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# Being digital: The challenge for career-change beginning teachers

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## ABSTRACT

*The pedagogical challenge of supporting learning in a digital world requires an understanding of how, where, when and when not to use information and communications technology (ICT) in teaching and learning. This paper builds on existing research on the integral use of ICT for teaching and learning, that is, digital pedagogies. Additionally, the research that highlights the value of skills and experiences that career-change beginning teachers bring to the profession is advanced. Through an interpretative analysis of quantitative and qualitative data collated via an online survey, the paper builds a profile of (N=64) career-change beginning teachers currently entering the profession from a one year graduate diploma program at a Queensland university. The responses showed that (a) career-change beginning teachers have diverse backgrounds (b) a range of ICT skills related to former careers exist; (c) beliefs about how ICT should be used for teaching and learning are firmly grounded in past experience; (d) confidence to manage data and teach ICT skills is high in contrast to confidence in using digital pedagogies; and (e) expectations about how ICT will be used in school contexts are also related to past experiences. The paper concludes that influencing beliefs about contemporary learning may be central to supporting career-change beginning teachers to develop familiarity and confidence in the use of digital pedagogies.*

## INTRODUCTION

Pedagogy is characterised by well-rehearsed habits that parallel a predictable and regular social world (McWilliam, 2006). Technological innovation, however, has impacted powerfully on pedagogy by extending social relationships, enabling the creation of new sources of knowledge, new knowledge and new ways of knowing (Loveless, DeVogd & Bohlin, 2001) thereby changing the way learning takes place, how it takes place and what is learned (DETA, 2007). In decades past, the knowledge and skills with which teachers commenced their career were generally adequate for life, whereas now, new knowledge, teaching tools and strategies are emerging frequently during a teaching career, requiring a commitment to ongoing professional development and pedagogical change. This is manifested as a challenge within the existing profession (Kennewell, Tanner, Jones, Beauchamp, 2008; Marshall & Anderson, 2008; Mishra & Koehler, 2006; Ottesen, 2006) and for those entering the profession through one-year Graduate Diploma programs having changed career from another profession to make integral use of ICT for teaching and learning, that is, digital pedagogy.

It is proposed in this paper that influencing beliefs about contemporary learning may be central to supporting career-change beginning teachers to develop familiarity and confidence in the use of digital pedagogies. This proposal builds on the body of literature that highlights the specialisations and varied repertoire of problem-solving, coping, management and organisational skills that career-change teachers bring to the profession compared to those who have selected teaching as their first occupation (see for example, Haggard, Slostad, &

Winterton, 2006; Priyadharshini & Robinson-Pant 2003, Williams, 2005). This is embodied in the notion that better acknowledgment of skills and experiences of career-change beginning teachers needs to occur given that “as professionals, they are by no means beginners” (Skilbeck & Connell, 2004, p. 4) and is the essence of the research reported in this paper.

This paper reports on the first phase of longitudinal case study research that examines the perceived enablers and barriers for career-change beginning teachers in transforming ICT skills into digital pedagogies. While the aim of the first phase was to identify career-change beginning teachers with high level ICT skills for interviews at a later date, this paper specifically reports on the following research questions:

1. What do the demographics of the career-change beginning teachers' reveal about who they are?
2. What ICT skills have been developed in previous careers and courses?
3. What beliefs do career-change beginning teachers have about using ICT in teaching and learning?
4. How confident are career-change beginning teachers in using ICT in teaching and learning?
5. What expectations do career-change beginning teachers have for using ICT in school contexts?

This paper will respond to these questions in 5 sections beginning with a section briefly outlining the theoretical and policy background to the current educational setting in Queensland.

## BACKGROUND

Education systems worldwide are recruiting professionals seeking career change as one means of dealing with teacher shortages in specialist areas and hard- to-staff schools, baby-boomer retirement, and steady attrition rates among younger teachers. In Queensland, career-change beginning teachers with work and study experience in a broad range of fields, and a one-year Graduate Diploma, are entering an education system that is currently addressing the challenge of technological change. This dynamic environment is explored through bringing together a constructivist theoretical perspective, education policy, and the literature on career-change, ICT skills and digital pedagogies.

### **Theoretical perspective**

The research described in this paper, grounded in the ICT professional learning literature (see, for example, Web & Cox, 2004), has a constructivist theoretical basis that draws on experiential learning theory (Kolb, 1984). Experiential learning theory is way of thinking about knowing is based on the pragmatic philosophy of John Dewey, Kurt Lewin's social psychology and Jean Piaget's cognitive developmental theory (Kolb, 1984). Key ideas include the iterative nature of the learning process and the value of reflective practice. In re-envisioning John Dewey's ideas in a contemporary context, the beliefs, confidence, and expectations of career-change beginning teachers are viewed as being situated in a past social and cultural context in general, and shaped by the nature of current policy contexts, pedagogical challenges and past occupational and study experiences in particular.

## Policy context

In Australia, *Learning in an Online World: Pedagogy Strategy* (MCEETYA, 2005) provides a nationally consistent focus on ICT as an enabler of pedagogy and provides sound guidance for systems and individual teachers. In acknowledging that ICT capabilities are essential for participation in today's society and economy, pedagogies integrating ICT have the potential to transform learning to better support interactive conceptual learning, focussed on constructing and creating knowledge (MCEETYA, 2005). The notion of digital pedagogies is flagged as one element in enabling contemporary and future learning in the Department of Education and The Arts (DETA) *Smart Classrooms* strategy. Renewed and reshaped pedagogy is at the core of this education reform agenda. The department explains digital pedagogy in the following manner:

Digital Pedagogy is a new way of working and learning with ICT to facilitate quality learning experiences for 21<sup>st</sup> Century learners. Digital pedagogy moves the focus from ICT tools and skills to a way of working in a digital world. Effective digital pedagogy is based on the needs of individual students and incorporates contemporary teaching and learning strategies. It features personalised approaches, intellectual engagement, rigorous learning, connectedness to global contexts, supportive and collaborative classroom environments and connected curriculum, assessment and reporting to improve outcomes for students.

(Laurie Campbell, personal communication, February 20, 2008)

Digital pedagogy is fostered through the *Smart Classrooms Professional Development Framework* that guides planning for professional learning with ICT. The framework is designed for teachers to reflect on and strengthen their beliefs and practices in using ICT for teaching and learning (DETA, 2006), and, as such, is supporting teachers to move the focus away from ICT skills to a way of working where ICT is integral to learning. In positing the notion that influencing beliefs about contemporary learning may be central to supporting career-change beginning teachers to develop digital pedagogies, it is timely to acknowledge the emergent view that a considerable gap exists between the intentions expressed in educational policies, the literature and the level of change in schools (Kennewell, et al. 2008; Marshall & Anderson, 2008; Mishra & Koehler, 2006; Ottesen, 2006).

## Pedagogical challenges

The way ICT is used reflects teachers' beliefs about pedagogy, which in turn relates to knowledge creation and learning (Loveless, Devoogd & Bohlin, 2001). Having ICT skills is no guarantee as to the development of contemporary perspectives on how teaching and learning best occurs nor does it necessarily lead to valuable student learning (Kennewell, et al., 2008, Mishra & Koehler, 2006). In isolation, or in addition, ICT skills simply allow faster access to information, more efficient processing and clearer presentation. Such an approach best supports a continuation of traditional methods of learning albeit faster, more reliable and with increased interactivity (Noss & Pachler cited in McNair & Galanouli, 2006). A challenge for career-change teachers is to modify the functional and operational uses of ICT that may have been developed in previous careers or home use and this may involve shaping or forming new beliefs about how learning occurs.

Learning environments that enable high quality outcomes for students supported and mediated by ICT generally incorporate a social constructivist approach (Driscoll, 2000). From a practical perspective, social constructivist principles are challenged by the rapid development of ICT and this challenges educators to build collaborative knowledge and

deepen learning experiences connected to the global learning environments. Additionally, creating contemporary and future learning environments that are more constructivist than transposed traditional pedagogies is advocated by researchers and employer groups (DETA, 2006a; Lloyd, 2005; Ross, Ertmer & Johnson, 2001). Career-change beginning teachers with high level ICT skills may risk taking on roles based on sharing skills and technical assistance without benefiting from experienced teachers' wisdom regarding pedagogy (Mutton, Mills & McNicholl, 2006), whether traditional or digital.

### **Career change teachers**

The motivation to change careers to teaching is linked to a desire for self-improvement, social and economic opportunities or a genuine interest in a particular discipline (Mayer, 2006; Williams, 2005). Career-change teachers, as diverse as they are alike, experience similar challenges to direct-entry beginning teachers. The literature suggests that beginning teachers of all backgrounds experience varying degrees of stress, self-doubt and disillusionment (Flores & Day, 2006; Goddard & O'Brien, 2004). Additional factors include loneliness, exhaustion, classroom management, administration, planning and curriculum, working with parents and communities, working with colleagues and expectations of the field are also issue of concern for beginning teachers (Eifler & Potthoff, 1998). As such, authors suggest that career-change teachers require as much help, if not more, as direct-entry teachers (Eifler & Potthoff, 1998; Goddard & O'Brien, 2004; Priyadharshini & Robinson-Pant 2003; Williams, 2005). There are, however numerous challenges and concerns in making a career-change into teaching.

A key challenge for career-change beginning teachers is to avoid reverting to long-held personal beliefs about teaching and learning when dealing with the realities of classroom life and other professional challenges (Churchill & Walkington, 2002). Beliefs about learning are acknowledged in the literature as a key enabler or barrier of contemporary teaching practice. Teachers' beliefs about students, teaching, digital pedagogies and change determine classroom practices and are a mix of willingness and capability to create engaging ICT-rich learning environments with students (Ertmer, 2005; Sime & Priestley, 2005).

Reshaping functional and operational use of ICT that may have been developed in previous career is another key challenge. Those with ICT skills gained in previous occupations may well bring perspectives that challenge the notion of how teaching has always been done in schools if beliefs about contemporary learning are shaped and formed through witnessing and experiencing the digital pedagogies in pre-service courses and in schools (Bai & Ertmer, 2008). The need for more recognition of previous responsibilities and experiences is of concern to some career-change teachers (Haggard, Slostad, & Winterton, 2006; Priyadharshini & Robinson-Pant 2003), however ICT related skills are likely to be put to good use throughout school communities (Student D).

## **RESEARCH DESIGN AND METHODS**

This section details how pedagogical challenges and career-change beginning teachers' capabilities are explored in the study. While a broader aim was to identify career-change beginning teachers with high level ICT skills, details of the method of exploring general demographics, ICT skills, beliefs, confidence and expectations of career-change teachers follow.

### **Aims and design of the research**

The research from which this paper is drawn aims to build a profile of ( $N=64$ ) career-change beginning teachers currently entering the profession from a one-year Graduate Diploma program at a Queensland university. Through an interpretative analysis of quantitative and qualitative data the patterns of beliefs, confidence and expectations of career-change beginning teachers as they develop digital pedagogies will be explored.

### **Participants and setting**

The research was conducted with career-change beginning teachers undertaking the one-year (two-semester) Graduate Diploma in Education at a Queensland university, 2006-2007. The criteria for involvement in the study was participation in the workforce for at least 75% of the last 5 years since 2001 and at least daily use of ICT resources and devices in the subject's previous occupation. Of the 500 enrolled in July 2007 when the students were invited to take part, 64 accepted the invitation and completed the survey ( $n=64$ ). These fell into three subsets: (1) those who had commenced in January, 2007 and who, by July when the survey was undertaken, had completed a 4-week field experience and 1 semester of lectures; (2) those who had commenced mid year in July 2007 and were at the beginning of the course; and, (3) those who were completing the course part-time and taking up to four years to complete the course.

### **Instruments**

Data reported in this paper was collected through an online survey consisting of 20 questions organised into five sections, namely:

1. background demographic data;
2. ICT-related professional knowledge and practices that career-change beginning teachers bring to the teaching profession from their previous occupation; and previous studies;
3. beliefs about using ICT for teaching and learning
4. confidence in using ICT for teaching and learning; and,
5. expectations for using ICT in school contexts.

Following the data gathering process, an analysis of the qualitative and quantitative data was undertaken. Firstly, a series descriptive tallies were calculated across ICT skills, beliefs, confidence and expectations, as well as comparisons of means through one sample T-tests using SPSS software. Secondly, a vertical analysis of each of the participant's responses was undertaken and thirdly, a cross-case analysis of patterns and differences (Miles & Huberman, 1984). The latter analyses enabled the determination of which career-change beginning teachers that responded to the survey had high level ICT skills that could be invited to take part in further research. While outside the discussion of this paper, the analysis revealed that 45% of those surveyed had "high" ICT skills, while the remainder displayed medium (19%) or low (36%) skills.

## **RESULTS**

The findings from the responses of career-change beginning teachers of who voluntarily took part in the research ( $N=64$ ) are reported here: (1) general demographic data providing the context; (2) ICT related professional knowledge and practices gained from their previous occupation and studies; (3) beliefs regarding ICT and teaching and learning and (4)

confidence in relation to using ICT for teaching and learning and lastly, expectations regarding using ICT in school contexts. These results have clear links to the research questions posed earlier in this paper.

## **1. Demographic data**

The demographic data obtained from the survey included age, gender, qualifications, year qualification obtained, discipline of highest qualification, occupations held for longer than 6 months in the last five years. Most of the teachers who responded to the survey ( $n=64$ ) were between 35 and 44 years of age (44%), with 32.2% in the 25-34 years age range. The least populous age range was 55 years and over (1.6%). The median was in the 25-34 age range. The group was predominantly female (83%). The highest qualification of 69% of respondents was a Bachelor's degree with 4% holding a Masters or PhD that was obtained in the majority of cases (54%) before 2000 with 9% gained prior to 1990. The qualifications while diverse were from Science (19%) and Health and Human Services (17%). Of interest is that while 19% hold Science degrees only 1.6% worked in a science related industry. The trend is reversed in the Information Technology field where 12.5% worked in the industry while only 5% had Information Technology undergraduate degrees. Other occupations - held for longer than six months in the last five years - included administration and customer service (21.9%) and management (12.5%).

## **2. ICT related professional knowledge and practices**

This survey section comprised of seven uses of ICT (after Lloyd, Masters & Garvey 2006) and one 5-point Likert rating scale to enable the calculation of ranked means and standard deviations to compare responses. Possible options ranged from 1 (Frequently - every day) to 5 (Not relevant). To ensure that all possibilities were covered, a free text input response was invited for participants to detail any other ICT devices and resources they used in a previous occupation with 42% adding additional information. The extent and level at which the career-change beginning teachers surveyed used ICT was a key variable in this study as it was used to determine cases for further investigation.

The data illustrated that the most frequently used ICT skill, used at least once per week in their former occupations was *communicating with colleagues and business associates* while the least frequently used skills were concerned with *creating and presenting seminars, lectures, and information sessions*.

ICT skills extended from minimal to, explained in the survey by students as using: High End computers and highly technical software to edit and create digital terrain models (3D viewing, 2D viewing etc) Microstation/ Geographic Information Systems (Student A); Pretty much anything imaginable. My role was to support this equipment. This ranged from Servers, desktops, blackberry, Palms, Scanners, printers, networked photocopiers, teleconferencing equipment, laptops, cameras (Student B); DVD creation including filming, editing, production CD creation including recording, editing and production AUTOCAD (Student C, in role as a registered training organisation multimedia tutor).

### 3. Beliefs regarding ICT and teaching and learning

Beliefs regarding how ICT should be used for teaching and learning were explored in several ways. The first question in this section sought responses to how ICT should be used for teaching and learning based on the indicators from the Queensland Department of Education, Training & the Arts *Smart Classrooms Professional Development Framework* (DETA, 2006). The responses were measured using a 5-point Likert rating scale, with possible options of 1 (Daily), 2 (Frequently - once per week on average), 3 (Occasionally - once per month on average) to 4 (Never) with an option note that that they believed the statement to not be good practice. The range of responses was between 1 and 4. Table 1 shows the mean, standard deviation and range of the responses.

The question was analysed for internal consistency using Cronbach's alpha reliability analysis (Nunnally, 1967) to determine how consistently participants responded to each item and the extent to which the items related to each other.

The Cronbach alpha coefficient for the 6 items was 0.767. While the value is not high, it indicates an acceptable level of consistency in responses and logical connections between aspects of the same broad issue of how career-change beginning teachers would use ICT for teaching and learning. In further analysing the reliability of responses, a split-half analysis was conducted to examine the correlation between parts of the survey. The split half analysis of this question was organised in two parts.

Part 1 items were:

- (a) I will build teaching and learning practices around my ICT skills;
- (b) I will create opportunities for students to use ICT to develop and apply new knowledge rather than teach them just what I know about ICT; and
- (c) I will need to model how to operate safely, ethically and legally when using ICT.

The Cronbach alpha coefficient for these questions was 0.469. While this measure is considered very low, it highlights the tension between the belief that ICT skills will determine teaching practices, as per item (a) and the belief that they will create opportunities for students to use ICT to develop and apply new knowledge (Item b).

Part 2 items were:

- (d) I will need to critically review, select and adapt ICT resources to create engaging learning experiences;
- (e) I will need to plan assessment tasks that incorporate the use of ICT; and
- (f) I will need to continue my ICT related learning throughout my teaching career.

From the results described in Table 1, the career-change beginning teachers in the survey described in this paper most commonly believed that they will need to *critically review, select and adapt ICT resources to create engaging learning experiences*. They least commonly believed that they would need to *plan assessment tasks that incorporate the use of ICT*. Of interest is the sample means for the beliefs that *teaching practices will be focus on ICT skills* and *create opportunities for students to use ICT to develop and apply new knowledge rather than teach them just what I know about ICT*. This highlights that many of the career-change beginning teachers have an ICT skills based focus rather than a more



holistic pedagogical approach recommended by the literature (see, for example Kennewell et al. 2008; Mishra, & Koehler, 2006; Ottsen, 2006) and in contemporary policy (MCEETYA, 2005).

Table 1

*Beliefs about ICT and teaching and learning*

Professional practices				
	Mean	s.d	Range	
	Scale range 1-5		Low	High
I will need to critically review, select and adapt ICT resources to create engaging learning experiences	1.6	0.61	1	3
I will build teaching and learning practices around my ICT skills	1.7	0.95	1	4
I will create opportunities for students to use ICT to develop and apply new knowledge rather than teach them just what I know about ICT	1.7	0.62	1	3
I will need to model how to operate safely, ethically and legally when using ICT	1.7	0.76	1	4
I will need to continue my ICT related learning throughout my teaching career	1.8	0.76	1	3
I will need to plan assessment tasks that incorporate the use of ICT	2.1	0.85	1	4
Scale range 6-19				
Total of all indicators	10.6	4.55	6	24

In this section of the survey, a second question regarding beliefs about how ICT should be used for teaching and learning provided an opportunity to clarify responses. Thirty nine percent of the respondents chose to do this. The replies were coded using an open coding system to determine concerns of the cohort in relation to teaching and learning with ICT. The concerns included (a) availability of resources (50%); (b) understanding of curriculum (10%); (c) time to teach everything (10%); (d) assessment (10%); (e) maintaining ICT skills (10%); and (f) Other miscellaneous responses that did not relate to the question (10%).

#### **4. Confidence regarding ICT and teaching and learning**

The fourth section of the survey posed questions regarding confidence to use ICT for teaching and learning. The question in this section included 8 indicators from the *Smart Classrooms Professional Development Framework* (DETA, 2006). Confidence was measured using a 5 point Likert rating scale, with possible options ranging from 1 (Highly confident) to

5 (Not at all confident). The range of responses was between 1 and 5. Table 2 shows the mean, standard deviation and range of the responses.

Table 2.

*Level of confidence in relation to the DETA Smart Classrooms ICT Certificate indicators*

Indicators	Mean	s.d	Range	
	Scale range 1-5		Low	High
Use ICT to locate, create, and record information	1.6	0.9	1	4
Store, organise and retrieve digital resources	1.7	0.8	1	4
Use ICT to access and manage information on student learning	1.8	0.9	1	4
Operate safely, legally and ethically when using ICT professionally and with students.	1.8	0.8	1	4
Use a range of ICT resources and devices for professional purposes	1.9	0.9	1	4
Plan units of work incorporating the use of ICT	2.1	0.9	1	4
Select ICT resources appropriate to student learning in a range of contexts and for a diversity of learners	2.2	1.0	1	5
Provide opportunities for students to use ICT as part of their learning	2.3	1.0	1	4
	Scale range 8 to 40			
Total for all indicators	15.4	7.2	8	33

The results in Table 2 show that the career-change beginning teachers surveyed felt most confidence to *use locate, create and record information*; and *store, organise and retrieve digital resources*. The data also shows that the beginning teachers felt least confident to *provide opportunities for students to use ICT as part of their learning*; and *select ICT resources appropriate to student learning in a range of contexts and for a diversity of learners*. This would suggest that the career-change beginning teachers have low levels of confidence in meeting the performance indicators associated with digital pedagogies and have the most confidence to apply the ICT skills more commonly associated with their former career. This is conformed statistically using the Pearson correlation techniques to calculate a low positive correlation significant at the 0.01 level (2-tailed) between levels of confidence and level of ICT skills.

## **5. Expectations in using ICT for teaching and learning**

The fifth section of the survey posed questions regarding expectations for using ICT for teaching and learning. The open-ended question in this section sought responses as to what the career-change beginning teachers thought they would learn in relation to digital pedagogies. The free-text responses were categorised into five clearly identifiable themes using selective coding: (a) transform teaching and learning through ICT (7.8%); (b) apply ICT to current curriculum and learning organisation (25%); and (c) improve ICT skills & knowledge (31%); (d) nothing new (28%); and (e) don't know (7.8%). This may indicate that the majority of the career-change beginning teachers think that they will either learn nothing new or their ICT skills will continue to develop as they apply their skills to curriculum contexts. A minority thought that they would be able to make an impact on the way learning takes place through the integral use of ICT for teaching and learning.

Together the results form a snapshot of the range of ICT skills that career-change teachers bring to the profession; beliefs about how the ICT skills could be used for teaching and learning; levels of the confidence in relation to teaching and learning, and expectations for continued learning about digital pedagogy. The data also provides initial answers to the research questions to be addressed by the study from which this paper was drawn.

## **DISCUSSION**

Three themes emerged from the data which reflect the perspectives of the career-change teachers. Firstly, the tendency to frame how ICT should be used in relation to previous career and study experiences; secondly the skills based emphasis of how teaching and learning best occurs and thirdly enablers and barriers linked to the nature of their experience in a previous career

### **Previous career influences**

Two of a range of capabilities that career-change beginning teachers bring to the profession are an understanding of how ICT can support work tasks and secondly, skills in using particular technologies. While the literature suggests that these capabilities alone will not have an impact on the development of digital pedagogy practices (Kennewell et al. 2008; Mishra, & Koehler, 2006; Ottsen, 2006), however, how the transformation occurs is worthy of further research. The survey concerned with confidence and beliefs data suggests that the career-change beginning teachers will depend on what they know and have experienced to navigate the early years of teaching. This is supported by researchers who write of challenges existing for some career-change teachers in transforming their technical knowledge into digital pedagogies. (Eifler & Potthoff, 1998; McNair & Galanouli, 2002); accepting that they need to learn new ideas in order to become a teacher (Williams, 1995); or more generally coping with being a beginning teacher (see for example Dawson 2008; Mayer, 2006).

### **ICT skills versus digital pedagogy**

The survey data suggests that career-change beginning teachers are more confident in using ICT for managing learning rather than digital pedagogies and they believe that digital pedagogies are dependent on ICT skills. Ottesen (2006) supported this notion by suggesting that experience fosters divergent responses that open up potentialities for action when beginning teachers focus on students interacting with ICT in situated activities. While the value of ICT skills expertise may well be considered an asset in schools, the risk of a technical focus and role is a possibility. This notion of being an “expert-novice” appears to

provide opportunities for interaction with a broader range of experienced teachers and a role across the school in relation to ICT use (Simpson, Payne, Munro & Hughes 1999). The potential to influence practices across school communities highlights the significance of understanding how career-change beginning teachers can be effectively supported in developing digital pedagogies.

### **Enablers and barriers**

Given the ongoing challenges of supporting teachers to develop digital pedagogies (Kennewell et al. 2008; Marshall & Anderson, 2008; Mishra & Koehler, 2006; Ottesen, 2006), the expectations of what will enable the use of ICT for teaching and learning as well as what will limit use are of relevance and interest. There is a clear focus in the data on the access, resources and time that may or may not be available to the career-change beginning teachers now and in the future, that is clearly linked to what was available in previous careers. Making the transition to a less well resourced environment is a dominant concern as Student D related in the survey: “I can see the value of ICT in the learning process, but understand that my use of the technology will most likely be limited by available access and resources.”

### **CONCLUSION**

Personal attributes such as skills, beliefs, confidence and expectations are archetypically considered the main barriers to the developing digital pedagogies (Ertmer, 2005 Ottesen, 2006; Sime & Priestley, 2005). On this basis, the research reported in this paper examined these attributes in relation to career-change beginning teachers with a view to developing a sense of who they are what they can contribute to supporting learning in a digital world.

The results of the research reported in this paper suggest, that (a) beliefs about how ICT should be used for teaching and learning are firmly grounded in past experience; (b) confidence to manage data and teach skills is high; (c) expectations about how ICT will be used in school contexts are also related to past experiences. This suggests that career-change beginning teachers initially develop pedagogical practices based on past occupations and vicarious experiences that do not transfer into digital pedagogies without scaffolding and mentoring. While the skills and experiences that career-change beginning teachers bring to the profession have the potential to enrich school communities, how best to support and influence the development of constructivist beliefs about contemporary learning may be central to supporting career-change beginning teachers to meet the pedagogical challenge of the digital world.

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