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Folk pedagogies and pseudo-theories: how lecturers rationalise their digital teaching

Louise Drumm*

Department of Learning and Teaching Enhancement, Edinburgh Napier University, Edinburgh, Scotland, UK

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The gap in knowledge about how learning theories relate to everyday digital teaching practices in universities inhibits scholarly and practical developments in this area. This article reports on part of a qualitative research project which identified patterns across teaching modes, descriptions and accompanying rationales. It found that learning theories played a minor role in educators' rationales, even though many of their teaching practices could be described as pedagogically 'sound'. Although social constructivist approaches were strongly represented in the data, the most widespread rationales for technology uses were folk pedagogies and pseudo-educational theories. This contradicts much of what scholarship and 'edtech' culture espouses as pedagogically led technology use. Such educational technology orthodoxies hinder the progress of theory use in this area and fail to address the realities of how lecturers use digital technologies. While it may come as no surprise that educators did not articulate their practices referencing learning theories, the dominance of pseudo-theories in this research represents a threat to the criticality of scholarship and practice in this area. This article recommends that critical and scholarly approaches to digital teaching are encouraged, and that folk and pseudo-theories are acknowledged and leveraged in the support and development of digital teaching.

Keywords: pedagogy; learning theories; digital pedagogy; rhizoanalysis; criticality

Introduction

'Pedagogy before technology' is something of a mantra in the support and development of teaching with digital technologies. However, the extent to which educational theory relates to the use of digital technologies for teaching, specifically the pedagogical application of learning theories, is rarely examined in light of existing teaching practices (Selwyn 2010). Furthermore, learning theories (concerned with how learners learn) and pedagogy (the intersection between teaching decisions and learning activities) are often conflated and unproblematised (Jaffer 2010).What constitutes 'theory' is also troublesome, particularly as demand for pragmatic approaches often results in frameworks and models being assumed to be theoretically grounded (Bulfin, Henderson, and Johnson 2013). The first decade of 21st century has witnessed substantial research conducted in this area(e.g. Beetham and Sharpe 2007; Conole *et al.* 2004; Kanuka 2008; Mayes and De Freitas 2007), with debates on whether

*Corresponding author. Email: l.drumm@napier.ac.uk

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theory should be appropriated from other domains (Howard and Maton 2011; Johri, 2011; Oliver, 2011, 2012; Selwyn 2010) sparring with the idea that something fundamentally new is occurring with digital teaching and learning, and new theories are required (Andrews 2011; Franklin and Harmelen 2007; Garrison 2011; Harasim 2012; Haythornthwaite and Andrew 2011; Masterman and Vogel 2007). The purpose of this article is to revisit a selection of commonly referenced theories of learning and use them as a means to explore how, and if, they relate to how lecturers discuss their digital teaching practices.

When it comes to scholarship in the area of education and technology, the field has been dominated by specific affordances of technology and proofs of 'success' (Selwyn 2010, 2013). Yet, when taking the long view of the history of research of education and technology, such as that taken by Mayes (1995) in a paper now over 20 years old, there appears to be much that has been forgotten, with nuance of thought and debate drowned out by a need for certainties and unquestioned orthodoxies of 'best practice'. As identified by Kanuka (2008), there is a need to examine the choices made by educators about pedagogical and technology in light of their underlying belief systems. This article is an attempt to draw together some established concepts of learning and map them against practice so as to contribute to our 'understanding the often uneven, contested and contradictory realities of technology use within educational settings' (Selwyn 2010, p. 67). In doing so, it furthers knowledge about theory and practice in this area and also addresses the perceived wedge between theory and practice for educators and those, such as academic developers, who support them.

Literature

Selected learning theories and learning myths

The following theories of learning (behaviourism, cognitivism and social constructivism) are frequently used to conceptualise, model and even proselytise the use of digital technologies in education. They are a subset of theoretical models of teaching and learning, and have been selected because they are often used as shorthand for theoretically informed pedagogies and are often implicitly implied whenever pedagogy is discussed. There are, of course, many other theoretical approaches to understanding learning which overlap, complement and contradict these theories. Myths around learning are also addressed here, as many of these have roots in the more established learning theories.

Behaviourism

As a theory of learning, behaviourism is broadly understood to be where a teacher, or technological proxy, uses stimuli to elicit a response or change in behaviour in the learner, which can be measured externally (Anderson and Dron 2011). Behaviourism's manipulative undertones, positivist assumptions and non-student-centred objectives have, most likely, led to discomfort in acknowledging that technology, through automation and interactivity, can easily facilitate such behaviourist approaches in teaching. This may account for the scarcity of explicit references to behaviourism in teaching practice despite obvious influences, such as the gamification and 'badging' of learning (Watters 2016). This was reflected in Wu *et al*.'s (2012) research on studies

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on games-based learning where they found a tendency for researchers to theorise their practice with contemporary 'fashionable' theories rather than with behaviourist-based theory. Conole *et al*. (2004) found a similar re-framing of behaviourist teaching as 'constructivist'. In an alternative assessment, Mayes and De Freitas (2007) critique crude interpretations of behaviourism and make the case for it as more closely aligned to active 'learning by doing' methods and, as such, should not be dismissed. Behaviourism has had a profound influence on popular strategies, in particular on instructional design and similar procedural approaches to teaching (Kanuka, 2006).

Cognitivism

In cognitivist learning approaches, internal cognitive processes such as motivation, reflection and pre-existing knowledge are taken into account (Ally 2008). Emerging from psychology, cognitivism frames learning as retention of, and access to, knowledge in working and long-term memory, and the importance of existing cognitive structures to aid these processes (*Ibid*.). This focus on the individual learner has contributed to the promotion of certain orthodoxies with digital technologies that have become widespread, to the point they are seen as self-evident 'common sense'. For example, cognitivism appears to underpin efforts to personalise learning through the use of digital technologies (Wheeler 2015), whereby educators can selectively deliver digital content to individual students. However, the view that learners can be viewed as 'self-educators' due to digital technologies has been identified by Kirschner and van Merriënboer (2013) as an 'urban myth' and chimes with warnings about the idealised autonomous learner (Biesta 2012). Indeed, some have labelled the 'personalised learning' touted by massive open online courses (MOOCs) a myth (Bates 2012), arguing that understanding of the learner as an individual is required for true personalisation rather than generic 'types' of learners. Furthermore, this facilitation of personalised needs of the learner via technology's different modes has found pedagogical justification in 'learning styles' (Ally 2008), a controversial but persistent conceptualisation of learning addressed below.

Social constructivism

Constructivism is based on the principle that knowledge is not passively received by the learners but something they actively construct. The role of the educator in constructivist learning shifts from that of an architect to a facilitator who supports the learners in building their own knowledge structures. This is often aligned with a shift from 'teacher-focused' to 'student-centred' teaching (Kemp 2013), which is itself problematised according to Biesta (2005, 2012) who laments the disappearance of the central relationship at the heart of teaching and learning (2012). Under social constructivism, digital content creation and communication tools are repurposed as sites for student-led knowledge construction(Conole and Alevizou 2010; Kinchin 2012). Consequently, social constructivism and collaborative digital technologies have become enmeshed in educational technology discourse, each enabling and reifying the other. Social constructivist learning theories have been elevated to 'best practice' when using digital technologies for teaching(Selwyn 2009). That is not to say they are not appropriate for some teaching practices, but the recent literature tends to over-report social constructivism and under-report on other theories.

Folk pedagogies and pseudo-theories of learning

'Folk pedagogies', coined by Olson and Bruner (1996), refer to theory of mind held by teachers about learning. Here, I extend folk pedagogies to include those that are gained through personal experience as both a learner and teacher, and through cultural norms about teaching (e.g. from a disciplinary teaching culture). Such naïve ideas of teaching have been pathologised in favour of change, specifically conceptual change on the part of the educator to 'better' beliefs(Ho, Watkins and Kelly 2001; Torff 1999). However, as apparent by Olson and Bruner's (1996) examination of theories of mind, all teachers hold personalised mental models of teaching which could be readily described as folk pedagogies, yet can all teachers be 'wrong'?

Closely related to folk pedagogies are popularly held concepts misconstrued as theories of learning, 'pseudo-theories'. Examples abound, such as 'urban myths' of digital nativism, now widely debunked (Bayne and Ross, 2011; Bullen and Morgan 2016; Jones *et al.* 2010), and 'intuitively appealing' learning styles (Kirschner and van Merriënboer 2013). The veracity of the claims behind learning styles has been tested in systematic reviews (Coffield *et al.* 2004; Cuevas 2015; Pashler *et al.* 2008), which concluded that there was no evidence that learners inhabit a single learning style exclusively, nor is catering for learning styles an effective practice to improve learning. However, the persistence of the learning styles 'neuromyth' (Newton, 2015) highlights the need by educators to have some kind of model of learning to frame their teaching. It aligns with intuitive understandings of learners as individuals. These add fuel to the argument that this field needs a greater theoretical examination of its practices.

Purpose

The purpose of the research project was to explore current teaching practices with digital technologies through the lens of educators' experiences and beliefs concerning both teaching and technology. The doctoral research project, from which this article partially draws upon, addressed the following question: 'what is the role of theory in teaching with digital technologies in universities?' Specifically, it aimed to explore explicit and implicit theorisations, rationales and principles of teaching as presented by educators themselves and mapped these against a selection of educational and technological theories. This article focusses on the relationship between these educators' teaching practices and the paradigms discussed above, and asks the following question: 'what is the role of theories of learning in digital teaching in universities?'

Methodology

The research design was based on qualitative methods comprising semi-structured interviews with participants who taught in higher education (the interview schedule is presented in Appendix 1). Two universities in Scotland and Ireland were chosen, not for comparative reasons but for a richer dataset from contexts where the professionalisation of teaching in higher education was being addressed at institutional and national levels (Hunt and Higher Education Strategy Group 2011; Moir 2012; The Scottish Government 2010). Recruitment of participants was done through gatekeepers in central academic development units and continued in tandem with interviews until the point of data saturation (Bryman 2012). Purposeful sampling (Patton 2002)

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was used to fulfil the criteria to ensure a representation across disciplines, age and gender. During recruitment, effort was made to include participants who had a range of experience and confidence with technology, including those with little or no experience. A small number of participants were recruited, which included those who had limited or narrow experience of technology and those who classified their experience as 'negative'. In total, 25 educators from seven disciplines were interviewed. A list of the participants with their disciplines and ages is presented in Table 1 and more information on the breakdown of institutions by faculty, subjects, levels and modes of teaching is presented in Appendix 2.

Data analysis was performed in two phases: the first phase was a sweep of the data with coding for emergent themes, and the second phase comprised an *a priori* search for themes addressing what the educators do with technology, and why. This article addresses the findings from the second phase of analysis which employed a 'light touch' rhizoanalysis (Masny 2013). Rhizoanalysis has been considered as a means to disrupt the limitations of qualitative research (Cumming 2015) and is based on Deleuze and Guattari's rhizome theory (1988). Rhizoanalysis entails mapping multiple connections between different parts of the data, without resorting to hierarchical structures which keep data within silos. Any point can connect to any other. Through building a map of these connections it was possible to construct overlapping layers of teaching practices, theories (including pseudo-theories) and rationales. An example of this can be seen in Figure 1,which displays a subsection of a spreadsheet displaying

Table 1. List of participants and their discipline and age range.

Pseudonym	Discipline	Age range (years)
Abigail	Business	40–49
Alice	Business	40–49
Andrea	Nursing	40–49
Avril	Health Sciences	50–59
Brendan	Engineering and Technical Communication	40–49
Darren	Computer Science	50–59
Emma	Nursing	40–49
Esme	Computer Science	40–49
Gary	Engineering	40–49
Gerard	Biomedical and Manufacturing Science	30–39
Ivan	Engineering	50–59
James	Business	40–49
Jane	Nursing	50–59
Janice	Business	30–39
Judy	Business	50–59
Kevin	Environmental Sciences	30–39
Lynn	Sociology	50–59
Mike	Engineering	40–49
Nuala	Social Sciences	40–49
Pam	Business	40–49
Paul	History	50–59
Pearce	Physics	40–49
Philip	Medicine	40–49
Steve	Politics	30–39
Victor	Engineering	50–59

Name	Teaching practices				Theories/concepts/pseudo-theories						Rationales		
	Core materials	Core activity	Alternative route	Supplementary	Active	Experiential	Independent	Social	Learning styles	Digital natives	Authentic	Convenience	Efficient
Abigail	False	True	False	True	False	True	False	False	False	True	False	True	True
Alice	False	True	False	False	True	True	True	True	False	False	True	False	False
Andrea	True	True	True	False	True	False	True	False	False	False	False	False	False
Avril	True	False	True	False	False	True	False	False	False	False	False	False	False
Brendan	True	False	False	False	False	False	False	False	False	False	False	False	False
Darren	False	True	False	False	False	False	False	False	False	True	False	True	True
Emma	False	True	False	False	True	True	False	True	False	False	True	False	False
Esme	False	True	True	False	False	False	False	True	False	False	False	True	False
Gary	True	True	True	False	False	False	False	False	False	False	False	False	False

Figure 1. Example section of cross-reference spreadsheet for data analysis.

the presence ('true')or absence ('false') of meta-themes for each participant and cross-references these against their teaching practices, their theorisations and rationales. Thus, four simple categories of teaching practice – core teaching, core student activity, alternative routes to teaching and supplementary teaching – could be analysed visually according to colour and contrast for patterns in rationales and mapped to theories.

As a qualitative study, this project had rich data but limited number of participants (n = 25). As such, the findings are presented as rich 'snap shots' of beliefs and practices of a selection of lecturers and are not intended to be generalisable across all higher education settings.

Results

As described in the previous section, there were four distinct teaching practices reported by the participants.

Figure 2 demonstrates the rhizoanalytic approach where multiple connections build rich layers between individuals and their teaching as each practice was mapped to participants' pseudonyms, and, as visible by the number of ribbons spanning from right to left, the majority of the participants described more than one practice. I grouped each teaching practice under the following headings: 'Pragmatic' (core teaching), 'Pedagogic' (core student activities), 'Broadcasting' (alternative routes to teaching) and 'Augmenting' (supplementary materials). These are not to be seen as labels for the individuals, but for the teaching practices they describe and were not unique behaviours. A synopsis of each subgroup is available in Figure 3,which maps technology uses, rationales, theories and pseudo-theories, along with digital tools employed for each practice.

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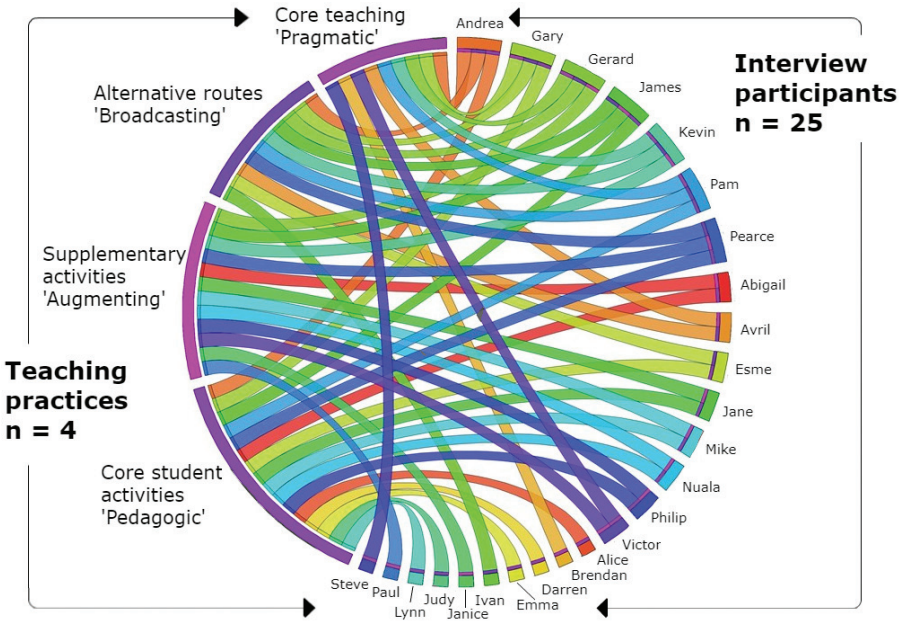

Source: Image created with circos.ca.

Figure 2. Participants' connections with multiple teaching practices.

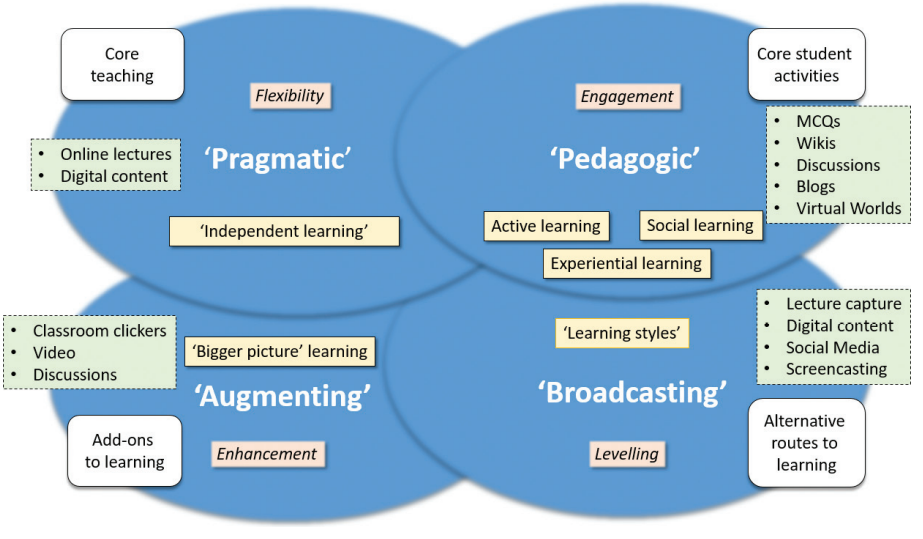

Figure 3. Four teaching practices with digital technologies with purposes, tools, rationales and theorisations/pseudo-theorisations.

Pragmatic digital teaching

Participants whose practices included 'pragmatic' approaches used technologies for the practicalities of core teaching, such as online lectures and materials for distance learning. Their reported rationale was flexibility for students, particularly 'anytime, anywhere' access, prioritising functional benefits of technology over pedagogical ones.

They used technology to solve the 'problem' of off-campus learning. When probed about pedagogy, these educators frequently used phrases such as 'self-directed' and 'independent learning'. However, rather than the generally accepted interpretation of these terms within education as giving learners a choice over direction and content of their learning (Meyer, 2010), these educators were using them as a shorthand to giving students materials and wrap-around instructions for working *without requiring ongoing support from the lecturer*. This reframing of 'independent learning' could therefore be described as a 'folk theory' built on these educators' intuited knowledge and experience.

There was an underlying thread of control, which could be framed as behaviourist, in some of the pragmatic teaching descriptions, such as restricting learners' access to content so as to elicit particular behaviours such as post responses on an online forum, for example, 'They're given a week, a window of a week to view the class, […] so they're on a timer' (Andrea, Nursing).

Many of those who practised pragmatic teaching worked in isolation, developing their teaching methods without consulting scholarship or colleagues. These folk pedagogies were often influenced by their own experiences of learning:

> My eureka moment was if I needed to change a tyre on a car and didn't [know] how to do it I'd just go YouTube it and…I just thought you could make a course built out of lots of video clips. (Brendan, Engineering)

Rather than viewing these educators' actions as 'reinventing the wheel', it could be argued that they are, in fact, intuitively forging new pathways, such as those described above, between their discipline and methods of teaching.

Pedagogic digital teaching

The pedagogic subgroup, as the name implies, demonstrated the significant influence of learning theories upon their teaching. Their use of technology was driven by a desire to get learners to 'do' things such as complete multiple-choice question (MCQ) quizzes or collaborate on a wiki, which often contributed to a summative assessment. Although these two different activities could be filed, respectively, under behaviourist and constructivist/social constructivist theories of learning, the context of these activities frequently displayed a nuanced blend of pedagogies. For example, Nuala (Social Work) used classroom-based tasks with students constructing frameworks which they later used individually during an 'open book' MCQ. Effectively, she shifted her teaching to encompass social constructivist methods while incorporating the use of an MCQ in a non-behaviourist manner. However, at no point did she frame her teaching with anything more pedagogically detailed than 'it's all about the learning rather than the assessment'. When asked why she used digital technologies for teaching, she answered:

> ... [*I*]t's a good way of communicating with the students and it means that they can do things in their own time and space. They don't have to be in the classroom doing it. Em, and it works. (Nuala, Social Work)

Her instrumental answer mirrored answers from other pedagogic educators who used myths like 'digital natives' as rationales for their use of digital technologies,

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while never referring to the pedagogical affordances which, from their own descriptions, they appeared to be employing.

In contrast to other pedagogic educators, Alice (Business) referenced social constructivist learning, amongst other theories, when describing her use of a wiki for group work with entrepreneurship students. She articulated its pedagogic principles that emanated from the discipline:

> ...[*E*]ntrepreneurship education is built on a lot of experiential learning techniques, em and...social learning. (Alice, Business)

Whether they had visible or invisible pedagogies, this subgroup also had a higher propensity than others to use technology myths about their teaching. Cultural clichés about technology such as 'digital natives' may have been reinforced by their own experiences in the classroom, as most of these educators were using technology in a blended mode with students who were generally more homogenous in age.

Broadcasting digital teaching

This subgroup centred their digital teaching on delivering content online to students as an alternative to existing face-to-face teaching. For example, a face-to-face lecture would be recorded for later viewing by absent students. This communication was a one-way process, with no requirements for students to reciprocate. They saw their use of technology as solving a number of perceived problems: bringing students up to the same 'level' of knowledge, providing students with 'choice' in learning and accommodating different 'learning styles'. For example, Gerard provided optional materials on a website:

> I let them use it in their own way if they wish. […]they can dip in a dip out in another way of learning what they're, what they're being taught in class as well. (Gerard, Biomedical Sciences)

Here digital tools and content provided alternative means for students to access materials.

Teaching practices described by those who broadcast rarely aligned with the three paradigmatic learning theories described above. Many rationalised their use of technology with the uncritical adoption of problematic concepts such as learning styles, for example:

> …[*I*]n a lecture you don't get to hit all of them. But if you can give people some video material, something to read, something to do, other skills come into play to support their learning (Pearce, Physics)

The idea that technology can deliver personalised learning based on cognitive differences is evident here, yet none of this group indicated that they had assessed students individually for their needs. Learning theories such as cognitivism and constructivism could account for many of the reported teaching practices of those who used broadcasting techniques, but instead these educators rationalised their teaching with folk pedagogies and neuromyths. It would appear that when it comes to using digital technologies for teaching and learning, some educators who do not have

access to educational theories will fill the theoretical vacuum with, at best, their own intuited pedagogy, or at worst, highly contested concepts.

Augmenting digital teaching

The final subgroup, those who augmented, used digital technologies experimentally to 'add value' to their existing teaching, such as providing preparatory 'icebreakers' or short videos as revision aids before exams. Some used digital materials to stimulate engagement or contextualise core learning. Paul (History), for example, used primary sources during lectures:

> I think this kind of thing gets them into it, you know, this kind of imagery, they like that sort of thing, […] it's good to mix in a little more traditional social history imagery from Punch. (Paul, History)

Although this subgroup had barely any references, explicit or implicit, to learning theories, there was a consistent theme of encouraging learners to expand their thinking beyond the requirements of assessment to the 'bigger picture' of their subject area:

> I wanted them to know that it's not only what's been taught in the class, [it] is the whole world, the whole world is wider than this for any module. (Mike, Engineering)

As such, their teaching with technology, while having a clear intended outcome for their students, did not fall neatly into one of the paradigmatic learning theories, nor did they give any account of how they supported the students to achieve this outcome. This explanatory vacuum may also account for the pronounced use by this group of ill-defined terms like 'engagement' or references to technology as entertaining or inherently stimulating, itself something of a cliché.

Discussion

The results of this study indicate that learning theory paradigms play a minor role in teaching with digital technologies, and of them, only social constructivism is employed explicitly by some participants. This study also demonstrates that not only do other, more unfashionable, theories of learning (such as behaviourism) have a part to play, but also pseudo-theories and folk pedagogies make significant contributions to educators' conceptualisations of their digital teaching. Furthermore, it can be seen from the data that these educators employed a range of pedagogical approaches, sometimes within an intricately interdependent framework, echoing the highly connected rhizome (Deleuze and Guattari 1988). These blended, sometimes invisible, pedagogies challenge dichotomies of 'good' or 'bad' teaching practices, for example, behaviourism and teacher-focused as 'bad' versus social constructivism and student-centred as 'good'. In effect, these educators were utilising the functionality of digital tools and forging learning experiences through implicitly employing more than one learning theory.

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The ease with which many of these educators spoke at length about their digital teaching practices with scant reference to theories of teaching or learning should not be taken as evidence of the irrelevance of theory to teaching practices. Nor should it be viewed as a worrying indictment of teaching, and the support of teaching, in universities..

As demonstrated, digging deeper into their reports, the selected learning theories still relate to practice. However, it would appear that theory vacuums, such as those who taught by 'broadcasting', are filled by proxies such as 'learning styles'. The dominance of folk pedagogies and pseudo-theories presents a credible threat to critical perspectives on digital teaching and learning as they are sticky concepts, often presented as common-sense 'edtech' orthodoxies beyond challenge. On the other hand, folk pedagogies respond and change according to personal experiences of teaching, giving educators an agential role in developing their beliefs of what works, in a way that rigid understandings of learning theories do not. There may be a role for such folk pedagogies in improving our understanding and support of teaching with digital technology at universities.

While it is perhaps not surprising that implicitly held knowledge about teaching is a struggle for educators to articulate(Elias and Merriam 1980), the lack of shared language makes discussing theory challenging across disciplines. It may be the case that academic developers and learning technologists, themselves inhabiting precarious and powerless positions(Clegg 2009) and operating with limited resources, use clichés and simplified maxims to help educators 'across the line' when supporting their use of technology. However, the problem of technology clichés and non-critical understandings of digital teaching is widespread (Bayne 2015), reflecting the lack of seriousness with which critical educational research is viewed from policy-makers and institutional leaders down. Ideally, educators should critique and adapt 'best practices', taking charge of their own pathways of teaching. Indeed, as demonstrated in the data, many of these lecturers do this, but there is a block in articulating, reflecting and sharing these pathways. A solution could be to frame academic development and teaching qualifications as a medium for educators to explore their own voices and communicate about their teaching, without requiring them to fit into prescribed orthodoxies. Rather than setting folk pedagogies and pseudo-theories as 'incorrect', they could be acknowledged and used as starting points for conversations about teaching.

Conclusion

This article addressed the question: 'what is the role of theories of learning in digital teaching in universities?' Adopting a rhizoanalytical approach to map connections within the data, this study found that, while educators rarely explicitly referenced learning theories, their practices reflected a complex blend of pedagogies.

Future research which could be undertaken relating to this work includes an examination of theories not accounted for within the learning theory paradigms, such as those which address functional and technological concerns. Additionally, rhizome theory in the form of rhizoanalysis has proven to be a productive means to cross-reference within the data and undercut qualitative tendencies to present data as hierarchical,thereby allowing for a more holistic view of the realities of teaching with digital technologies. Future work should explore in greater detail the theoretical and practical applications of such an approach.

Teaching practices can, and should, 'talk back to theory' (Bennett and Oliver 2011) as much as theory to practice. There is a need for institutions to adopt strategic approaches that encourage and support critical engagement by educators on their use of digital technologies, bypassing the easy-to-grasp clichés and embracing the complexity of human-technological entanglement. At a practical level this can be supported through academic development and the encouragement of thoughtful, evidence-informed use of educational technologies. The narrative of orthodoxies and pseudo theories can be countered through a renewed focus on professional development of academic developers and learning technologists, specifically in scholarly and research-based skills, and the recognition of these skills in such roles. Through identifying connections between learning theories, folk pedagogies and teaching practices, this article provides a contribution to knowledge which can be taken forward, not only by other researchers, but also by academic staff who teach, those who support them and senior staff in higher education. Thus, a positive impact on student learning could be attained through explicit discourse and transparency of purpose when digital technologies are employed for teaching and learning in universities.

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Appendices: Folk pedagogies and pseudo-theories

Appendix 1: Data Collection Interview Schedule

Warm-up questions

A. Tell me about your teaching commitments. Who/what do you teach and how often?
B. What has been your career pathway to this point?

Part 1: Discussion about teaching artefact

1. Can you tell me about an example of digital technology used in your teaching? Prompts:
    a. What is its context: the module and programme(s)?
    b. How did you go about choosing and/or designing it?
    c. What happened when you used it?
    d. Has it been changed?

Part 2: General discussion

2. Looking at this module overall, what are the key 'take-aways' for students in terms of what they learn? Prompts:
    a. How do you go about teaching these? What do you do?
    b. What do students do to learn them?
    c. You've been teaching for *[x from questionnaire]* years, would you say you have developed (or are developing) a set of principles or a philosophy for what works for you as a teacher? Could you describe them?
3. What is the teaching culture of your department?
4. Why do you use digital technologies in your teaching? Where do you get your ideas from?
5. Are there aspects of your teaching which you believe could not be done using digital technologies?
6. Does using technology change your role as an educator, for example, the way you interact with students? Does it give you more or less control?
7. Are there situations where you would like to do more with digital technologies but there are barriers? What are they?
8. Looking at digital technologies from a wider perspective – both personal and professional – what role does it play in your life? Prompts:
    a. Are you comfortable with it having that role?
    b. And for society in general, do you have any hopes or concerns arising from the large-scale use of digital technologies?
    c. In terms of the use of digital technology in education, do you have any hopes or concerns for students?

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Appendix 2: Sample breakdown by institution, faculty, subjects taught, levels and mode of teaching

Scottish university (Total participants n= 13) Those who held teaching qualification = 6. Those working towards teaching qualification = 2.				**Irish university (Total participants n = 12)** Those who held teaching qualification = 3. Those working towards teaching qualification = 1.			
School or faculty	**Subject area (number of participants)**	**Undergraduate /postgraduate/ adult education**	**Mode (distance, blended or face-to-face)**	**School or faculty**	**Subject area (number of participants)**	**Undergraduate /postgraduate/ adult education**	**Mode (distance, blended or face-to-face)**
Engineering, computing & environment (5)	Engineering (3)	UG	Blended	Engineering (2)	Mechanical engineering (1)	UG & UG, Adult Ed	Blended
		UG	Blended		Science Communication (1)	UG	F-2-f & distance
		UG & PG	Blended & distance				
	Computing (1)	UG	Blended	Computing (1)	Computer science (1)	UG & PG	Blended & distance
	Sustainable environments (1)	UG & PG	Blended	Physics (1)	Physics (1)	UG	Blended
Business & society (6)	Business Management (3)	UG & PG	F-2-f & blended	Business School (3)	Management information systems (1)	UG & PG	Blended
		UG	Blended		Industrial relations & HR (1)	UG	Blended
		UG	Blended		Accountancy (1)	UG	Blended
	Social science - history (1)	UG	F-2-f & blended	Social Sciences (1)	Social Policy & Social Work (1)	UG & PG	Blended
	Social science - politics (1)	UG	Blended				
	Social science - sociology & criminology (1)	UG	Blended				
Health & life sciences (2)	Nursing (2)	UG & PG	Blended	Nursing, medicine, biomedical & health sciences (4)	Nursing (2)	UG & PG	Distance & blended
					Health education (1)	UG & Adult Ed	Distance
					Bio-medical & manufacturing (1)	UG & Adult Ed	Blended & distance

UG = undergraduate
PG = postgraduate
F-2-f = face-to-face teaching of students
Blended = teaching which incorporates both face-to-face and online teaching approaches
Distance = distance learning where students can fulfil most of their learning and assessment at a distance from a physical campus

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