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Effect of incentivized online activities on e-learning

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Abstract

When it comes to e-learning, the main concern is always the communication technology, instead of studying how the technology can work to enhance effective learning experience among learners (Stiles, 2000). This paper is an attempt to look beyond communication technology and examine the effect of online activities as an assessment incentive (motivation) on adult learners with particular reference to a specific e-course offered by the School of Arts and Social Sciences at SIM University (UniSIM), Singapore's only university for adult learners. In this case study, the overall continuous assessment was enhanced in the July 2008 semester by adding on online activity and the percentage of online activity (such as discussion board) was increased from 10% to 20% in the January 09 semester, while the qualitative feedback system was introduced in the July 09 semester. The researchers observe that these changes have resulted in an overall better performance by students in the continuous assessment component, while the deviation in students' performance has been further lessened. It is also found that the students' overall continuous assessment in online activities has improved after the instructors' qualitative feedback system was introduced.

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Keywords: Communication Technology; E-learning; Online Activities; Motivation; Adult Learners

1. Introduction

When it comes to e-learning, the main focus has always been what the communication technology can offer, instead of studying how to enhance effective learning experience among learners (Stiles, 2000; Ravenscroft, 2001).

There are various pedagogical theories pertaining to e-learning. As the focus of this paper is on the learners, and learning itself is a communication process, the researchers would like to discuss the issue from a different perspective – Communication behavior model. This theoretical framework is under Cognitive Paradigm, which emphasizes explanation of individual factors, such as motivations, values, attitudes, and behavior.

Elaboration Likelihood Model (ELM), one of the key communication behaviour models, suggests that it takes *Motivation* for receiver to think about the message. Therefore, motivation is believed to be one of the key factors that affect quality of information process and decision-making (MacInnis & Jaworski, 1989; Maheswaran, & Sternthal, 1990). Undoubtedly, the quality of information process translates into effectiveness of learning.

This paper looks at the effect of online activities as an assessment incentive (motivation) on adult learners with particular reference to a specific blended e-course *Mass Media in a Changing World*, offered by the School of Arts and Social Sciences at SIM University (UniSIM), Singapore's only university for adult learners. In this case study, the overall continuous assessment was enhanced in the July 2008 semester by adding on online activity and the percentage of online activity (such as discussion board) was increased from 10% to 20% in the January 09 semester,

while the qualitative feedback system was introduced in the July 09 semester. The researcher observes that these changes have resulted in an overall better performance by students in the continuous assessment component, while the deviation in students' performance has been further lessened. It is also found that the students' overall continuous assessment in online activities has improved after the instructors' qualitative feedback system was introduced.

2. Elaboration Likelihood Model (ELM)

Elaboration Likelihood Model (ELM) is one of theories that attempt to explain communication behavior. It suggests that the degree of a receiver's involvement in information processing will result in different route to attitude change: *central route* and *peripheral route*. If the "elaboration likelihood," or cognitive effort, is high, a central route will be taken. In the central route, attitudes are developed or shaped by careful consideration, thinking and integration of related information. When the "elaboration likelihood" is low, the peripheral route is assumed. (Petty & Cacioppo, 1983; Schneier & Warren, 1994).

Throughout the process, it takes Motivation, Opportunity and Ability (MOA) for the receiver to think about the message arguments. Therefore, MOA to process information are believed to be the key factors that affect information process and decision-making (MacInnis & Jaworski, 1989; MacKenzie & Spreng, 1992).

The researchers would like to highlight certain aspects of the Elaboration Likelihood Model (ELM), which can help explain its relations with effectiveness of e-learning.

2.1 Information Processing

After being exposed to a message, a receiver would undergo certain stages: 1) attention to the message 2) understanding of message content 3) evaluation of the message (elaboration integration), and 4) a change of opinion (Boster, Hamilton, & Hunter, 1993).

Throughout the process, it takes motivation, opportunity and ability (MOA) for the receiver to think about the message arguments. Therefore, motivation, opportunity and ability to process information are believed to be the key factors that affect information process and decision-making (MacInnis & Jaworski, 1989; MacKenzie & Spreng, 1992).

This situation can be explained using the ELM. This theory suggests that the degree of a receiver's involvement in information processing will result in different route to attitude change: *central route* and *peripheral route*. If the "elaboration likelihood," or cognitive effort, is high, a central route will be taken. In the central route, attitudes are developed or shaped by careful consideration, thinking and integration of related information. When the "elaboration likelihood" is low, the peripheral route is assumed. Under such circumstance, attitudes are formed or changed without active thinking about the issue or arguments under consideration. This route can also be said to fit a situation in which persuasion results from "non-issue-relevant concerns" (Petty & Cacioppo, 1983; Schneier & Warren, 1994).

The high elaboration situation is based on the assumption that the audience's motivation, opportunity and ability (MOA) to process the information are high. In other words, the audience has actively processed the information. On the other hand, the low elaboration situation does not involve any high MOA to process information. In other words, the audience is less likely to actively process the information (Zajonc, 1980).

Literature indicated that e-learning platform, such as computer and Internet, involves lots of "point and click" techniques that allow users to select information they want easily and promptly. In other words, the Internet users have higher dominance over the message exposure on the one-to-one basis (Murphy, 2000; Lee, 2000). According to Batra, Myers, & Aaker (1996), the more active role the audience plays during the presentation, the more likely the information processing will be central instead of peripheral.

Cognitive response theory can explain part of the central route situation. It suggests that people tend to think while elaborating the information, or the issue-relevant thoughts they are interested in (Brock and Shavitt, 1983). Lee (2000) suggested that receivers would show the tendency to process only the information they need. It is highly possible that messages appearing through the Internet can lead to more cognitive elaboration than those appeared on faster-paced TV or Radio (Lee, 2000).

There are two types of information-seeking activities among computer and Internet users: browsing and directed search (Uzunboylu, Bicen & Cavus, 2011; Rowley & Farrow, 2000; Hoffman & Novak, 1996). Browsing is “an activity in which one gathers information while scanning an information space without an explicit objective” (Toms, 2000, p. 424). Whereas, directed search refers to active search for information that helps make decision (Wolfenbarger & Gilly, 2001).

MOA may influence communication behavior on the Internet, especially on the information-seeking part. It would be useful to empirically find out how motivation influences the local consumer behavior on the Internet.

2.2 Motivation to Process Information

Motivation is “an inner state of arousal” that directs to attaining a goal (MacInnis & Moorman, 1991). Many motivations that impel human conduct are themselves acquired, which is, people learn to need certain substances, situations and experiences that prompt or urge them to engage in particular kinds of behavior (DeFleur & Ball-Rokeach, 1989).

Our inherited biological motivations, such as hunger and thirst, may be more or less similar between one person and another. However, the acquired or learned motivations are products of our social experiences (Thorndike, 1998). Since everyone has a distinctive set of learning experiences in his own unique environment, the motivations that an individual acquires provide for great individual differences.

Hoyer & MacInnis (2001) suggested that motivation is increased by something of (1) personal relevance; (2) consistence with their values, needs and goals; (3) perceived risk; and/or (4) moderately inconsistency with their previous attitudes (p.55).

In the context of computer or Internet, perceived usefulness can be considered as an important motivation factor (Atkinson & Kydd, 1997). Previous research found that perceived usefulness has a significant relationship with computer usage. For example, Davis (1989) found that perceived usefulness was positively correlated with both self-reported current usage and self-predicted future usage. Adams *et al.* (1992) and Igbaria *et al.* (1994) also found that there was a significant correlation between perceived usefulness and system usage.

2.3 Motivation and Effectiveness of E-learning

Theoretically speaking, if we can increase the learners’ motivation, their involvement in e-learning will be higher. When students’ involvement in e-learning environment is higher, their learning experience will positively be enhanced. Ultimately, the overall impact of learning on students will be greater (Macdonald, 2008; Stiles, 2000; Thomas, 2007).

3. Online Activities as Assessment Component – An Experiment at UniSIM

To understand the effect of motivational incentive on the adult learners, an experiment on the assessment component was conducted for a period of four semesters (Jan 08 – July 09 semester). Effectiveness of learning can be examined from different perspectives. One indicator can be students’ overall scores. Though learning experience itself can hardly be quantified in the first place, the researchers would like to focus on the students’ scores as subject for observation as they are relatively more measurable than other aspects, such as level of students’ critical thinking skills, which may in fact be affected by other factors.

A specific blended e-course *Mass Media in a Changing World* was rolled out in July 08 Semester, after the retirement of its predecessor *Introduction to Communication Studies*, a conventional course without any online component.

10% of the online activity (online discussion board) was added to the continuous assessment of this newly-developed blended e-course in July 08 Semester. The percentage of the assessable online activities had increased from 10% to 20% in the January 09 semester, while the qualitative feedback system was introduced on top of 20% assessment percentage in the July 09 semester. To achieve the objective of this experiment, the difficulty level and learning objectives of this course remain the same for the past semesters.

Table 1: Percentage of Online Activities as Assessment and Overall Mean Score

Semester	Online Activities (Assessment percentage)	Number of students	Overall Mean Score	SD (Overall Score)
Jan 2008	0%	96	54.30	14.88
July 2008	10%	122	60.63	14.18
Jan 2009	20%	217	61.27	13.84
July 2009	20% + Written Feedback	268	61.19	12.80

As indicated in Table 1, while the percentage of online activities as assessment component has been increased from July 08 Semester to Jan 09 Semester, the overall mean score has been improved accordingly as well. The changes are especially obvious for the first three observation periods (Jan 08 semester to Jan 09 Semester), when online activities as assessment component has been increased from 0% in Jan 08 Semester all the way to 20% in Jan 09 Semester. Each semester, additional 10% is raised.

Interestingly, the researchers also observe that the Standard Deviation (SD) of scores have dropped from semester to semester, indicating the differences in students' performance have been further lessened.

After the instructors' qualitative feedback system was introduced in July 09 Semester, it does not seem to have much effect on the overall mean score. However, the deviation in students' scores has been further reduced.

Table 2: Percentage of Online Activities as Assessment and Exam Mean Score

Semester	Online Activities (Assessment percentage)	Number of students	Exam Mean Score	SD (Exam Score)
Jan 2008	0%	96	52.40	14.47
July 2008	10%	122	53.40	15.32
Jan 2009	20%	217	59.75	13.85

Table 2 seems to indicate an effect of percentage of online activities as assessment on the exam mean score as well. The researchers observe that the changes in percentage of online assessment have resulted in an overall better performance by students in exam, though the deviation is not significant.

Table 3: Written Feedback and Mean Score of Discussion Board

Semester	Online Activities (Assessment percentage)	Number of students	Mean Score (Discussion Board)	SD (Exam Score)
Jan 2009	20%	206	65.86	18.85
July 2009	20% + Written Feedback	260	70.98	18.08

Table 3 indicates the difference in mean scores before and after the written feedback was introduced. Before July 09 Semester, the assessment rubric does not have an open-ended feedback column. In July 09 Semester, the instructors were instructed to convey the feedback and comments, on top of the marks given to students.

It seems that the written feedback system does have a positive effect on students' performance in discussion board. The mean score has improved from 65.86 to 70.98, while the deviation in scores has been narrowed.

4. Conclusions

The findings and observation of this experiment suggest that the learners' motivation does play an important part in their involvement in learning. When students' involvement in e-learning environment is higher, the overall score as an indicator of students' performance can be improved.

Based on the findings, the researchers would like to propose the following strategies, which are believed to be able to improve effectiveness of e-learning.

4.1 Include e-learning activities as part of the course assessment components

This represents a direct incentive to engage the learners. The researchers would like to suggest that most, if not all, e-learning activities should be graded. By doing so, the instructors would find it relatively easier to maintain the learners' motivation and discipline levels. "Perceived risk" in failing to participate in the e-learning activities is high, if these activities are in fact graded.

4.2 Foster frequent instructor-learner interaction

Instructors who employ e-learning should make the platform more interactive. The online discussion board should encourage learners to articulate and reflect their thinking, instead of just browsing the course materials and lecture notes. By adding online activities, learners will be pushed to take the central route in their information processing. Their involvement in learning will hence be improved. In return, the instructors' motivation will be increased due to the interaction.

4.3 Rethink course design

The instructors should rethink learning outcome and course outlines, if they intend to convert the conventional course into an e-learning one.

On top of the technical knowledge, instructors should include case studies which learners may find it "moderately inconsistent with their previous attitudes," but "relevant" to their works or lives.

The researcher strongly believes that there are many other better strategies to improve effectiveness of e-learning along the way. The researcher hopes that this paper can generate more discussion and even trigger some empirical studies on this area.

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