant to their online teaching role (54.3.%), and that it is high quality (56.5%). Enacted practice was not found to be affected by availability, relevance, and quality of professional development in this context.

Finally, course duration was not found to affect practice in this teaching context and 51.4% confirmed that practice is neither positively or negatively affected by course duration.

3.3 Summary

In summary, data analysed evidences that enacted practice is affected by conceptions of teaching. This is highlighted by teachers with teacher-centred, intermediate, and student-centred profiles reporting different frequencies of enacting some students-centred practices. Importantly, teachers with a student-centred teaching conception reported more frequently using discussion forums and creating a friendly learning environment. Those teachers also reported a stronger desire for more training regarding using technology to teach their discipline. Notably, all 46 teachers in this study reported that their enacted practice is less student-centred than their conception of teaching indicating additional external factors affect practice.

Eight teaching context factors from literature were investigated and five were found to affect practice within this teaching context. Teachers reported that workload, class sizes, and compliance with the CBT curriculum all directly affect their practice. Data analysis found that enacted practice is also affected by the number of students per teacher and the discipline being taught. For example, teachers with the smallest number of students were more likely to report a higher frequency of enacting the student-centred practice of using technology for real-time student engagement. Differences between frequency of enacted practice were also identified among teachers from different teaching discipline groups.

Enacted practice was not found to be affected by teacher demographics, the number of active teaching subjects, course duration, or the availability, relevance, and quality of professional development.

4. Conclusion

There is a deficit in our understanding of how teachers perceive and enact online pedagogy (Prieto-Rodriguez et al., 2016; Sun & Chen, 2016). This deficit extends to our understanding of the tensions that result in online education being perceived by teachers as a challenging teaching environment, and to our understanding of how those challenges affect enacted practice. The under-researched online education context of this study is Australia's VET sector which requires a growth in the quantity and quality of online education to support its continued expansion, which is itself necessary to support jobs growth.

This small (n=46) exploratory study investigated what online VET teachers conceive is good online pedagogy and the alignment of their enacted practice with that conception. Enacted practice was found to be affected by conceptions of teaching, and teachers with student-centred conceptions reported more frequently enacting some student-centred practices than teachers with intermediate or teacher-centred conceptions. Analysis of the data suggested that while the sampled online VET teachers report aligning with conceptions that good online pedagogy is student-centred, their enacted practice is substantially less so. While 71.7% of teachers aligned with student-centred conceptions of teaching, only 23.9% evidenced student-centred enacted practice profiles. Five factors within this online VET teaching context were identified as affecting enacted practice. These are teacher workload, class size, compliance with CBT curriculum, the number of students per teacher, and the discipline being taught. The differences between teaching conceptions and enacted practice found in this study reflects a compromise between conceptions of teaching and the teaching context navigated by teachers (Norton, Richardson, Hartley, Newstead, & Mayes, 2005) and is why teaching context factors are deemed essential to any investigation of teaching (Clark & Peterson, 1986).

For researchers, although the small sample size within this study means the findings are not generalisable across other online teaching contexts, the survey is scalable. Broadening the application of this survey will contribute more to our understanding of what teachers conceive as good practice online and what shapes these practices as teachers in different online teaching contexts move from conceptualisation to enactment. This study is ongoing and the findings reported above have also informed the focus of subsequent data collection strategies. The second stage of data collection includes observation of teaching practices to map the range of online teaching practices enacted and the range of technologies actively utilised by teachers. The third stage of data collection includes interviews with online VET teachers to more deeply understand how they understand the nature and purpose of their teaching role. Findings from these stages will be reported in due course.

The employing organisation who provided access to online VET teachers for this study are navigating both the continued expansion of online education and the increased demand for its enhanced quality and effectiveness. That institution intends to use the results of this study to review their online teacher hiring, training, and management practices, and to better understand online education as more than simply a different mode of delivery. Their intent is that understanding and responding to factors that affect practice will support the enactment of online education that aligns to what is currently established in the literature as good online pedagogy for teachers, thereby subsequently enhancing student learning outcomes.

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