

Strategies for Digital Inclusion: Towards a Pedagogy for Embracing and Sustaining Student Diversity and Engagement with Online Learning

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Abstract

This paper reports on a current PhD study which aims to develop a conceptual framework for effective teaching and learning approaches that influence digital inclusion and exclusion of diverse students. It will also seek to identify differences in learner characteristics and how these characteristics impact on their needs, experiences and engagement with using technology for learning, specifically on a blended learning programme. The study will move away from traditional definitions of diversity and explore the different characteristics of a varied learner population. The research methodology adopts a critical realist perspective, using a multi-phase mixed methods study which will evolve sequentially through four distinct phases. The focus of this paper is to outline the research to date, which at the time of writing has completed Phase 1 and has implemented Phase 2. Findings from Phase 1 suggest that digital exclusion cannot be predicted or dealt with by categorising students into groupings of: gender, age, ethnicity, geography, socio-economic status and educational background. Additionally, the findings indicate that digital exclusion is influenced by external factors, such as elements of the course content or navigation of the virtual learning environment rather than internal factors such as individual technological skills. The paper concludes with preliminary findings from Phase 2, which concur with findings from Phase 1 and goes on to suggest strategies to make the university induction process more effective.

Introduction

Historically, Information Communication Technology (ICT) use (or non-use) has been measured by researchers and educational establishments by categorising students into non-traditional participation groupings such as: gender, age, ethnicity, geography, socio-economic status and educational background. For example Boonaert and Vettenburg (2011) study of young people talk about a digital divide as ‘unequal access to the internet and its use’ that is influenced by demographic factors such as age, gender and socio-economic status. More recently Ofcom (2012) has suggested that traditional conceptions of this divide might be out of date and misplaced as over 95% of UK households with children now have access to the internet. The current trend for encouraging widening participation in higher education institutions (HEI) (Department for Business, Innovation and Skills, 2012) and the vast range of courses on offer in the United Kingdom (UK) has resulted in a more varied student population, compared to the traditional university population (Universities UK , 2012). It is fair to say that the basic set of measures above, once used to determine student involvement with technology could now be seen as outdated. In a recent study of student’s participation in online learning, Johnson (2011) observes that it is essential to understand student characteristics and how they may influence the learning process and outcomes.

University costs have soared in the UK since the 2010 coalition government came to power, (UCAS, 2013) so financial savvy students have become more selective consumers looking for a product that meets all of their needs. Gone are the days when a university campus would mainly consist of college and sixth form leavers pursuing a four year taught degree to start a career. HEIs now cater as much for non-traditional students undertaking short and top up courses, foundation degrees and professional development, as they do for once conventional students.

Not only has the student population and courses on offer evolved but the way in which the courses are delivered has advanced too. A modern online learning environment can offer blended learning programmes that provide opportunities to access course materials, collaborative software, discussion boards, wikis and other learning technologies at university, from home or on ubiquitous mobile devices (Holzinger et al., 2005) and can assist the learning process, (Means et al.,2009). There are many definitions of blended learning, including the ratio of the methods being blended, the blending of different pedagogical models and the variation of learner experience (Oliver and Trigwell, 2005). According to Garrison and Vaughan (2008) a misconception of blended learning is that its aim is to combine face-to-face (f2f) and online delivery, often to minimise lecturer workload. Additionally, Launer (2010) suggests that blended learning does not even have to involve online learning but could utilise a blend of f2f delivery and self-study. However, this study defines blended learning as the facilitation of teaching and learning using a combination of f2f and online methods, where technology replaces elements of a unit (Mason, 1998) and it is this combination that this research will investigate.

Original Contribution to Knowledge

The aim of the research is to identify differences in learner characteristics and how these characteristics impact on their experiences of using technology for learning. The

findings will be incorporated into a conceptual framework for effective teaching and learning approaches and of factors that influence digital inclusion and exclusion. The conceptual framework will be an original contribution to the body of knowledge in educational research.

Specifically, the objectives of this study are:

1. To explore the characteristics of learners and analyse their influence on digital exclusion and inclusion.
2. To investigate what current and emerging pedagogies are being used for engaging students with technology enabled learning (TEL).
3. To assess the value of current and emerging pedagogies with a diversity of learners.
4. To examine what students need to be effectively engaged with a blended learning programme.
5. To incorporate the findings into a conceptual framework for effective learning approaches and of factors that influence digital inclusion and exclusion.

By combining a sequential mixture of qualitative and quantitative methods, the illustration below demonstrates how through four phases, a conceptual framework will be created.

Phase	Objective	Method	Sample
1	1	Semi structured interviews	Undergraduate Heath and Social Care students, Bournemouth University
2	2	Semi structured interviews	Undergraduate Heath and Social Care students, Bournemouth University
3	3 & 4	Survey	Undergraduate students (mixed schools), Bournemouth University
4	5	Action research	Undergraduate students, Southampton College

Table 1 Illustration of research design.

Literature Review

The rapid momentum that ICT gains in its development signifies an urgent re-evaluation of whether students' experiences of digital exclusion and inclusion are the same now as they were before technology was a ubiquitous part of life.

Conventionally, diverse students are categorised by a widely used set of demographics. As far back as the 1800's authors and researchers refer to diversity in education. For example, Sir Edward Taylor (1870) writes about "race", "origin" and "culture" (p.2) when he discusses language learning in his book. Yet much of the literature that focuses on student diversity was before technology was common place in education and certainly does not reflect the rapidly gaining momentum of advances in technology and its impact on the learner and their needs. Furthermore, it is entirely possible that some students will fall into one or more of the groupings (Taylor and House, 2010). A review of historical and recent literature documenting diverse

learners shows that only demographics such as gender, age, ethnicity, geography, socio-economic status and educational background are used.

An exploration into five aspects of higher education by Haggis (2006) found that with so many diverse students choosing HE, conventional support is unrealistic and that it is up to the educational establishments that provide for these students to move away from traditional support networks and concentrate on new teaching and learning approaches. Importantly, adapting courses so as to utilise new technology, will enable the diverse student population to access and learn the subject.

A study of university students conducted by Yorke and Longdon (2008) found that students failing to adjust to different and unfamiliar teaching and learning environments were ‘at risk’ of withdrawing from their program of study. Of those, mature students are more likely to ‘drop out’ in the first year of study compared to younger students (Coffield et al., 2004). According to Knowles, (2011), older learners, argued to be ‘digital immigrants’ by Prensky (2009), learn in a different way to their younger counterparts. This humanistic view of Andragogy, the science behind the teaching of adults, proposes that adult learners may need different support networks to younger learners such as, academic, technical or pastoral support for self-managed learning. Recently, a great deal of literature has argued against Prensky’s digital native/digital immigrant concepts (McKenzie, 2007 Kennedy et al., 2010). His assertions concerning digital immigrants can be misunderstood. When he talks about digital immigrants, he refers to the time in which they were born and not the level of technological competence they possess. However, despite these gloomy assertions for older learners, over two thirds of students obtain qualifications later in life (Jenkins, 2013). This signifies that older learners are using HE to improve life and career chances more than ever.

Gender can impact on how students learn (Bennet and Marsh 2003, Wehrwein et al. 2006). Female students are less likely to speak out in a traditional face to face classroom environment yet in online course discussions are more likely to voice contributions, in turn impacting on perceived deeper learning, (Anderson and Haddad, 2005). Kay (2008) reports that male learners have higher self-efficacy than females when learning online but females are slightly more positive about the online learning experience and perform better on computer-related tasks. In contrast, research exploring gender perceptions of e-learning found that female learners place more importance on the planning of e-learning activities and value contact with the teacher (González-Gómez et al., 2012).

Teacher contact and more specifically monitoring of student progress and support, was found to be essential elements to successful online learning for multi-cultural students according to McNaught and Vogel (2004). A number of researchers have studied the preferences of different ethnic groups towards online learning (Chin et al., 1999, Munro-Smith, 2002, Huffman Leyva 2005). However, Boyette (2008) points out that there is little research on some ethnic groups with reference to online learning. Online content itself is a cause for concern. Heemskerk (2005) suggests that on a practical level, certain ethnic groups are under-represented in e-learning materials.

According to some of the literature, where students live impacts on their use of technology. There are areas in the UK that are ‘digitally unengaged’ (Longley and Singleton 2008). Longley and Singleton’s study showed that approximately 1.15 million people in England live in an area of digital unengagement, in turn impacting on educational success with technology. Unengaged areas are more often than not linked to areas of material deprivation but not always. In some coastal and rural areas the geographies are different. There is little material deprivation but other factors influence digital unengagement, such as lack of or slow bandwidth is a major factor along with the ages of the population.

As previously mentioned, geographical unengagement is often linked to material deprivation. Generally, the digital divide represents the gap between people who can use and have access to technology and those that do not. Chen and Wellman (2004) describe the digital divide as ‘differences between those who have all the necessary resources to participate in current society and those who do not’ (Eynon, 2009 p.27). Lichy (2011) talks about a ‘second-level’ digital divide within the UK. Their study investigated students and their use of the internet. Largely down to the Labour Government’s 2008 ‘Home Access’ scheme, which provided lower income families with IT equipment and internet packages, they concluded that there was no longer a significant ‘divide’ between students being able to access the internet or not; the ‘second-level divide’ appeared in the way in which the internet was being used. Although this scheme has now ceased, families will still benefit from the equipment provided and as stated earlier, 95% of families now have internet access (Ofcom, 2012). Students from higher socio-economic backgrounds used the internet more for school and home work than lower socio-economic groups. This is backed up by an Ofcom (2012) study that suggests that internet access at home is now close to entirety across all economic classes. These are encouraging reports considering that school pupils who are eligible for Free School Meals (FSM) are less than half as likely to go to university as other pupils (BIS 2012).

Many universities in the UK encourage students to enrol on courses regardless of previous academic success but with evidence of career experience in the subject. This has resulted in mixed academic (proven) ability within cohorts, (Wooden et al., 2001). Students who enter HE with ‘non-traditional’ qualifications could be disadvantaged due to the lack of preparation for essay writing and study skills (O’Driscoll et al., 2010). Students who are most likely to say they are not interested in connecting to the internet are those with lower levels of education (Helsper and Godoy-Etcheverry, 2011). However, Koivusilta et al. (2007) propose that links between educational background and technology use is in the activity itself and not the time spent on it. In particular, digital gaming was linked to poor school achievement in some cases.

A search for e-learning pedagogy in the literature revealed a lack of research into specific models and frameworks directly influencing teaching and learning using technology. Mayes and DeFreitas (2004) concluded in their e-learning review that there were no e-learning models, only e-enhancements of existing teaching and learning models and frameworks. An example of this is Mason’s (1998) models which are influenced by distance learning. He states that,
‘All of the elements I am about to discuss are very familiar educational approaches - they are simply being adapted and re-discovered in their online form’ (p. 3)

Of course, we have been offered Gilly Salmon's 5 Stage E-Moderating Model (2004) but this specifically describes the stages of participation in an online community and does not set out to address e-learning pedagogy per se. The most recent and influential review of e-learning was conducted by Conole in 2010. Her report sought to review pedagogical models and how they were being used in an e-learning context. Conole's review follows a number of other comprehensive reviews on e-learning pedagogy (Mayes and DeFreitas 2004, Beetham 2005, Dyke et al. 2007, Conole 2008, Ala-Mutka 2009) but as technology is a moving target with regards to development, dated reviews, although important, cannot account for these new advances. Additionally, all of these reports (on the most part) reviewed how e-learning 'fits' in with different pedagogical approaches, almost shoe-horning technology into something within which it can be given a pedagogical label. JISC's E-learning Programme (2012) goes much further to understanding e-learning pedagogy. They ran a series of studies that incorporated different aspects of e-learning but nothing specifically investigating blended learning and student characteristics since 2009 (Conole et al. 2009), which looked at e-learning in a practice-based context. In practice, experienced teachers often use a tried and tested approach to designing activities that subconsciously incorporate theories and approaches to teaching and learning. With new technologies introduced into the learning environment there can be a difficulty in understanding how and why to use them (Falconer and Conole, 2006).

It can be seen from the literature that there is no shortage of research investigating how diverse groups interact with technology. Studies which include research on these groups go some way to explain the challenges that certain students may face when using ICT within an HE environment. Fewer studies however, have considered combinations of groups and no study has investigated whether there are other characteristics that may be influential in technology use (or non-use). Additionally, e-learning pedagogy, which sets out effective strategies for online teaching and learning, seem to be adapted from traditional pedagogical frameworks, are outdated in the context of emerging or disruptive technologies or are influenced by other forms of online learning such as distance learning.

Research Design

A multi-phase combination mixed methods approach will be used sequentially in this study. Mixed methods research involves philosophical assumptions that guide the data collection and analysis of quantitative and qualitative approaches in many phases (Creswell and Plano Clark, 2007). The research takes place at Bournemouth University (BU) in the south of England. A sample of undergraduate Health and Social Care (HSC) students were the focus of Phase 1. Semi-structured interview techniques were adopted as the initial method to encourage rich descriptions. In line with a critical realist approach, interviews will allow participant's to describe their experiences of digital inclusion and exclusion in their own words. This method will also expose which characteristics affect barriers to digital inclusion and uncover the wide-ranging needs that influence engagement with blended learning programs. The interviews took place after the completion of a particular unit on a blended learning course. Phase 1 is currently being replicated with a new sample from HSC and forms the basis of Phase 2. The Programme Leader was approached to confirm that the unit remained the same from the previous year with no variables that could affect the

analysis. Phase 2 (2014) is a year on from Phase 1 (2013) and some initial findings will be discussed at the end of this paper.

A thematic analysis framework will be adopted to analyse the data from Phase 1. At a rudimentary level, thematic analysis is a method for recognising, analysing, and reporting patterns within data. Thematic analysis is favoured for a critical realist approach (Roulston, 2001) although its flexibility allows it to be utilised across many epistemological and theoretical stances. Braun and Clarke's (2006) hierarchy for qualitative data analysis has been adapted for the analytical process using Nvivo software to manage the data.

To ensure a level of trustworthiness and quality in the study, the researcher used a triangulation of methods as suggested by Guba and Lincoln (1989, 1994) as well as the Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist adapted from Tong et al., (2007).

Findings and Results

As a result of the data analysis, themes were generated from the nodes. Further, characteristics were identified from the participant's narratives and compared to the existing literature.

Digital exclusion is defined in this research as being unable to access or use technology, or use it in the way it was intended to facilitate the learning process for any reason. 13 out of the 16 participants disclosed attitudes towards digital exclusion in some form. The main themes that emerged were:

- Appropriate content
- Compatibility
- Clarity
- Peers
- IT support
- M-learning
- Equipment
- Navigation and logging in
- Online submission

The data revealed that the most significant area of exclusion for the sample is in perceived irrelevant or confusing content of course material. Feelings of frustration and stress can be experienced if online content is not clear. Moreover, unclear face to face content can influence the frustration when students then work independently online. This mirrors a similar study by Beaudoin et al (2009) who researched student's online experiences that affected satisfaction. As discussed in the literature review, Anderson and Haddad (2005) found that female students' perceptions of deeper learning were facilitated by online discussion. It could be the case that the students were not participating as planned or did not appreciate why they were being asked to complete this part of the course as they were. Another significant finding is the experiences of participants with compatibility. A common pattern of frustration was not being able to access information at home due to incompatibility issues. This is a potentially significant problem for those students who are to study a blended learning programme. Peers can contribute to digital exclusion by not participating

appropriately in collaborative tasks. This can lead to other students feeling awkward and possibly not completing the task to their best ability. Peers also contribute to the problems that are encountered on group Facebook pages, generating rumours and false information. The data reveals that IT support within the university is widely offered and utilised. There are a number of support networks in place within HSC that students seem to be unaware of. Phase 2 will pursue the reasons for this in more depth. M-learning is described as the use of handheld technology that relies on wireless and mobile phone networks, to aid teaching, learning and support, (m-learning.org). With this in mind, the BU app is very much part of the student's support network. However, some participants were unable to use it effectively, especially with iPhones and iPads. Negotiating the Virtual Learning Environment (VLE) through a number of tabs and entering your student password and ID three or four times to access one form causes some frustration with the participants. Others reveal that submitting essays online can be problematic if left until the last minute as others are also trying to submit and the system can crash. This is particularly concerning when a deadline has to be met.

After the themes had been identified, characteristics that were revealed by the interview participants, were organised to indicate which were dominant, that is most prevalent in each theme. They were:

- Age
- Geographic's
- Previous jobs/life experiences
- Year of study
- Course of study
- Motivations
- Hobbies
- Family
- Previous qualifications

The most interesting revelation from the data is that there appears to be no age limit to digital exclusion or inclusion. Additionally, many of the students who shared characteristics across a number of themes also fell into one or more of the traditional groupings. This highlights the complexity of students and erroneous task of trying to group them in order to predict how they might engage with technology. Any age can experience aspects of exclusion. This is contrary to much of the literature that suggests that older learners experience digital exclusion more than their younger counterparts.

Limitations

As this research utilises interview data collection techniques and is grounded in critical realism beliefs, it is subjective and based on personal interpretations of the researcher. The findings from Phase 1 are limited to one unit of a course being studied within one school at Bournemouth University. The unit is delivered with a blended learning model but it is recognised by the researcher that, as discussed in the introduction, other courses/units may have a different blend of methods. It is also recognised that the sample in Phase 1 was fairly small, although saturation had been reached.

Preliminary Discussion

So far, this research suggests that there is no typical demographic that is more closely associated with digital exclusion or inclusion than any other. Most of the participants that took part in the study experienced exclusion of some form or other during the unit studied. Most of the participants felt exclusion in the form of the content being used to facilitate the unit and not their own technological skills. It could be argued that technological advances within IT are so ubiquitous and widespread in our homes, learning to cope with technology is becoming a lifestyle. Another interesting observation from the research was how previous experiences of technology affect how the participants feel about the technology now. There is evidence from the literature that says that prior experiences of technology use influences attitudes and perceptions towards current use of online learning (Muilenburg and Berge, 2005). This would explain some of the more negative perceptions of the participants. Additionally, general experiences during the course can impact on how the participants feel about technology, as if the lines are blurred between technological and non-technological issues. These findings would support JISC research by Creanor et al. (2006). Many of the perceptions of the participants were similar. Even in the cases of misguided information about support networks for example. If you consider Salmon's five stage e-moderating model (2004) to communicating online, a prerequisite of achieving Stage 1 is that the learners know how and where to access help and support. It would seem that as students talk with each other, it may be the case that a miscommunication of information or a 'Chinese whisper' scenario can develop amongst cohorts. Additionally, this can be fuelled by the student's Facebook group. This will be one of the phenomena that will be investigated during Phase 2.

The obligation by HEIs to provide competitive TEL offers, results in an abundance of studies and reports into pedagogical must haves for successful designs however, further investigation is needed into whether this is being translated into practice. For example, the disparity between what a student needs to do to be a successful e-learner, what the student actually does and whether they understand why they are doing it. This confirms the need for e-learning strategies to address the new factors determining the divide.

Further Work

Phase 2 of the research is in progress and is addressing the points raised in Phase 1. A new sample is being interviewed who have completed the same unit as the sample in Phase 1. 10 participants have been interviewed to date. The iterative process of data analysis has produced some interesting preliminary results.

8 of the 10 participants suggested that there was an element of a 'Chinese whispers' effect that happens on the groups Facebook page. 5 of which went as far to say that this generated a sense of panic within the group. Looking at the characteristics of these 5 participants, there is no pattern as to which students experience this. Although most of the participants admitted to a 'Chinese whisper' phenomenon, this did not deter them from using the Facebook group as a support network, as what they gained from it was far more beneficial to them. The social circles within this sample that are created using social media play a part in constructing attitudes towards digital exclusion in as much as misinformed or incorrect posts lead to anxiety and concern.

This did only seem to happen on social media sites as although rumours could spread verbally this did not seem to cause any panic as it was limited to the immediate social circle and not the whole Facebook group.

Phase 2 did not confirm that previous experiences influenced current perceptions of technology per se: it did however find that previous experiences of technology generated feelings of self-doubt towards using technology. 9 of the 10 participants voiced feelings of uncertainty with the technology to be used on the course and whether they had used it before. The older participants that had entered the course after a long period of employment perceived the technology to be different to that they had been using at work or at home and therefore unable or difficult to use. These feelings of self-doubt were experienced prior to the course starting but developed into something positive when the course started. Whereas the younger participants who shared similar views were not anxious about the technology until after the course had started and they knew which technologies they were to use. The older participants all agreed that it had not materialised in practice and that they were able to use the technology without any problems that related to their skills. Additionally, none of the older students shared any experiences of digital exclusion due to a lack of personal technological skills. Any experiences they had faced with new technologies, such as blogs, they had met with an opportunist and positive view which allowed them to pick up the new skills quickly. Phase 2 confirmed the findings from Phase 1 with regard to the digital native/immigrant debate. Phase 1 discovered that age played no part in digital exclusion. During Phase 2, this hypothesis was investigated further. Interestingly, the younger participants, considered by some to be digital natives, perceived the older participants, considered by some to be digital immigrants, as facing certain challenges with technology, yet none of the older participants interviewed shared this view. While the older students would admit that some technologies were new to them, they did not consider this to be a hurdle only an opportunity to learn something new. Furthermore, the older students perceived the younger students as having previous knowledge and experience of using new technologies, therefore an advantage. The younger students also perceived themselves as having an advantage with technology; however this did not translate into practice. The younger students in this sample were limited in which technologies they used, being very capable of using social media and other methods of communication but not as comfortable using sites for research or the VLE. This runs parallel with the literature from the Technology Acceptance Model (TAM) (Teo, 2009) which emphasises younger students' perceived ease of use with ubiquitous technology and using technology for consumption and not creation (Bennett et al., 2011). A hypothesis for this could be that as technology evolves and becomes more ubiquitous in education and everyday life, older learners, through experience have caught up with younger learners. So even though older learners who are 'digital immigrants' due to being born before technology was commonplace, are now as comfortable using technology as their younger counterparts. Perhaps a renaming for this younger group: 'digital consumers' or 'digital communicators' would now be more appropriate than 'digital natives'.

Again, with the Phase 2 sample 'support' was a significant theme that emerged from the data. The support networks at the university that were commonly used by this sample were IT support and Library support. The group's Facebook page was an important source of support (academically and emotionally) and some participants

relied on peers and lecturers for face to face support. 7 of the 10 participants were aware of being informed about support networks during their induction at the start of the course, however as the support was not needed then, they did not store the information. This raises an important point. Most universities will prepare a carefully organised induction for their new students in order to inform them of all the necessary information that they may need during their time there, yet it could be argued that most of that information is lost and only the information that is significant at that time is remembered. There is an argument here for universities and other institutions to stagger the induction process so that certain information is given later at a time when it might be more relevant.

Phase 2 will continue to research the points raised during Phase 1. After completion of Phase 2, Phase 3 will be implemented to evaluate the trustworthiness of the data analysis. The final Phase 4 will evaluate the original contribution to knowledge that this PhD research seeks to make: a conceptual framework for effective teaching and learning approaches that influence digital inclusion and exclusion of diverse students.

References

- Ala-Mutka, K., 2009 Learning in and from ICT enabled Networks and Communities. Final report of the study on Innovations in New ICT-enabled Learning Communities, Seville: IPTS
- Anderson, D. and Haddad, C. 2005 Gender, Voice, and Learning in Online Course Environments. *Journal of Asynchronous Learning Networks (JALN)*, Vol. 9:1
- Beaudoin, M., Kurtz, G. and Eden, S. 2009 Experiences and Opinions of E-learners: What Works, What are the Challenges, and What Competencies Ensure Successful Online Learning. *Interdisciplinary Journal of E-Learning and Learning Objects* Volume 5:2009 IJELLO special series of Chais Conference 2009 best papers
- Beetham, H. 2004 Review for JISC pedagogy Programme, Developing e-Learning Models for the JISC Tutor Communities, Version 2.1 Available at http://www.jisc.ac.uk/elearning_pedagogy.html accessed on 1.5.14
- Bennett, S. and Marsh, D. 2003 Widening Participation and e-Learning: Meeting the Challenge within a Foundation Degree, *Journal of Widening Participation and Lifelong Learning*, vol. 5, no. 3
- Bennett, S., Maton, K. and Carrington, L. 2011. Understanding the complexity of technology acceptance by higher education students. In T. Teo (Eds.), *Technology acceptance in education: Research and issues* (pp. 63-77). Rotterdam, Netherlands: Sense
- BIS 2011 Students at the heart of the system available at <http://www.bis.gov.uk/assets/biscore/higher-education/docs/h/11-944-higher-education-students-at-heart-of-system.pdf> accessed on 16.9.13
- Boonaert, T. and Vettenburg, N. 2011 'Young people's internet use: divided or diversified?' *Childhood* 18, 54-66
- Boyette, M. 2008 An investigation of the online learning environment in higher education through the observations and perceptions of students of color (Doctoral dissertation). Available at <http://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1146&context=etd> accessed on 1.5.14
- Braun, V. and Clarke, V. 2006 Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3 (2). pp. 77-101. ISSN 1478-0887
- Chen, W. and Wellman, B. 2004 'The global digital divide – within and between countries'. *IT & society* 1 (7), 39-45
- Chin, K., Chang, V., and Bauer, C. 1999 The impact of cultural differences on web-based learning. Paper presented at the CAL'99 Conference, London, UK

Coffield, F., Moseley, D., Hall, E. and Ecclestone, K. 2004 Should we be using learning styles: what research has to say to practice. Learning and Skills Research Centre, London

Conole G. 2008 The role of mediating artefacts in learning design. Handbook of research on learning design and learning objects: Issues, applications and technologies (108-208) Information Science Reference

Conole, G. 2010 'Review of pedagogical models and their use in e-learning', available at <http://cloudworks.ac.uk/cloud/view/2982> accessed on 1.12.13

Conole, G. Thorpe, M. and Edmunds, R. 2009 Learners' experiences of blended learning environments in a practice-based context available at <http://www.jisc.ac.uk/whatwedo/programmes/elearningpedagogy/pblxp.aspx> accessed on 2.5.14

Creanor, I. Trinder, K. Gowan, D. and Howells, C. (2006) LEX The Learner Experience of E-learning JISC Final Report available at http://www.jisc.ac.uk/uploaded_documents/LEX%20Final%20Report_August06.pdf accessed on 1.5.14

Creswell J and Plano Clark V 2007 Designing and Conducting Mixed Methods Research, Sage, Thousand Oaks, CA

Department for Business Innovation and Skills 2012 Widening Participation in Education. Available at <https://www.gov.uk/government/policies/widening-participation-in-higher-education--4> accessed on 6.2.14

Dyke, M., Conole, G., Ravenscroft, A., and de Freitas, S. 2007 Learning theory and its application to e-learning. In G. Conole and M. Oliver (Eds.), Contemporary perspectives in e-learning research: Themes, methods and impact on practice (pp. 83-97). Abingdon: Routledge. Available at <http://ide600learningenviron.supa.wikispaces.net/file/view/ch+6+%26+7.pdf/38245976/ch%206%20%26%207.pdf> accessed on 1.12.13

Eynon, R. 2009 'Mapping the digital divide in Britain: implications for learning and education'. Learning, media and technology, 34, 277-290

Falconer, I. and Conole, G. 2006 LADIE gap analysis, report for the JISCfunded LADIE project, available at <http://www.elframework.org/refmodels/ladie/guides/LADiE%20Gap%20Analysis.doc> accessed on 1.5.14

Garrison, D. and Vaughan , N. 2008 Blended learning in higher education. San Francisco: Jossey-Bass

González-Gómez, F., Guardiola, J., Rodriguez, O., and Alonso, M. 2012 Gender differences in e-learning satisfaction. Computers & Education, 58(1), 283-290. Available at <doi:10.1016/j.compedu.2011.08.017> accessed on 30.1.14

- Guba, E. and Lincoln, Y. 1989. Fourth generation evaluation. Newbury Park, CA:Sage
- Guba, E. and Lincoln, Y. 1994. Competing paradigms in qualitative research. In Denzin, N. and Lincoln, Y. (Eds.), *Handbook of qualitative research* (pp. 105-117). Thousand Oaks, CA: Sage
- Haggis, T. 2006 Pedagogies for diversity: retaining critical challenge amidst fears of 'dumbing down'. *Studies in Higher Education* 31(5) 521-535
- Heemskerk, I., Brink, A., Volmanw, M. and Ten Dam, G. 2005 Inclusiveness and ICT in education: a focus on gender, ethnicity and social class, *Journal of Computer Assisted Learning* vol. 21, pp1–16
- Helsper, E. and Godoy-Etcheverry, S. 2011 The long tail of digital exclusion: The social context of digital (dis)engagement in Chile and the UK. In *The linked world: How information and communication technology is transforming societies, cultures, and economies*. Washington, MA: Conference Board Press
- Holzinger, A., Nischelwitzer, A., and Meisenberger, M., 2005 Mobile phones as a challenge for m-learning: Examples for mobile interactive learning objects (milos). Third IEEE International Conference on Pervasive Computing & Communications Workshops, 307-311
- Huffman Leyva, L.2005 A description of the perceptions and attitudes of students and instructors regarding Latinas in online instruction at three northern California community colleges (Doctoral dissertation)
- Jenkins, D. 2013 National Child Development Study Institute of Education available at <http://www.ioe.ac.uk/newsEvents/85353.html> accessed on 16.9.13
- JISC's E-learning Programme 2012 available at <http://www.jisc.ac.uk/whatwedo/programmes/elearningpedagogy.aspx> accessed on 1.12.13
- Johnson, R. 2011 Gender differences in e-learning: Communication, social presence, and learning outcomes. *Journal of Organizational and End User Computing*, 23(1), 79-94. Available at [doi:10.4018/joeuc.2011010105](https://doi.org/10.4018/joeuc.2011010105) accessed on 31.1.14
- Kay, R. 2008 Exploring gender differences in computer-related behavior: Past, present and future. In T. T. Kidd & I. Chen (Eds.), *Social information technology: Connecting society and cultural issues* (pp. 12-30). Hershey, PA: Information Science Reference. Available at [doi:10.4018/978-1-59904-774-4.ch002](https://doi.org/10.4018/978-1-59904-774-4.ch002) accessed on 30.1.14
- Kennedy, G., Judd, T. and Dalgarno, B. 2010. Beyond natives and immigrants: Exploring types of net generation students. *Journal of Computer Assisted Learning*, 26:5
- Knowles, M., Holton, E. and Swanson, R. 2011 *The Adult Learner* 7th Ed. Elsevier Inc., Oxford

Koivusilta, L., Lintonen, T. and Rimpelä, A. 2007 Orientations in adolescent use of information and communication technology: A digital divide by sociodemographic background, educational career, and health Scand J Public Health 35: 95-103

Launer, R. 2010 Five assumptions on blended learning: What is important to make blended learning a successful concept? In Tsang, P., Cheung, S., Lee, V. and Huang, R. (Eds.), Lecture Notes in Computer Science, 6248, pp. 9-15. Berlin: Springer

Lichy, J. 2011 'Internet use behaviour in France and Britain: exploring socio-spatial disparity among adolescents'. International journal of consumer studies, 35, 470-475

Longley, P., Ashby, D., Webber, R. and Li, C. 2006 Geodemographic classifications, the digital divide and understanding customer take-up of new technologies » BT Technology Journal Volume 24, Issue 3 , pp 67-74

Longley, P. and Singleton, A. 2008 Social Deprivation and Digital Exclusion in England. Urban Studies vol. 46 no. 7

Mason, R. 1998. Models of online courses. *ALN Magazine* 2(2)

Mayes, T. and de Freitas, S. 2004 Review of e-learning frameworks, models and theories: JISC e-learning models desk study, JISC

McKenzie, J. 2007. Digital nativism, digital delusions, and digital deprivation. From Now On: the educational technology journal, volume 17, number 2, available at <http://www.fno.org/nov07/nativism.html>, accessed on 14.3.14

McNaught, C and Vogel,D. 2004 The converging streams of globalisation and eLearning. Stretching the comfort zone. In R. Atkinson, C. McBeath, D. Jonas-Dwyer and R. Phillips (Eds), Beyond the comfort zone:Proceedings of the 21st ASCILITE Conference (pp. 637-646). Perth, 5-8 December

Means, B., Toyama, R., Murphy, Y. Bakia, M. and Jones, K. 2009 Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies. Washington, D. C: U.S. Department of Education

Muienburg, L. and Berge, Z. 2005 Student barriers to online learning: A factor analytic study. Distance Education, 26 (1), pp29-48

Munro-Smith, N. 2002 A tale of two cities: Computer mediated teaching and learning in Melbourne and Singapore. In A. Williamson, C. Gunn, A. Young, & T. Clear (Eds.), Winds of change in the sea of learning: Charting the course of digital education. Proceedings of the 19th ASCILITE Conference. Auckland, New Zealand: UNITEC available at <http://www.ascilite.org.au/conferences/auckland02/proceedings/papers/105.pdf> accessed on 14.3.14

O'Driscoll, M., Allan, H., Simpson, V. and Sequeira, L. 2010 How can the University use e-learning to improve the learning experience of non-traditional students?

Ofcom 2012 'Children and parents: media use and attitudes report'. Research document: available at <http://stakeholders.ofcom.org.uk/binaries/research/media-literacy/oct2012/main.pdf> accessed on 16.1.13

Oliver, M and Trigwell, K. 2005 Can 'Blended Learning' Be Redeemed?, E-Learning and Digital Media, 2(1), 17-26. Available at
<http://dx.doi.org/10.2304/elea.2005.2.1.17> accessed on 4.4.14

Prensky, M., 2009 H. Sapiens digital: From digital immigrants and digital natives to digital wisdom. Innovate: Journal of Online Education, 5 (3)

Roulston, K. 2001 Data analysis and 'theorizing as ideology'. Qualitative Research, 1(3), 279-30

Salmon, G. 2003 E-moderating (2nd edn) London, Routledge Falmer

Salmon, G. 2004 E-moderating-The Key to Teaching and Learning Online, Second edition, RoutledgeFalmer, UK

Taylor, E. 1870 Researches into Early History of Mankind and the Development of Civilization. Bradbury, Evans and Co., London

Taylor, J. and House, B., 2010. Motivations, identity and concerns in widening participation students at different stages of the student life-cycle. Psychology Teaching Review, 16, 46-57

Teo, T. 2009 Modelling technology acceptance in education: A study of pre-service teachers Computers & Education, 52(2), 302-312 available at
<http://dx.doi.org/10.1016/j.compedu.2008.08.006> accessed on 1.5.14

Tong, A., Sainsbury, p. and Craig, J. 2007 Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus group. International Journal for Quality in Health Care; Volume 19, Number 6: pp. 349–357

UCAS. 2013 Student Finance. Available at
<http://www.ucas.ac.uk/students/studentfinance/> Accessed on 9.3.14

Universities UK 2012 Patterns and Trends in UK Higher Education. Higher Education: Analysing a Decade of Change. Available at
<http://www.universitiesuk.ac.uk/highereducation/Pages/PatternsAndTrendsinUKHigherEducation2012.aspx#.Uup-aRuPPmQ> accessed on 30/1/14

Wehrwein, E., Lujan, H and DiCarlo, S. 2006 Gender differences in learning style preferences among undergraduate physiology students doi:
10.1152/advan.00060.2006 Adv Physiol Educ 2007 vol. 31 no. 2 153-157

Wooden, M. VandenHeuvel, A., Cully, M. and Curtain, R. 2001 Barriers to training for older workers and possible policy solutions. Department for Education and Training and Youth Affairs, University of South Australia

Yorke, M. and Longden, B. 2008 The First Year Experience of Higher Education in the UK. York: Higher Education Academy

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