Motivational Influences in Self-Directed e-Learning

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This presentation reports results of a mixed-method research study of working adults and college students who participated in self-directed e-learning courses on what influenced their motivation in their self-directed e-learning. The learner motivation is investigated in terms of what influences the learner motivation and whether the learner’s motivational level changes during the instruction. Principles for the design of self-directed e-learning courses to sustain learner motivation are identified from this empirical study.

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; Olson & Wisher, 2002), high learner drop-out rates have been a concern in Web-based instruction (Carr, 2000; Cornell & Martin, 1997; Frankola, 2001; Islam, 2002), which also have been the case in distance education and computer-based instruction (Diaz, 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 that problem. 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 (Clark, 2003; 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.

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 this end, one needs to present a learning environment that builds success for online learners. 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 online learners is a great challenge due to the lack of interaction in such learning environments (Bonk & Dennen, 2003; Cornell & Martin, 1997; Keller, 1999).

Although the importance of learner motivation in Web-based instruction has been recognized in many literatures (Bonk, 2002; Ritchie & Hoffman, 1997), there is a lack of research on theories and practice of the design of motivating Web-based instruction (Keller, 1999; Song, 2000). Hence, there is a need to identify learners’ motivational needs to design motivating Web-based instruction. The purpose of this study is to investigate factors that influence learners’ motivation in Web-based instruction, in particular when they take self-directed e-learning courses. Here self-directed e-learning refers to a type of Web-based instruction in which the learner goes through instruction delivered through the Web in a self-paced format without the presence of an instructor. In more detail, this study answers the following questions:

- What influence the learner motivation in self-directed e-learning?
- Does the learner’s motivational level change during self-directed e-learning?
- What influences the learner’s motivation change during self-directed e-learning?

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 influences changes in their motivation to learn 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

This 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) identified four components of motivation – i.e., attention, relevance, confidence, and satisfaction - and strategies to design motivating instruction. Clark (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 (Maehr, 1976). Studies have been done on how to improve learner motivation. Some theorists contend that 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 researchers 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.

Methodology

Participants
The sample for the present study was drawn from the population of adult learners who had taken a self-directed e-learning course in various education and training contexts. A sample of approximately 800 adult learners was selected from working adults and adult students across the United States, who were randomly selected from employees in the client organizations of the e-learning vendor selected for this study, which is alluded to earlier. About 400 learners of self-directed e-learning courses were selected from those who were undergraduate or graduate students enrolled in universities around the United States. Additionally, about 400 learners of self-directed e-learning courses were also selected from working professionals in various workplace settings (e.g., business, non-profit, and government organizations).

The Survey Instrument
A survey instrument (i.e., a questionnaire) was constructed to collect quantitative data in this study. A new survey instrument was developed by undergoing the following three steps to ensure its reliability and validity. First, a preliminary survey instrument was designed based on the theoretical framework that was developed from the review of literature, which was described in the earlier section. Second, the preliminary instrument was modified after a qualitative inquiry was completed prior to the present study in order to include additional motivational factors that were identified from the results of the qualitative research [see Kim (2004) for more information about the qualitative inquiry that preceded the present study]. Third, the survey instrument went through another modification phase after a pilot study was conducted to improve the reliability of the instrument.

The resulting survey instrument has 60 questions, which comprises 59 multiple-choice questions and one open-ended question. This survey instrument is divided into three sections; (1) questions about the respondents’ backgrounds (questions 1-13), (2) Likert-type questions to measure the respondents’ perceptions of motivational influences in their self-directed e-learning (question items 14-46), and (3) Likert-type questions regarding their motivation to persist in their self-directed e-learning and to continue self-directed e-learning in the future and an open-ended question for general comments about their perceptions of the self-directed online learning environment (questions 47-50). This survey instrument comprised of three a priori scales, which were conceptualized from the theoretical framework through the review of relevant literature (i.e., personal factors, internal factors, and external factors).

Cronbach’s alpha was performed on this survey instrument with the data collected from the pilot study to measure internal consistency of the scales included in the instrument. The results of reliability analysis showed that the item on relevance had no strong correlation with any of the three a priori scales in the instrument. To address this issue, I added a new scale on relevance to this survey instrument by adding three more items related to relevance, which were adapted from a motivational questionnaire developed by John Keller, Instructional Materials Motivation Survey (IMMS). By adding a new scale on relevance to this survey instrument, the final version of the instrument comprised of four a priori scales with the reliability coefficients ranging from .78 – .81 (see Table 1). The following table summarizes a priori scales in the survey instrument and the reliability of each scale.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Question Items</th>
<th>Reliability Coefficient (α)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Factors</td>
<td>16, 22, 23, 26, 27, 31, 33, 40, 41</td>
<td>.79</td>
</tr>
<tr>
<td>Internal Factors</td>
<td>17, 18, 20, 28, 29, 34, 35, 38, 39</td>
<td>.80</td>
</tr>
<tr>
<td>External &amp; Social Factors</td>
<td>21, 24, 30, 32, 36, 37</td>
<td>.78</td>
</tr>
<tr>
<td>Relevance</td>
<td>14, 27, 35, 44</td>
<td>.81</td>
</tr>
</tbody>
</table>

Data Collection and Analysis
A message was sent to listservs or e-mail to the sample alluded to earlier to invite them to the survey. The message included information about the study and the URL to the survey site. As a result, a total of 368 individuals
completed the survey, yielding approximately a 46 percent response rate. The respondents took the surveys on the Web anonymously and their responses were stored on the Web server. The data was retrieved from the hosting server and was imported to a statistical analysis program. Descriptive statistics (e.g., means, standard deviations, and frequencies) and inferential statistics (i.e., Pearson’s chi-square, correlation analysis, factor analysis, and a multivariate analysis) were performed to analyze the data.

Results

Participants’ Demographics and Backgrounds in e-Learning
Of 368 respondents to this survey, 43 percent took the e-learning course as college students and 52 percent took the course as working professionals. The working professionals who participated in this survey belonged to organizations of various types: 45 percent belonged to a business organization, 39 percent belonged to a college or university, and 13 percent belonged to not-for-profit or government organizations. Among 158 college students who participated in this survey, 30 percent (n = 47) of them were undergraduate students and 70 percent (n = 111) of them were graduate students. Gender was equally distributed among the respondents to this survey: 46 percent were female and 54 percent were male. In terms of age, 18.2 percent of the respondents were 24 years old or younger, 43.5 percent were between 25 and 34 years of age, 21.7 percent were between 35 and 44 years of age, and 16.6 percent were 45 years old or more. Additionally, most of the survey respondents had moderate to high levels of experience in using computer and Internet technologies. Over 70 percent of respondents said they were using the Internet more than 20 hours per week, and 87 percent of them reported that they were using at least 3-5 software programs on a regular basis.

Respondents to this survey study took self-directed e-learning courses on various topics; 48 percent responded that they took a self-directed e-learning course on desktop applications, 30 percent took a course on computer programming, and 22 percent took a course on soft skills. The time that respondents spent taking a self-directed e-learning course also varied; 10 percent of those surveyed responded that they spent less than an hour taking the e-learning course, 62 percent responded that they spent 1-6 hours in the course, and 19 percent responded that they spent 7 hours or more in the course. In terms of the respondents’ prior experience with online learning, 30 percent responded that they had no prior online learning experience and the other 70 percent responded that they had taken 1-7 or more online courses, including college online courses and self-directed e-learning courses. Results of the chi-square test revealed that the respondents in corporate training settings had more experience with online learning than did those in formal education settings \( \chi^2 (1, 366) = 12.770, p < .05 \). When asked about the frequency of their interaction with an instructor or technical support staff, 31 percent of the respondents indicated that they never had such interactions and another 60 percent of those surveyed responded that they rarely or occasionally interacted with an instructor or technical support staff.

Factors Influencing Learner Motivation in Self-Directed e-Learning
A factor analysis of the thirty-three Likert-scale items on motivational influences in self-directed e-learning was performed using image factoring extraction method with varimax rotation. This factor analysis resulted in seven factors with initial eigenvalues over 1. A reliability analysis (i.e., Cronbach’s \( \alpha \)) was conducted on each factor to test for internal consistency. Results of the reliability analyses revealed three factors had acceptable reliability levels, which ranged from .651 to .843 (see Table 2).
Table 2. Results of the Factor Analysis and Reliability Analysis on Motivational Factors in Self-Directed e-Learning

<table>
<thead>
<tr>
<th>Factor</th>
<th>Items</th>
<th>Reliability coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. E-learning is not for me.</td>
<td>16. I did NOT have enough technical skills to be successful in e-learning.* 19. Some learning tasks in the course were too challenging for me.* 43. I was overwhelmed with the amount of information presented in this course.* 28. I experienced too many disruptions to get through the course.* 31. I would prefer to use other medium for a self-paced course.* 23. Technical difficulties that I encountered while I took this course frustrated me.* 26. I felt anxious or frustrated when I had to take tests or quizzes in this course.* 32. This course format was not suited for my learning style.* 22. I often forgot to go back to the course when I took this e-learning course.*</td>
<td>α = .843 (N = 368)</td>
</tr>
<tr>
<td>2. E-learning is right for me.</td>
<td>35. This course content was useful to me. 36. Multimedia presentations in this course stimulated my interest. 34. Taking a self-directed e-learning course was worthwhile. 44. The course content was relevant to my interests. 30. The course simulated real-world situations. 17. The difficulty level of the course content was just right for me. 46. It was important for me to complete this course. 45. My institution was supportive of my e-learning. 29. Hands-on activities in this course helped me engaged in learning. 40. I received enough feedback on my performance in this course. 42. I was interested in learning through technology as a way to enhance my technical skills. 41. The course Web site was easy to navigate.</td>
<td>α = .822 (N = 368)</td>
</tr>
<tr>
<td>3. I don’t want to be all by myself.</td>
<td>33. I wanted to get answers to my questions from an instructor.* 38. I would prefer to interact with peers rather than to learn on my own in an online course.* 39. I needed to be under a deadline to complete this course.*</td>
<td>α = .651 (N = 368)</td>
</tr>
</tbody>
</table>

*These items were negatively loaded on a factor and were reverse-coded when computing scale scores and reliability coefficients for each factor.

Descriptive statistics were performed on the factors to investigate the mean scores of these factors. The mean scores of these three factors ranged from 3.02 to 3.73 on a 5-point scale (1 = “strongly disagree” and 5 = “strongly agree”), which suggests that the respondents’ had moderately strong belief that e-learning was for them, or not for them, or they did not want to do it all by themselves (see Table 3).
Table 3. Descriptive Statistics for the Motivational Factors in Self-Directed e-Learning

<table>
<thead>
<tr>
<th>Factors *</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1</td>
<td>368</td>
<td>1.67</td>
<td>5.00</td>
<td>3.4580</td>
<td>.66509</td>
</tr>
<tr>
<td>Factor 2</td>
<td>368</td>
<td>2.00</td>
<td>5.00</td>
<td>3.7310</td>
<td>.46197</td>
</tr>
<tr>
<td>Factor 3</td>
<td>368</td>
<td>1.00</td>
<td>5.00</td>
<td>3.0163</td>
<td>.80438</td>
</tr>
</tbody>
</table>

* Factor 1 = “E-learning is not for me.”
* Factor 2 = “E-learning is right for me.”
* Factor 3 = “I don’t want to be all by myself.”

Changes in the Learners’ Motivation during Self-Directed e-Learning
The respondents’ self-reported overall initial motivational level was high (M = 4.95, SD = 1.272, where 1 = “very low” and 7 = “very high”) and their motivational level after they went through some lessons in the course was also high (M = 4.95, SD = 1.333, where 1 = “very low” and 7 = “very high”). When asked how their motivational levels changed as they went through the self-directed e-learning course, those surveyed responded that their motivational levels remained the same (M = 3.01 and SD = .976, where 1 = “decreased significantly” and 5 = “increased significantly”), as shown in Figure 1.

![Figure 1. Results of Descriptive Analysis of Learner’s Motivational Changes during Self-Directed e-Learning.](image)

Correlation analyses were performed to examine which variables were significantly correlated with learners’ motivational change. The results of correlation analysis showed that the learner’s motivational change – i.e., an increase or decrease in the learner’s motivation level during self-directed e-learning – had a significant positive correlation with his or her satisfaction with the e-learning course (r = .327, p < .01) and with the frequency of his or her interaction with an instructor or technical support staff during the self-directed e-learning (r = .244, p < .01). The learner’s motivational change also had a significant negative correlation with his or her age (r = -.107, p < .05), as seen in Table 4. Among the three motivational factors identified from the factor analysis alluded to earlier, only the first motivational factor, “e-learning is just for me” was significantly positively correlated with the learner’s motivational change (r = .467, p < .01). The other two motivational factors “e-learning is not for me” and “I don’t want to be all by myself” were not significantly correlated with the learner’s motivational change, where the correlation coefficients were -.031 (p = .548) and -.020 (p = .706) respectively.

Table 4. Variables that are Significantly Correlated with the Learner’s Motivational Change during Self-Directed e-Learning

<table>
<thead>
<tr>
<th>Variable</th>
<th>Correlation Coefficient (r)</th>
<th>Coefficient of Determination (r²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>“E-learning is right for me.”</td>
<td>.467**</td>
<td>.218</td>
</tr>
<tr>
<td>Learner satisfaction</td>
<td>.327**</td>
<td>.107</td>
</tr>
<tr>
<td>Interaction with an instructor or technical support staff</td>
<td>.244**</td>
<td>.059</td>
</tr>
<tr>
<td>Learner’s age</td>
<td>-.107*</td>
<td>.011</td>
</tr>
</tbody>
</table>

* p < .05. ** p < .01.
Factors Associated with the Learner’s Motivational Change
A multiple regression analysis was performed to identify the factors that were associated with learners’ motivational change during self-directed e-learning. The dependent variable for this multiple regression analysis was the learner’s motivational change during self-directed e-learning, where 1 = “decreased significantly” and 5 = “increased significantly”. Thirteen independent variables were entered for the stepwise regression analysis, which consisted of demographic variables (age, gender, respondents’ vocational status, and the setting in which they took the e-learning course), the respondent’s backgrounds in e-learning (computer competency, course topics, prior experience with e-learning, time spent in taking the e-learning course, and the amount of interaction with an instructor or technical support staff in the self-directed e-learning course), and the three motivational factors identified from the factor analysis.

The results of this multiple regression analysis revealed that five out of thirteen variables entered for the stepwise multiple regression analysis significantly contributed to predicting the learner’s motivational change during self-directed e-learning. Those five predictors accounted for 30.2 percent of the variance in the learner’s motivational change ($R^2 = .302$, adjusted $R^2 = .293$). Table 5 summarizes the results of stepwise regression analysis, including regression coefficients, intercept, $R^2$ and adjusted $R^2$.

Table 5. Results of Stepwise Multiple Regression Analysis of Variables for Predicting the Learner’s Motivational Change during Self-Directed e-Learning

<table>
<thead>
<tr>
<th>Variables §</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Intercept</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>$R$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.988</td>
<td>.098</td>
<td>.467</td>
<td>-.596</td>
<td>.218</td>
<td>.216</td>
</tr>
<tr>
<td>2</td>
<td>.147</td>
<td>.044</td>
<td>.166</td>
<td>-.592</td>
<td>.241</td>
<td>.236</td>
</tr>
<tr>
<td>3</td>
<td>.162</td>
<td>.044</td>
<td>.171</td>
<td>-.667</td>
<td>.268</td>
<td>.262</td>
</tr>
<tr>
<td>4</td>
<td>-.136</td>
<td>.041</td>
<td>-.146</td>
<td>-.442</td>
<td>.289</td>
<td>.282</td>
</tr>
<tr>
<td>5</td>
<td>.232</td>
<td>.090</td>
<td>.116</td>
<td>-.488</td>
<td>.302</td>
<td>.293</td>
</tr>
</tbody>
</table>

Note. Formal education setting was the reference category for educational setting dummy variable, where the other category in this variable was corporate training setting. ** $p < .01$.

§ 1 = Motivational factor: “e-learning is right for me”
2 = Learner satisfaction
3 = Frequency of interaction with instructor or technical support staff
4 = Age
5 = Educational setting.

Furthermore, the results indicated that the first predictor (motivational factor) best explained the variability in the dependent variable, accounting for 22% of the variance ($R^2 = .218$, adjusted $R^2 = .216$). The second predictor (learner satisfaction) added 2.3% to the prediction [$R = .491$, $F (2, 363) = 57.527$, $p < .01$] and 2.8% of the variance was increased by adding the third predictor (the frequency of interaction with an instructor or technical support staff) to the equation [$R = .518$, $F (3, 362) = 44.258$, $p < .01$]. The fourth predictor (age) added 2.1% to predicting the variance [$R = .538$, $F (4, 361) = 36.760$, $p < .01$], and the fifth predictor (educational setting) increased the prediction by 1.3% [$R = .550$, $F (5, 360) = 31.193$, $p < .01$]. Additionally, the standardized regression coefficients ($β$) presented in Table 5 show that the fourth predictor (age) has a negative coefficient value whereas the other four predictors have positive coefficients values, indicating a negative linear regression between the learner’s age and his or her motivational change.

Discussion and Conclusion

The results of the present study have confirmed other research findings that learners’ motivational levels tend to change over time. Given the findings from this study that some learners experience a change in their motivational level during self-directed e-learning, there are clear implications for designing motivating self-directed e-learning environments. By understanding what is associated with the learner’s motivational change during self-directed e-
learning, e-learning designers can be better informed on how to create a learning environment in which the learner is expected to sustain his or her motivation to learn during the self-directed e-learning process.

Although e-learning designers cannot control some of the factors that were found to contribute significantly to predicting the learner’s motivational change during self-directed e-learning, such as age and educational setting, they can indeed take other significant predictors into account when designing the learning environment to help learners stay motivated. Findings of this study suggest that the learner’s motivational level is likely to increase when the e-learning course is designed in a way that is relevant to the learner, has multimedia components and hands-on activities, simulates real-world situations, provides feedback on the learner’s performance, and provides easy navigation on its course Web site.

Furthermore, the findings of the present study indicate that in order for motivation to remain constant or increase, the e-learning environment should be designed in a way that makes the learner satisfied with the overall learning experience and that provides him or her with opportunities to interact with an instructor or support staff. Interactions between the learner and instructor or technical staff need to be considered especially when the e-learning courses are designed or delivered for students in college or university settings, because such interactions are more likely to positively influence the motivation in these learners than in learners in workplace settings.

The findings from the present study have implications for the motivational design of self-directed e-learning courses. The nine factors that were found significantly associated with learner’s motivational change from the results of the present study can be translated into the principles for the design of motivating self-directed e-learning courses. Figure 2 summarizes the instructional design principles recommended for sustaining the learner’s motivation in self-directed e-learning identified from the results of the present study.

1. Provide learners with content that is relevant and useful to them.
2. Include multimedia presentations in the course that stimulate the learner’s interest.
3. Include learning activities that simulate real-world situations.
4. Provide learners with content that the difficulty level of which is just right for them.
5. Provide learners with hands-on activities that engage them in learning.
6. Provide learners with enough feedback on their performance.
7. Design the Web site that is easy to navigate.
8. Design the course in a way that the learner is satisfied with the overall learning experience.
9. Incorporate some social interactions in the learning process (e.g., interaction with instructor, technical support staff, or animated pedagogical agents).

Figure 2. Instructional Design Principles Recommended for Sustaining the Learner’s Motivation in Self-Directed e-Learning

It should be acknowledged that there are some limitations to this study. Since this study examined the self-directed e-learning course format, it is likely that the findings of this study might be limited to this particular type of online learning environment. Therefore, readers should take caution not to generalize the findings of the present study to other types of online learning environments (e.g., instructor-led online courses). Additionally, the present study focused on adult learners (e.g., adult students and working adults); it is possible that the motivational needs of adult learners might be different from those of school children or younger adults, as suggested by several theorists and researchers (Bohlin & Milheim, 1994; Gibbons & Wentworth, 2001; Wolcott & Burnham, 1991). Therefore, the findings of the present study may not be generalizable to learners of younger ages.

It is possible that different factors might influence learner motivation in different types of online learning environments. Since this study was conducted with learners who took a particular type of online course, it is recommended that studies are conducted on what influences the motivation of learners in other types of online learning environments (e.g., instructor-led e-learning courses, and online courses in formal education settings). I suspect that such studies will reveal some motivational factors that were not found in the present study but have significant impacts in other online learning environments, and will also provide insights on whether the findings of the present study can be generalized to other types of online learning environments.
I also recommend that factors that influence the learner’s attrition from the e-learning course be investigated in future research studies. Investigation of the factors that influenced learner attrition was not attempted in the present study as it was not the main focus of the study. But I believe that such a study will be beneficial in informing educators and instructional designers on how to design self-directed e-learning environments that foster the learner’s motivation to persist in learning. Some studies have been done in Web-based distance education programs (e.g., Groleau, 2004; Tello, 2002), yet such research studies are lacking on self-directed e-learning settings. Findings from such a study may provide one with an empirical basis upon which he or she can understand what factors prevent learners from persisting in self-directed e-learning courses.

References


