Learner Characteristics and Patterns of Online Learning: How Online Learners Successfully Manage their Learning

Trish Andrews, Educational Consultancy, Australia,
Belinda Tynan, The Open University, United Kingdom

Abstract

Online distance learning is a rapidly growing segment of the education market with many institutions adopting this form of delivery to increase their flexibility and competiveness in a global environment. Given its importance in providing different opportunities for both learners and institutions, the rapid growth in online distance learning over the last two decades has led to a considerable focus on researching a range of issues that impact on the online distance learner experience. These investigations have focussed primarily on instructional or learning design, interaction and communication in learning communities, learner characteristics and attrition. While much focus has been on the types of interventions that organisations might deploy to limit attrition and ensure a successful learning experience for online learners, it remains that learners cannot be easily classified into homogenous groups. There is a need to understand more deeply who they are and how they behave as individual online distance learners. With this in mind, the focus of the research reported on here was '*how do mature-age distance learners go about learning*?' by providing insight into the lived experience of individual learners.

The paper situates the research in the macro, meso, micro theoretical framework for researching online distance learning and focuses this study at the micro-level with a focus on learner characteristics. The paper explores the role of learner characteristics and learner behaviour patterns in online learning and discusses the general findings of the study including students' ability to orchestrate time and to ensure a feeling of wellbeing. The paper also provides four case studies that demonstrate the patterns that some distance learners have developed or adopted to support successful outcomes in online distance learning. The paper outlines the methodology used to uncover learner characteristics and patterns and their importance in supporting successful participation in online distance learning. The paper concludes with some suggestions for further research.

Introduction

The increasing adoption of online learning for a range of educational contexts has encouraged significant research into online distance learning, which has contributed considerable understanding of a learning mode that has grown in popularity over the last two decades (Allen & Seaman 2014; Zawacki-Richter & Anderson, 2014). While this work has undoubtedly contributed to improvements in online learners' experiences, online distance learning continues to be plagued by problems such as high attrition rates (Hart, 2012; Woodley & Simpson, 2014;), concerns about quality (Ehlers, 2012; Harvey & Green, 1993), poor understanding of how to teach effectively online (Maybery, Reupert, Patrick & Chittleborough, 2009), and the role of technology in online learning (Andrews & Tynan, 2012) amongst many other issues.

Researching online distance learning

These continuing concerns, as outlined above, highlight the importance of the need for ongoing research into online distance learning but equally importantly, identify the requirement to develop understanding within a framework that provides a more holistic view of the field, its truths and issues. Zawacki-Richter & Anderson (2014) have suggested that

> *"…research questions must be posed within a theoretical framework that is embedded within a holistic structure of research areas within a discipline. Furthermore, the structure, cultures, history and past accomplishments of a research discipline for the foundations for identifying gaps and priority areas for researchers." (p.1)*

In their work, Zawacki-Richter & Anderson identified three layers of research investigation in online distance education. These were identified as follows in Figure 1. Essentially, at the macro-level, the focus is on distance education systems and theories, at the meso-level the focus in on management, organisation and technology whereas at the micro level, teaching and learning issues and concerns are emphasized.

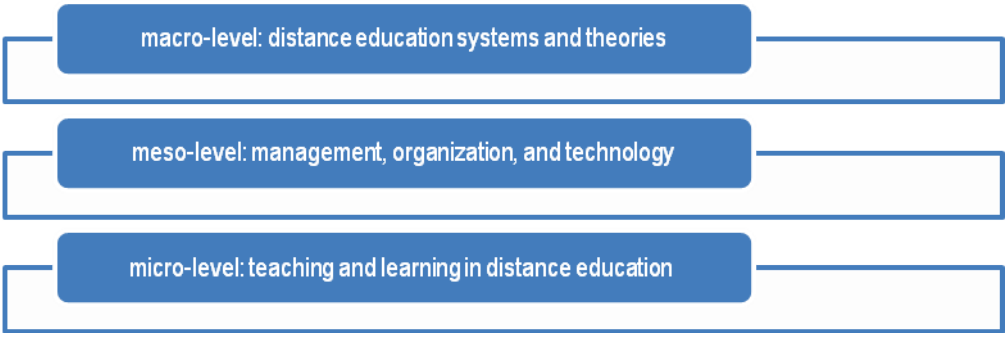

Figure 1. Characterisation of online distance learning research

Within these layers various topics are categorised as displayed in Table 1. The research reported in this paper has a focus at the micro level and specifically on learner characteristics. In particular the study explored the lived experience of online distance learners, their aims and goals, their different approaches to learning including their use of technology, their dispositions and how they manage their learning.

Table 1: Examples of topics within the Macro, Meso and Micro framework

Macro -level	**Meso-level**	**Micro level**
Access, equity and ethics	Management and organization	Instructional and or design issues
Globalisation of education and cross—cultural aspects	Costs and benefits	Interaction and communication in learning communities
Systems and institutional partnerships	Educational technology and infrastructure	Learner characteristics
Convergence of DE and blended	Innovation and change	
Theories and models	Professional development	
Research approaches, literature reviews and knowledge transfer	Learner support	
	Quality assurance	

Learner Characteristics

Understanding the characteristics of learners has long been considered essential to enabling successful participation in and completion of online learning courses. As Dabbagh (2007), points out:

> *"Determining the characteristics and educational needs of the online learner may not necessarily guarantee success in a distance education course or program (Galusha, 1997). It could, however, significantly help administrators, teachers, and instructional designers understand (a) who is likely to participate in online*

> *learning, (b) what factors or motivators contribute to a successful online learning experience, and (c) the potential barriers deterring some students from participating in or successfully completing an online course" (p.217).*

The focus of much of the research in to this area has been largely on mature age and lifelong learners who have, since the 1950's, expanded in larger numbers as education has become more accessible. In an increasingly technologically mediated world distance learners are a changing demographic and the characteristics of these learners are also changing and evolving (Dabbagh, 2007). Moving away form the traditional notion of the distance learner as independent and place-based, and given the widespread adoption of technology to support distance teaching and learning activities, Dabbagh suggests that digital literacy is an increasingly important characteristic for online distance learners. Confirming this, a research study conducted by Chun Yun Lau, (2008) found that students believed that positive self-efficacy in relation to computers and a positive attitude to technology were essential characteristics for online learners. In a study that explored self directed learning, Candy (2004) highlighted the importance of computer use and digital literacy in online learning and pointed out that institutions needed to recognize and address the fact that learners have considerable differences in their digital literacy, which is highly influenced by their personal and professional contexts. Successful online learners, regardless of their background and previous experiences, need to know how to communicate and interact in a variety of online learning environments and without these abilities will struggle in contemporary online learning environments (Dabbagh, 2007).

Along with digital literacy, Dabbagh (2007) also identifies other characteristics of successful online distance learners including:

- Having a strong academic self-concept.
- Possessing interpersonal and communication skills.
- Understanding and valuing interaction and collaborative learning.
- Possessing an internal locus of control.
- Exhibiting self-directed learning skills.

Stoter, Bullen, Zawacki-Richter and Von Prummer (2014) identify a similar list to Dabbagh and include entry point, learners personality traits and dispositions for learning, their self-directedness, level of motivation, time (availability, flexibility, space) and the level of interaction between their teachers, the learning tools they have

at their disposal and level of digital competency amongst many other characteristics. Time management is identified as a critical element in the research into learner characteristics (Hart, 2012; Hung & Zhang, 2008; Stoter et al., 2014). Most of the focus on time management in the research emphasizes the importance of students using their time wisely as well as suggesting that students need to engage in their studies frequently and from early in the semester. Hart, (2012) also suggests that students who exhibit good time management skills and had the ability to establish good relationships with other learners are more likely to be successful in their studies than those who don't. Hung & Zhang (2008) supports the notion of relationships as an important characteristic of online learners and found that learners who collaborating with other learners in online learning environments led to better learning outcomes and that learners needed to be not only independent, but interdependent

While the research into learner characteristics identifies behaviours and practices that can result in successful online learning experiences for learners, it is important to recognize that part-time online learners are not an homogenous group. While they may share an increasingly intertwined social, work and personal life within which learning is situated, they display behaviours that make each of them unique (Andrews & Tynan, 2012; Andrews, Tynan & James, 2011). Combined with the increasingly technological world in which learners live there are many influences on their individual goals and success factors when studying online distance education. The research however in these areas has been largely focussed on the traditional learner and while some work has been undertaken in the area of the online distance learner (Dabbagh, 2007; Hart, 2012), there remains a need for prioritising further work at the micro level of learner characteristics which draws upon the lived experience of individual learners in online distance learning modes. The need for this research is evident as online distance learning enrolments grow, attrition rates remain high (Allen & Seaman, 2010; Paterson & McFadden, 2009) and the world in which our learners learn is increasingly complex with many drivers impacting learner success.

Research approach

The key objective of the projects discussed here was to contribute to effective and positive learning experiences for the online learner in distance programs. Thus, the central research question of this study is '*how do mature-age distance learners go about learning*?' This research question fits well within the Micro context for research into online distance learning (Zawacki-Richter & Anderson, 2014) and to identifying learners' behaviours in relation to their learning activities. The project was conducted

in two phases. A pilot project involving 12 students conducted at one regional, dual mode university and a national project. The national project was funded by the Australian Government and the Office of Learning and Teaching (OLT) and involved four Australian universities – two research intensive traditional face-to-face institutions and two dual mode institutions offering both face-to-face and distance learning programs. Both projects also investigated the spaces and places (physical and virtual) within which distance learners participate in ICT supported teaching and learning activities.

The projects took a 'lived experience approach' (Groenwald, 2004) and collected 'student voice' data, to illuminate understandings of distance learners' experiences in relation to the ways in which they engage with ICTs, including mobile and social networking technologies. A uniform recruitment method was difficult to sustain across all participating institutions. Issues identified in the literature review regarding blurring of online and distance student identity and institutional terminology (Coates, Nesteroff & Edward, 2008; Moore, Dickson-Deane & Galven, 2011) were felt by all partners during the recruitment process. The study recruitment strategy was amended, adapted and in some cases required multiple approaches. Recruitment and participation information mounted on the project website was used to provide a consistent background. Mature age distance learners are time-strapped. The minimum time spent by participants on interaction with the study including data collection was around ten hours over a period of two to ten weeks, although many participants spent considerably more time on their contributions. Several initial respondents decided not to participate in both studies because of the time commitment required.

Within the phenomenological study frame, multiple methods were applied to collect data from students. Firstly, interested students were invited to join a Skype information session with a member of the study team. They provided particulars of their study, work and domestic circumstances, and received a study pack in return. The pack contained the detailed study information sheet, method guidelines and a consent form for return to the project. Participants were invited to provide two types of diary data in various textual, audio, video and photographic formats, Charting the Weeks activities and the Day Experience Method, photos of learning spaces and to participate in a focus group discussion. While participants largely provided print diaries, some chose to use audio and video to chronicle their study behaviours and patterns. In total 54 students from the 5 institutions represented in the two projects institutions completed the study.

Charting the Week's Activities

Charting the Week's Activities is a record of the amount of time participants spent, each day for a week they selected, on working, learning, personal, and social activities. Participants recorded the places they used for learning and the resources they utilised and could use video, audio or print diaries. This approach is well-suited to uncovering patterns in the ways in which online learners engage with their learning activities and resources.

The Day Experience Method

The Day Experience Method was developed for the Learning Landscape Project at Cambridge University (Riddle & Arnold, 2007) and adapted for this project. Participants provide a detailed record of their activities during an 18 hour period on a 'usual' study day. Irregularly timed SMS prompts are used to ask students to make a detailed record of their activity using either a video, audio or print diary immediately or as soon as possible after receiving the prompts.

Additionally, participants sent photos of their learning spaces and joined a focus group discussion conducted via Skype or, in some instances, teleconference. Focus group discussions were recorded for transcription. Email correspondence during the data collection period was also included in the dataset. The inquiry strategy provided a rich multi-media dataset from the perspective of the learner.

These kinds of data collection processes can be onerous for participants who can have difficulties in meeting the requirements (Ganeson & Ehrich, 2009). However, in almost all cases in both studies, all participants provided all of the data requested.

Results and discussion

The results of this study identified a number of leaner characteristics and patterns of learning behaviours for the learners in this study. With one exception, the participants in the two projects reported on here, identified as successful online learners who are highly motivated individuals developing unique patterns of learning and self organization to support their learning activities and complete study requirements. The student who did not identify in this way later dropped out of their studies. A significant learner characteristic identified in the study was orchestrating time, which is accomplished through managing self, using technology, learning on the go and participating in concurrent activities. While the theme of orchestrating time is consistent with the views of Stoter et al. (2014), Hart (2012) and Hung and Zhang

(2008), that time management is an important characteristic for persisting in online distance learning programs, it goes beyond the concept of simple time management as currently discussed in the literature. Other characteristics related to connectedness, and technology use. An interesting theme that also emerged was the focus on wellbeing, the need for students to feel that they were happy and enjoying the different aspects of their lives. While orchestrating time was an important part of maintaining a feeling of wellbeing, the spaces and places students chose to undertake their learning also played an important role. Notwithstanding the commonalities, students varied widely in the way they demonstrated these different characteristics, as found in a in the first study by the authors (Andrews & Tynan, 2012; Andrews, Tynan & James, 2011). As an example of the variability of individual students in relation to the characteristics outlined here, four case studies, Christine, Zara, Pam and Zack, are discussed in relation to the learner characteristics identified in the study and the different patterns of learning behaviours that successful online distance students display. Additional comments from other participants are also utilized to illustrate the learner characteristics and learner behaviour patterns identified in the study.

Orchestrating time

Finding ways to fit studies and learning activities in and around busy lives with multiple commitments was a major issue for 41 (95%) of the study participants. How participants managed their time for learning and other activities varied, highlighting the uniqueness of individual approaches, partly influenced by preferred learning style, partly course structure, but mainly by:

> *constantly juggling … different jobs. (Rosemary, 2013).*

Managing self, learning on the go and concurrent strategies were integral to orchestrating time. Being able to manage themselves and their time was remarked on by two-thirds of participants. Strategies to manage learning, and especially to fit learning around other activities, varied from structured planning, relying on routine, to preparing for opportunities during the day or some mix of these.

Table 2: Christine (Wednesday)

Times & Duration	Type of task relating to learning	Technology used	Location	Comments on context
Wednesday				
9.00am	Skim readings and lecture notes	Smartphone	Shops	Having a milkshake while watching kids play
11.00 am	Check what other students are doing	Laptop, Facebook, Skype	Lounge at home	Preparing for a collaborative quiz task
Midday – 4.00 pm	Talk with other students about quiz	Laptop, Skype	Lounge at home	'we all have kids so at times the numbers dropped to pick up kids from school, etc. 3pm had lunch while talking on Skype
7.00 pm	Helping others with quiz questions. Starting on assignment	Laptop, Facebook Skype	Lounge at home	
9.00 pm	Writing an assignment	Pdf & standard word processor	Lounge at home	Reference pdfs for assignment and reading these while doing assignment
11.00 pm – 11.30 pm	Complete online quiz	Laptop, Blackboard	Lounge at home	While taking a break (from assignment)
11.30 pm – midnight	Resumed assignment	Laptop, Pdf & standard word processor	Home	
Midnight – 2,00 am	Exchanging assignments via email	Laptop, Email, MSN	Home	At midnight talking to a student doing same assignment. Exchange assignments for editing. Realise they have tackled assignment in a different way – decide this is a good thing and insightful for both.

As can be seen in tables 2-5 Christine, Zara Pam & Zack are expert orchestrators of time, making use of opportunities as they arise and also planning time carefully while juggling different activities and responsibilities to manage their study. Table 2 demonstrates how Christine learns on the go and uses concurrent strategies as part of her learning behaviours. Zara & Pam (Tables 3 and 4) also make use of learning on the go and concurrent strategies, but in very different ways. Technology is an important enabler for learners in managing their learning (Dabbagh, 2007; Stoter et al., 2014). Zack (Table 5) makes us of blocks of time to mange not only his study, but his personal life.

Technology use

As demonstrated by the differences in Christine, Zara, Pam and Zack's experiences, learners vary greatly in the way they use technology to support their learning. Technology was a critical component of the participants' ability to orchestrate their time for maximum efficiency and there was a strong sense that they could not mange without it. Mobile technologies are increasingly integral to learners' orchestration of time. In particular, mobile technology enables learners to be opportunistic and to make the most of time when it becomes available, even a few minutes here and there.

> *What dictates what I do is time more than anything else 'cause that's what I have the least of. So it's not so much the mobility it's just the best way to use time for me. (Rosemary, 2012)*

Christine, Zara & Pam made use of these technologies not just to learn on the go but also to enable them to engage concurrently in learning and other activities. While Zack (Table 5) did not particularly use mobile technologies, he found that technology enabled him to fill perceived gaps in the materials provided by his institution and was able to complement his learning by making use of social media tools such as YouTube. Students appear to be well aware of the opportunities offered by the internet and social media and are quite active in using these to supplement their learning activities (Andrews, Tynan & James. 2011).

Table 3: Zara Tuesday and Wednesday

Times & Duration	**Type of Task relating to learning**	**Technology used**	**Location**	**Comments on Context**
Tuesday				
10.00 am – Midday	Deliver presentation + Study	Work laptop, no internet	Small town bowls club	Doing study in "downtime " from work activity
4.00 pm – 6.00 pm	Deliver presentation + Study	Work laptop, no internet	Small town bowls club	Doing study in downtime from work activity
9.00 pm	Check email		Motel room	This may be work related
Wednesday				
5.00am – 7.00 am	Study	Work laptop, hotel internet, Mobile personal iPhone	Hotel room	Details of study not provided. iPhone is personal tool
4.00 pm – 6.00 pm	Study	Work laptop, hotel internet, personal iPhone	Hotel room	Details of study not provided

Table 4: Pam, Sunday

Times & Duration	Type of task relating to learning	Technology used	Location	Comments on context
Wednesday				
5.00 – 6.00 am	Study – exam preparation –	Computer print out of powerpoints and summary typed up on computer	Study	Concentrated study tie for exam preparations
6.00 – 7.30	Walk – listen to lectures on ipad	Ipad	Outside	Orchestrating time – focus on exercise and well being
7.30 – 9.30	Breakfast, chores, notes on lectures intermittently	Hand written notes, computer	Home	Multi-tasking, wellbeing
10.30 – 11.45	Morning Tea			
11.45 – 12.30	Study – as above	Handwritten notes	Verandah – alternative learning area.	Focus on wellbeing
12.30 – 1.00	Lunch			
1.00 – 2.30	Study – as above.	Handwritten notes	Verandah – alternative learning area	
2.30 – 5.30				Personal activity
5.30 – 6.20	Study	computer and handwritten notes	Study	
6.20 – 7.20				Personal activity
7.20 – 8.30	Study – lectures and notes	computer and handwritten notes.	Study	
8.30				Personal activity

Connectedness was identified as a key characteristic of the learners in this study and moves away from the notion of the independent distance learner that was typical of more traditional distance learning prior to the widespread adoption on online distance learning. In this project connectedness was understood as distance learners' ability to interact and engage with the people and other learning resources that frame their learning spaces. The theme built on coding for the people that students' viewed as important to their learning experience, feelings (of inclusion or isolation) as well as the personal choices, technologies and strategies that made things work for them. While

relationships were important to many of the students, being able to connect to resources in flexible ways was also a key aspect of this characteristic. The four case studies discussed here demonstrate the very different ways in which learners exhibit connectedness. For Christine, this was achieved by using a range of social media and online communication tools to interact with other learners (Table 2). The relationships she established with other learners, enabled her to discuss her learning with peers and to receive feedback. This was an important aspect of Christine's learning activities and demonstrates clearly that she was an interdependent learner (Hung & Zhang, 2008). For Zara connectedness was demonstrated through accessing resources from remote locations when internet access enabled her to do this. For Pam, using her iPad while walking enabled her to connect to learning materials and to use technology to engage in learning tasks while undertaking other activities that contributed to her sense of wellbeing. Lack Christine, Zack also made use of social media to connect himself to a range of resources that he felt provides a superior learning experience. However, he did not particularly feel the need to connect to peers for this kind of learning activity.

Table 5: Zack, Thursday and Saturday

Times & Duration	**Type of task relating to learning**	**Technology used**	**Location**	**Comments on context**
Thursday				
7.30 – 4.30				Work
5.00 – 6.00				Arrive home, nap
7.00 – 10.00	Watch YouTube videos on macro economics from Berkley University			'Space not specified
Saturday				
7.00 am – 9.00 am	Study		Home study	Technologies not specified
10.00 am – 1.00 pm	Study		University library	Needs to be in quiet zone with no distractions Technologies not specified
1.00 – 6.00 pm				Family time,
6.00 – 11.00 pm				Dinner with friends

Wellbeing

A somewhat surprising characteristic that emerged form the study was that of wellbeing. Wellbeing identified as an important driver for many of the choices students make, not only about **when** but also about **where** and **how** they engage in their learning. Student wellbeing is defined here as a sustainable state of positive mood and attitude, resilience, and satisfaction with self, relationships and learning experiences. Participants used many different strategies to promote a sense of wellbeing including doing learning tasks concurrently with other activities, choosing to do some of their study outdoors or in some other alternative space than the home study, engaging in learning tasks while travelling or participating in exercise and interspersing study sessions with family and other personal activities. In Christine's case (Table 2) spending time watching her children play while she also did some study contributed to this sense of wellbeing. For Zara (Table 3) this was accomplished through concurrent work and learning activities (Table 3) while for Pam (Table 4) a sense of wellbeing was established through engaging in concurrent exercise and learning activities as well as using alternative spaces such as the verandah. Seeking spaces and places outside to engage in learning activities was common for many of the participants in the study and the comments below illustrates not only that it has an impact on well being, but also is perceived by some learners as having a positive impact on learning .

> *… the other place is out in the garden… I try to get outside as much as I can… that's where I do my good thinking for study … (Helen, 2012)*

> *I could sit out on the veranda and just listen to [the lectures]… Just to get out of the 4 walls, go outside and get some fresh air, clear your head a bit as well. (Zack, 2012)*

For Zack (Table 5) as well as finding alternative places to study, having a nap when he came home from work and ensuring family and social time on the weekend were important strategies for maintaining a sense of wellbeing.

Conclusions

Applying Zawacki-Richter and Andersons' (2014) macro, meso and micro framework to researching online distance learners enables holistic understanding of the relationships between the different aspects of online distance learning and the ways in which these elements impact on learner experience. This study, which focused on the 'lived experience' of learners provided deep insights into learner characteristics and patterns in learning behaviours and the ways in which individuals applied these to their particular circumstances in order to be successful online learners. The four cases presented here clearly show that while learners may have characteristics on common, they way they demonstrate these characteristics vary widely. The case studies also suggest that all learners may not necessarily have all the characteristics that are seen as necessary to successful online learning, but utilize the ones they do have in ways that ensure success for them.

Understanding the uniqueness and complexity of the different ways in which the students such as Christine, Zara, Pam and Zack, reported on here, orchestrate their time to manage their learning as well as recognizing the ways in which they use technology for learning on the go, engaging in concurrent activities and connectedness, while aiming for a sense of wellbeing, highlights the need for ongoing research into the micro level of online distance learners.

As the online distance learning environment continues to evolve with the ongoing and widespread adoption of technology, learner behaviours and characteristics will also change and evolve. This environment requires ongoing research to ensure that our understanding of learners keeps pace with these changes and universities can provide the kinds of learning experience that contribute to successful online learning experiences. Deep understandings of learner characteristics and behaviours can assist institutions in making the policy and practice decisions that can positively impact on student learning outcomes and encourage students to persist in their studies. Exploring the different dimensions of online learning using a framework such as the one discussed here (Zawaki-Richter & Anderson, 2014) can also contribute to institutions broad understanding of distance learning and to consider what other kinds of research can be of benefit in supporting successful online distance learners.

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