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Teachers' Perspectives on Motivation in High School Distance Education

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Abstract

Motivation in distance education (DE) has been studied mostly at the postsecondary level with few studies having been conducted at the high-school level. This paper breaks with this tradition by reporting on the perspectives on motivation of 42 Canadian high-school DE teachers. Data collection involved one-hour long, semi-structured telephone interviews across the eastern, central, and western areas of the country. Data analysis of transcribed interviews resulted in the identification of 16 sub-categories which were further grouped under three main categories as follows: 1. Communication, Interaction, and Social Presence; 2. Intrinsic and Extrinsic Motivators; and 3. Learner-Centered Designs. Findings are presented according to the 16 sub-categories and discussed in relation to the three categories and in relation to the theoretical and empirical literature.

Résumé

La motivation dans l'éducation à distance (ÉD) a surtout été étudiée au niveau postsecondaire alors que peu d'études ont été menées au niveau secondaire. Cette étude rompt avec cette tradition en relatant les perspectives en lien avec la motivation de 42 enseignants d'ÉD canadiens de niveau secondaire. Les données colligées impliquaient des sondages téléphoniques semi-structurés d'une durée d'une heure, menés dans l'est, le centre et l'ouest du pays. L'analyse des données des transcriptions d'entrevues ont eu pour résultat l'indentification de 16 sous-catégories qui ont été groupées sous trois catégories principales, à savoir : 1. Communication, interaction et présence sociale; 2. Motivateurs intrinsèques et extrinsèques; et 3. Concepts centrés sur l'étudiant. Les conclusions sont présentées selon les 16 sous-catégories et sont discutées en lien avec les trois catégories et en lien avec la littérature théorique et empirique.

Introduction

Motivation is one of the most significant components of learning in any educational context (Maeher, 1984). It has been identified as a determinant of student satisfaction and perceived learning outcomes in distance education (DE) environments (Eom, Wen, & Ashill, 2006). While motivation is critical for student success in DE (Choi & Johnson, 2005;

Liao, 2006; Lim & Kim, 2003), it is not always easily promoted. A lack of nonverbal and nonvisual cues may hinder communication and students may feel socially isolated (Kerka, 1996). They may have little or no supervision and some students may procrastinate (Rovai, Ponton, Wighting, & Baker, 2007; Tuckman, 2007). Lack of motivation has been identified as a cause of student attrition in DE (Smith, Clark, & Blomeyer, 2005; Visser, Plomp, Amirault, & Kuiper, 2002).

In general, motivating students in DE contexts is challenging especially in cases where interaction is low, such as in self-directed online instruction (Lim & Kim, 2003). Motivating young DE students poses special challenges. As Smith et al. (2005) argued, young students might have less autonomy and independence than adult students as well as less intrinsic motivation "to help them persist in their studies" (p. 13). DE learners need to manage their learning, monitor their work, and be self-directed (Tuckman, 2007; Wang, Peng, Huang, Hou, & Wang, 2008), all of which can be challenging for young students.

Motivation in DE has been studied mostly at the postsecondary level (e.g., Choi & Johnson, 2005; Hurd, 2006; Kim, 2004; Lim & Kim, 2003; Tuckman, 2007; Wang et al., 2008), with few studies having been conducted at the high-school level (e.g., Hobgood, 2007; Madore, 1998). In general, according to Smith et al. (2005), high-school DE has not yet received extensive attention compared to the postsecondary level. At the Kindergarten to grade 12 (K-12) level, there is comparatively less research on student motivation than on other issues such as implementation (Hannafin, Hill, Oliver, Glazer, & Sharma, 2003; Hobgood, 2007; Talvitie-Siple, 2007). In addition, the research conducted to date on motivation in DE has focused on motivation from the student's perspective, but comparatively less attention has been paid to teachers' perspectives on motivating high-school DE students. As Turner (2001) indicated with respect to research on motivation in general, "the focus … should move beyond students alone" (p. 91).

In this paper, we report on a study of Canadian high-school DE teachers' perspectives on motivation. We begin with a literature review that focuses specifically on motivation in DE environments. We describe our study's methods and follow with findings from our inductive analysis of DE teachers' perspectives that allowed us to identify categories and sub-categories of motivation. We subsequently discuss the categories in relation to the empirical and theoretical literature on motivation in DE and conclude with implications for practice.

Literature Review

Studies of motivation in DE settings have been guided by a variety of constructs, concepts, and frameworks. Reinhart (1999) and Wang et al. (2008) focused on students' self-efficacy (Bandura, 1986) and attribution (Weiner, 1985, 1986). In Reinhart's experimental study, students were assigned to web-based instructional tasks that varied in difficulty (low, medium, high). The study relied on Bandura's concept of self-efficacy, defined as "a person's judgement of their capabilities to organise and execute courses of action required to attain designated types of performances" (Reinhart, 1999, p. 12). It aimed to investigate the relationship between motivation to learn from web-based instruction with task difficulty and self-efficacy. Findings revealed that self-efficacy for web-based learning was positively related to motivation to learn in this format, although this finding was inconclusive.

Wang et al.'s (2008) study investigated how learning motivation and having a learning strategy affect student results, how these two variables are related, and how other factors such as self-efficacy and attribution also impact results. The study revealed a relationship between self-efficacy and learning motivation, as "self-efficacy affects learning motivation via attribution and ultimately affects learning results" (p. 22). Like Reinhart's study, Wang et al.'s was concerned with DE student outcomes. In this regard, a relationship was found between self-efficacy, learning strategies, and learning results, whereby "self-efficacy affects learning results via learning strategy" (p. 22). Wang et al. consider that these findings highlight the importance of learning strategy, and that this is the case especially in DE contexts where collaboration and self-directed learning are used.

Liao (2006) applied flow theory (Csikszentmihalyi, 1975, 1990) to DE in order to investigate student motivation. Based on Csikszentmihalyi's work, Liao refers to flow as "a state of feeling, where external factors do not seem to matter" (p. 48) and as "a complex construct which attempts to integrate motivation, personality, and subjective experience" (p. 46). Flow theory focuses on the variables of skill and challenge. According to the author, because the study investigated DE, a focus on students' feeling of control and the degree of interactivity was also needed, since DE learners "need to operate a complex system" (p. 48). Among the antecedents of flow considered in the study, which were perceived skill, perceived challenge, perceived control, and perceived interactivity, interactivity was the main antecedent. More specifically, students' flow experience was influenced by learner-teacher and learner-interface interaction, whereas the influence of learner-learner interaction on flow was not significant.

Lim and Kim's (2003) study examined how five different types of motivation (which they identified as course relevancy, course interest, affect/emotion, reinforcement, and self-efficacy) affected application of learning, or the degree to which students used and applied learned knowledge and skills. The authors identified as the "major finding" of the study the fact that "all motivation variables except course interest seemed to affect students' learning while reinforcement and self-efficacy influenced students' learning application" (p. 436). The authors then formulated teaching strategies based on their findings, because the question still remains of "how to design online instructions that fully accommodate … differences in learner characteristics and promote learner motivation to result in better learning outcomes and transfer" (p. 436).

Martens, Bastiaens, and Kirschner's (2007) study included a focus on Ryan and Deci's (2000) construct of intrinsic motivation and Rovai and Lucking (2003) investigated intrinsic and extrinsic motivation. Martens et al. emphasised that intrinsic motivation may be "of prime importance in authentic e-learning" because it leads to exploration, curiosity, and collaboration. Although the study was not designed to focus directly on intrinsic motivation, findings revealed that "the amount of intrinsic motivation reported by students and the amount of self-reported explorative behavior were highly correlated" (p. 90). For the authors, this finding showed "the importance of the concept of intrinsic motivation in new learning environments based on constructivist principles" (p. 90).

Rovai and Lucking (2003) used the concepts of intrinsic and extrinsic motivation in a study designed to identify whether there were differences in various measures of motivation between students registered in e-learning and face-to-face (F2F) university courses. Findings revealed no differences in intrinsic motivation measures. However, students enrolled in courses offered in e-learning format had higher levels of intrinsic motivation on three measures of intrinsic motivation labelled "to know," "to accomplish things," and "to experience stimulation." These students "report learning to be more pleasurable and have more satisfaction with the process of learning [which] suggest[s] the students' subjective or perceived task value of e-learning may be an important consideration" (p. 423). The authors explain that these differences might be explained because, as evidenced in the e-learning literature, "online instruction facilitates increasing levels of intrinsic motivation" (p. 427). However, when interpreting these results, the fact that e-learning students may be self-selected also needs to be considered.

Another study comparing two modes of instructional delivery is Yang's (1991) study, which relied on Maeher's (1976) continuing motivation. The focus was on continuing motivation in computer-based

compared to print-based instruction. Findings were not conclusive with respect to continuing motivation, as this construct was "difficult to interpret" (p. 95).

In their focus on student perceptions, some studies (e.g., Choi & Johnson, 2005; Song & Keller, 2001; Visser & Keller, 1990; Visser et al., 2002) have relied on a motivational design model by Keller (1983) focusing on the concepts of attention, relevance, confidence, and satisfaction, known as the ARCS model, to which volition and self-regulation have been added (see Keller, 2008a). The model "includes a systematic motivational design process" (Keller, 2008b, p. 179). Some of the studies relying on the Attention, Relevance, Confidence, Satisfaction (ARCS) model in DE contexts focus on its use in designing and implementing DE programs or motivational techniques. One illustration is Chyung, Winiecki, and Fenner's (1999) study in a context of an adult university distance program with high dropout rates. The authors reported on interventions based on the ARCS model, together with an organizational model and program evaluation, which resulted in: decreased dropout rates; increased likelihood of persistence in distance learning; increased student satisfaction, confidence in learning, and students' perception of relevance of the program to their goals.

Another illustration of the use of the ARCS model to investigate motivation in DE is Choi and Johnson's (2005) study, which focuses on use of video in online learning. The study aimed to "investigate the potential of video instruction based on constructivism that is devised to engage learners in active, authentic, and collaborative learning" (p. 216). It compared online student perceptions of video- and text- based instruction to identify whether video-based instruction could affect learning (the authors focused on "comprehension" and "retention" to identify evidence of learning) as well as motivation, which the authors considered from the perspective of attention, relevance, confidence, and satisfaction. Some of the study's findings pointed to the concept of attention in particular, as there were higher levels of student attention with use of video as opposed to text.

Apart from the ARCS model, other design models have also guided research on motivation in DE. For example, the study by Martens et al. (2007) discussed above aimed to investigate how students perceive tasks and whether tasks motivate them. The study used ten constructivist educational design principles adapted from Dalgarno (1998) in order to compare designers' expectations with student perceptions. These principles related to: learner control over content, sequence, and learning strategy; top-down organization of the provision of content; content in context; discovery; zone of proximal development; authentic activities;

student articulation of knowledge and discussion; metacognitive strategies; and intrinsic motivation.

Tuckman's (2007) study investigated whether the addition of motivational scaffolding to a DE environment "improved engagement, and performance, particularly among procrastinators" (p. 414). Motivational scaffolding was defined as "the addition of features to enhance learner motivation and collaboration" (p. 414). Findings revealed that the "procrastinating" students' performance was better when motivational scaffolding was included, whereas non-procrastinating students performed equally regardless of whether the scaffolding was used or not.

Hobgood (2007) investigated the relationships between student perceptions of motivation and enjoyment and student perceptions of learning from online discussions. The study relied on the Community of Inquiry model and used an online survey in three sections of an Advanced Placement Psychology course. It included a focus on distance versus F2F learning and males versus females. Findings revealed a strong relationship between student perceptions of motivation and enjoyment and their perceptions of learning from online discussions.

Madore (1998) investigated students' perspectives in a teleconference chemistry program with a focus on motivation and compared distance versus non-distance students. The study relied on Weiner's (1985) attribution theory, which, as Madore explains, proposes that "the future successes/failures of students may be predicted according to the particular attributions they have associated with their past success or failure" (p. 152). Data collection included diary entries, telephone interviews, and questionnaires. Most participants attributed their successes "to themselves and not to external factors such as exam difficulty" (p. 104).

The study of high-school teachers' perspectives on motivation reported on in this paper differs from those presented in this literature review in that its focus is on the teacher's perspective on motivating students. Unlike Hobgood's (2007) study, ours is not situated within the strand of DE research which compares distance and F2F contexts. Our study is also different from Hobgood's and Madore's (1998) in that we were not investigating motivation in terms of correlations between constructs. We focused instead on teachers' perceptions.

Methods

The findings presented in this paper are part of a larger data set collected in a study of teachers in high-school DE classrooms. Forty-two teachers were recruited as follows: 11 from western Canada, 21 from central

Canada, and 10 from eastern Canada. Our selection was driven by an interest in representing a diverse range of perspectives from across the country. All teachers who consented to participate were included. The teachers worked from different locations, including physical schools, offices, and their home. They worked for a total of 14 different organisations, such as virtual schools, regional or district school boards or divisions, or learning units working directly under a provincial Department of Education. Only one of the teachers worked at a private institution. All others were employed by a public school system. Of the 42 teachers, three had previously taught in a context of correspondence distance education and one in a context of videoconferencing. The remaining 38 teachers had between one and 10 years of experience teaching in an online setting.

We conducted semi-structured (Patton, 2002), one-hour long telephone interviews with the 42 teachers in May and June of 2008. The questions related to motivation were as follows: In what ways do you motivate or engage students?; How do you know if your students are motivated and engaged?; In what ways is motivating and engaging your students different or similar to motivating them F2F? These open-ended questions were supplemented in the course of the interviews by additional probing questions to gain deeper insights.

The interviews were recorded and subsequently transcribed. We then proceeded with unitizing (Lincoln & Guba, 1985) by dividing the transcript of each interview into units of meaning or thematic units (Henri, 1992) and subsequently relied on open and axial coding (Strauss & Corbin, 1998) for analysis. Open coding involved breaking data open in order to identify relevant concepts, naming and labelling the data, and constantly comparing. It was followed by axial coding, which facilitated developing categories of teachers' perspectives of motivation in high-school distance education.

Findings

Data analysis resulted in the identification of three categories subdivided into 16 sub-categories.

Table 1. Categories of teachers' perspectives on motivation in high-school distance education.

Communication, Interaction, and Social Presence	Intrinsic and Extrinsic Motivators	Learner-Centered Designs
1. Personal Relationships	1. Tracking, Checking, and Monitoring	1. Engaging Designs
2. Humour	2. Carrots on Sticks	2. Pace of Learning
3. Tone of Voice	3. Self-motivation	
4. Face-to-face Meetings	4. Support of Others	
5. Teacher Feedback	5. Encouragement	
6. Teacher-initiated Communication		
7. Student-initiated Communication		
8. Student Comments		
9. Interaction and Discussion		

In the following subsections, teachers' perspectives are presented within the three main categories and their subcategories. In order to convey the multiple perspectives as accurately as possible, we relied on the wording transcribed from the interviews. In some instances, we used direct quotes to convey the actual expressions used by teachers.

Communication, Interaction, and Social Presence

Personal Relationships

Motivation is helped by establishing a personal relationship and personal connection so students understand that there is a person behind the computer and not a robot. Personal contact makes students feel like they own the material and they feel less isolated. In a synchronous voice communication environment, one strategy to engage students is to speak to them individually and ask a personal question as they are logging on.

Humour

Maintaining a sense of humour and being a little light-hearted is one approach to motivating learners. Throwing in jokes, making up funny little stories, using a cartoon to jazz up content, and even making assessment tools more fun for students can be motivating.

Tone of Voice

Students' tone of voice and of their written messages can help teachers assess how motivated or enthusiastic they are or gauge how a student is feeling about what they are doing. The voice that teachers use with students can keep them motivated. At the beginning of a course, a teacher might have a phone conversation with students so that they can recognize the teacher's voice.

Face-to-Face Meetings

Informal, F2F meetings with students—for example, once a year—help teachers meet the student in their context. Meeting students F2F might be particularly important if a teacher feels that the strongest connection with students they found was in the F2F environment. F2F meetings are also important for students because they can see that the teacher is not just a figment of their imagination. Once they have met teachers, they feel more comfortable initiating contact.

Teacher Feedback

Detailed, quality, frequent and prompt feedback are the number one motivator. Students are motivated by encouraging comments such as "you know this is a good start, but you still need to do this." Teachers might also try to put marks into perspective in assignments, with comments such as "this mark is high for this work" or "this is a tough course," or they might include notes such as "good news" or "congratulations" when phoning or emailing a final mark to students. Teachers have to be very careful in the words they choose and phrasing feedback, because students might turn off and not continue in the course.

Teacher-Initiated Communication

Establishing initial contact and opening the lines of communication with students is very important so that they are not hesitant to contact the teacher later on. It is also important to talk on a regular basis and to identify students' strengths and interests. Real-time communication with students is necessary because it is immediate and teachers can lose students if there is a lot of delay between a question and an answer. When teachers think that a student is struggling with a certain topic, they might offer help. Other motivational strategies involve sending invitations when they drift away or finding alternative ways of saying "I've missed your presence in the course." In some cases, teachers may only contact students on a "they-ask-questions-I-answer-questions" basis.

Student-Initiated Communication

In some contexts, most contact may be student-driven. Students might email the teacher to report whether they like or don't like things. Some might phone teachers a lot or be very active in a course asking questions about what they don't understand, and the teacher can then interact with them. In general, communication can help teachers "read between the lines" and tell if students are getting the work done or having trouble. Teachers can tell whether students are motivated if students are communicating, submitting assignments, and working regularly. However, it can be hard to motivate students who don't ask questions and "they just sit there for weeks." Communication is hard if students can't associate a face with the teacher. Students should be taught to communicate their frustration.

Student Comments

Comments such as "That was a really fun module" or "I like talking about that subject" may serve as indicators of whether students are motivated. Teachers might also get comments from those students who are comfortable telling teachers how they feel about an online course. However, getting comments from students and motivating them is more difficult if there is a time delay, because the time they spend online may be very short, maybe after hours, and the teacher might never see them online.

Interaction and Discussion

One way of motivating students is to interact with them on a daily basis and keep them involved. A discussion board can be used for personal greetings at the beginning of a course so that students introduce themselves to the other class members and talk about why they are taking the course. Teachers can also use a news forum which becomes the first thing students are supposed to look at in the morning. They can use assignments that require students to contribute and respond to each other's ideas. Discussions can center on controversial issues so that students have to provide their opinion. Even if they have no questions, they might still come online because they want to participate in a chat.

Intrinsic and Extrinsic Motivators

Tracking, Checking, and Monitoring

A student-tracking program may be used to monitor presence or pages visited, or verify what students are doing, if they are struggling in a certain area. Having a checklist that students have to follow as well as

assignments they can check off may help keep them engaged. Another tool might be an attendance structure in which students must be online at least once a week in some capacity. Students might also be asked to use a particular tool, such as a message board, a certain amount of times. If there is not much pressure for students to complete work, the teacher might "use tricks to convey the idea that it is just like regular school, there are people watching." It can be difficult to keep students online without sounding like "a scolding parent."

Carrots on Sticks

For some students, marks serve as a sort of "a carrot on a stick." Teachers might use inducements and admonishments such as assigning marks for participating in discussion forums, accessing course materials, or submitting work by a certain time. Having a contest or offering a prize might serve to encourage participation in an activity. In general, students might be motivated by points and also by money for scholarships. Practices regarding evaluation might involve getting students to re-submit with corrections for formative assessment tasks. The teacher might "reward the re-submission with a higher mark." If students receive a mark based on submission of lessons or they otherwise lose points, this might encourage students to be responsible.

Self-Motivation

To succeed at an online course requires a self-disciplined, self-motivated individual. The motivation has to be "self-generated, intrinsic, in the student themselves." Teachers may emphasise the importance of independent work and study skills. In an asynchronous environment, the key to success for students is to impose a certain structure and discipline on themselves, which is really critical. In some cases, students go through a screening process at their school and take a readiness quiz to see if they are actually ready to be independent and work within "strict time-management guidelines."

Support of Others

It is important that there be somebody who is showing an interest in what they are doing or someone at home who is actively encouraging or pushing them. Teachers may involve parents by sending them letters or copying the parent in emails. Where possible, local facilitators at the schools may motivate students and act as a "liaison" between the teacher and the student. If a student is struggling or the teacher has not heard from them for a while, they may contact the facilitator to find out what was going on. Facilitators can communicate with parents and administration and help support students with course material,

schedules, or technical issues. The school's guidance counsellor might be contacted if students don't keep up with their work or "if they are really not getting it."

Encouragement

Teachers might use encouraging comments in their emails or they might encourage students to ask questions about how they are doing. Students can be invited to respond and to stay in touch and not "sit on the problem." One technique for encouraging students is also to look at a distance course as "a series of small steps as opposed to a great undertaking," for example by trying to set a goal of going through a particular chapter within a week, calling the students, and helping the students keep in their minds that they are able to do the course. Students may be motivated "by having things that are low stakes and then do higher-stakes assessment activities afterwards."

Learner-Centered Designs

Engaging Designs

A course that is "not all just monotonous text" speaks to the different learning styles of the students. Interactivity and visual appeal are other elements that can be added. Instead of having a question/answer type of assignment, students can, for example, manipulate data or interpret an image. Teachers might have a quiz that is not printed but online so that students can get results right away and "instant gratification". Making assignments worth the students' time and effort and more multimedia-based is one way teachers can engage students. Teachers can "strip any extra information and put just the essentials because students don't like to read very much." Information and readings need to be clear, straightforward, and easy to access and current. Social-networking tools and video motivate students. Students can access tutorial videos if they get stuck on something.

Pace of Learning

Timelines may be adjusted for students so that every time they go in to check their marks, they are reminded about what they have to do and when they have to do it. If they haven't submitted anything, teachers might give them "a gentle nudge" to continue working. Teachers might also have a daily submission of work that students are held accountable for, which helps them stay on track and build self-motivation and self-discipline. In some settings, students may go at their own pace and have no particular dates to submit assignments. One way of helping move

students through a course might be to have "conditional releases," whereby a student is only given the first three weeks of instruction and "then the computer releases another chunk of four weeks."

Discussion of Findings

Communication, Interaction, and Social Presence

Teachers' perspectives contrast, on one hand, the personable, real-time, individual connection and communication that occur normally in F2F contexts with the depersonalized computer or "robot" behind the screen on the other. In DE, individuals have to be able to "project themselves affectively within [a] medium" (Garrison, 1997, p. 6). As Garrison also indicates, this may be done verbally or nonverbally. In an environment without visual cues as in DE, students may feel isolated (Kerka, 1996). Teachers' affective projection is, therefore, important. Tone of voice, humour, personal relationships are part of this projection. Garrison, Anderson, and Archer (2000) described social presence as "the ability of participants… to project their personal characteristics into the community, thereby presenting themselves to the other participants as 'real people'" (p. 89). Humour is an indicator of social presence and is part of "socio-emotional communication" (p. 95) necessary in online learning.

Humour, together with self-disclosure and expressions of emotion, are ways of displaying affect in computer-mediated communication which Rourke, Anderson, Garrison, and Archer (1999) identified as indicators of social presence. In a study of social presence in the web-based synchronous high-school classroom, Nippard and Murphy (2007) identified the following social presence indicators: use of humour; use of informal language to show affection; and teacher self-disclosure. In a postsecondary context, Lim and Kim's (2003) study of motivation in online learning found that, although emotional involvement and relationships were important in terms of motivating students, they were not always easy to achieve: "The weakest aspect of online instruction has been said to be the lack of instructor student relationship through 'eye to eye' and 'tongue to tongue' communication that creates online learners' emotional involvement in the learning process" (p. 437).

In their study of high-school DE, Murphy and Rodriguez-Manzanares (2008a) observed findings similar to those of Lim and Kim (2003). In the DE classroom, teachers cannot typically interact physically or F2F with students. Informal, off-chance, casual social interactions outside of class and in corridors are not possible. Personal interactions and rapport building must be "premeditated," "consciously promoted" and "can only be achieved with more work" (p. 1068).

Moore (1993) argued that, in DE, the greater the transactional distance, or the "space of potential misunderstanding between the inputs of instructor and those of the learner" (p. 22), the more autonomy the learner has to exercise. He defines learner autonomy as "the extent to which in a programme the learner determines objectives, implementation procedures, and resources and evaluation" (p. 13) and opposes it to teacher control (Garrison, 2000). Murphy and Rodriguez-Manzanares (2008b) hypothesised that synchronous classes might help compensate for the lack of self-motivation and self-direction of some students at the high-school level. Transactional distance could also be decreased by "deliberate strategies to promote rapport, collaboration, and engagement" (Theoretical framework section, ¶3).

Liao's (2006) emphasis on the importance of learner-teacher interaction as opposed to learner-learner interaction was confirmed by teachers' perspectives in our study. These perspectives suggest that teacher-student interaction may serve as what Tuckman (2007) referred to as a motivational scaffold. The perspectives provide insight into the forms that interaction might take in high-school DE. Interaction in this context goes beyond simply talking to students and includes developing rapport and personal relationships, communicating in real time, and even visiting students F2F. While interaction may be important, teachers' perspectives also highlight the difficulties associated with interaction including communicating the correct tone, ensuring that feedback is positive, and encouraging students to communicate.

Intrinsic and Extrinsic Motivators

The categories of Carrots on Sticks and Tracking, Checking, and Monitoring captured teacher motivational techniques that rely on extrinsic motivation. Extrinsic motivation refers to students' externally controlled behaviours, as described by Deci and Ryan (1985). They conceptualised motivational orientations along a continuum of intrinsic (i.e., more self-determined) and extrinsic (i.e., less self-determined, more externally controlled) behaviours. Some of the studies reported on this paper's review of the literature (e.g., Lim & Kim, 2003; Reinhart, 1999; Wang et al., 2008) focused on the role of self-efficacy and self-regulation (e.g., Choi & Johnson, 2005; Song & Keller, 2001; Visser & Keller, 1990; Visser et al., 2002). Teachers' perspectives suggest that extrinsic motivators may play an important role in DE at the high-school level. Their perspectives also shift the focus away from self-regulation towards the responsibility and direction of the teacher to control students' behaviours in a DE environment.

At the same time, teachers' perspectives also recognized the role of self-motivation. The Self-motivation category reflected the importance of intrinsic motivation, from within the student. In relation to intrinsic motivation and DE, Martens et al. (2007) argued that it may be "of prime importance in authentic e-learning" (p. 90). In their comparison of student and designer perceptions of online authentic tasks, Martens et al. found that the amount of intrinsic motivation reported by students and the amount of self-reported explorative behaviour were highly correlated. Our findings highlighted the role of intrinsic motivation; however, there was less attention paid to the teacher's role in enhancing this type of motivation, for example through collaboration and rapport building.

McCombs and Vakili (2005) drew on the American Psychological Association's (APA) framework of Learner-Centered Principles (APA Task Force on Psychology in Education, 1993; APA Work Group of the Board of Educational Affairs, 1997) to provide specific recommendations for online teaching and learning. In relation to the framework's dimension of Motivational and Affective Factors, they emphasised the need to "avoid the assumption that online learners are those who prefer less personal contact with instructors, are independent learners, have high motivation to learn, are self-disciplined, and have high personal self-efficacy" (p. 1592). This recommendation suggests that motivation of the DE high-school student may not be self-generated or intrinsic. As Smith et al. (2005) indicated in their synthesis of research on K-12 online learning, when comparing adult online students to young online students, it is necessary to consider that younger learners may have less intrinsic motivation.

In addition, as Rovai and Lucking (2003) have argued, a low sense of relatedness in a DE environment can be related to loss of intrinsic motivation. The category of Encouragement pointed towards strategies that might potentially include building a more personal relation between teacher and student. Visser et al. (2002) noted that DE students' positive feelings about what they have accomplished can help support their intrinsic feelings of satisfaction: "Students should be encouraged that if they work hard, they can and will be successful" (pp. 98-99). Our findings also pointed to the role of providers of DE and teachers in identifying students' motivational characteristics early in their program of study. In their analysis of literature on K-12 online learning, Smith et al. (2005) refer to recommendations in DE literature to use instruments which consider students' motivational characteristics such as the Educational Success Prediction Instrument (ESPRI) (e.g., Ferdig, Papanastasiou, & DiPietro, 2005; Roblyer & Marshall, 2002-2003). These should be used "not… to discourage or disallow students from enrolling in an online program or school" but "to build an understanding of the features, strategies, and

supports that prospective students require in order to become successful online learners" (p. 57). Smith et al. also refer to the possibility of including "sessions to introduce students to online learning and… presurveys, precounseling, face-to-face mentoring and trial periods" (p. 57).

Learner-Centered Designs

Keller (2008b) argued that, in DE environments, strategies to motivate students can be incorporated into instructional design and delivery. The participants in our study emphasised the need for this incorporation and identified a variety of motivational techniques. As Stoney and Wild (1998) noted, if the interface in a DE environment is designed poorly, "students will not be intrinsically motivated to make use of the product or to learn with it" (p. 40). The category of Engaging Designs reflected teachers' preoccupation with moving away from text-based towards more motivating media-rich instructional designs. Our findings in this regard provide support for Choi and Johnson's (2005) observations regarding the positive effect of video-based instruction as opposed to traditional text-based instruction.

The category Pace of Learning reflected the role of flexible designs in DE. Flexibility allows for personal choice and control, which have been recognized by the APA Learner-Centered Principles as factors conducive to motivation. However, a flexible pace of learning might actually present disadvantages for some high-school students because they may have less self-motivation than do adult students (Smith et al., 2005), which may make it more difficult for them to persist in distance courses. Tuckman (2007) found that "procrastinating" DE students performed better in a web course which included motivational scaffolding, such as checklists and study support groups, compared with another version of the same web course which did not. Our findings included a role for such checklists.

Conclusions

The findings reported in this paper add to the literature on motivation in high-school DE by shifting attention away from issues of students' self-efficacy, self-regulation, and self-motivation to the specific role that teachers can play in motivation in this context. As we noted at the beginning of this paper, students at the secondary level are less likely to be autonomous and independent than would be post-secondary students. They may lack intrinsic motivation and be less able to manage their learning, monitor their work, or be self-directed. For these reasons, the high-school DE teacher has a pivotal role to play in promoting motivation

in this context. Our study suggests numerous techniques and strategies that teachers might use for this purpose.

The study was limited to use of interviews only. A variety of data-collection techniques such as observations of DE students and teachers could have provided additional insights. We were concerned with DE in Canada only. Had we included teachers from the United States, where there exist a number of virtual high schools and cyber-schools (see Berge & Clark, 2005; Zucker & Kozma, 2003), our findings might have been different. The fact that the participating teachers worked for different organisations with different approaches to the delivery and design of high-school DE prevented us from drawing definitive conclusions. In-depth case studies of particular DE organisations with similar approaches to, for example, percentages of asynchronous and synchronous delivery would likely provide more insight into factors affecting motivation in high-school DE.

The scope of our study did not allow us to investigate specific characteristics of DE delivery models in relation to student motivation. Based on our findings, we can only hypothesise that issues related to high-school student motivation might manifest themselves differently in synchronous versus asynchronous DE and, therefore, place different demands on teachers and require different emphases in their practices. Studies of delivery models such as asynchronous versus synchronous and their relation to student motivation could prove valuable in terms of informing policy.

In terms of practice, our findings suggest that, as in a F2F context, communication, interaction, and relationships were important in terms of motivating students. However, in the DE environment, they take on an added importance because individuals are separated in space and, often, in time. While the DE context makes communication, interaction, and relationships more important, it also makes them more difficult in many ways. Organizational or policy decisions may need to take into careful consideration the types of learning management systems and tools being used to support learning in these contexts. How well do they support, for example, communication, interaction, feedback, and not solely tracking and monitoring?

Our findings point to the potential value of professional development opportunities to identify strategies and techniques to promote communication, interaction, and relationships in the DE high-school

classroom. Techniques and strategies to promote communication, interaction, and social presence are summarized as follows:

Table 2. Implications for teachers related to communication, interaction, and social presence.

- Communicate one-on-one with students.
- Ask personal questions.
- Maintain a sense of humour.
- Make assessment tools more “fun”.
- Have a phone conversation with students so that they can recognize the teacher's voice.
- Monitor students' tone of voice of their written messages.
- Use a motivating voice.
- Where possible, hold a face-to face meeting with students.
- Provide detailed, quality, frequent and prompt feedback.
- Put marks into perspective in assignments.
- Be very careful in phrasing feedback.
- Establish initial contact and open the lines of communication with students.
- Identify students' strengths and interests.
- Engage in real-time communication with students.
- Offer help when students are struggling.
- Send invitations when students drift away.
- Rely on communication to read between the lines.
- Help students associate a face with the teacher.
- Teach students to communicate any frustration.
- Look for indicators of whether students are motivated.
- Interact with students on a daily basis and keep them involved.
- Use a discussion board for personal greetings at the beginning of a course.
- Use a news forum which becomes the first thing students are supposed to look at in the morning.
- Use assignments that require students to contribute and respond to each other's ideas.
- Centre discussions on controversial issues so that students have to provide their opinion.
- Provide opportunities for students to participate in a chat.

Likewise, teachers may need to develop approaches to and awareness of both intrinsic and extrinsic ways of motivating students in these contexts. Organizations delivering DE to high-school students may wish to develop plans of action to identify and support students who might have low levels of intrinsic motivation. Local facilitators and parents may have an important role to play in this regard. Policy implications may include the need to hire additional personnel such as DE guidance counsellors who can support at-risk or unmotivated students. Specific strategies and techniques related to these forms of motivation are as follows:

Table 3. Implications for practice related to intrinsic and extrinsic motivators.

- Use a student-tracking program to monitor presence or pages visited.
- Use student checklists to keep students engaged.
- Use an attendance structure.
- Ask students to use tools (e.g., a message board) a certain amount of times.
- Convey the idea that distance learning is just like regular school.
- Assign marks for participating in discussion forums, accessing course materials, or submitting work by a certain time.
- Use contests, prizes, points, and money for scholarships to encourage participation.
- Use formative assessment tasks.
- Allow students to resubmit assignments and reward the re-submission with a higher mark.
- Emphasise the importance of independent work and study skills.
- Use a screening process and readiness quizzes to see if students are actually ready to be independent and work within time-management guidelines.
- Involve parents by sending them letters or copying them in emails.
- Rely on school facilitators to motivate students and act as a liaison.
- Rely on the school's guidance counsellor if students don't keep up with their work or if they are struggling.
- Use encouraging comments in emails.
- Encourage students to look at a distance course as a series of small steps.
- Help students set weekly goals.
- Include lower stakes before higher-stakes assessment activities.

The importance of the design of learning suggests that specific multimedia skills will be required by teachers in order to promote learner-centered designs that move away from simple emphasis on text. The inclusion of more multimedia may have policy implications since they may require not only more bandwidth but, as well, the hiring of instructional designers and graphic artists. In cases where DE programs are intended to provide equal and quality educational opportunities for all learners, such as in contexts of public schooling programs in DE format, their design may need to take into account the diversity of learners in terms of their motivation. We have summarised the specific strategies and techniques related to design as follows:

Table 4. Implications for practice related to learner-centered designs.

- Move beyond monotonous text to meet different learning styles.
- Add interactivity and visual appeal.
- Instead of question/answer type assignments, rely on data manipulation or image interpretation.
- Use online as opposed to printed quizzes that provide instant results.
- Make assignments worth students' time and effort.
- Use more multimedia-based assessment.
- Strip extra information and include only the essentials.
- Use social-networking tools and video.
- Provide tutorial videos.
- Adjust timelines so that when students check their marks they are reminded about deadlines.
- Provide students with a gentle nudge to continue working.
- Require a daily submission of work.
- Allow students to go at their own pace.
- Use conditional releases to release work in chunks.

In terms of implications for research, our study was not designed to take into consideration teachers' perspectives on motivation in synchronous versus asynchronous contexts of high-school DE. However, references to the importance of real-time interaction and communication, F2F meetings, time-delays, and personal voice suggest that synchronicity may play an important role in motivation in DE at the high-school level. This is a hypothesis that might be investigated in future studies. The

study of motivation at this level might also be approached through research-validated frameworks such as the Learner-Centered Principles, which includes a motivational dimension. Bernard et al. (2004) proposed using this framework for design and analysis of DE environments in order to "explor[e] the cognitive and motivational processes involved in learning at a distance" (p. 415). In addition, other analytical frameworks and theories specifically designed for DE environments which have been applied mostly to postsecondary settings, such as Transactional Distance Theory (Moore, 1993) and the Community of Inquiry model (Garrison et al., 2000), might help provide new insights into motivation in high-school DE.

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