# Motivational Influences in Self-Directed Online Learning Environments: A Qualitative Case Study

Kyong-Jee Kim
Indiana University

## Introduction

The Web technology is changing the way people learn, work, and socialize (Bonk & King, 1998). More and more people are turning to the Web technology for their learning needs due to the flexible delivery system of the Web. Although the effectiveness of Web-based instruction has been proven in many studies (Jung & Rha, 2000), high learner drop-out rates have been a concern in Web-based instruction, which have also been the case in distance education and computer-based instruction (Diaz, 2002; Islam, 2002; Moore & Kearsley, 1996).

Past studies on the factors of learner attrition in distance education suggest that lack of time and lack of motivation are the major causes of the problem (Bonk, 2002; Gibson, 1998; Visser, Plomp, Amirault, & Kuiper, 2002; Wolcott & Burnham, 1991; Zvacek, 1991). Although instructional designers or instructors do not have control over the learner's time, they can have some influence over learner motivation as it tends to change through instruction (Coldeway, 1991; Song & Keller, 1999). Therefore, attention needs to be paid to improving learner motivation to address the issue of learner attrition in Web-based instruction.

Research abounds about the importance of learner motivation in learning. Past studies have consistently reported that motivation makes a significant impact on the student's achievement. In addition, successful learning experiences, which affect continuing motivation of the learner, are conducive to life-long learning (Wlodkowski, 1993), which is critical for adults as society becomes more complex and changes rapidly more than ever. As with traditional instruction, learner motivation is an important instructional design component of Web-based instruction (Bonk, 2002; Ritchie & Hoffman, 1997). Although the importance of learner motivation for Web-based instruction has been recognized, there is a lack of research on theories and practices of the design of motivating Web-based instruction (Keller, 1999; Song, 2000).

Motivation is critical for the success of online learners. E-learning is a rapidly growing market and is expected to be so in the future. A recent survey reported that the U.S. e-learning market in 2002 was $10.3 billion (Adkins, 2002). It is projected that the U.S. e-learning market will grow to $83.1 billion in 2006. Considering this large amount of spending on e-learning, it is imperative that the investment to be worthwhile for the stakeholders. To accomplish that goal, we need to provide online learners with a learning environment that builds success for their learning. Fostering adequate motivation for the online learner is one of the critical factors for creating a successful online learning environment (Hofmann, 2003).

Yet, responding to the motivational requirements of learners in self-directed online instruction, which is the instructional approach in most online computer training courses, is a great challenge due to the lack of interactions in such learning environments (Bonk & Dennen, 2003; Cornell & Martin, 1997; Keller, 1999). Problems resulting in symptoms of demotivation may also stem from issues other than motivation – i.e., lack of skills, environmental factors, etc. (Keller, 1999). Therefore, a systematic approach to analyzing the problems of learner motivation is warranted for our better understanding of the motivational needs of learners in self-paced online learning environments.

The purpose of this study is to investigate the problems associated with learner motivation in Web-based instruction, in particular in self-directed online learning environments. This study is interested in identifying and exploring what motivate or demotivate learners from completing a self-directed online course, which have implications for designing motivating online learning environments. In more detail, this study will answer the following questions:

- What are motivating and inhibiting factors to learn in self-directed online learning environments?
- Does learner motivation change during instruction? if so, how?
- Are there individual differences in learners' motivational levels in self-directed online learning environments?

The results of this study are expected to increase our understanding of the motivational needs of the participants of self-directed online computer training by identifying what motivate or demotivate them to learn

computer skills in a self-directed learning environment. The results of the study are expected to inform instructional designers of how to design a motivating online learning environment.

## Background of the Study

his study investigated learners of self-directed online courses to answer aforementioned questions. Here, self-directed online courses refer to courses delivered via the Web in which learners go through instructional materials delivered via the Web at their own pace without the presence of an instructor. Adult learners can participate in online learning in various contexts, yet the self-directed online learning format is the focus of this study because self-directed online learning is a primary instructional format in training settings for adult learners (Driscoll, 2002; Galvin, 2002).

The courses that the study participants took were offered by a major U.S. e-learning vendor, who offers over 3,000 online courses to 20 million learners per year worldwide. Those courses are offered to adult learners in various educational and workplace settings. The course format is stand-alone, typically 6-8 hours long, self-paced instruction delivered via the Web. The topics covered in those courses include desktop applications (e.g., Microsoft Office products), computer programming (e.g., JAVA, Oracle, MS .NET), soft skills development (e.g., coaching skills, consulting skills), and special topics tailored to the needs of specific organizations or fields.

The learners participated in this study took self-directed online courses either in school or work settings. The learners in school settings took the online courses offered by the university either for personal development or as assigned by their course instructors. The learners in work settings also took the online courses either for personal development or to improve their job skills.

## Literature Review

Motivation by definition is the degree of the choices people make and the degree of effort they will exert (Keller, 1983). Past studies indicate that motivation is affected by affective, social, and cognitive factors (Relan, 1992). Keller (1983; 1987a; 1987b) identified four components of motivation – i.e., attention, relevance, confidence, and satisfaction - and strategies to design motivating instruction. Clark (1997; 1998) developed a CANE (Commitment And Necessary Effort) model that identified two processes of motivation: commitment and necessary effort. Wlodkowski (1993) suggests six major components that affect adult learners' motivation in the time continuum. These motivational models were used in other research studies to identify the gap in learner motivation and how to design motivating instruction.

Several theories have provided theoretical frameworks for understanding motivation (Pintrich & Schunk, 1996). Among different constructs on motivation, continuing motivation and intrinsic motivation are the most significant for instructional theory and research (Kinzie, 1990). Intrinsic motivation is defined as the motivation to engage in an activity "for its inherent satisfactions rather than for some separable consequence" (Ryan & Deci, 2000). Theories of motivation and empirical evidence have suggested several sources of intrinsic motivation. Some motivational researchers posit that activities that provide learners with a sense of control over their academic outcomes may enhance intrinsic motivation (Pintrich & Schunk, 1996). Lepper and Hodell (1989) have identified challenge, curiosity, control, and fantasy as primary characteristics of tasks that promote intrinsic motivation.

Continuing motivation is the type of intrinsic motivation most directly concerned with education and it reflects an individual's willingness to learn (Maeher, 1976). Studies have been done on how to improve learner motivation. Theorists argues the primary reward for the learner is the activity itself; thus, continuing motivation is facilitated by an intrinsic interest in the activity (Condry & Chambers, 1978). Similarly, Merrill (2002) posits that the primary reward for the learner is learning itself - i.e., when the learner is able to show a new skill or an improvement in a skill, he is motivated to perform even better. He suggests it as an integration component of effective instruction.

It is important to review past studies on motivational issues in computer-assisted instruction and distance education settings, since motivational features encountered these settings are similar to those in Web-based instruction (Song, 2000). Kinzie (1990) argues that intrinsic and continuing motivation are important components in computer-based instruction. Malone (1981) suggests challenge, fantasy, and curiosity as the components of intrinsically motivating computer-based instruction. Song (2000) also argues that three types of motivation – motivation to initiate, motivation to persist, and motivation to continue – are important in Web-based instruction. Studies have been done on the effects of delivery medium to learner motivation. Several researches suggest that motivation to learn via a particular medium is influenced by the learner's beliefs about

his own ability and the difficulty level of the task, rather than by the medium per se (Clark, 1994). Similarly, Reinhart (1999) found that the learner's self-efficacy and task difficulty affects his motivation to learn via the Web. In addition, Keller (1999) posits that learner support is important for motivating learners in Web-based instruction.

## Methods

### Participants

An interview research method was used as a means to explore the issues under investigation. Interviews were conducted of adult learners who have taken self-directed online courses. The sample for this study was drawn from over 3,000 working adults and adult students who registered for one or more self-directed online courses between September 2003 and January 2004, which was retrieved from the user database of the company who were the provider of the online courses that the study participants enroll. From this user list, about 200 people were purposefully selected to get a sample representative of the population in terms of their status, gender, experience in online learning, and the type of courses taken. The adult student group was drawn from students enrolled in a large Midwestern university. The working adult group was drawn from learners in three different types of organizations (i.e., non-profit, university, and business organizations) throughout the U.S. The investigator contacted them via e-mail soliciting their participation in the study, so 6 working adults and 6 adult students agreed to participate. Among the 12 adults interviewed, 7 were females and 5 were males. The participants took courses of various topics; seven of them took courses on desktop applications, three of them took courses on computer programming, and two of them took courses on soft skills.

### Instrument

A semi-structured interview method was used to collect interview data in this study. Several open-ended questions were asked to participants to explore their feelings and behaviors with regard to the issues under study. The interview questions consisted of three parts; introduction to the interview, leading questions, and the concluding session. In the introduction, the purpose of the study and information on the confidentiality of the participant's responses was explained to him or her. The second section included leading questions to be asked of the participant. The last section included closing remarks on thanks the participants and reminding them of possible follow-up questions in the future.

Two pilot interviews were administered in order to test the instrument to increase the clarity and the likelihood of eliciting desired information. One in-person interview and one phone interview were conducted in the pilot test stage. The interview questions were revised based on the feedback from this pilot study.

### Procedures

One-on-one interviews were conducted from March through June of 2004. 8 participants were interviewed in person and 4 participants who were located at distance from the investigator were interviewed via phone. Semi-structured questions were asked to the participants to explore their motivational problems and the solutions to alleviate the problems. In-person interviews were held either at a conference room or the participant's office room, all of which were quite rooms. Each interview took between 30 – 45 minutes and was tape recorded. The interviews were transcribed verbatim for analysis.

A transcript analysis was conducted of the transcripts in order to identify emerging themes or patterns from the qualitative data. The investigator copied the transcripts into index cards. A sentence or sentences that provided information relevant to the research questions were written on to the index cards. Two investigators – the author and an external data analyst – sorted the index cards to identify emerging themes. The index cards were sorted by grouping the cards that had common issues or topics together. Several emerging themes were identified as a result. An external auditor also reviewed the results of the data analysis to evaluate the provide feedback on the trustworthiness of this data analysis.

## Results

### Motivation to start online instruction (Motivation to initiate)

Most of the interview participants pointed out the flexibility and convenience of self-paced online learning, (i.e., the fact that they can learn at their own pace without the time constraints of classroom instructions and at the comfort of their home) as the primary reason for choosing an online training option. One

participant, who is a full-time working professional and also a part-time graduate student, noted that:

> I thought it was a really good way to learn more software programs and things of that nature that I don't have to go to the classroom one as a part-time student, full-time mother, full-time worker. It's just easier, and I can do it from home. You know, I don't have to be on campus, it just takes my user name and password, and I can do this from home without…anytime I want to. I mean, you know, I'm not restricted to time or anything, and I really like that. And if I don't have time to finish something, it will save my spot, and I like that a lot, considering my interruptions.

**Motivational changes and learner persistence**

Although the convenience and flexibility of self-paced online learning was the biggest motivator for them to choose self-paced online training options, it did not necessarily motivate them enough to persist in their learning. Participants' retention rates were investigated as an indicator of learner persistence (i.e., the motivation to persist). The results indicated that half of the participants did not complete the courses, as seen in Table 1. There were also a different range of retention rates across subject areas – i.e., 0% of those who took computer programming courses completed the course, whereas 100% of those who took soft skill courses completed the course (see Table 1).

Table 1. *Retention rates of the participants of self-paced online courses*

| Topics | # of Participants | # of Drop-outs | Retention rates |
|---|---|---|---|
| Computer programming | 3 | 3 | 0% |
| Desktop applications | 7 | 3 | 57% |
| Soft skills | 2 | 0 | 100% |
| **Total** | **12** | **6** | |

When asked why they did not complete the course, three adult students indicated they did not complete the course because it was too boring. Two working adults indicated that lack of time was the main reason that they did not complete the course. One adult student even failed to start the instruction due to the difficulty of navigation.

When asked about their motivational change, eight out of the twelve people interviewed indicated that their motivational level did not change. Four of them stated that their motivation waned as they went through the instruction. The lack of interaction (both computer interaction and human interaction) in their learning was the major reason for them to get bored with the instruction, and ultimately waned their persistence. One participant described her motivational change as follows:

> At first, I think that I'm really, really excited and I want to do this, and I get all into it, and then after when, I would say, half-way through, I get sort of not as motivated - maybe even a little bit bored with it to a certain extent… The convenience is nice, but that's not what keeps it. It makes you want to try it, but it's not what keeps you interested in it. It's got to have more interaction. It doesn't hold my interest as long as what I think it should, and I think if there was some more interactivity of a program, then it would really keep my interest more, and I would be more enthused about taking more courses.

**Interactivity (human-computer interaction) during online instruction**

When asked what motivated or demotivated them to learn while they took the self-paced online course, participants stated that animations and simulations in the online courses were interactive and that those interactive features helped them engaged in their learning. One participant who took an introductory course on a computer application (Macromedia Dreamweaver) stated that:

> The one thing I did like about Dreamweaver (course) is it was very interactive and it would let you move things within while it's doing it, but the other one that I had tried to take before wasn't like there. Oracle (course) was the one I took before, that, it was just you read and then you try and answer the questions about what you read. If it was just read to answer questions, I mean, my interest in that subject went down within an hour. I didn't want to do it anymore. If it was interactive like the one with Dreamweaver (course) where it said to click the button and, you know, you could see what it did, then I was more interested in that. But if it was read to answer questions, I'd get really sleepy and bored.

As was illustrated in the participant's comment above, the lack of interactivity made them lose interest in the topic and was a major reason for dropping out of the course, in particular, among those who took

computer programming courses.

**Human interaction during online instruction**

The effects of human interaction on the learners' motivation appear to be different according to the context they are in. Most of the adult students (4 out of 6) participated in this study mentioned that human interaction is important for their learning and the lack of human interaction in this kind of online learning environment could probably decreased their motivation to persist in their learning. For example, a participant who is a part-time graduate student mentioned that:

> I don't think that you have to have a classroom to have learning take place. You have to have interaction, though, whether it's through e-mails, whether that interaction takes place through phone calls, getting together at the coffee shop, however that interaction takes place, because it does, at least for my personality, it does, I think that interaction does help the learning process. It helps to motivate you. You're not like, you know, separate, you're out here in this little world and the entire world's over here, but being part of that group, it does actually help you in the learning process. You can see where you're going.

In contrast, working adults responded that human interaction was not important for their learning in this kind of learning environment and therefore the lack of human interaction had little impact on their motivation. To them, flexibility in their learning was more important than having an instructor for their learning, as noted by a participant who was a full-time working adult as follow:

> It would depend on the time flexibility, the ability to do it at any time was probably more important in this particular case than having an instructor. If I could do the same thing as a structured class and had the time I would probably prefer having an instructor but this being a fairly small class, a fairly small unit of material and having the flexibility whenever I wanted to was definitely a plus rather than having to schedule a particular time to be at a particular place or be online at a particular time or whatever.

One interpretation for such differences between adult students and working adults on their perceptions of the lack of human interaction is that working adults seemed to be more independent learners than those in the school setting. Three out of six working adults interviewed mentioned that they would prefer to learn in a self-paced format over an instructor-led one. For instance, one working adult stated the reason that why she chose an online training option over classroom instruction as follows:

> It (online training) was probably less boring. I could control, part of it is I can control my learning experience better. Take it in bits and pieces and not have to spend all day in one class with a teacher who might not be very good. I would just rather learn it myself.

In contrast, four out of six adult students interviewed mentioned that presence of an instructor would help their learning process (i.e., being able to ask questions). For example, a graduate student who took a course on statistical computer program mentioned that:

> For instance, with in say a two-way ANOVA design or something like that and you're partitioning sums of squares a certain way you know I understand how to do it but I don't necessarily understand why I have to do it and a person could help explain to me why I had to do so perhaps structuring it that way where there is there is the, where there's the tools component and guiding me through how to do it and then a person kind of suggesting well this is why we're doing what we're doing. For me that would be really helpful and then since that wasn't there I was kind of left to my own devices to kind of try to understand why. Now verbally you could say why but perhaps for me it helps if somebody is telling me that.

**Application and integration of content by the learner**

In response to questions that what engaged or interested them in their online learning, the participants indicated that they were interested in activities that simulate real-world situations and give them hands-on experience, such as animations and simulations. These instructional approaches are known to be effective, and they also seem to motivate learners as well. One participant who took a course on computer application described his experience engaging in animations in the course as follows:

> The thing I liked about the course was the fact that they had actual parts of the program in it. And I

> think, it looks like they set it up, obviously it wasn't actually the program, but they just had areas where if you were as close to you if you were actually doing the work in the program and I actually opened up the program and did stuff that way, too. So I could actually find out how it worked. I thought it was good. I thought it was good that they went through and used the actual program.

In addition to animations, simulations also seemed to be engaging and interesting for the learners as mentioned by a participant, who was a full-time working professional and took a course on consulting skills:

> The simulations were also very good. The, they're very rich in where you like if you're having a, you can have a conversational simulation with someone and actually sort of an intelligent conversation where you are asked to respond appropriately and then it scores you on how well you, which response was more appropriate. And I really, it's kind of like game playing. It was fun for me to try to guess what was a more appropriate response.

**Learner control**

Most of the participants indicated that they felt positive about being able to control the pace of their learning. One participant who was a part-time student with a full-time job and took a course on computer applications noted that:

> …and the fact that it's work at your own pace is nice, too. Because there are some online classes where they do want you to be on a schedule, to have things turned in if you're being graded and so forth, but with this online course, it's nice to just find the time, find a half hour here or there and go in and work on it, and not feel that pressure of I have to do this right away.

Most of the participants also preferred the control over the sequence of instruction so that they could skip the part that they are already familiar with and spend more time on the part they are not familiar with. One participant stated that:

> The one thing I guess I kind of preferred a difference between the two (face-to-face and online instruction) was that when we were covering sections that I was familiar with I was able to move through very quickly versus a classroom I would have had to sit through their lesson outline for them to get through that. I was able to skip over the easier things and go to the harder parts I really wanted to spend time on.

## Conclusion / Discussions

**Implications of the Findings**

The results of this study confirm other research findings that the lack of motivation is the major reason for student drop-outs in online courses. It also provides empirical support for the claims by theorist that three types of motivation (i.e., motivation to start, motivation to persist, and motivation to continue) can influence learners' motivation in self-directed online learning settings, those motivation can change over time as learners go through instruction. Given the findings of this study that the learner's motivational level changes as they go through instruction, it is suggested that instructional designers need to put various factors into account that influences the learner's persistence and continuing motivation.

This study found several factors that Interaction is found to be critical for creating motivating online learning environments. The learners felt that computer-learner interaction is critical for motivating online learning environments. Yet, the lack of human interaction in the self-paced online learning environment did not seem to impact the motivation of adults in workplace learning settings.

The findings of this study also provide some implications for the design of motivating self-paced online learning environments. This study found that aninimations and simulations are beneficial in engaging learners in self-paced online learning environments. Also, the application of content to real world situations were found to be motivating to learners. Such an approach is regarded as effective instruction by many researchers and it is also seem to be an effective way to motivate learners.

**Limitations of the Study**

It should be acknowledged that there are some limitations to this study. This study adopted a case study approach in the sense that it investigated learners of online courses developed by a particular e-learning vendor. Since there are online courses developed by many other e-learning vendors and since their courses are

not designed in the same way, it is recommended that the self-paced online courses developed by several e-learning vendors are investigated to enhance the generalizability of the findings of this study.

Since this study examined on self-directed online course format, it is likely that the findings of this study might be limited to this particular type of online learning environments. Therefore, readers should caution not to generalize the findings to other types of online courses (e.g., formal distance education programs). Also, since this study was conducted of adult learners (e.g., adult students and working adults), their motivational needs might be different from those of school children or young adults, as suggested by several motivational theorists. Therefore, it is suggested that the findings of this study might not be generalized to younger age groups..

**Recommendation for Future Studies**

This study was a qualitative case study in which the aim was to explore the issues under study in details with a relatively small-sample of subjects. Therefore, it is recommended that a quantitative study be conducted with a larger sample to enhance the generalizability of the findings of the study. Also, it is my speculation that different factors might influence learner motivation in different types of online learning environments and with different kinds of learner characteristics. Since this study is conducted of learners who took a particular type of online courses (i.e., self-directed online courses), it is recommended that the studies are conducted on what influences learner motivation in different online learning environments. Such studies will provide insights on whether the findings of the study can be applied to other types of online learning environments (e.g., instructor-led online courses, online degree programs).

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