

Exploring Motivation in an Online Context: A Case Study

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Abstract

With the increasing ubiquity of new technologies, many claims are being made about their potential to transform tertiary education. In order for this transformation to be realized, however, a range of issues needs to be addressed. Research evidence suggests that motivation is an important consideration for online learners. This paper reports on one aspect of a case study situated within a larger study that investigates the nature of motivation to learn of preservice teachers in an online environment. Using self-determination theory as an analytical framework, the focus here is on the underlying concepts of autonomy, competence, and relatedness. The ways in which certain social and contextual factors can foster perceptions of these needs being met are explored. These factors are known to have a supportive effect on learner motivation. Most prominent among these were the relevance of the learning activity, the provision of clear guidelines, and the ongoing support and feedback from the lecturer that was responsive to learners' needs. Supportive, caring relationships were also important.

The rapidly changing nature of digital information and communications technology is having a dramatic impact on how, where, and when individuals choose to learn (Harasim, 2012). Educational institutions are no less affected (Haythornthwaite & Andrews, 2011), including preservice teacher education, which has seen a dramatic increase in the availability of technology-enabled education programs over the last decade (Robinson & Latchem, 2003).

In a time of such rapid change, educators must be cognizant of factors that contribute to learning success in digitally mediated or augmented environments. Motivation is one such factor (Bekele, 2010). Perceptions regarding the motivation of online learners have developed out of earlier distance education models (Moore, 1993) and adult learning theories (Knowles, 1984) that consider such learners as being independent and self-efficacious and having high motivation to learn (McCombs & Vakili, 2005).

As the student population becomes increasingly diverse, the boundaries between formal, nonformal, and informal learning environments blur and new forms of online learning, such as massive open online courses (MOOCs) experience low completion rates (Liyaganawardena, Adams, & Williams, 2013), these underlying assumptions about distance education are being questioned (Haythornthwaite & Andrews, 2011). A growing body of research highlights motivation as an issue requiring further investigation in online contexts (Hartnett, St. George, & Dron, 2011; Keller, 2008; Kim & Frick, 2011).

Motivation

“To be motivated means *to be moved* to do something” (Ryan & Deci, 2000, p. 54; italics in original). 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. Therefore, it must be inferred from actions, such as choice of tasks, persistence, effort, and achievement, or from what individuals say about themselves (Schunk, Meece, & Pintrich, 2014).

Understanding the complexity of motivation is important, because it has practical implications for online instructors and instructional designers as well as learners. For example, motivation to learn 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 (Schunk et al., 2014).

Contemporary views of motivation emphasize the situated, interactive relationship between the learner and the learning environment (Turner & Patrick, 2008). Just as motivation is a key factor in learning and achievement in face-to-face educational settings (Brophy, 2010), so it is in online learning environments (Kim & Frick, 2011). Nevertheless, several researchers have highlighted the limited quantity and scope of research in online contexts (Bekele, 2010; Kim & Frick, 2011).

Furthermore, while contemporary theories of motivation acknowledge that aspects of motivation are dynamic and responsive to situations (Turner & Patrick, 2008), some studies have adopted such theories without acknowledgement of the bidirectional nature of motivation. Conceptual frameworks used to investigate motivation in online environments include Keller's (2010) ARCS (attention, relevance, confidence and satisfaction) model (Carpenter, 2011; Kim & Keller, 2008), self-efficacy (Moos & Azevedo, 2009), goal orientation (Dawson, Macfadyen, & Lockyer, 2009), interest (Moos & Azevedo, 2008), and intrinsic–extrinsic motivation (Shroff & Vogel, 2009), as well as various combinations of these constructs (e.g., Lin, Lin, & Laffey, 2008; Yukselturk & Bulut, 2007).

Self-Determination Theory of Motivation

Constructs commonly used when investigating motivation are intrinsic and extrinsic motivation. When people are intrinsically motivated to engage in an activity, they do so

for the interest or enjoyment inherent in the activity. In contrast, extrinsic motivation involves reasons separate from the activity (e.g., passing a course, the approval of others, the relevance or perceived worthwhileness of the learning).

Self-determination theory (SDT; Ryan & Deci, 2000) is an influential theory that explicates intrinsic and extrinsic motivation and one that has been applied in education, generally (Deci & Ryan, 2008), and preservice teacher education, more specifically (Evelein, Korthagen, & Brekelmans, 2008). This theory has been applied in both face-to-face (Brophy, 2010) and online contexts (Rienties et al., 2012).

SDT is a contemporary theory of situated motivation that acknowledges the complex and dynamic interplay of social and contextual factors underlying and influencing motivation to learn and is built on a fundamental premise relating to learner autonomy. SDT argues that all humans have an intrinsic need to be self-determining or autonomous, as well as to feel competent and to experience a sense of relatedness to others. The satisfaction of these basic needs promotes autonomous motivation and effective performance (Deci & Ryan, 2012).

Building on the work of Deci and Ryan (1985), Connell (1990) defined 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). 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” (pp. 51-52).

Within an SDT framework, Ryan and Deci's (2000) taxonomy of human motivation details a continuum of types of motivation “in terms of the extent to which the motivation for one's behaviour emanates from one's self” (p. 61). Importantly, it identifies several types of extrinsic motivation, which vary in terms of autonomy or self-determination, from the classic externally controlled motivation through increasingly more autonomous, volitional, and valued types of extrinsic motivation, even though the motivational drivers still involve outcomes separate from the activity itself.

The degree to which an individual expresses self-determined forms of extrinsic motivation, or alternatively, intrinsic motivation (this being the most self-determined type of motivation), depends on whether their innate needs of autonomy, competence, and relatedness are met by factors within the learning environment (Ryan & Deci, 2000). When autonomous, students attribute their actions to an internal perceived locus of causality and experience a sense of freedom and choice over their actions (Reeve, Ryan, Deci, & Jang, 2008).

Support for competence is also necessary to facilitate motivation (Deci, Vallerand, Pelletier, & Ryan, 1991), and external events convey information about a person's competence or skill level. SDT also hypothesizes that autonomous motivation is more likely to flourish in situations where learners experience a secure sense of belonging (Deci & Ryan, 2008). The three broad needs are interrelated and feed one another, positively or negatively.

Research in face-to-face contexts has shown that autonomy support within the learning context leads to more self-determined motivation among learners (Deci & Ryan, 2008). Examples include providing rationales for tasks, the use of noncontrolling language, and the provision of relevant and meaningful instructional activities that align with students'

personal interests. Choice has also been shown to be supportive of learners' autonomy needs (Patall, Cooper, & Robinson, 2008). However, the perception of choice, or lack of it, rather than the actual choice 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 may include such things as explicit, detailed information that clarifies expectations without seeking to control behavior; provision of informational feedback; and responsiveness to student questions, comments, and suggestions (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 high quality (i.e., more self-determined) motivation.

Support for relatedness needs additionally impacts motivation to learn. The more individuals' autonomy and competence needs are met within a supportive interpersonal relationship, the more connected and trusting they feel toward that person (Ryan, La Guardia, Solky-Butzel, Chirkov, & Kim, 2005). Teacher involvement in terms of the amount of time invested, care taken, and attention given has been shown to be a powerful motivator (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).

Several online studies have utilized self-determination theory as a theoretical basis (Hartnett et al., 2011; Rienties et al., 2012; Xie, DeBacker, & Ferguson, 2006). Comparative studies are common (Shroff & Vogel, 2009; Wighting, Liu, & Rovai, 2008), and findings have indicated that online students were more intrinsically motivated than were their on-campus counterparts.

Other research has suggested that learners' perceptions of autonomy were predictive of both intrinsic and extrinsic motivation (Huang & Liaw, 2007). Intrinsic motivation was associated with greater exploration of the learning environment (Martens, Gulikers, & Bastiaens, 2004), and intrinsic goal orientation was significantly positively correlated with online success (Yukselturk & Bulut, 2007). Together, these studies suggest that learners' perceptions of autonomy are important in fostering online students' intrinsic motivation.

These studies have also 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 (Hartnett et al. 2011; Xie et al., 2006), however, draw on multiple perspectives (i.e., of both instructors and students) or examine more self-determined forms of extrinsic motivation (Hartnett, 2010). The study by (Hartnett et al., 2011) is distinctive in highlighting the complex, multifaceted, situation-dependent nature of motivation in online contexts.

Furthermore, with the exception of research by Hartnett et al., none of the studies clarified which of the different psychological needs of SDT were supported by the

identified contextual factors. Arguably, for example, clearly stated guidelines and well-designed discussion topics guide, clarify, and facilitate the learning process, thereby supporting a learner's need to feel effective and competent. In other words, the support for learners' *competence* needs rather than their *autonomy* needs fostered the observed intrinsic motivation.

The current research sought to go beyond existing research by using the underlying concepts of SDT (i.e., autonomy, competence, and relatedness) as critical lenses to untangle the multiple influences on motivation that combine in complex ways in an online context. Thus, we aimed to shed light on the ways in which the different psychological needs of learners were affected by a range of social and contextual influences.

The Study

This paper utilizes the dataset of a larger study (Hartnett, 2010) that explored the motivation of preservice teachers situated within real-life online learning contexts. While the main study explored and identified a broad range of influences that either supported or undermined learners' motivation in two online learning contexts, results presented and discussed here focus on only those that fostered perceptions of motivation among learners in one context.

Our purpose is to discuss in depth the complex interplay of factors that emerged as supporting motivation to learn. Factors that can unintentionally undermine motivation in online contexts are explored elsewhere (Hartnett, 2010). The question guiding the investigation was, In what ways do social and contextual factors relate to preservice teachers' autonomy, competence, and relatedness needs in an online learning environment?

Case Study

This study was exploratory in nature, and we sought to identify, explore, and understand preservice teachers' learning experiences as they related to their motivation to learn in a specific online context. Therefore, the methodology adopted was case study, because such an approach can be of value where the research aims to investigate a complex phenomenon embedded in the real world, where the scope is difficult to define and can only be understood within context (Yin, 2009).

Purposive sampling (Patton, 2002) was adopted where predetermined criteria of importance were used to ensure relevance to the research question. In particular, (a) the course was required to be predominantly online with only limited resources provided by alternative methods such as print-based materials; and (b) course expectations required students to participate within the online learning community as an integral part of coursework.

Procedures

Ethical approval to undertake the study was gained prior to commencement. Data collection procedures comprised online questionnaires and face-to-face, semistructured interviews (undertaken after the completion and marking of relevant coursework); and online asynchronous discussion transcripts (generated during the course but collected after all coursework was completed, graded, and results submitted).

The questionnaire collected demographic information; self-report measures of motivation using the situational motivational scale (SIMS) developed by Guay, Vallerand, and Blanchard (2000) that operationalizes the self-determination continuum; and open-ended questions developed to gain insight into possible relationships between social and contextual influences and learners' motivation. The SIMS scale measures situational intrinsic motivation, extrinsic forms of motivation (identified regulation, external regulation) and amotivation using 16 seven-point Likert scales with four questions for each motivation subscale (see Guay et al., 2000, p. 210 for the complete questionnaire). The four subscales' internal consistency values (Cronbach's α) ranged from .77 to .95. Interviews were undertaken to further explore participants' experiences, as well as how the context influenced their thinking, feeling, behavior, and motivation in an online environment.

Both open-ended questionnaire responses and interview questions were developed with reference to current motivation literature. Collecting online asynchronous discussion transcripts enabled perceptions of both lecturer and student participants, evident from interview and questionnaire data, to be confirmed or anomalies highlighted.

Context and Participants

The course that provided the context for the case study presented here was situated within the larger context of a preservice teacher education program within a New Zealand tertiary institution. Students in this program were preparing to teach in New Zealand primary (i.e., elementary) schools.

The case itself was positioned within an introductory social studies curriculum course that formed a compulsory component of the program. Students usually took this course in the second year of their degree, which was considered Internet-based rather than fully online, because students received some print material (study guide) at the beginning of the semester.

Assessment for this course comprised three assignments. The individual microteaching assignment required students to plan and teach two consecutive lessons to a group of four to six students in a school of their choice and formed the boundary for the case. The first lesson had to include a diagnostic activity to identify the children's current understanding and prior experiences of the social studies concept the student wanted to develop. Based on the results of the diagnostic activity, the second lesson then developed the children's conceptual understandings in the chosen area, followed by a formative assessment task to provide evidence of the children's learning.

Next, students were required to annotate children's work samples, collected during these lessons, highlighting effective learning in social studies. Finally, students were required to reflect on how well they developed children's understanding of key aspects of learning with reference to the literature. Students completed this assignment over a 4-week period, which was worth 40% of the final grade and was assessed on all aspects of the assignment.

During this time, students were also required to engage with peers in the wider class and contribute to weekly online activities designed to support this process. The lecturer posted details in online weekly messages that were designed primarily to scaffold the learning process (e.g., development of diagnostic activity) as well as provided details of what students were required to do. The online learning platform used for online communication and most content delivery was the WebCT Learning Management

System. The course had been delivered online by this lecturer for several years prior to this research investigation and was well established. The lecturer was responsible for all online teaching and assessment throughout the semester. She considered herself an experienced online teacher in the context of this course. In addition, she was an experienced lecturer in the field of social studies, having taught in the undergraduate teacher education program for a number of years prior to this investigation.

Collectively, 9 student participants took part in the study (out of a possible 47 taking the course) and 1 lecturer. Student participants were located throughout New Zealand and undertook their courses at a distance from the main campus. Two of these students were located at a small satellite campus of the institution. The student participant group comprised 1 male and 8 females, with participants' ages ranging from 18 to 55 and 78% in the over-24 age group.

Data Analysis

Both inductive and deductive analysis occurred within this research investigation. SDT (in particular, psychological needs and the continuum of motivation types) provided sensitizing concepts with which to explore the qualitative data (Blumer, 2006). An inductive approach geared to allowing additional patterns, themes, and categories to emerge from the data occurred concurrently (Bogdan & Biklen, 2007).

This approach also allowed for the possibility of disconfirming influences to emerge, including themes indicating that motivation was undermined rather than supported and themes that did not fit within the SDT framework. The qualitative analysis software package NVivo was used to facilitate and manage the complex, iterative process of analyzing the qualitative data.

This process involved reading and rereading all qualitative data to get a sense of the breadth of responses and the possible range of codes needed to identify themes. Each theme was assigned a code, and each coded piece of text was placed at a node named in such a way that it described the essence of the idea identified. In this way, chunks of text with similar ideas were able to be stored together. These pieces of text varied in length and were coded at all relevant nodes depending on whether single or multiple themes were identified. One researcher coded all of the qualitative dataset.

Results

SDT is used here as an organizing framework to present the findings. Within each organizing concept, key social and contextual factors are identified and explored to determine how they facilitated perceptions of autonomy, competence, and a sense of relatedness. No one factor enabled all the psychological needs of learners to be met. Rather, learners' perceptions of the extent to which this occurred were formed from multiple influences that combined in complex ways. SIMS scale questionnaire data that identified the different types of motivation participants experienced during the microteaching activity are reported elsewhere (Hartnett et al., 2011).

Autonomy Supportive Themes

Overall, participants perceived themselves as autonomous while engaged in the microteaching assignment and associated online activities, as indicated by the following comments:

- “It was really valuable because so much of what we do in other courses is prescribed that, you know, you need to have the experience of making your own choices and making your own mistakes or your own successes.” (Student1, Interview)
- “I liked the freedom, yeah the freedom of that....We could choose our own strand, our own levels, our own school” (Student2, Interview).

Several significant themes and subthemes emerged as facilitating learners' perceptions of autonomy (see Table 1).

Table 1
Influences That Supported Perceptions of Autonomy, Competence and Relatedness

Themes	Frequency Count
Autonomy Supportive Themes	
Task relevance & meaning (professional or personal)	55
Interest (situational or personal)	52
Actively use knowledge in practice	32
Autonomy supportive lecturer	20
Provision of choice	19
Competence Supportive Themes	
Clear guidelines and expectations	90
Ongoing guidance and supportive feedback	65
Responsiveness of the lecturer	60
Judgments of high self-efficacy	52
Helpful and supportive peers	30
Perceptions of useful course resources	25
Optimal challenge	23
Relatedness Supportive Themes	
Relationship with lecturer	71
Relationships with peers	55

The relevance and meaning of the activities emerged as the most salient theme that supported the autonomy of participants. Within this major theme, two key subthemes emerged: professional relevance and personal relevance. Example comments included, “This assignment was exactly what the course is about and indeed what we are studying to be is all about – teaching” (Student2, questionnaire), and “It related to...things that you could really use in the class; you could just imagine how useful it is and how well it works” (Student6, interview).

The second subtheme was associated with the relevance of the assignment in terms of the personal relevance and meaning the activity engendered for participants. Being able to make connections from the course content to their everyday lives, in terms of existing interests and prior experiences, enhanced the meaningfulness for participants, as the following comment indicates:

It actually was really quite interesting....The school had just had a jubilee and I thought, “Well, I'll focus it around that and doing other celebrations.” And it was just before ANZAC Day [national day of remembrance in Australia and New

Zealand] and my husband has got medals, so I could take those. (Student3, interview).

The autonomy needs of learners were further supported through the promotion of interest in two distinct ways. Situational interest (i.e., features of the learning activity itself that participants found interesting) was promoted in the form of online discussions that were considered “quite hot topics,” as noted by Student1: “I got the impression that people were participating quite regularly because it's just interesting” (interview). Other students noted the lecturer's teaching approach: “I mean, you could tell that she loves social studies....She's got lots to share with you. She's not withholding anything. She just wants social studies out there” (Student2, interview).

Moreover, activities that provided opportunities to pursue personal interests were key mechanisms that supported autonomy, as revealed by the following example:

I decided to take it into the fact or opinion kind of evaluation or, you know, inquiry aspect of that, that intrigues me. I mean anything to do with getting kids to think about why they are thinking fascinates me. (Student7, interview)

Being able to use knowledge actively in practice was also seen as important and valuable and was the next most prominent theme highlighted by learners. The following remark is indicative of what this meant to learners:

I think it was probably the best thing that you could do....You know, you learn all about social studies...and then you are faced with the problem, well, how am I going to teach that? You know, it's like, “Oh wow okay, I've just read all about it, so now I have to actually work out for myself how that's going to go.” (Student2, interview)

Another theme to emerge was the autonomy supportive approach adopted by the lecturer, for whom sharing of power was a central consideration: “For me, it's a sharing of power, acknowledging I do have power. I'm marking their work, that gives me power, but I'm acknowledging it and...I'm trying to reach out and build them up” (Lecturer, Interview).

In addition to sharing power, the lecturer supported learners' autonomy by using a communication style that conveyed flexibility and personal responsibility to the learner. The following message was received by several participants in relation to their lack of discussion about their ideas for the upcoming microteaching activity. While she reiterated her expectations, she worded it in a way that emphasized her willingness to support them through the planning and development of their microteaching lessons:

Just come in to support your thinking about your microteaching....All other groups have been talking on line....I know you might meet but you also need to participate here so I can see/hear and add to your thoughts. Hope there's something up by Monday. (Lecturer, online discussion)

Two thirds of participants, thus, developed perceptions of autonomy, as illustrated by the following comments:

- “I loved how she brought it across, because she wasn't serious, and this is how it is, and this is how it's going to be, and she gave us the freedom to explore” (Student3, interview).

- “Isn't it lovely to feel worthwhile & capable & valued” (Student9, online transcript).

Participants also perceived that many choices were available to them. Having choice was perceived as freeing and having no limits, as the following remarks attest:

- “Choice is very important to me in a motivational sense” (Student7, questionnaire).
- “Choice in the microteaching subject gave me practice at identifying authentic and engaging learning contexts for the children (critical to social studies) so it was a good learning experience for me” (Student1, questionnaire).

Not all participants experienced this sense of choice. Several participants talked of having limited choices. Those who expressed a lack of choice focused on the compulsory nature of the assignment (e.g., “I felt there was not much choice in this assignment. I needed to do it for this course,” Student5, questionnaire). Other factors undermining perceptions of autonomy for several participants included time constraints (i.e., factors outside the immediate learning context, such as other study commitments, impacting on the time available) and technology constraints (i.e., perceived limitations of the text-based asynchronous medium).

Competence Supportive Themes

All participants reported a sense of competence within the microteaching context. The following comment, which was indicative of comments made by all participants, provides a clear example of their sentiments:

When I first started the course, I thought social studies, and I didn't really have a clear picture of what teaching social studies would actually mean. What would I actually be teaching? But I do now....I'm sure I've got a lot more to learn but it's a lot clearer and a lot more confident. (Student6, Interview)

Seven main themes emerged as facilitating learners' perceptions of competence while engaged in the microteaching assignment and associated scaffolding activities (see Table 1).

Support for learners' competence needs was principally achieved through the provision of clear guidelines and expectations. One student described the activities as follows:

The overall structure was clearly defined and followed a logical progression. The fact that little time [was] needed to be spent on interpreting the requirements (as, sadly, can so often be the case with academic courses) made for a more efficient and effective approach to planning. (Student7, questionnaire).

Another student said that students could “simply ‘get on with it,’ without needing to seek clarification” (Student1, questionnaire).

Students perceived high-quality, ongoing guidance and supportive feedback from the lecturer. Example comments included the following:

- “We have all got lots of support and positive feedback which encourages us to keep trying; it also keeps our motivation up” (Student9, questionnaire).

- “We depend so much on what the lecturer would say about things we don't understand and...[when] the lecturer is responding to it or explain[s] a bit more it will be very, very good.” (Student8, interview).

The timeliness and responsiveness of that support was also found to be crucial in fostering perceptions of growing competence among learners. Students perceived their lecturer as “very helpful; actually she is one of the most helpful I've encountered...always giving us notes and tips and always there and when you ask her something she replies” (Student8, interview). Another student said, “She has always made herself available, and there has always been lots of positive interaction and I think that that has made a big difference” (Student9, interview).

Learning activities that encouraged judgments of high self-efficacy by building on learners' prior knowledge and experience, as well as allowing them to implement planned lessons successfully in an authentic context encouraged learners' sense of competence to continue to grow throughout the activity. The following comments reflect those made by participants:

- “Lessons that I had taught in the past, I just sort of used the ideas from that and the planning and things like that” (Student5, interview).
- “Actually going into a school and doing those two microsessions has given me a lot more confidence and just more knowledge of how to use the curriculum” (Student6, interview).

Not all participants experienced high levels of efficacy. Two students questioned their ability to complete the assignment successfully because of the requirement to learn within an online environment. These students were located at the satellite campus of the institution where the majority of their courses (excluding this one) were offered in a traditional face-to-face format. These differing circumstances meant they had less prior experience with online learning than other participants in the group. Their statements included the following: “[It's] a big one for me especially with the online learning because I...don't feel that I was capable enough to do it” (Student4, interview).

Being able to ask questions and make comments or suggestions, either within the class forum or to specific peers, was seen as a further source of support and encouragement. The participant group as a whole talked about the academic support they provided and received from each other; for example, “If you had a problem, you just go to someone else and say, 'Hey, look, can you clarify that? You seem to have a really clear understanding'....That help is always there” (Student3, interview).

Another theme emerging from the data in support of students' competence needs was the perceived usefulness and completeness of the course resources. Participants expressed confidence about their capabilities to complete the assignment successfully, as in the following statement:

The study guide, lectures, and readings were very useful—providing a lot of information about planning for social studies, and strategies for inquiry, values exploration, and social decision making in the classroom. I did not require any additional resources (other than online exemplars)—the study guide, lecture notes etc. for this course were very complete. (Student1, questionnaire)

Finally, activities that were optimally challenging (i.e., where skill level and challenge are high and reasonably well-matched) supported perceptions of competence, as the

following comment indicates: “I felt this assignment was fantastic for bringing together all of my skills and what I have learnt” (Student2, questionnaire).

Relatedness Supportive Themes

Overwhelmingly, participants reported strong connections to others within the learning environment. The following comments were indicative of those expressed by all participants including the lecturer:

- “She [the lecturer] is just so easy to talk to and because she is easy to talk to, you find everyone else is a lot freer to talk about things....She sets the tone or the theme.” (Student3, Interview)
- “The dialog and the connection and the lovely things that you hear them say to each other.” (Lecturer, Interview)

Two themes emerged as supportive of learners' relatedness needs (see Table 1): the relationship with the lecturer and relationships with peers.

The most salient of these was the sense of connectedness with the lecturer. This theme encompassed several aspects that included the friendly, open, and caring approach of the lecturer; her willingness to share personal information; and her modeling of inclusivity and respect. This connection, in turn, encouraged learners to respond in a similar manner.

Student perceptions of the lecturer as caring and friendly were important in supporting learners' relationship needs: “So nice to have such an interactive tutor, who cares where we're at too” (Student9, online transcript).

The lecturer's willingness to share personal information allowed learners to “relate to [the lecturer] as a person and not a lecturer” (Student4, interview) and “appreciate who she is and what she's doing and where she is at in her life” (Student6, interview). Another student stated that the lecturer modeled inclusivity and respect that “embraced the whole lot of us as individuals, but as a group we were all valid. Everybody's point of view is valid” (Student9, interview).

Peers who were perceived as friendly and caring, valued the contributions made by each individual, and respected what they had to offer, established mutually supportive relationships with fellow learners. These relationships were described as “friendliness” in an interview with Student7. Student3 said, “Everyone has got an opinion; everyone is valued for their opinion” (interview).

In addition, participants commented on the importance of the online inclusive learning community, in which their learning was situated where “we could all be open and honest and feel safe” (Student9, interview) as a result of the lecturer trying “to make everybody feel included” (Student4, interview).

Discussion

Influences Supporting Perceptions of Autonomy

Relevance and Meaning. The importance of the learning activity in terms of its relevance and meaning emerged as a central theme that fostered the expression of

autonomous motivation among learners. The importance of connecting to the lives of learners was evident.

All participants saw a clear link between their own experience during the activity and its relevance to their future teaching practice. The usefulness or utility value of the activity (i.e., a means to achieving a future goal) they were undertaking was clear, and they identified with it. Highlighting the relevance and applicability of an activity to future goals has been identified previously as important for supporting the autonomy needs of learners resulting in more self-determined motivation (Brophy, 2010).

The ability to make connections from the course content to their everyday lives, in terms of existing interests and prior experiences, enhanced the meaningfulness of the task and encouraged personal involvement for 7 of the 9 students. Learning activities that are relevant to personal goals, values, and interests have previously been shown to be autonomy supportive (Reeve et al., 2008). Personal relevance and task value are important sources of motivation to learn in online contexts as noted in previous studies (Artino, 2007; Keller, 2008; Xie et al., 2006).

Promotion of Interest. The lecturer supported learners' autonomy needs through the promotion and maintenance of situational interest—interest generated by certain conditions in the learning environment (i.e., online activities that were considered hot topics and the lecturer's enthusiasm for her subject). Maintained situational interest tends to be more sustained and has the effect of focusing attention over an extended period of time (Hidi & Renninger, 2006).

Interest is always content specific (Krapp, 2002). All participants reported being engaged, at least in part, because of the interest generated within the learning situation. Additionally, the lecturer created ongoing situational interest by the inclusion of regular online activities and resources that were topical, relevant, and meaningful, both personally and professionally, an approach supported by Hidi and Renninger (2006). The lecturer's passion, enthusiasm, and commitment to her subject were other important factors that promoted learner interest as well feelings of connectedness with the lecturer and among participants. This finding corresponds to prior research that has shown situational interest and social relatedness to be significantly correlated (Boekaerts & Minnaert, 2006) and the importance of social presence of the teacher to learner motivation (Kehrwald, 2008).

The promotion of situational interest is an important finding, because it demonstrates that, while the potential for interest lies within the individual (Hidi & Renninger, 2006), the situation—in this case the teaching approach—also has an important bearing on its development and, therefore, by definition, motivation.

Seven out of the 9 participants also expressed a strong, well-developed preexisting individual interest in social studies content, which was further enhanced by the autonomy supportive context of the microteaching task. Opportunities to link learning activities to areas of personal interest have been shown previously to support autonomy, thereby promoting more self-determined forms of motivation (both intrinsic and extrinsic; Reeve et al., 2008).

Opportunities to Use Subject Knowledge in Practice. Students liked being active and being able to put into practice what they were learning in an authentic way. All the participants said that having opportunities for action was a key feature that helped them to understand the importance, relevance, and value of the tasks, particularly to their

future teaching practice. Tasks that involve a high degree of participation and activity have been shown to promote motivation (Reeve, Deci, & Ryan, 2004), learner engagement, and deeper understanding (Brophy, 2010; Keller, 2008).

Autonomy Supportive Lecturer. The lecturer's online communication style emphasized flexibility and personal student responsibility rather than seeking compliance. The use of explicit, detailed information that clarifies what is required without seeking to control behavior has been identified previously as an important characteristic of autonomy supportive teachers (Reeve, 2009).

Provision of Choice. Most participants expressed perceptions that they had considerable choice. When the choices available were perceived as appealing, learners could align learning activities with their individual interests. Students indicated that the provision of choice enabled them to make connections between what they were learning and their personal and future teaching goals. While the term connectedness is often used in the context of interpersonal relationships, it can also be applied to teachers' provision of learning activities that connect to learners' lives, in terms of relevance to their needs, values, and personal goals.

Having opportunities to choose how and when to act promotes perceptions of choice, an internal locus of causality, and greater volition, according to Van Etten, Pressley, McInerney, & Liem (2008). The choices offered were not perceived by these participants as trivial or superficial, as can sometimes be the case with, for example, option choices (Reeve et al., 2003).

Influences That Supported Perceptions of Competence

Clear Guidelines and Expectations. All participants perceived that the amount, clarity and quality of information relating to the goals, guidelines and expectations of the assignment were sufficient and appropriate for their needs. From their perspectives, the quality of information provided a framework that assisted them in working towards the learning objectives of the activity with a measure of confidence. In this sense, the clear structure and guidelines likely not only supported competence needs but also perceptions of autonomy. Students make connections between assignment requirements and course goals, a factor known to promote motivation (Van Etten et al., 2008).

The fact that high structure within the learning activity can coexist and be seen as mutually supportive rather than conflicting with the autonomy needs of learners has been noted previously (Jang, Reeve, & Deci, 2010). This conceptualization of structure and autonomy as two independent, mutually supportive contextual variables (Guay, Ratelle, & Chantal, 2008) is somewhat different than the notions in some distance education literature that learner autonomy and structure have an inverse relationship (Moore, 1993). That inverse relationship is due to a somewhat different interpretation of structure as a vehicle for teacher control, rather than as a means for learners to feel in control of their own learning.

Ongoing Guidance and Supportive Feedback. All participants perceived that the information they received from the lecturer guided, clarified, and facilitated the learning process, thereby supporting their need to feel effective. Previous research (Jang et al., 2010) has shown that intrinsic motivation and self-determined extrinsic motivation are most prevalent in learning environments where teachers provide structure (e.g., regular, constructive feedback) in an autonomy supportive manner (e.g., using informational language).

Timeliness and Responsiveness. Being available and approachable and answering queries promptly were also viewed by the participants as ways in which the lecturer provided support for their developing understanding. When a participant posed a question or needed assistance, students perceived the lecturer replied quickly, increasing their perceptions of responsiveness and online presence (as was also found in Bekele, 2010; Carpenter, 2011; Xie et al., 2006).

Judgments of High Self-Efficacy. The ways in which self-efficacy was fostered during the microteaching assignment was perceived as important in meeting participants' competence needs. The assignment built on the prior knowledge and experience of learners, including microteaching and lesson planning mastery experiences, as well as existing subject knowledge. These factors were key in high self-efficacy judgments made by participants on commencing the assignment. Moreover, they had opportunities to put knowledge learned into practice in an authentic context. With verbal persuasion from the lecturer (as in Bandura, 1997) in the form of feedback and support, learners' sense of competence continued to grow throughout the activity.

Helpful and Supportive Peers. Interaction was a way in which students met the competence needs of their classmates. The ways in which students provided learning assistance and support to each other in the form of clarifying expectations, sharing ideas, or offering suggestions contributed to their feelings that their competence needs were met.

Being able to seek and gain assistance from classmates was seen as a source of support and encouragement that, in conjunction with a supportive lecturer, met their needs to feel proficient within this context. It also demonstrated that tasks that may be difficult to accomplish alone could be achieved with the help of more competent others (Vygotsky, 1978), contributing to positive (i.e., more self-determined) patterns of motivation.

The value of collaboration has been well documented in the motivation (e.g., Brophy, 2010) and online learning (e.g., Anderson, 2006) literature, often in terms of meeting learners' relatedness or social connectedness needs. In the study described here, support from peers also assisted in supporting the competence needs of students, which corresponds with previous studies (Van Etten et al., 2008; Xie, et al., 2006). The importance of fellow learners providing learning assistance and supporting the competence needs of their peers can be found in the community of inquiry model and the concept of teaching presence (Garrison, Anderson, & Archer, 2000).

Usefulness and Relevance of the Resources Provided. Participants perceived the learning resources as useful in terms of (a) providing guidance that assisted them in navigating their way through the learning process and (b) supplying exemplars that clarified expectations in terms of quality of work. Structure supports competence needs, as reflected in previous studies in both traditional (Reeve et al., 2004) and online (Xie et al., 2006) settings.

Optimal Challenge. All participants perceived the learning activity to be optimally challenging, that is, where skill level and challenge were high and reasonably well-matched, and experienced a sense of satisfaction and achievement. Shroff, Vogel, and Coombes (2008) have shown that these feelings can contribute to expressions of higher self-determined motivation.

Influences That Supported Perceptions of Relatedness

Relationship With Lecturer. The supportive, caring approach of the lecturer was viewed by all participants as a positive, key feature of their experience. Teacher involvement has been shown to be a strong motivator for learners (Brophy, 2010). Online studies of motivation have also found that involvement of the instructor was critical in supporting students' intrinsic motivation (Xie et al., 2006). More broadly, the value of social bonds in the online learning process (Rovai & Lucking, 2003), the social role of the online tutor (Anderson, 2006), and the need for skillful online facilitation by the instructor in order to nurture social presence and the development of an online community (Rovai, 2007) are well-recognized in the online literature.

The sharing of personal information through self-disclosure (by the lecturer) was highlighted by participants as a further way in which their need to experience personal connections was supported. The use of self-disclosure has been identified as a way of encouraging the development of relationships in online environments and is one of the affective indicators of social presence in online contexts (Kehrwald, 2008).

Experiences of feeling included and respected by the lecturer likely additionally supported the development of relationships and, consequently, the expression of more self-determined motivation. The adoption of a respectful and inclusive approach by the lecturer where multiple perspectives were appreciated seemed to encourage the development of an inclusive and respectful attitude among learners within the learning community (as also noted in Rovai, 2007).

Relationships With Peers. The importance of relationships with peers was evident across this investigation. The ways in which students in the wider class were friendly and caring, valued individual contributions, and demonstrated a respectful attitude contributed to their relatedness needs being met. In addition, participants commented on the importance of the inclusive learning community in which their learning was situated. The role played by the teacher in modeling this type of approach was highlighted by participants as critical to the development of an inclusive, respectful community.

The importance of inclusion and respect have been noted in the literature in terms of (a) encouraging and supporting motivation across diverse groups of students (Ginsberg & Wlodkowski, 2000), and (b) enabling the development of online communities along with the feelings of connectedness and social presence this can engender (Rovai, 2007).

Implications

This study has demonstrated that perceptions of autonomy, competence, and relatedness by learners (which contribute toward feelings of self-determination) were influenced by online teaching practices, the design of learning activities, and the social aspects of the tasks in which they were engaged. This finding is hardly new or surprising given our current understanding of the situated nature of learning in traditional (Lave & Wenger, 1991) and online (Wegerif, 1998) contexts.

What is new is the consideration of these influences from a motivation perspective (through the analytical lenses of SDT) and the findings that, similar to learning, motivation is also context-dependent. The implication is that differing circumstances of students within the learning context need to be considered and, where possible, accommodated in order to support learners' psychological needs and the expression of high quality (i.e., more self-determined) motivation among learners.

For online instructors, this means taking the time to find out the individual circumstances of students and remaining alert to anything that might result in course requirements being perceived as constraining in some way. By establishing frequent, ongoing communication with learners, where they feel able to discuss issues in an open and honest manner without fear of censorship, online instructors are in a better position to monitor and respond to situational factors that could potentially undermine learner motivation.

By providing guidelines and expectations at the outset of an activity that are as clear, detailed, and as unambiguous as possible, instructors can support learners' competence needs. Furthermore, learning activities need to be optimally challenging by building on the prior knowledge, skills, and experience of learners. Online instructors must be familiar with students' prior learning and develop activities accordingly. Additionally, online instructors need to monitor learners' progress on an individual basis, as not all students will feel that they have the necessary knowledge and skills to succeed.

Even when initial guidelines are clear and the challenge of the task and the skill level of learners are well-matched, the majority of learners still require varying degrees of ongoing task-related guidance and formative feedback to ensure that self-efficacy judgments remain high. This guidance needs to be offered in a timely, responsive, and informational manner. That is, feedback needs to be specific and detailed in order to clarify areas of student work that need addressing, and it needs to be communicated in a way that highlights these as problems to be solved (with support) rather than as criticism.

Teachers and instructional designers also need to be cognizant of the important role they play in influencing learner motivation when designing learning activities. Most importantly, the relevance and value of the task (e.g., online discussions) need to be clearly identified and linked to learning objectives to help learners understand how the activity can aid in the realization of personal goals, aspirations, and interests, both in the shorter and longer term. With meaningful choice (i.e., not just option choices) that allows learners to pursue topics of interest to them, the perceived value of the activity is further enhanced. In addition, designing activities that enable students to apply new learning in an authentic way (e.g., work-based practice) can promote immediate interest as well as help them to appreciate the larger importance of what they are learning.

By not equating autonomy with independence, as other have suggested (Moore, 1993), but instead envisaging autonomous acts as those “fully endorsed by the self and thus in accord with abiding values and interests” (Ryan & Deci, 2006, p. 1560), this study has shown that learner autonomy and social relatedness can not only coexist but combine in ways that promote motivation to learn. Therefore, establishing a supportive network among learners within the wider class is an additional important motivation consideration.

Interaction is an essential element of a supportive community and must be built in to the overall structure of the course (Rovai, 2007). Respect, concern for others, and a culture of inclusiveness help to promote quality online interaction, which should be modeled by the online instructor. Strategies such as adopting a friendly approach and being willing to share relevant personal experiences are ways in which online instructors can develop and model supportive online relationships that facilitate motivation to learn.

Limitations

As with all research, there are a number of limitations with this study. The use of case study methodology meant that research findings are associated with a particular chosen context, namely one course that formed part of a preservice teacher education program within a single New Zealand university. The small number of participants also limits the transferability of the findings. The purpose of the research was to explore ways in which motivation to learn was supported within a specific context, not to provide nor to empirically validate a model. The findings are not generalizable. Our observations provide further evidence that motivation is a complex, multifaceted, and situation-dependent construct in which learners, their teachers, the learning design, the technological, and the organizational context play important and mutually constitutive roles.

Conclusion

Using the underlying concepts of self-determination theory, this study has uncovered a range of social and contextual factors that support autonomy, competence, and relatedness in an online course. In doing so, this study has developed, evaluated, and provided evidence for a richer model of supportive influences on motivation than has been previously attempted in studies of online learning.

In particular, the identification of a range of factors that support self-determined extrinsic motivation as well as intrinsic motivation offers practical assistance in supporting teachers' understanding of the dynamic interplay of factors that can support student motivation. These factors may assist in the creation of useful guidelines for teachers and instructional designers when considering the development of, and teaching within, online educational contexts, including newly emerging learning environments such as MOOCs.

The interplay of factors will vary within any given context and will almost certainly be different for every participant within it. But unless this complexity is recognized and understood, however, the risk of being inadequately prepared to face the challenge of developing practices that support the motivation of learners in the future is real.

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