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ONLINE LEARNING: EXAMINING INSTRUCTIONAL DESIGN STRATEGIES IN LEISURE CURRICULUM

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An assessment of the park and recreation-related educational programs and departments within the United States indicates an increasing presence of web-based distance learning (WBDL) environments. According to a voluntary listing posted on NRPA's official website, over 35 courses are offered within a WBDL environment with almost 20 U.S. colleges and universities participating. In addition, some programs currently offer a 100% WBDL baccalaureate and/or master degree. These numbers are also somewhat conservative as additional programs offered by universities continue to emerge as evident by the dialogue and postings on the online discussion forum of the Society of Park and Recreation Educators (SPREnet). With this increase in instructional technologies there has been a growing concern in the educational community regarding the effectiveness of these tools to meet the needs of the learners (Lukow & Ross, 2003; Van Dusen & Worthen, 1995). Despite this concern, many of the issues surrounding the effective implementation of WBDL programs have not been explored sufficiently. Grounded within social cognitive theory, this study examined the instructional design of a WBDL about pay-for-performance systems in parks and recreation. The effects of two instructional methods, online discussion groups and multiple formats, are assessed on cognitive outcomes. The moderating role of experience with technology, technology self-efficacy, and several individual characteristic variables were also examined.

Bandura's (1977, 1986, 1991) Social Cognitive Theory was the first to incorporate the notion of reciprocal determinism. Reciprocal determinism takes into account the learning process, the individual, and the environment suggesting each element influences and is being influenced by the other (Gibson, 2004). Using this framework, instructional design researchers have explored the interactions between the learner, the environment, and their behavior in learning environments and findings have suggested that purposeful interaction in a specific and pre-determined way can increase the learner's motivation and learning (Sabry & Baldwin, 2003). Based upon this research, it would appear that one way to provide for asynchronous interactions in a WBDL is through the use of discussion groups for different activities such as group assignments and problem solving exercises. Social cognitive theory also suggests each learner embraces his or her own view or perspective into the learning environment. Social cognitive theory holds that people do not merely react to external influences, as if they were unthinking organisms, but actually select, organize, and transform stimuli that impinge upon them (Wexley & Latham, 2002). Based upon this research, the learner in a WBDL program should be exposed to several perspectives of the content (i.e., Microsoft PowerPoint presentations, text-based documents, sound graphics, video clips, and/or hyperlinks).

Methods

Drawing from social cognitive theory, the following hypotheses were developed:
Hypotheses 1: Learners who participate in discussion groups will perform higher on an objective test of pay-for-performance compared to learners who do not participate in a discussion group.

Hypotheses 2: Learners presented with content in a multimedia format will perform higher on an objective test of pay-for-performance compared to learners who are presented content in one media format.

Hypothesis 3: An interaction is expected between discussion groups and multiple-formatted presentations of the content in a WBDL program. In particular, learners' performance declarative knowledge (i.e., learning) is expected to be higher in a WBDL program using discussion groups and multiple formatted presentations of the content than in a WBDL program using only discussion groups, multiple formatted presentations or a WBDL program with neither mode of instruction.

The moderating role of experience with technology, technology self-efficacy, and several individual characteristic variables were also examined. A 2 x 2 experimental design was utilized to test the hypotheses. Four variations/presentations of the WBDL workshop were created to test the hypotheses. Group 1 (noMFnoD) served as the control group – in this group, participants were without the presence of multiple presentation formats and without discussion groups. Participants were provided the content in one format - an online format with images. The treatment condition for Group 2 (MFnoD) was the integration of multiple formats without discussion groups to the workshop content. Specifically, the three sections of the workshop were presented in multiple formats: an online format with images, PowerPoint format, and a Portable Document Format (PDF) with images. The content within each of the three formats was identical, enabling the participant to select the most preferred format. The treatment condition for Group 3 (MFD) was the integration of both multiple formats and discussion groups. Members of group 3 were exposed to multiple formats (identical to Group 2) and also participated in discussion group activities at the conclusion of the three sections. Discussion group activities required the students to reflect and comment on the content and respond to at least one other student's posting. For example, at the end of section 1 ("Purposes/Overview of a Pay-For-Performance System"), students were asked, "Based on the U.S. court cases on performance appraisal practices, five criteria (i.e., Presented training program to evaluators) have been identified. Which one of these criteria do you feel would be the most difficult for agencies to achieve? Why?" The treatment condition for Group 4 (DnoMF) was the integration of discussion groups without multiple formats into the workshop content. A 2-3 hour WBDL instructional program/workshop on pay-for-performance in public parks and recreation was developed for the purpose of contrasting the styles of presentation and followed a linear format with learners completing each section before advancing to the next section. Undergraduate students in the four university courses were invited to participate in the study. A total of 213 students registered for the workshop. Random assignment placed each participant in one of four WBDL workshops. A two-week deadline to complete the WBDL workshops was imposed to facilitate prompt participation by the students. Using a modified Dillman (2000) technique, a series of reminders were sent to the participants yielding an 84% response rate (n=180) with 47 participants in the noMFnoD group; 49 in the MFnoD group; 40 in the MFD group, and; 44 in the DnoMF group. Data of interest to the study were collected at two points during the WBDL course for all four groups. Prior to starting the WBDL course, all participants completed a questionnaire (online) that collected demographic information and assessed participants' technology self-efficacy, experience with technology, and (pre-test) declarative knowledge of the course content. At the conclusion of the workshop, the participants were required to complete a post-test (online) assessment of their declarative knowledge that was used to measure participants' learning in the WBDL program. Univariate analyses of covariance (ANCOVA)

procedures were utilized to test hypotheses. To assess the contributions and differential effects of the demographic and moderator variables in addition to the group formats, hierarchical regression analyses were used.

Results

The instruments used in the study were first examined for reliability and validity with internal consistency measures (Cronbach's alpha coefficients) ranging from .76 to .80. One-way 2 (multiple formats) x 2 (discussion activities) ANCOVA was computed to contrast the adjusted declarative knowledge post-test scores (with the pre-test scores covaried out). Results showed that the main effect of workshop group was significant ($p < .05$). Student-Newman-Keuls tests revealed that participants in the DnoMF group scored higher than participants in the other groups (MFnoD, MFD, and noMFnoD). No differences between the latter three groups were found. ANCOVAs were also calculated to test the moderating effects of experience with technology and technology self-efficacy. The main effect for perceived experience with technology and technology self-efficacy were non significant as were the interactions (all, ns). To conduct the regression analysis, the individual characteristics were entered into the first block, followed by the technology self-efficacy and experience with technology variables in the second block. Workshop group contrasts were inserted as the final block to determine their incremental contribution beyond the effects of the other factors. The results of the hierarchical regression analysis indicated that the individual characteristics cluster accounted for almost 13% of the variance in declarative knowledge scores and significantly contributed to the prediction of post-test declarative knowledge ($F(7,159) = 3.26, R^2 = .13, p < .05$). The second block comprised of technology self-efficacy and experience with technology did not significantly contribute to the regression equation (ns). When adding the block of workshop groups, a significant change in explained variance occurred with the contrasts between pairs of workshop groups adding an additional 10% of the total variance. Inspection of the individual contrasts showed that a significant difference was obtained when the noMFnoD group was compared with the MFD (F change = 5.80, R^2 change = .03, $p < .05$) and DnoMF (F change = 12.76, R^2 change = .07, $p < .05$) groups, and when the MFnoD group was contrasted with the DnoMF (F change = 17.55, R^2 change = .10, $p < .05$) and MFD (F change = 8.75, R^2 change = .05, $p < .05$) groups.

Discussion

Overall, two major findings emerged from this research study. First, there was a strong effect of having discussion group activities in the 2-3 hour online workshop consistently noted. Online workshops using discussion group activities had significant effects on learning. These findings provide support for the use of Social Cognitive Theory's reciprocal determinism and self regulatory frameworks by emphasizing learning as a social process of interactions with the content, other learners, and their internalized standards (Bandura, 1991). These positive effects were not impacted by participants' technology self-efficacy, experience with technology, or other individual characteristics. The second finding was the neutral effect of multiple formats on learning. Contrary to the hypotheses, using multiple formats in an online workshop did not significantly affect learning compared to an online workshop without multiple formats. A possible explanation for the neutral effect of multiple formats on learning centers on the length of the WBDL workshop. Previous research on multiple formats (Johnson & Aragon, 2003) has investigated WBDL courses that were between 12-16 weeks in length while this study examined a WBDL workshop that was 2-3 hours in length. Additional research in the recreation field that examines the effects of various modes of instruction within longer WBDL programs is needed.

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