

# Chapter 1

## The importance of motivation in online learning

**Abstract** This chapter begins by looking broadly at learning as a process of knowledge construction and the increasing role of digital technologies in this process within tertiary education contexts. This is followed by an introduction to online learning along with definitions, discussion of foundational online learning concepts and contemporary pedagogical approaches used in online learning environments. Next, the reasons why motivation is an essential consideration in online teaching and learning contexts are explored. Then, existing research into motivation to learn in online environments is discussed in light of contemporary theoretical motivation frameworks. Finally, self-determination theory (SDT) – an intrinsic-extrinsic theory of motivation – is discussed in detail. In particular, the continuum of human motivation that outlines a range of different types of extrinsic motivation and the underlying psychological concepts of autonomy, competence and relatedness that SDT is built on are discussed. In doing so, justification for the use of SDT as the conceptual framework for this work is provided.

**Keywords** e-learning, online learning, motivation, self-efficacy, interest, goal orientation, self-determination, intrinsic, extrinsic, autonomy

### 1.1 Motivation and online education

Paris and Turner (1994) describe motivation as the ‘engine’ of learning. Motivation can influence what we learn, how we learn and when we choose to learn (Schunk & Usher, 2012). Research shows that motivated learners are more likely to undertake challenging activities, be actively engaged, enjoy and adopt a deep approach to learning and exhibit enhanced performance, persistence and creativity (Ryan & Deci, 2000b). Given the important reciprocal relationship between motivation and learning (Brophy, 2010), it is not surprising that motivation has been actively researched across a wide range of traditional educational settings (Schunk, Meece, & Pintrich, 2014). Despite this, studies that explore motivation to learn in online contexts are limited in both number and scope, as others have noted (Bekele, 2010).

Of the research that is available, there has been a tendency to adopt a limited view of motivation that does not acknowledge the complexity and dynamic interplay of factors underlying and influencing motivation to learn (Brophy, 2010). Instead, designing motivating learning environments has received attention (Keller, 2010). Alternatively, motivation has been viewed a relatively stable personal characteristic and studies have focused on identifying lists of traits of successful learners (Yukselturk & Bulut, 2007). Comparative studies between online and on-campus students are common using this approach (Wighting, Liu, & Rovai, 2008) and findings indicate that online students are more intrinsically motivated than their on-campus counterparts.

However, higher dropout rates associated with online courses compared to similar face-to-face ones (Park & Choi, 2009) lend support to the view that motivation is more complex than the above studies suggest. Feelings of isolation (Paulus & Scherff, 2008), frustrations with the technology (Hara & Kling, 2003) and time constraints due to other responsibilities (Keller, 1999) have all been identified as factors influencing students’ decisions to withdraw from online courses. However, poor motivation has also been identified as a decisive factor in contributing to the high dropout rates (Artino, 2008; Keller, 2008). Therefore, student motivation is considered a crucial factor for success in online learning environments (Artino, 2008; Keller, 2008) and is a primary reason for the current study. Collectively, these factors point to the need to reconsider motivation to learn in technology-rich environments. But before turning our attention to motivation it is important to start by defining what is meant by online learning.

### 1.2 Online learning

Today, there are a plethora of terms to describe the application of digital technologies in learning including distance, online, open, flexible, blended, flipped, mixed and MOOCs (Massive Open Online Courses). To help make sense of these terminologies, Bullen and Janes (2007) have conceptualised a continuum of technology use ranging from face-to-face to fully distance environments. E-learning is a common term used to describe

anything on this continuum that incorporates digital technologies in the learning process (Nichols, 2008).

### **1.2.1 Definition**

Online learning has its roots in distance education. A. W. Bates (2005) points out that the terms ‘online learning’ and ‘e-learning’ are used interchangeably, but makes the distinction that e-learning can encompass any form of technology while online learning refers specifically to using the internet and the web. The term “fully online” is used by Bates (2005, p. 9) to distinguish distance courses where students *must* have access to an internet capable device to undertake the course. Ally (2008) also highlights that there are many definitions of online learning that reflect the diversity of practice and technologies in use. He goes on to define it in the following way:

... the use of the internet to access materials; to interact with the content, instructor, and other learners; and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience (p. 5).

Given the lack of consensus of terminology, the term *online learning* is used in this book. It is taken to encompass the definition offered by Ally and incorporates the fully online distinction used by Bates that makes cognisant the distance context of courses. In other words, *online learning* described here is taken to be a form of distance education mediated by technological tools where learners are geographically separated from the instructor and the main institution.

### **1.2.2 Learner autonomy and control in online learning**

While it not the intention here to offer a comprehensive review of the history of distance education, or the place of online learning within it, it is important to discuss two theoretical concepts that have been influential in the overall development of the field and continue to influence our understanding of learning and motivation in contemporary online contexts. These concepts are *transactional distance* that encompasses the notions of structure, dialogue and autonomy suggested by Moore (1990); and the alternative concept of *learner control* (Garrison & Baynton, 1987). Similar concepts exist within contemporary motivation literature, particularly those associated with self-determination theory (Deci & Ryan, 1985) – the motivational framework that underpins this investigation.

Moore (1990) coined the phrase *transactional distance* to define the psychological separation frequently experienced by students, as a result of the spatial and/or temporal separation between learners and instructors in a distance learning context. From this perspective, the relative amount of structure and dialogue inherent in the learning activity determines the degree of ‘distance’ experienced by the learner (Dron, 2007). Structure refers to the design of the course and expresses the flexibility or rigidity of the teaching methods, objectives and assessment practices (Moore, 1993). Dialogue refers to the degree of interaction with the instructor and is associated with the communication medium (Moore & Kearsley, 2005). In Moore’s theory, low dialogue and structure equate to high transactional distance and vice versa (Garrison, 2000). However, the theory points out that high dialogue and structure are difficult to achieve simultaneously (Dron, 2007). The theory also incorporates a third concept, learner autonomy. The greater the transactional distance (i.e. low structure and dialogue), the more responsibility is placed on the learner (Moore & Kearsley, 2005). In this model, Garrison (2003) argues that autonomy is associated with independence and self-directed learning. While Moore points out that the transactional distance model does not imply that autonomous learners do not require teachers, he does suggest that they require less dialogue and minimal structure when compared with less autonomous learners (Moore, 2007).

Other researchers in the field have argued that the term *autonomy* has suffered from the lack of clear definition (Garrison, 2000; Garrison & Baynton, 1987). Garrison and Baynton (1987) argue that a richer, more inclusive concept is that of *learner control*, as it helps to address the confusion associated with the role of independence in distance education. In this conceptualisation, “control is concerned with the opportunity and ability to influence, direct, and determine decisions related to the education process” (p. 5). This can only be achieved by striking a balance between *independence* (being free to make choices without restrictions or outside influences); *power* – later referred to as competence – (the capability to be responsible for and take part in the learning process); and *support* (the resources, including the teacher, available to the learner throughout the learning process). In this model, support from the teacher enhances greater control on the part of the learner; it does not take away from it. Baynton (1992) tested this model via confirmatory factor analysis and found that the subsequent three main factors mirrored the proposed dimensions.

The work of other researchers has also influenced our understandings of choice, control and autonomy in distance education, most notably Candy (1991). Candy focused on self-direction and distinguished two different

types: self-direction as 1) a personal characteristic; and 2) the degree of control a learner has in determining his or her learning path. This is an important distinction because it recognises that autonomy is both a personal and situational variable. In other words, the degree of autonomy a person expresses can vary from situation to situation.

Dron (2007) has built on the work of previous theorists and developed a conceptual model called *transactional control*. Transactional control has to do with choice and attempts to explain the dynamics of transactional distance. In this model, structure is equivalent to teacher control, dialogue relates to negotiated control, and autonomy relates to learner control. In other words, control is seen as a continuum from learner control at one end to teacher control at the other, which is determined by the choices made throughout the learning trajectory.

While the concepts of autonomy, independence, control and agency have been central to the development of distance education theory, other theories have also been influential.

### ***1.2.3 Contemporary theories of learning***

With the advent of the internet and communication technologies that enable interaction between and among student groups, contemporary learning theories increasingly inform teaching and learning practices in online contexts (T. Anderson & Dron, 2011; McLoughlin & Lee, 2008). In particular, constructivist and social constructivist perspectives of learning have gained prominence in online education research and literature (Ally, 2008; Dyke, Conole, Ravenscroft, & de Freitas, 2007).

Constructivism sees the student at the centre of the learning process and actively involved in the construction of knowledge (Dalgarno, 2001). Learning from this perspective places emphasis on authentic activities, collaboration, learner control or agency, reflection, active engagement and intrinsic motivation (Herrington & Oliver, 2000). There are several strands of constructivism. Two which figure prominently are cognitive constructivism and social constructivism (Dyke, et al., 2007).

Individual cognitive constructivism has grown out of the foundational work of Piaget (1977) and is a theory that views the learner as agentic (i.e., the ability of an individual to make choices and act on those choices) and learning as an active process of individual meaning-making. Favoured approaches tend to be task-oriented, hands-on and self-directed (Dyke, et al., 2007). Examples of cognitive constructivist methods include: active learning, problem-based learning and inquiry learning (Kirschner, Sweller, & Clark, 2006). Researchers (Lindgren & McDaniel, 2012) have recognised that digital technologies present new opportunities for supporting learner agency most notably by personalising the learning experience, allowing the student to choose, assemble and construct their own representations of knowledge in their own way (Conole, 2010).

The foundations of social constructivist theory can be found in Vygotsky's cultural-historical theory (1978) and the writings of Dewey (1916). Social constructivism conceptualises learning as participation in shared activities where the context and the situated nature of learning are integral considerations. Social constructivist theory also acknowledges the importance of motivation and the crucial part contextual factors play in the fostering of motivation among learners (McInerney & Van Etten, 2004). From this perspective, knowledge is distributed among members of a community, and learning involves individuals' abilities to participate successfully in community practices (Wenger, 1998). Language is a central tool for learning and co-construction of knowledge (Dyke, et al., 2007). It can be argued that the recent emergence of the theory of connectivism, that views learning as a process of developing networks of information, resources and people (Siemens, 2005), is a logical development of social constructivist theory in a digitally-mediated world.

The situated, social and constructed nature of learning has been recognised in the online learning literature (Howland, Jonassen, & Marra, 2012). Principles such as mediation, zone of proximal development, internalisation, cognitive apprenticeship and distributed intelligence have been adopted to underpin the design and development of online learning environments (Dyke, et al., 2007). Particular emphasis has been placed on the development of online learning communities (Harasim, 2012) where opportunities for collaboration and interaction are realised through the use of various digital communication tools (Haythornthwaite & Andrews, 2011). While there is a focus on the socially-mediated nature of learning in the sections that follow, this does not negate the importance of individual constructions of knowledge. Learner interactions with course content in particular, frequently occurred at an individual level in the online learning contexts.

### ***1.2.4 The role of interaction in online learning***

Interaction has been used in online learning to denote anything from clicking on a link to interpersonal dialogue among many participants (Nichols, 2008). However, for the purposes of this investigation, a useful starting point is the work of Moore (1989). Moore identified three types of interaction in earlier generations of distance education, namely: learner-instructor, learner-content, and learner-learner interaction. Hillman, Willis, and Gunawardena (1994) added a fourth type, namely learner-interface interactions.

**Learner-instructor** interaction refers to exchanges that occur between learners and the teacher and are characterised by attempts to motivate and interest the learner. They also provide a mechanism for feedback allowing clarification of misunderstandings. Thach and Murphy (1995) identified seven types of learner-instructor interactions in distance education settings: 1) establishing learning outcomes/objectives; 2) providing timely, useful feedback; 3) facilitating information presentation; 4) monitoring and evaluating student progress; 5) facilitating learning activities; 6) facilitating discussions; and 7) determining learning needs and preferences. More recently, Garrison, Anderson, and Archer (2000) have developed the concept of teaching presence as part of the community of inquiry model. Teaching presence explicates the teaching role in online environments which encompasses design and organisation, facilitating discourse and direct instruction (Garrison, 2011).

Teaching presence and the effective facilitation of learner-instructor interactions, particularly via online dialogue, has continued to be an area of active research (Garrison, 2011; Mishra & Juwah, 2006; Rovai, 2007). From this, guidelines for facilitating effective practice have emerged that build on those of Thach and Murphy (1995). For example, Rovai (2007) explicates design and facilitation guidelines for effective online discussions based on research and experience. They include ways of encouraging learner motivation, incorporating opportunities for learner choice, and clarification of expectations as well as developing and nurturing a strong sense of community. Mishra and Juwah (2006) highlight the importance of establishing a purpose and context for discussions, clarifying the relevance of discussions by making links to learning outcomes and the importance of encouraging learners to participate through the provision of appropriate support.

**Learner-content** interaction describes the intellectual process that occurs between the learner and the resources associated with the topic of study (Moore, 1989). Learner-content interactions occur when learners access such things as textual and graphical representations of the subject matter (Hirumi, 2006). With the increasing availability of technology, learners can now choose from a huge variety of information at any time or from any place. But in order to interact with content, learners need to be able to access relevant and appropriate resources which frequently, requires guidance from the teacher (T. Anderson, 2006). Availability of adequate resources has also been shown to be important from a motivational perspective (Reeve, Deci, & Ryan, 2004).

**Learner-learner** interactions highlight processes that take place between peers undertaking a course together (Moore, 1989). This can include processes such as sharing information and understandings, working together to interpret and complete activities, solving problems, and sharing opinions or personal insights. Technology-mediated communication technologies, for example, provide learners with opportunities to collaborate and actively participate in knowledge co-construction via online discussion (Hirumi, 2006).

Juwah (2006) argues that for learners to participate and have positive peer interactions, they need know how to effectively use the digital tools and must understand how to learn. This includes having the necessary prerequisite, prior knowledge and an understanding that successful learning requires self-regulation. Even with the necessary skills, peer interactions in technology-mediated environments are complex and cover a range of intellectual (e.g., reviewing, conceptualising), social/ emotional and instructional interactions (e.g., critiquing). Much of what is known today about what is required for effective peer interactions to occur in technology-mediated environments has emerged from the analysis of asynchronous discussion transcripts (De Wever, Schellens, Valcke, & Van Keer, 2006). Garrison et al. (2000) developed the community of inquiry model that posited that interactions must consist of three core elements for effective peer learning to occur. They are: cognitive presence – the degree to which the participants can construct meaning through ongoing communication; social presence – the ability of participants to present themselves as ‘real’ to other community members; and teaching presence – the design and facilitation of the learning experience.

**Learner-interface** interaction refers to a learner’s ability to use the required technological tools in order to interact and communicate with the instructor, other students and the course content (Hillman, et al., 1994). A learner’s belief in their ability to use the necessary technological tools to learn online has also been found to be related to performance (Moos & Azevedo, 2009).

**Online communities** Rovai and Lucking (2003, p. 6) state that “interaction is the primary mechanism through which community is built and sustained”. Interaction between learners and the development of learning

communities has gained considerable attention (T. Anderson, 2006; Harasim, 2012; Rovai, 2000) because it has been identified as a crucial factor in creating and sustaining online communities (Haythornthwaite & Andrews, 2011).

The development of a supportive network among learners can foster motivation to learn, commitment to group goals, encourage the co-construction of knowledge (Bonk & Khoo, 2014), and has been shown to be significantly related to perceived cognitive learning (Rovai, 2002). However, building such a network is not straightforward. Interaction is an essential element of a supportive community but will not occur by simply providing the technological tools to learners (Garrison, 2011). Course structure (T. Anderson, 2008), class size (Vrasidas & McIsaac, 1999), prior experience (Jawah, 2006), social presence (Lin, Lin, & Laffey, 2008), instructor immediacy (Shea, Swan, & Pickett, 2005), use of self-disclosure (Cutler, 1995), collaborative learning (Boekaerts & Minnaert, 2006), group facilitation (Jones & Issroff, 2007), personal agency (B. Anderson, 2006), and the ability of learners to meet their peers' affective needs within small group settings (B. Anderson & Simpson, 2004), have all been found to influence student interaction and their sense of being part of an online community.

The discussion to this point has identified that the adoption of social constructivist principles that encompass the concepts of collaboration, interaction, and dialogue are important underpinnings in the development of successful online learning communities. Developing and sustaining a sense of online community is also important in fostering motivation among learners (Bonk & Khoo, 2014). In the section that follows, attention turns to the existing body of research that has investigated the motivation of learners in online environments.

### **1.3 Motivation to learn in online environments**

The characteristics of independence, self-direction and intrinsic motivation have long been associated with distance learners (Moore, 1989). Intrinsic motivation has also been identified as an important characteristic of online learners (Shroff, Vogel, Coombes, & Lee, 2007). Findings from comparative studies between online and on-campus students (Huett, Kalinowski, Moller, & Huett, 2008; Shroff & Vogel, 2009; Wighting, et al., 2008) also suggest that online learners are more intrinsically motivated compared with their on-campus counterparts at both undergraduate and postgraduate level.

But as Martens, Gulikers, and Bastiaens (2004) argue, online learners are often required to be more intrinsically motivated *because* the learning environment typically relies on intrinsic motivation and the associated characteristics of curiosity and self-regulation to engage learners. In fact, the technology itself is viewed by some as inherently motivating because it provides a number of qualities that are recognised as important in the fostering of intrinsic motivation, namely challenge, curiosity, novelty and fantasy (Lepper & Malone, 1987). The novelty factor tends to wear off as users become accustomed to the technology (Keller & Suzuki, 2004) and intrinsic motivation can wane. Frustration with technical problems can also reduce intrinsic motivation.

While the intrinsic motivation of learners is an important consideration, contemporary research studies exploring motivation in these environments is limited in both number and scope (Bekele, 2010). Recent concern over attrition rates in online courses (Lee, Choi, & Kim, 2013), particularly from new technology-mediated environments such as MOOCs (LiyanaGunawardena, Adams, & Williams, 2013), highlights the need for greater understanding of the complexity of factors that influence motivation to learn in online contexts.

#### **1.3.1 What is motivation?**

Brophy (2010, p. 3) defines motivation as “a theoretical construct to explain the initiation, direction, intensity, persistence, and quality of behaviour, especially goal-directed behaviour”. Motivation involves goals that provide the impetus for purposeful action with an intended direction. Whether physical or mental, activity is an essential part of motivation. Inherent in this definition is the notion that motivation is a process rather than an end result. This has implications in terms of measurement of motivation. That is, because it cannot be observed directly it must be inferred from actions such as choice of tasks, persistence, effort and achievement, or from what individuals say about themselves (Schunk, et al., 2014). Contemporary views link motivation to individuals' cognitive and affective processes such as thoughts, beliefs, goals and emotions and emphasise the situated, interactive relationship between the learner and the learning environment that is facilitated or constrained by various social and contextual factors (Schunk, et al., 2014).

#### **1.3.2 Why is motivation important?**

Motivation has been described as the ‘engine’ of learning (Paris & Turner, 1994) and can influence what, when,

how we learn and is a significant factor in performance (Schunk & Usher, 2012). It has been shown to play an important role in determining whether a learner persists in a course, the level of engagement shown, the quality of work produced, and the level of achievement attained. Understanding the nature of motivation and the ways in which personal histories, social factors, experiences and circumstances may influence the motivation of learners, therefore, has important practical implications for those involved in online teaching and learning.

While few would disagree that motivation is an important factor in learning, the complexity and multifaceted nature of the construct has resulted in the development of several theories (Schunk, et al., 2014). These can be broadly conceptualised in terms of a general *expectancy – value model of motivation* (Brophy, 2010). The expectancy component is concerned with learners' beliefs about whether they are able to perform a task (Bandura, 1997). The value component relates to beliefs a learner holds about the task itself (Eccles & Wigfield, 2002). In addition, comprehensive reviews of the motivation literature have resulted in the development of several motivation design models. These include Keller's (2010) ARCS model and Ginsberg and Wlodkowski's (2000) motivational framework for culturally responsive teaching. Keller's model, in particular, has been frequently used as a conceptual framework for the development of online learning environments that enhance learner motivation.

### ***1.3.3 Motivation, the learning environment and the learner***

Different perspectives have been adopted when exploring motivation to learn in online environments. The two that feature most prominently are motivation from the perspective of instructional design and motivation viewed as a trait of the learner. The first perspective concentrates on the design of the learning environment and the factors considered necessary to provide optimum learner motivation (Keller & Deimann, 2012; Zaharias & Poylymenakou, 2009). The second perspective views motivation as a relatively stable personal characteristic of the learner (Wighting, et al., 2008; Yukselturk & Bulut, 2007). But as we begin to understand more about the nature of motivation in online contexts, a third situated perspective is emerging that acknowledges the dynamic and responsive nature of motivation to different situations (Hartnett, St. George, & Dron, 2011; Rienties et al., 2012). Throughout the remainder of the chapter, research from all three perspectives is presented. The various motivational theories that underpin different research investigations are also discussed.

#### **1.3.1.1 Motivation from a learning design perspective**

The first perspective adopted when examining motivation in online learning settings has been to concentrate on the design of the environment to elicit student motivation. Several instructional design models have been put forward, some of which consider learner motivation as a component of a broader design approach, and others which focus exclusively on motivation (see for example Chan & Ahern, 1999). By far the most frequently used instructional design framework for the development of motivating online learning environments is Keller's ARCS model (Keller, 1987). The framework was developed as a means of influencing learner motivation by using a systematic approach to instructional design. The attention, relevance, confidence and satisfaction (ARCS) categories serve as guidelines for systematically developing instructional strategies that capture learner attention, establish relevance of what is being taught, encourage learner confidence, and provide a sense of satisfaction via intrinsic and extrinsic rewards (Keller, 2010). Though not originally developed for it, the ARCS model has been used as a design approach for instruction in online learning contexts (Keller, 2008; Keller & Deimann, 2012) and has underpinned a variety of other studies (ChanLin, 2009; Hodges & Kim, 2013; Paas, Tuovinen, van Merriënboer, & Darabi, 2005).

These kinds of instructional design approaches have been very important in developing our understanding of motivation in online learning environments. However, they are not sufficient on their own to explain the complex processes that occur as they often do not take into account learner differences. Even though the full application of the ARCS design process incorporates an analysis of the motivation of learners (Keller, 2010), the model itself is often applied in a more prescriptive way (ChanLin, 2009; Hodges & Kim, 2013). Such approaches concentrate on the view that it is the designer and developer who make the material motivating and frequently reflect earlier behaviourist theories of motivation that assume that behaviour is caused by events or stimuli external to the person (Hickey & Granade, 2004). Contemporary motivation literature suggests that it is a complex mix of these as well as other factors that contribute to a learner's motivation in any given situation (Brophy, 2010).

#### **1.3.1.2 Motivation from a learner trait perspective**

The second and predominant method for investigating motivation has been to conceptualise various motivation constructs as learner characteristics or traits. The impetus for conducting much of this research has been in an

attempt to identify factors that contribute to higher attrition rates (Lee, et al., 2013). Conversely, other studies have attempted to identify characteristics that predict learner success (Yukselturk & Bulut, 2007).

Moos and Marroquin (2010) contend that research investigating motivation in technology rich environments should be guided by fundamental and well-established theories of motivation. These include, self-efficacy theory (Bandura, 1997); goal orientation theory (Murayama, Elliot, & Friedman, 2012); interest theory (Hidi, Renninger, & Krapp, 2004); and intrinsic–extrinsic motivation theory, in particular self-determination theory (Ryan & Deci, 2000a). Of these, self-efficacy theory has been used most frequently.

**Self-efficacy:** Social cognitive theory proposes that motivation influences both learning and performance (Schunk & Usher, 2012) and focuses on how people acquire knowledge, skills, beliefs and strategies through their interactions with and observations of others. Bandura's (1986) social cognitive theory is central to this area of motivational research. It is based on the premise that there is a reciprocal interactive relationship among personal factors, behaviours and environmental influences. A focal point of this theory is the notion of self-efficacy, defined as the belief that one is capable of learning or performing at a certain level in order to attain particular goals. Self-efficacy, unlike similar constructs such as self-concept, is focused on an individual's beliefs about their performance capabilities for a particular task within a particular context that has yet to be undertaken.

Bandura (1997) proposed that individuals use information from a number of sources in order to judge self-efficacy. These include actual experiences (successes, failures), vicarious experiences (model observation), attributions, verbal persuasion, and physiological/affective states. Actual experience plays a major role in assessing self-efficacy for a task, with success generally raising self-efficacy and failure lowering it. Ability and effort attributions affect self-efficacy with positive ability attributions enhancing self-efficacy more than effort attributions (Schunk, et al., 2014).

Observing similar peers successfully completing a task can convey to the observer that they too have the capabilities for success where model similarity is an important factor. Having a trusted person tell you that you have the ability to succeed is a further important source of information. Physiological symptoms such as increased heart rate or sweating can act as a signal of anxiety, indicating a lack of skills or ability. Alternatively, it may be interpreted as positive anticipation suggesting confidence in the ability to succeed.

Self-efficacy has been linked to factors influencing goal setting and goal performance (Schunk & Usher, 2012) and has been shown to be a major motivational factor that affects students' task choices, effort, persistence and achievement (see Brophy, 2010). Research has consistently shown that self-efficacy is a strong predictor of performance and student motivation (Schunk, et al., 2014).

Self-efficacy has also been highlighted as an important predictor of successful outcomes and satisfaction in online learning environments (Kuo, Walker, Belland, & Schroder, 2013). Academic self-efficacy (Artino, 2008; Lynch & Dembo, 2004) and efficacy to learn online (Shen, Cho, Tsai, & Marra, 2013) have both been found to be significantly related to a number of factors. These include: use of high level learning strategies (Moos & Azevedo, 2009; Wang & Wu, 2008); critical thinking and metacognitive learning strategies (Artino & Stephens, 2006); persistence (Hart, 2012); satisfaction (Artino, 2007, 2008); participation (Kuo, et al., 2013); and academic performance (Hodges, 2008). However, several studies exploring self-efficacy to learn online did not predict student achievement outcomes (Bell, 2007; Xie, DeBacker, & Ferguson, 2006). Prior successful experience with online learning has also been found to be important for learners to feel efficacious about future learning in similar contexts (R. Bates & Khasawneh, 2007). Furthermore, learner self-efficacy may fluctuate as they come to understand the challenging nature of learning in technology-rich environments (see Moos & Marroquin, 2010).

**Goal orientation:** A second conceptual framework commonly used to support studies investigating motivation to learn in online contexts, is goal orientation theory. Goal orientation theory explores learners' reasons for engaging in achievement behaviour, in particular the beliefs that result in different approaches to and engagement in achievement situations (Murayama, et al., 2012).

Although there are numerous types of goal orientations, the two that have been studied most extensively are learning (mastery or task-involved) goals and performance (ego-involved) goals (Schunk, et al., 2014). Learners who adopt a learning goal orientation tend to focus on learning for understanding, developing new skills, and improving or developing competence where the standard for judging the achievement or otherwise is internal to the learner. In contrast, a performance goal orientation tends to focus on demonstrating competence or ability

where the standard for measurement is in comparison to others (Murayama, et al., 2012).

While earlier research focused on the differences between learning and performance goals, more recent work recognises that performance goal orientation can be further categorised into performance-approach (wanting to demonstrate competence in relation to others) and performance-avoid (wanting to avoid looking incompetent) orientations. This research also suggests that performance-approach goals can be potentially positive for learning and, when combined with learning goals, can lead to optimal motivation (Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002). What is also clear from the research is that a performance-avoidance orientation is negatively related to various learning outcomes (Brophy, 2010).

Studies in online learning environments have found that students who adopt a performance orientation are more likely to contribute to assessed activities (Bures, Abrami, & Amundsen, 2000) and focus on administrative tasks (Dawson, Macfadyen, & Lockyer, 2009) in comparison to learners who adopted a learning goal orientation. Furthermore, research has shown positive relationships between learning goal orientation and increased participation in discussions related to learning and sharing (Dawson, et al., 2009), metacognitive strategy use and performance (C.-H. Chen & Wu, 2012), and learners' overall satisfaction (Kickul & Kickul, 2006). A small body of research has investigated approach and avoid goal orientations, for example, a learning-approach orientation has been shown to be a predictor of achievement (Crippen, Biesinger, Muis, & Orgill, 2009). In addition, Moos and Marroquin (2010) highlight the fact that the type of strategies learners use differ depending on their goal orientation, while Ng (2012) found that the positive effects of both learning and performance goal approach orientations are supported by learners' control beliefs. Apart from a few exceptions (Ng, 2008, 2009), studies that have considered the adoption of multiple simultaneous goals by learners in online contexts are rare.

**Interest**, a concept closely related to intrinsic motivation, is a distinct motivational construct evident in some online motivational research. Research in traditional educational contexts has consistently shown that the level of an individual's interest has a significant influence on their learning (Hidi & Renninger, 2006). Interest is a concept that has been characterised in a number of ways, but is most often viewed as a psychological state that "involves focused attention, increased cognitive functioning, persistence, and affective involvement" (Hidi, 2000, p. 311). Interest is always content specific (Krapp, 2002) and two types of interest have frequently been associated with this psychological state, namely individual and situational interest (Hidi & Harackiewicz, 2000). Individual interest is seen as a relatively stable disposition or motivational orientation towards certain activities. Situational interest is engendered in response to particular conditions within the environment and tends to be less enduring (Hidi & Ainley, 2008).

Rather than being seen as opposites, situational and individual interest are considered distinct constructs that can interact and influence each other. While researchers have highlighted the importance of individual interest on learning and motivation (Hidi & Renninger, 2006), research has also focused on situational interest as a way for educators to foster student involvement and motivation in specific activities (Hidi & Harackiewicz, 2000). In their four-phase model of interest, Hidi and Renninger (2006) describe two different types of situational interest, triggered and maintained. Triggered situational interest tends to be short-lived. Maintained situational interest follows on from the triggered state and is usually sustained over longer periods of time.

Triggered situational interest has been linked to learning environments that include group work and use of computers (Hidi & Renninger, 2006; Lepper & Malone, 1987). Maintained situational interest has been linked to a variety of conditions such as personal relevance and utility value (Hidi & Renninger, 2006), collaborative work as well as authentic and meaningful activities (Blumenfeld, Kempler, & Krajcik, 2006; Boekaerts & Minnaert, 2006).

Studies of online learning have shown that higher engagement occurs when learners a) are personally interested in the topic (Schallert & Reed, 2003) and b) have a pre-existing individual interest in computers (Sansone, Fraughton, Zachary, Butner, & Heiner, 2011). Additionally, personal interest is enhanced in autonomy-supportive online environments (Moos & Marroquin, 2010); a learner's level of topic interest has been linked to mathematics learning (Renninger, Cai, Lewis, Adams, & Ernst, 2011) and reading comprehension (Akbulut, 2008) in online environments; and situational interest has been shown to increase with the inclusion of conceptual scaffolding (Moos & Azevedo, 2008). However, researchers have highlighted the need to account for novelty effects frequently seen in technology-rich contexts where learner interest diminishes over time (see Moos & Marroquin, 2010).

**Intrinsic – extrinsic motivation:** is another motivational construct that has been used to investigate learner motivation in online environments. "Intrinsic motivation is defined as the doing of an activity for its inherent



satisfactions rather than for some separable consequence” (Ryan & Deci, 2000a, p. 56). Intrinsic motivation often results from the challenge, interest or fun an individual derives from an activity. In contrast, “extrinsic motivation is a construct that pertains whenever an activity is done in order to attain some separable outcome” (Ryan & Deci, 2000a, p. 60). In other words, intrinsic motivation is associated with undertaking an activity for the enjoyment or interest inherent in it. Extrinsic motivation is associated with a source outside the activity itself, such as undertaking a course of study to improve future career prospects. Research suggests that individuals who are intrinsically motivated are more likely to undertake challenging activities; be actively engaged and enjoy learning; adopt a deep approach to learning; and exhibit enhanced performance, persistence, and creativity (Amabile, 1985; Brophy, 2010; Ryan & Deci, 2000b).

Several studies have explored students’ reasons for engagement in online environments from an intrinsic – extrinsic motivation perspective (e.g., Rentroia-Bonito, Jorge, & Ghaoui, 2006; Shroff & Vogel, 2009; Xie, et al., 2006). Huang and Liaw (2007) found that learners’ perceptions of autonomy were predictive of both intrinsic and extrinsic motivation. A study by Martens et al. (2004) examined the intrinsic motivation of psychology and technology undergraduates undertaking authentic computer tasks. They found that high levels of intrinsic motivation were not necessarily indicative of higher levels of achievement. Instead, intrinsic motivation was associated with greater exploration of the learning environment. Results of research by Rienties, Tempelaar, Van den Bossche, Gijssels and Segers (2009) revealed that difference in learner motivation influenced the type of discourse contributions with intrinsically motivated learners being central and prominent contributors. While this body of research adds to our understanding of motivation, it is important to note that there has been the tendency to focus predominantly on intrinsic motivation (Martens, et al., 2004; Rovai, Ponton, Wighting, & Baker, 2007; Shroff & Vogel, 2009). In doing so, current views that individuals can be simultaneously intrinsically and extrinsically motivated to a greater or lesser degree over time in any given context, are neglected (Paris & Turner, 1994).

#### **1.3.1.3 Motivation from a situational perspective**

Although fewer in number, studies have been conducted that do acknowledge a more contemporary situated ‘person in context’ perspective (Turner & Patrick, 2008). For example, using self-efficacy theory, studies have shown that receiving elaborated and timely feedback significantly enhanced student self-efficacy (Artino, 2007, 2008; R. Bates & Khasawneh, 2007; Wang & Wu, 2008). Collective efficacy, “people’s shared beliefs in their collective power to produce the desired results” (Bandura, 2000, p. 75), is a related construct that has been shown to have positive effects on discussion behaviour and group performance in computer supported collaborative learning environments (Wang & Lin, 2007a, 2007b).

Using goal orientation theory, Matuga (2009) found that goal orientation changed from a performance to learning orientation over time, within the context of an online science course. In a related study, Whipp and Chiarelli (2004) found that instructor support, peer support and course design all influenced learner interest within a web-based course. Xie et al. (2006) identified contextual factors that increased student intrinsic motivation (e.g., clearly stated guidelines, well-designed discussion topics and instructor involvement and those that decreased it (e.g., lack of instructor and peer feedback).

### **1.4 Self-determination theory as a framework for studying online motivation**

Arguably one of the more well-known theories of motivation is intrinsic–extrinsic motivation. An influential theory that explains this motivation concept is self-determination theory (SDT) (Deci & Ryan, 1985). Self-determination theory is a contemporary theory of situated motivation that is built on the fundamental premise of learner autonomy. SDT argues that all humans have an intrinsic need to be self-determining or autonomous, as well as competent and connected, in relation to their environment.

Connell (1990) defines *autonomy* as “the experience of choice in the initiation, maintenance and regulation of activity and the experience of connectedness between one’s actions and personal goals and values” (pp. 62-63). When autonomous, students attribute their actions to an internal locus of causality and experience a sense of freedom and choice over their actions. *Competence* is defined as “the need to experience oneself as capable of producing desired outcomes and avoiding negative outcomes” (Connell & Wellborn, 1991, p. 51). *Relatedness* “encompasses the need to feel securely connected to the social surround and the need to experience oneself as worthy and capable of ... respect” (Connell & Wellborn, 1991, pp. 51-52).

SDT states that if the environmental conditions are such that they support an individual’s autonomy, competence and relatedness needs, then a learner’s inherent intrinsic motivation will be promoted (Ryan & Deci, 2000a). When intrinsically motivated, outside incentives are unnecessary as the reward lies in the doing of

the activity (Ryan & Deci, 2000b). In contrast, students who are extrinsically motivated undertake activities for reasons separate from the activity itself (Ryan & Deci, 2000a); for example gaining good grades, avoiding negative consequences, or because the task has utility value such as passing a course in order to earn a degree.

Ryan and Deci (2000a) recognised that learners will not be intrinsically motivated at all times and in all situations. SDT explains extrinsic motivation processes in terms of external regulation, as the reasons for undertaking the task lie outside the individual. However, the degree to which an activity is perceived as externally regulated can vary and therefore *different types of extrinsic motivation exist*. The taxonomy of human motivation details a continuum of regulation that incorporates amotivation (lack of motivation) at one end through to intrinsic motivation at the other, with different types of extrinsic motivation sitting between the extremes. The various forms of extrinsic motivation highlight a shift in the degree to which externally motivated behaviour is autonomously determined. They range from externally controlled with little or no self-determination, to more internal control and self-regulation where a learner engages in an activity because of its significance to their sense of self.

Research has shown that intrinsic and extrinsic types of motivation can and do co-exist (Lepper, Henderlong Corpus, & Iyengar, 2005). It is the degree to which a student is intrinsically or extrinsically motivated that is important, with more self-determined students experiencing positive learning outcomes even when extrinsically motivated (Reeve, et al., 2004; Reeve, Jang, Hardre, & Omura, 2002). Furthermore, autonomous forms of motivation have also been shown to have a potential buffering effect on less self-determined types of motivation (Ratelle, Guay, Vallerand, Larose, & Senécal, 2007; Sheldon & Krieger, 2007).

According to this taxonomy, an *amotivated* individual lacks intention because he/she feels incompetent or has low self-efficacy. They feel that whatever they do it will not affect the outcome, or they place low value on the task being undertaken. Within the four patterns of extrinsic motivation, *external regulation* refers to individuals who are responsive to threats of punishment or the offer of rewards. This is the type of extrinsic motivation most often contrasted with intrinsic motivation, especially in earlier research. *Introjection* refers to students who engage in a task because they feel they should due to the expectations of others and feel guilty if they do not participate. Even though the feelings are internal, the individual is not self-determining as they are being controlled by their feelings (Ryan & Deci, 2002). The third level of extrinsic motivation, called *identification*, is associated with individuals who engage in the task because it has personal value to them. The locus of causality is internal in the sense that the individual has chosen the goal or identifies with it and is aware of its importance. But the motivational pattern is still considered extrinsic in the sense that it is the utility value (a means to an end), personal importance and/or relevance of the task rather than the task itself that determines the behaviour.

The final level within the extrinsic motivation types is *integration*, where learners engage in the activity because of its significance to their sense of self. Both identified and integrated types of motivation share some of the qualities of intrinsic motivation (Ryan & Deci, 2000a) and have similar consequences for learning and motivation. This has important implications as it highlights how educators can assist learners to appreciate the importance and value of learning activities even when they are not intrinsically interesting. More recently, Deci and Ryan (2012) have described the continuum of human motivation in terms of two meta-theoretical concepts, namely controlled and autonomous motivation to differentiate between externalised and internalised types of extrinsic motivation. External and introjected regulations are viewed as types of controlled extrinsic motivation while identified and integrated regulations are considered types of autonomous motivation in conjunction with intrinsic motivation. For a diagrammatic representation of the continuum see Ryan and Deci (2000a).

Research in traditional learning situations shows that autonomy support within the learning context leads to more self-determined forms of motivation among learners (Deci & Ryan, 2008; Guay, Ratelle, & Chanal, 2008; Reeve, 2009; Reeve, Ryan, Deci, & Jang, 2008; Van Etten, Pressley, McInerney, & Liem, 2008). Examples include: providing rationales for tasks, the use of non-controlling language, and the provision of relevant and meaningful instructional activities that align with students' personal interests.

Conversely, external regulation such as deadlines, directives and compliance requests serve to undermine self-determined types of motivation (Deci & Ryan, 2008; Guay, et al., 2008; Ryan & Deci, 2000a; Vallerand, Pelletier, & Koestner, 2008; Van Etten, et al., 2008). Rewards can have a similar effect if used in order to control behaviour such as task engagement, completion or performance (Deci, Koestner, & Ryan, 1999). Choice has also been shown to be supportive of learners' autonomy needs (Katz & Assor, 2007; Patall, Cooper, & Robinson, 2008). However, it is the perception of choice, or lack of it, rather than the actual choices that is critical in terms of self-determination (Reeve, Nix, & Hamm, 2003).

Support for the competence needs of learners is also necessary to facilitate motivation (Schunk & Zimmerman, 2006). The provision of structure (Connell & Wellborn, 1991) has been shown to be important in supporting competence needs and facilitating self-determined types of motivation. Structure includes explicit, detailed information that clarifies expectations without seeking to control behaviour; provision of informational feedback given in a timely manner; and responsiveness to student questions, comments and suggestions, (Deci & Moller, 2005; Reeve, et al., 2004; Reeve, et al., 2008).

The fact that high structure within the learning activity can co-exist and be seen as mutually supportive, rather than conflicting with the autonomy needs of learners, is something that has been previously noted in the general motivation literature (Jang, Reeve, & Deci, 2010; Reeve, 2009). In addition to structure supporting learner competence, learning activities designed to be optimally challenging, that is where the challenge of the task is high and reasonably well-matched to learners' skill levels (Csikszentmihalyi, 1985), encourage feelings of capability and more self-determined motivation.

The more an individual experiences having their autonomy, competence and relatedness needs met within a relationship, the more connected and trusting they feel towards that person (Ryan, La Guardia, Solky-Butzel, Chirkov, & Kim, 2005). In line with this, teacher involvement in terms of the amount of time invested, care taken, and attention given, have also been shown to be powerful motivators (Brophy, 2010). Inclusion, which encompasses respect and connectedness, has also been identified as one of the basic conditions necessary for encouraging and supporting motivation across diverse groups of learners (Ginsberg & Wlodkowski, 2000). Conversely, difficulties in relationships with teachers and other learners have been associated with a corresponding undermining of autonomy needs (Martens & Kirschner, 2004).

Criticism of self-determination theory centres around the argument that the fundamental assumptions on which it is based adopt a distinctly Western perspective and may not be universal (McInerney & Van Etten, 2004). In particular, the assumption that autonomy is a universal human need is questioned within collectivist cultures (Markus & Kitayama, 1991). However, research in non-Western cultures supports SDT, although with slightly differing emphasis on autonomy and relatedness (for a summary see Reeve, et al., 2004). Several researchers (Reeve, et al., 2004; Ryan & Deci, 2006) point out that this criticism often stems from the misunderstanding of the concept of autonomy where it is frequently equated with individualism and separateness. Research has shown that autonomy and relatedness are compatible constructs (Ryan & Deci, 2006).

Several online studies have utilised self-determination theory as a theoretical basis (Giesbers, Rienties, Tempelaar, & Gijssels, 2013; Hartnett, et al., 2011; Rienties, et al., 2012). For example, Chen, Jang and Branch (2010) showed that addressing the autonomy, competence and relatedness needs of learners is likely to enhance online engagement, achievement and course satisfaction. Collectively, other research studies have demonstrated that feedback, the instructor's role in online discussions, choice, competence, challenge, interest, relevance and collaboration all influenced student intrinsic motivation to learn in the various online learning contexts. Few studies, however, draw on multiple perspectives (i.e., of both instructors and students) or examined more self-determined forms of extrinsic motivation. This has resulted in a tendency by some researchers to characterise online distance learners as intrinsically motivated (Rovai, et al., 2007). The study by Hartnett et al. (2011) is distinctive in highlighting the complex, multifaceted, situation-dependent nature of motivation in online contexts using SDT as an analytic tool.

## 1.5 Summary

With advances in technology that have enabled greater connectivity among learners contemporary learning theories, in particular social constructivism, have increasingly informed teaching and learning practices in online distance learning contexts. Constructivist principles that encompass concepts of collaboration, interaction and dialogue, where the context and situated nature of learning are integral considerations, have been shown to be important underpinnings in the development of successful online learning communities. Motivation has been identified as a key factor in developing and sustaining a sense of community as well as learning and achievement in online contexts.

The review of the literature has highlighted the limited number and scope of studies that have explored motivation to learn in online learning settings. Moreover, the majority of existing studies have either adopted a behaviourist approach, focusing on the environment, or a cognitive perspective that concentrates on the characteristics of the learner. Both overlook the dynamic and responsive nature of motivation to learn. Contemporary theories of motivation have been used to underpin some research. However, they have generally been applied in limited ways. Studies that have used a situated approach do exist, but are also limited in terms of the breadth of social and contextual motivational influences explored and their use of narrow conceptualisations

of motivation. An example of this has been the tendency to view intrinsic and extrinsic motivation as opposites and to focus exclusively on intrinsic motivation in studies using self-determination theory as a conceptual framework. Taken together, these issues highlight the need for research that explores motivation from a contemporary situated perspective, in 'real-life' online settings that includes consideration of a broad range of social and contextual influences.

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