Initial teacher education by open and distance modes: A snapshot of e-competency experiences in Australia

Authors

Eva Dobozy

Eva.Dobozy@curtin.edu.au

School of Education
Curtin University, Perth
Western Australia

Dirk Ifenthaler

dirk.ifenthaler@deakin.edu.au

Centre for Research in
Digital Learning
Deakin University,
Melbourne, Victoria,
Australia

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This paper explores the need for greater clarity of the effectiveness of initial teacher education by open and distance modes. Reports about global teacher shortages are not new. However, the recent infograph produced by the United Nations Education, Science, and Cultural Organisation (2013) paints an alarming picture. One way to assist in the supply of sufficient qualified school teachers is to provide initial teacher education (ITE) at a distance. This paper reports on an investigation of e-competency experiences of first-year students enrolled in distance-delivered ITE. The findings from in-depth interviews show that distance-delivered ITE is not only a viable study option, but is viewed by all respondents as the preferred study mode. More importantly, a number of participants reported that for them, it is the only way to gain a teaching qualification even though some acknowledge a lack of e-competency skills at the commencement of their studies.

1. Introduction

The world is in the grip of a teacher shortage (Australian Mathematical Science Institute, 2013; McKenzie, Rowley, Weldon, & Murphy, 2011; OECD, 2012a; UNESCO, 2013). The demand for qualified and highly skilled early childhood, primary and secondary school teachers is high on the agenda of most nations around the world. "The issue of teacher demand and supply is both complex and multi-dimensional", notes Schleicher (2012, p. 12). The imminent retirement of experienced and long-serving baby-boomer teachers and early career teacher retention problems contribute, as major factors, to the current imbalance between supply and demand of school teachers in Australia and elsewhere. One way to assist in the supply of sufficient qualified school teachers, is through the provision of initial teacher education (ITE) at a distance. ITE in Australia is the university education provision that leads to the qualification and licensing of teachers as professionals. The Bachelor of Education is typically acquired through a period of intense study of specific subject matter (course work units) and includes a substantial workplace learning component. The Australian undergraduate teaching degree is typically acquired through direct or indirect enrolment at a university. During this stage, students are commonly referred to as pre-service teachers. Advancements in learning technologies are rapidly transforming distance-delivered ITE, enabling the re-imagining and redesigning of open and distance learning (ODL). Unsurprisingly, the new and flexible teaching and learning provisions have increased the appeal of ITE through ODL and, as a consequence, Curtin University has experienced a great increase in enrolments in ITE courses delivered through open and distance modes. Nevertheless, little is known, as yet, about the attributes and e-competencies of learners who choose to enrol in ITE at Curtin University, delivered fully online through either open or distance modes. The distinction is

made between open (through Open Universities Australia) and distance (through Curtin University), because of the different entry requirements for ITE.

The paper is structured as follows: First, e-competency is explored and defined as an umbrella term with five supporting concepts. Second, Open Universities Australia (OUA) as a consortium of multiple universities is briefly introduced. Third, the methodology of the study is outlined, which concerns the in-depth interviews with participants form the School of Education at Curtin University. Fourth, the findings are presented and discussed, putting a spotlight on first-year students' e-competency expectancy and experience. The findings are structured into vignettes of common themes accompanied by analytical comments linking to the five supporting concepts of the e-competency umbrella term. Fifth, the limitations of the present study are outlined and possible future research topics are explored. Finally, methods, topics and themes are summarised and implications for practice are briefly outlined.

e-Competency: An umbrella term

e-Competencies is an umbrella term recognising the multi-faceted and multi-dimentional nature of information communication technology (ICT) mediated skills and knowledge (Schneckenberg, 2010). There is growing agreement among researchers that a competency is "more than just knowledge and skills. It involves the ability to meet complex demands, by drawing on and mobile[s]ing psychosocial resources" (OECD, 2005, p.4), involving "the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development" (European Union, 2008). These resources have been acknowledged as intangible assets and are "increasingly recognised as a central ingredient assuring national productivity growth, and an unmistakable driver of innovation" (Dobozy, 2013, p. 5). Given the complexity of this umbrella term, we agree with Romani's (2009, p. 23) suggestion that the notion of 'e-competencies' should incorporate the following five supportive concepts:

- e-awareness (knowledge about ICTs and ethical and safe online behaviours),

- technological literacy (ability to use ICTs for social, recreational, educational and work purposes),

- information literacy (ability to analyse, synthesise and create information),

- digital literacy (ability to use ICTs for personal and professional purposes, navigating and connecting multiple information sources)

- media literacy (ability to use multiple media sources and create visual, audio and text-based resources)

e-Competency is a complex concept and a highly desirable set of attitudes, skills and knowledge that requires of contemporary knowledge workers a mix of academic and technological self-efficacy beliefs and demonstrated abilities (OECD, 2012b). In other words, someone is deemed 'e-competent' when she or he can display responsible, ethical and autonomous mobilisation of the necessary attitudes, knowledge and skills to contribute to a fulfilling and productive existence in our digital and global knowledge era. Moving on from a theoretical discussion, we introduce the study context, prior to discussing the findings and implications.

Open Universities Australia

Open Universities Australia (OUA) is a consortium of seven universities (including Curtin University) that provides university education for a wide range of learners, including 'non-traditional' students or students unable to enrol in online delivered courses through their local university. For example, students living in the vicinity of one of Curtin University's campuses are generally not permitted to enrol in distance-delivered ITE if the same program is offered in on-campus mode. However, they have the opportunity to enrol in distance-delivered ITE through OUA. Entry into OUA programs is "open to anyone and anywhere" (Open Universities Australia, 2013, p. 1), meaning that "open education is a philosophic construct that advocates the removal of constraints and barriers to learning" (Kanwar, 2012, p. 3). Hence, generally no tertiary entry results are required or no location-based restrictions are in place to gain access to the courses on offer. By contrast, enrolment in an ITE program through distance mode at Curtin University (CU) requires that applicants fulfil the normal Australian Tertiary Entry requirements to the program. In the case of teacher education, generally, only students living in rural or remote areas in Western Australia are eligible to enrol in Curtin University's 'regional education program', which is referred to as 'distance-delivered'.

Research methodology

The qualitative data analysis was informed by sociocultural theory, which has, as its primary tenet, the social construction of meaning (Bedeian, 2004). It pays close attention to the importance of social, cultural and historic contexts and language to mediate the production of knowledge and insight. This theory acknowledges that all thought and action is underpinned by prior experience, and personal and professional values (Lantolf, 2000). Hence, sociocultural theory aims to explore personal experiences, infusing the described reality with interpretation in the development of a rich and coherent narrative account. Or, to put it differently, the intention of research informed by sociocultural theory is to capture the perceptions, intent, action and motivation of participants, focusing on the interplay between individual experiences and their environment (Dewey, 1933; Lave & Wenger, 1991; Vygotsky, 1978).

The forefathers of sociocultural research and learning theory, such as Lev Vygotsky, Jerome Bruner, and John Dewey point to the central role that learners play in shaping the learning process and outcomes of formal education. The way that learners choose their study modes and interactions will shape their experiences and collective knowledge construction. Hence, even if a group of learners is enrolled in the same program and engaged in the same activities, individual students' learning experiences and perceptions of its value will be different (Corrin, Bennett, & Lockyer, 2013). Perceptions of value, difficulty level and struggles are dependent on personal and professional histories, social, cultural and physical factors (Wertsch, 1985). As learners bring their own life worlds, learning goals and aspirations to the learning experiences, their perceptions, experiences and needs will vary from each other and those of the designers of the learning experiences (Lekkas, Germanakos, Tsianos, Mourlas, & Samaras, 2013). Empirical research studies in the field of education that are conducted employing a sociocultural perspective, often favour the utilisation of qualitative research methods (Norton, 2009) precisely because the researchers are concerned with documenting and interpreting the primacy of learner variables in the context of pedagogical activities.

Case-based research design

Case-based research design and methods are commonly used in the evaluation of new pedagogical approaches, for example ODL in ITE, which presents a case of complex change practices in learning institutions (Yin, 2013). The case study research design relies on multiple data sources and multiple data collection methods (Patton, 2001) and the larger study was able to collect data from a variety of data sources. First, there is the case of the three student groups studying through different modes (on-campus; distance and OUA), second, there are a number of complementary qualitative and quantitative methods employed to gather data from students, such as questionnaires, final student grades, and in-depth interviews, and finally the different locations and study programs, which provide another opportunity for data triangulation of the larger student sample. This report concerns itself only with the qualitative analysis of the in-depth interviews from students enrolled at Curtin University's teacher education programs. Its aim was to better understand learner characteristics, learning experiences and learner e-competencies as described spontaneously during the interviews. Of particular interest was to ascertain patterns of student characteristics, learning experiences and unmet e-competencies related needs for students choosing to study online. Hence, the study asked the following research question: What are issues pertaining to student motivation, competence and choice of students studying in open and distance mode?

A qualitative case-based research design was applied, underpinned by a social constructivist methodology (see below for a more elaborate explanation of the study methodology). A total of 22 OUA students agreed to be interviewed for this study. The OUA teacher education cohorts are substantially larger than the university-enrolled student cohorts (on-campus and distance). However, this did not result in a large number of interviews, which made this project manageable.

In-depth interviews

To capture the idiosyncratic ways meaning was made and value was ascribed to different ITE – ODL experiences, it was necessary to engage students in a conversation about their motivation and experience through personal interviews as a data gathering mechanism. Mutually convenient interview times were arranged between researchers and participants. While participation was initially secured from a small number of pre-service teachers studying ITE through the distance mode (regional ITE program), no convenient and mutually agreeable time could be arranged for the phone interviews, despite multiple attempts to contact students. Hence, a total of 22 successful interviews were conducted with pre-service teachers studying through the open (OUA) mode. Although the interviews were highly structured and the questions and their order pre-planned, an attempt was

made to provide a relaxed atmosphere in which to gather the qualitative data. Therefore, the interviews were conducted as dialogues, which allowed for in-depth explanations of personal and idiosyncratic expectations and lived experiences.

A key feature and advantage of structured interviews is their replicability. Given that the larger study was conducted at multiple locations simultaneously, replicability was important. It also provides greater reliability and validity to the data collected, because of internal consistency. All interview questions were open-ended and non-directive:

Q1. What has it been like for you to study online?

Q2. What were the good things you experienced?

Q3. Did you experience anything unexpected?

Q4. What have you found most challenging about studying online?

Q5. Was the whole experience what you expected?

Q6. Why did you choose to study online rather than on campus?

Q7. Are you continuing your studies? Still through online?

Q8. If not still enrolled – why did you withdraw? Are you planning on returning at some stage? If yes – when?

Q9. What is truly important to you about how you learn?

Q10. How would you have liked to have interacted with other students? How would you have liked to have interacted with teaching staff?

Q11. Do you have any other comments or messages that you would like to convey?

Themed vignettes

The role of the analyst in qualitative work involves the balancing of the importance of detailed accounts directly drawing upon the ideas and words of participants, with the need to produce a coherent and logically flowing report. Hence, the interview data is represented as themed vignettes, synthesising the information provided by different participants with similar views into a unique little story or vignette. This narrative approach provided additional protection of participant identities and made possible the reproduction of verbatim comments of actions and emotions of participants. Or, to put it differently, the themed vignettes of embodied experiences that follow are a synthesis of multiple, but similar views expressed during the telephone interviews by various participants. Throughout the reconstruction of views,

an attempt was made to use verbatim accounts of pre-service teacher expectations and lived experiences.

Findings

In total 22 in-depth interviews were conducted with students enrolled in Curtin University's ITE programs. Quite surprisingly, no student enrolled in the distance study mode was available for the short telephone interview conducted following the online questionnaire (see Table 2). Hence, the below vignettes only contain data from OUA-affiliated ITE students.

Table 1 What has it been like for you to study online?

Question No	Participant perception
	Vignettes 1-3
Q1	*Vignette 1: New experience* "Nothing like I've ever done before. It's been a huge adjustment. At first it was overwhelming, frightening and difficult, because I've been out of study for 17/20/25 years. Once I've embraced it and got on with it, it became easier and I got used to it. With a bit of time management the experience was great." *Vignette 2: Positive experience* "I love it, it's perfect for me and so convenient. Going physically to university would have been impossible for me. I'm independent anyway and this fits better into my schedule. Being able to do it in my own time is fantastic. I've just had a baby and not having to go to lectures is great. The flexibility is a real blessing. The only part of online that was difficult was relying on the discussion board as only a few people got involved." *Vignette 3: Negative experience* "It has been very difficult, isolating and frustrating as there is no one there to talk to and discuss information with like in a face-to-face class. I don't think the structure of the course was well thought through. Overall, I wasn't happy with the way the unit was delivered. They said that students who engage more in the discussion board would perform better, I object to this and don't think this makes you a better student."

Overwhelmingly, the participants reported that they had a positive experience in their first year of ITE at Curtin University,

enrolled through OUA (see Table 1). In total 17 (77%) out of the 22 pre-service teachers interviewed reported that it was a 'good' or 'very good' experience. Nevertheless, there were clear signs that many students felt overwhelmed and some felt unsupported at times, especially as they commenced their studies, which was reflected in comments noting that students returned to study after a long period of work and/or child minding (see Table 3, Vignette 1).

Table 2: What were the good things?

Question No	Participant perception
	Vignettes 4-7
Q2	*Vignette 4: The tutor* "The tutor was very helpful. The feedback [on assignments] has been excellent and the support was really motivating. It helped us grow at our own pace." *Vignette 5: Flexibility* "The possibility to study whenever it suits me, at 4 am or 10 pm and at my own pace. Also, the fact I didn't have to sit in a classroom ever with 19 year olds. And, I did not incur travel and parking costs." *Vignette 6: Blackboard – resources* "I like Blackboard. I'm in a rural area, so the online resources were great. It was good to have all the information there at all times, what I wanted, when I wanted it – at all times. There were many readings, but I enjoyed them and I learn better this way than listening to a lecture." *Vignette 7: Blackboard - discussion board* "The access to and interaction with my peers and my tutor through the online postings was the best part. Being able to talk to others and for the most part, it was the students responding if we had queries, not the tutor."

Students found different study elements of value (see Table 2), but the notion of flexibility and convenience seemed to be a driving factor in accounts of positive features of online-delivered ITE. Various reasons were provided for the value-adding nature of flexible ITE delivery, such as 'not having to attend classes', 'not incurring travel and parking costs', and 'having access' to tertiary level education even when living in a rural or remote area (N = 20 positive comments).

Table 3: Did you experience anything unexpected?

Question No	Participant perception
	Vignettes 8-16
Q3	*Vignette 8: Assignments* "The feedback on assignments was unexpected and really good. I learn a lot from what I get back." *Vignette 9: Blackboard* "Using [the university's learning management system] was hard. It took me time to figure out how to use it – about a week. I have never used anything like it and I found that it could have been more user friendly. And, I didn't expect to have to submit assignments through the drop box." *Vignette 10: Exams* "I was expecting exams, but there were none in the first year." *Vignette 11: Forums* "I didn't realise there were forums. I was only expecting textbooks and assignments" *Vignette 12: Group work* "I wasn't expecting to have to do some group posts, which required everybody in our group to participate – and had to set up wikis and Facebook things [events] to try and communicate, which was really difficult for me, having never done it." *Vignette 13: My skills* "I was surprised how badly I managed my time." *Vignette 14: Program quality* "No, not really, they offer the same content [as on -campus study], not the watered-down version." *Vignette 15: Standard of work* "The standard of work was a lot higher than I expected and the work was more difficult." *Vignette 16: Tutors* "I was surprised that it could take a couple of days to get a response from a tutor. Tutors were not online on weekends, but assignments were due on a Sunday night, so I was expecting tutors to be available to answer questions. In some units tutors haven't been as helpful as in others."

While nine respondents (41%) reported that they did not experience anything unexpected, 13 of the interviewed pre-service teachers noted a great variety of factors that they did not expect (see Table 3). These ranged from 'no exams' to 'online group work tasks' and 'tutor variability'. It was important to account for all the topics that were mentioned, sometimes only by one student, because it is these accounts that provide valuable insight into the match or mismatch between student expectation of learning and teaching provisions and what they actually experience, such as group work activities or the use of specific collaboration technology. Very often, understanding student expectations will enable adjustments to be made in the future, such as reviewing the timing of assignment submission to ensure that e-tutors will be available when students are expected to submit their assignment using the university's learning management system, or the provision of a vodcast that illustrates the setting up of a Facebook event etc. It is important to keep in mind that students, specifically those enrolling in OUA-associated courses, are often mature age learners (Rossiter & Baker, 2013). Unsurprisingly they often report to have been away from university-level study for a number of years and lack critical e-competencies as outlined above. Hence, they will need, especially in an ODL environment, careful mentoring and coaching (see Table 3).

Whereas the responses to question 3 were quite disparate, the topics noted by respondents to question four centred on some well-known key issues reported previously in studies concerning online learning (Lonchamp, 2006; Summers, Waigandt, & Whittaker, 2005), such as feelings of isolation and underdeveloped self-management and independent study skills (see Table 6). The attainment of independent thinking skills and working habits is now acknowledged as an integral part of e-competency development and higher education achievement. Although Guri-Rosenblit notes that "developing autonomous and self-directed learners is indeed a lofty goal", (2009, p. 109), the inclusion of a 'generic skills assessment' component in the first Feasibility Study for the Assessment of Higher Education Learning Outcomes in an attempt to test university and student performance globally (OECD, 2012b) makes explicit the attention that generic skills have received in recent years.

Table 4: What was most challenging?

Question No	Participant perception
	Vignettes 17-20
Q4	*Vignette 17: Lack of personal contact* "The isolation and the lack of personal, face-to-face contact makes me feel like I am a long way away from Perth. I miss the opportunity to talk to other students. On campus, one can sit down with a group and brainstorm ideas." *Vignette 18: Studying again* "Getting back into the swing of study after so long is hard. A lot of new lingo and the academic writing requirements are challenging." *Vignette 19: Time management* "Being organised and managing my study time. Finding time to do the work. The fact that everything is available online does not make it easier. I suppose for any online student it is always a challenge to keep working, it can be easier to simply sit back and watch a movie or something." *Vignette 20: Tutors* "Getting tutors to respond and not being able to walk up to a tutor and ask a question. Having to wait for a response and then replying again."

Half of the interviewed pre-service teachers (50%) note that the distance-delivered ITE matched their expectations, the other 50% of interviewees responded no (or yes and no) to the above question (see Table 5). Significantly, the great majority of 'no' responses expressed, similar to 'yes' responses, very positive views about their overall experience. They either judged the learning experience as 'better than expected' or 'a combination of expected and unexpected experiences'. Only a minority of respondents thought that their expectations were not met due to some shortcomings of learning design or implementation, such as insufficient tutor/student interaction or the difficulty of the work. This positive response can be related to the expectation and willingness of these students to enhance their e-competencies and accept that this may not be a fast and/or easy endeavour, requiring instead persistence and intrinsic motivation. Hence, it can be argued that these students possess high levels of academic and technological self-efficacy beliefs.

Table 5: Was the experience as expected?

Question No	Participant perception
	Vignettes 21-24
Q5	*Vignette 21: YES* "Yes, it was definitely what I expected. I'm quite happy with it. I went in knowing it was challenging." *Vignette 22: NO – better* "No, it was even better, I have absolutely loved it. A lot more feedback and involvement from tutors than I anticipated. Very, very straight forward. I expected that doing everything online would be complicated." *Vignette 23: NO - harder* "No, much harder, more of a challenge and more involved. I didn't expect it to be as difficult having done no previous university study." *Vignette 24: NO – more interaction* "I assumed there'd be more interaction with tutors." *Vignette 25: YES and NO* "Yes and no, overall I would say YES, but it's a weird combination of really enjoying it but also being frustrated, i.e. hard to interact with others or lack of time to commit to studies."

Table 6: Why study online?

Question No	Participant perception
	Vignettes 26-29
Q6	*Vignette 26: Cost* "It's more cost effective. I can study without the painful expenses of going to campus." *Vignette 27: Enjoyment* "I wasn't enjoying studying on campus. I don't want to go on campus with people at least 20 years younger than me." *Vignette 28: Family* "I didn't need to back up my family and move to the city. I have young children at school and it is impossible for me to study on campus." *Vignette 29: Work* "I can't afford to leave work, so it's easier to do online study."

Table 7: Will you continue to study online?

Question No	Participant perception	
	YES	NO
Q7	22	0

Family, work commitment and reduced cost dominated the reasons given for the preference to study ITE online (see Table 6). This is not surprising. However, two respondents noted that it was the enjoyment factor that led them to the decision to study through OUA. The online environment provides some form of security and protection that can be comforting and assist mature age learners, who may be less technologically savvy to persist with their studies and succeed in their studies.

The pre-service teachers interviewed for this study responded unanimously in the affirmative to question seven, which is quite surprising, given some of the more critical comments provided to earlier questions. Maybe it is a question of degree and for those participants with more critical views; the positive elements outweigh the less desirable aspects of distance-delivered ITE (see Table 7).

As question eight is a highly personal question, it was expected that there would be a great variety of responses (see Table 8). However, similar to previous questions, respondents' answers fit into the now quite familiar topics of independent work, quality resources, social interaction and tutor support. It is through questions that probe participants' views concerning pedagogy that the value of independent work and the related issue of quality of resources become apparent. Other participants seemed to prioritise outcomes rather than processes and were simply concerned with receiving good grades (see Vignettes 30 and 34).

Table 8: What is truly important to you about how you learn?

Question No	Participant perception
	Vignettes 30-34
Q8	*Vignette 30: Grades* "Not so much how, but the outcome, so grades." *Vignette 31: Independence* "Discovering stuff for myself. I prefer to learn with a little bit of guidance only and I can come to my own conclusions." *Vignette 32: Quality resources* "Quality resources, so that I get the hang of things. Being able to get current and modern information. Parts of a textbook from a current unit are a bit outdated." *Vignette 33: Social interaction* "I learn more off people that there's someone there to help me when I need it. That's why Facebook was great and any question I sent off through Blackboard was answered. The clarification is essential." *Vignette 34: Tutor* "Thing I would like to see but haven't found so far is more feedback from the tutor, and more guidance as to where you are heading. Last assignment I thought I had aced it, but I only passed and I was left confused. My referencing which I thought was right was incorrect."

Based on responses to question ten, it is clear that there is a demand for greater social contact among pre-service teachers in general (N = 11), but more so between tutor and student (see Table 9). A number of respondents noted the value of synchronous discussions. Whereas some interviewees found group interactions via Blackboard or email sufficient, others noted that they would have preferred regular private phone or Skype meetings with their e-tutor. Although favoured by a number of students, synchronous individual tutor-student communication would increase tutor workload significantly and may be problematic if e-tutors and students do not live in the same time zone.

Table 9: How would you have liked to interact with others?

Question No	Participant perception
	Vignettes 35-37
Q9	*Vignette 35: Online chat* "I prefer to have online chat. Email and discussion board are fine, but to validate your ideas, you want instant feedback rather than wait for a response." *Vignette 36: Open forum* "The group I was assigned to did not contribute to the discussion board. Forums are great, but there needs to be interaction." *Vignette 37: Tutor* "A phone or Skype call from a tutor to see how you're doing and tips of how you could improve would be great."

While it seemed that many respondents noted that they had a satisfactory experience and they found it 'good', 'enjoying' and 'rewarding' (N = 12), the issues of inconsistency and time investments are important (see Table 10). Much attention will need to be given to improvement strategies to ensure that students are provided with correct information concerning time investment, especially for online and OUA students, who have a number of other life commitments that need to be balanced. Similarly, tutor variability is an issue not only for online delivery of programs, but can be quite distressing for ODL students, precisely because they do not have the opportunity to simply walk up to a tutor at the end of class.

Table 10: Any other comments?

Question No	Participant perception
	Vignettes 38-40
Q10	*Vignette 38: Inconsistency* "A lot of inconsistency with tutor feedback. Some tutors gave lots of feedback and others were hard to get hold of and hardly gave any feedback." *Vignette 39: Positive experience* "It's been good. I found it really satisfying and rewarding. I thoroughly enjoyed it and I'm glad I did it. It gave me an opportunity to do a degree and I wouldn't have done it if it wasn't for OUA." *Vignette 40: Time investment* "The amount of reading that we were supposed to do was extensive in relation to the amount of time that is allocated. I was told that the amount of time required was 10 hours per week, but for me, it was much more."

Discussion

Empirical research highlights that the lack of e-competence influences the adoption of educational technology in teaching and learning (Bates, 2000; Johnson, 2003). Accordingly, existing e-competencies need to be challenged and advanced in order to be able to judge the effective use of ICT in formal teaching and learning (Schneckenberg, 2010).

The findings of this study provide rich evidence that e-competencies are important for positive experiences in open and distance modes of ITE (e.g. Vignettes 1-7). Hence, these findings provide important insights for advancing the design of the current ITE for open and distance modes courses that will include a stronger focus on the diversity of e-competencies of students. More specifically, we argue that a clear endorsement of Curtin University's online learning option for students enrolled in an ITE program through OUA was that each one of the 22 interviewed pre-service teachers noted that they intend to continue to study online (see Table 9). Another important insight gained from the in-depth interviews was the narrow range of responses to the question of what is 'truly important about how they learn' (see Table 10). Given the differing social, cultural and historical backgrounds of research participants, it was expected that pre-service teachers choosing to study through ODL modes

would identify a wide variety of highly personal reasons for doing so, but quite surprisingly, their responses were often quite similar. Each person's ideas concerning the importance of how they learned could be categorised into one of four groups: cost, enjoyment, family, and time. The rationale for the comparable reasons provided is that it seems to be a reality of modern times that most adults are time-poor. Moreover, learners with young families to support seem to be looking for cost-effective solutions that allow for the balancing of study commitments with child minding duties and other family commitments.

Limitations and future studies

The terms generalisability, reliability and validity are typically associated with quantitative research, increasingly they are now also foreshadowed as important concepts in qualitative research (Anderson, 2010; Kidd, 2002). In any case, no claim is made to the generalisability of the findings of the present study to ITE delivered through distance modes. Hence, a possible criticism is that the data gathering process concerning pre-service teachers' perception of ODL was narrow, focusing solely on the Curtin University experience. Nevertheless, this paper was able to point to some common themes and trends that warrant further investigation.

Future research may confirm initial trends or provide important additions and caveats to the findings presented here and may complement the present findings. Combining research finding from different case studies will provide a considerable measure of rigor, enhancing validity and reliability of the findings that would potentially allow for some generalisability and transferability of findings (Anderson, 2010; Guri-Rosenblit, 2009; Patton, 2001; Yin, 2013). Nevertheless, as with all qualitative research designs, this study was less concerned with representativeness than with the identification and reporting of student perceptions of critical incidents and processes that shed light on pre-service teacher expectations and lived experiences in ITE delivered through online and open learning modes.

Conclusions

Curtin University is among the leaders in the delivery of open and distance learning courses in Australia; and ITE enrolments, especially through OUA, have increased dramatically over the last few years. Despite its apparent popularity, little was known in the past about the motivation of students to enrol in distance-delivered ITE. This study sought to investigate this problem.

Seeking an in-depth understanding of student expectations and lived experiences in ITE at Curtin University, the data was grouped into themes that related to personalised viewpoints and experiences. The focus was not on the design of the learning experiences, but rather on how distance-delivered ITE was perceived by interviewees as conducive to learning, how adequate their e-competency levels were to take up online learning, and how ODL was able to meet the individual needs of pre-service teachers or provided a barrier to their learning success.

This study provided some important leads concerning themes of and trends for distance-delivered ITE, which may provide a foundation for the future cross-sectional analysis of the qualitative data collected for the larger study. More importantly, it highlighted the possibilities and potential advantages of extending the provision of online delivery of ITE and in-service teacher professional development and learning opportunities at Curtin University and elsewhere. These are exciting times for education and given the looming global teacher shortage, studies on innovative pre-service and in-service teacher education are urgently needed. The social component of online learning, especially peer-to-peer engagement and social presence will need to be better understood as some respondents noted they felt isolated from other students and from e-tutors, despite the wide variety of communication options on offer. Not only is it important to understand how distance-delivered ITE can be improved to help more students succeed, but also how graduates fare in the labour market compared to those who gain their degree through traditional on-campus study. Hence, much more research is needed to gauge students' e-competencies as they enter their online studies as pre-service teachers and potentially also in-service teacher professional development.

References

Anderson, C. (2010). Presenting and evaluating qualitative research. American Journal of Pharmaceutical Education, 74(8), 1-7.

Australian Mathematical Science Institute (2013). Discipline profile of the mathematical sciences in 2013. Melbourne, VIC: AMSI, University of Melbourne. . Retrieved 25.03.2014, from: http://mathsofplanetearth.org.au/wp-content/uploads/2013/03/Discipline_profile_2013.pdf

Bates, A. W. (2000). Managing technological change. strategies for college and university teachers. San Francisco, CA: Jossey-Bass.

Bedeian, A. (2004). Peer review and the social construction of knowledge in the management discipline. Academy of Management Learning and Education, 3(2), 198-216.

Corrin, L., Bennett, S., & Lockyer, L. (2013). Digital natives: Exploring the diversity of young people's experience with technology. In R. Huang, J. M. Spector & Kinshuk (Eds.), Reshaping learning: The frontiers of learning technologies in a global context (pp. 113-138). New York: Springer.

Dewey, J. (1933). How we think. New York, NY.: Dover.

Dobozy, E. (2013). Research skills for the future: Research workforce under the spotlight. Journal of Research Practice, 9(1), Article V4. Retrieved from http://jrp.icaap.org/index.php/jrp/article/view/382/312

European Union. (2008). Glossery – Recommendation of the European Parliament and of the Council. Retrieved 25.03.2014, from http://www.eucen.eu/EQFpro/GeneralDocs/FilesFeb09/GLOSSARY.pdf

Guri-Rosenblit, S. (2009). Distance education in the Digital Age: Common misconceptions and challenging tasks. The Journal of Distance Education, 23(2), 93-104.

Johnson, D. F. (2003). Toward a philosophy of online education. In D. G. Brown (Ed.), Developing faculty to use technology – programs and strategies to enhance teaching (pp. 9-12). Bolton, MA: Anker Publishing.

Kanwar, A. (2012). Four decades of open and distance learning: Future directions. Retrieved 05.07.2013, from http://www.col.org/resources/speeches/2012presentations/Pages/2012-09-27.aspx

Kidd, S. A. (2002). The role of qualitative research in psychological journals. Psychological Methods, 7(1), 126-138. doi: 10.1037//1082-989X.7.1.126

Lantolf, J. (2000). Introducing sociocultural theory. In J. Lantolf (Ed.), Sociocultural theory and second language learning (pp. 1-26). New York: Oxford University Press.

Lave, J., & Wenger, E. (1991). Situated learning: Legitimate periperal participation. Cambridge, UK: Cambridge University Press.

Lekkas, Z., Germanakos, P., Tsianos, N., Mourlas, C., & Samaras, G. (2013). Personality and emotion as determinants of the learning experience: How affective behavior interacts with various components of the learning process. In M. Kurosu (Ed.), Human-Computer Interaction. Applications and Services (Vol. 8005, pp. 418-427). Heidelberg: Springer.

Lonchamp, J. (2006). Supporting synchronous collaborative learning: A generic, multi-dimensional model. International Journal of Computer-Supported Collaborative Learning, 1(2), 247-276. doi: 10.1007/s11412-006-8996-7

McKenzie, P., Rowley, G., Weldon, P., & Murphy, M. (2011). Staff in Australia's schools 2010. Main report on the survey. Melbourne, VIC: ACER Press.

Norton, L. (2009). Action research in teaching and learning: A practical guide to conducting pedagogical research in universities. New York: Routledge.

OECD. (2013). Trends shaping education 2013. Spotlight 1. Retrieved 25.03.2014, from http://www.oecd.org/edu/ceri/SpotlightAgeing.pdf

OECD. (2012a). Who are the teachers? Education at a glance 2012. Retrieved 05.07.2013, from http://dx.doi.org/10.1787/eag_highlights-2012-28-en

OECD. (2012b). Assessment of higher education learning outcomes. Retrieved 09.07.2013, from http://www.oecd.org/edu/skills-beyond-school/AHELOFSReportVolume1.pdf

OECD (2005). The definition and selection of key competencies: Executive summary. Available online: http://www.oecd.org/pisa/35070367.pdf [Accessed 21 January 2014].

Open Universities Australia. (2013). Distance Education and Online Courses. Retrieved 05.07.2013, from http://www.open.edu.au

Patton, M. (2001). Qualitative evaluation and research methods. London: Sage Publications.

Romani, J. (2009). Strategies to Promote the Development of E-competencies in the Next Generation of Professionals: European and International Trends. Monograph No. 13. Available at: http://www.cardiff.ac.uk/socsi/research/researchcentres/skope/publications/monographs/monograph13.pdf

Schleicher, A. (2012). Preparing teachers and developing school leaders for the 21st century: Lessons from around the world. Retrieved 05.07.2013, from http://www.oecd.org/site/eduistp2012/49850576.pdf

Schneckenberg, D. (2010). What is e-Competence? Conceptual framework and implications for faculty engagement. In U.-D. Ehlers & D. Schneckenberg (Eds.), Changing cultures in higher education (pp. 239-256). Heidelberg: Springer.

Summers, J. J., Waigandt, A., & Whittaker, T. A. (2005). A Comparison of student achievement and satisfaction in an online versus a traditional face-to-face statistics class. Innovative Higher Education, 29(3), 233-250. doi: 10.1007/s10755-005-1938-x

United Nations Education, Science, and Cultural Organisation (2013). Chronic shortage of teachers to persist beyond 2030. Infograph. Retreived 25.032014 from: http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/ED/GMR/images/2011/WTD_infog.gif

Vygotsky, L. S. (1978). Mind in society. The development of higher psychological processes. Cambridge, MA: Harvard University Press.

Wertsch, J. (1985). Vygotsky and the social formation of the mind. Cambridge, MA: Harvard University Press.

Yin, R. K. (2013). Case study reseach: Design and methods (5 ed.). London: Sage Publications.