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Not Another Boring Library Orientation

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Abstract

This study explores the effectiveness of game-based learning (GBL) as an instructional method for one-time library orientations. Two groups of students attend a one-time library orientation. One group is taught using traditional instruction (TI) methods. The other is taught using a GBL approach. A posttest is used to measure student knowledge of using library resources. Results will show no significant differences between the GBL approach and TI; however, results will demonstrate that students are more engaged and more satisfied with the library using the GBL approach.

Keywords: game-based learning, traditional instruction, library orientation

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Introduction

“Motivation is the most important factor that drives learning. When motivation dies, learning dies . . .” (Gee, 2003, p. 3).

Moans, sighs, and eye rolls are perhaps familiar body language signs to librarians in higher education when it comes to mandatory library orientations. Many students find these one-time orientations tedious, boring and unnecessary. Librarians may find students unengaged and unmotivated to participate and learn. This does not have to be the case. By using an alternative method, game-based learning (GBL), to teach library orientations, students can be motivated to learn, have fun while doing it, and receive a positive impression of the library. This study compares GBL to traditional instruction (TI) in a one-time library orientation to provide evidence that GBL is as effective as TI for learning. In addition, the study will show that students who participate in GBL are more engaged and more satisfied with their library experience.

Literature Review

The American Library Association (2015) defines information literacy as the ability to “recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information” (para. 5). Two of the main goals of library orientations, a form of library instruction, is to introduce students to library resources (Lange, 2015) and to enable students to become lifelong, independent learners (de Kock, 2013) which both go hand-in-hand with the concept of information literacy. Library instruction teaches students how to locate, find, and critically evaluate resources, regardless of format (de Kock, 2013; Leach & Sugarman, 2006); however, the method that librarians usually employ to share this information, e.g., lecture and PowerPoint, can be very boring for students (de Kock, 2013; Lange, 2015;

Leach & Sugarman, 2006; Smith, 2007). Furthermore, “a mere five percent of lecture material is retained . . . (Smith, 2007, para. 10).

Games, on the other hand, are part of students’ everyday lives (Oblinger, 2004). According to the Entertainment Software Association, 68% of gamers are over 18 years old (New Media Consortium, 2014). A game as defined by Mayer and Johnson (2010) “. . . is a rule-based environment that is responsive to the player’s actions, offers appropriate challenges to the player, and keeps a cumulative record of the player’s actions” (p. 244). An educational game has the intent of causing a “. . . desirable change in the player’s knowledge” (Mayer & Johnson, 2010, p. 245).

Research has shown that games provide active learning opportunities and engage students. They promote collaboration, as they are social in nature (Gee, 2003; Oblinger, 2004; Prensky, 2003; Shaffer, Squire, Halverson, & Gee, 2005). Games provide opportunities for immediate feedback and allow students to transfer and relate their learning to outside contexts (de Kock, 2013; Gee, 2003; Leach & Sugarman, 2006; Mayer & Johnson, 2010; New Media Consortium, 2014; Oblinger, 2004; Prensky, 2003; Shaffer et al., 2005; Smith, 2007). They allow students to be producers and not simply consumers of their own learning and they promote deeper learning (Gee, 2003). Games give students information at the time of their need (Oblinger, 2004). Games also promote systems thinking, critical and logical thinking, and help students to develop problem-solving skills (Gee, 2003; Prensky, 2003; Shaffer et al., 2005).

Even with all the good that games can do, there are some factors worth considering before using GBL. Games should not be played just so students can have fun. The most effective educational games are aligned with learning objectives (de Kock, 2013; Leach & Sugarman, 2006; Mayer & Johnson, 2010; Oblinger, 2004; Shaffer et al., 2005). Students need to know the

purpose of the game, why they are playing it and how it relates to the subject matter at hand (de Kock, 2013; Leach & Sugarman, 2006; Oblinger, 2004). Games could detract and distract players from properly processing the academic content of the game, i.e., interfere with students' cognitive processing capabilities (Mayer & Johnson, 2010). To be most effective, a balance needs to be found between the entertainment and educational features of the game so that student learning is enhanced (Leach & Sugarman, 2006; Mayer & Johnson, 2010).

Students crave something other than lecture and require motivation to learn. They want to be actively involved in their learning and for the learning to have personal meaning (Shaffer et al., 2005). They want collaboration, experiential and problem-based learning activities, interactivity, and immediate feedback (Gold, 2005; Leach & Sugarman, 2006; Oblinger, 2004; Shaffer et al., 2005; Smith, 2007). GBL offers students all of these options as well as being an excellent method to increase student motivation. In addition, games allow “. . . librarians [to] appear approachable, flexible, and willing to have fun” (Leach & Sugarman, 2006, p. 197).

Significance of the Study

There is a dearth of research pertaining to one-time library orientations in general (Leach & Sugarman, 2006). While research on GBL does exist, the research shows that GBL is still a “hard sell” in education (de Kock, 2013; Gee, 2003; Leach & Sugarman, 2006; Mayer & Johnson, 2010; New Media Consortium, 2014; Oblinger, 2004; Prensky, 2003; Shaffer et al., 2005; Smith, 2007). As expected, the author discovered there is a lack of recent research focusing on library orientations and GBL together. All of these issues combined demonstrate a very real need for current research focusing on GBL and one-time library orientations. Using games in education is not a new concept; however, it is a concept that still needs encouragement. By conducting this study, the author hopes to add the body of research in favor of GBL as well

as provide evidence that librarians, students and library orientations can benefit from employing this method of instruction.

Research Questions and Hypothesis

Research Questions

- Is GBL as effective as TI in improving student knowledge in a library orientation setting?
- Are students who attend a library orientation that utilizes GBL more engaged and more satisfied with the orientation compared to those who attend a TI orientation?

Hypothesis

The study based on GBL and library instruction research (de Kock, 2013; Gee, 2003; Lange, 2015; Leach & Sugarman, 2006; Mayer & Johnson, 2010; Oblinger, 2004; Prensky, 2003; Shaffer et al., 2005; Smith, 2007) predicts that GBL will be equally effective as TI in improving student knowledge in a library orientation setting. It also predicts that students will exhibit higher levels of satisfaction and engagement with the GBL approach compared to that of TI.

Method

Procedure

The study takes place at a business library at a medium-sized private-not-for-profit university in the southern region of the United States. It involves two different business library orientations. Each orientation session lasts for one hour and forty minutes. The instruction part of the orientation is the standard one hour. Forty minutes has been added to give students time to complete the demographic survey and the pretest at the beginning, five minutes and ten minutes, respectively, and the posttest and the satisfaction survey at the end, ten minutes each. The orientation covers how to use library resources, such as the library catalog, research guides, and

databases, to research a company. Both sessions use the same librarian as the instructor. The author will observe both sessions.

Two groups (N=30 per group) of business undergraduate students attend a library orientation session. One session, the control group, is taught using the TI method of lecture via PowerPoint interspersed with hands-on activities. After each activity, students share answers with the entire group. The other session, the experimental group, is taught using a GBL approach. PowerPoint is used to show the instructions for each activity. Students are divided into ten groups of three. The groups work together to complete the hands-on activities and compete against each other. Each activity is timed to encourage the sense of competition. Groups share their answers with the entire group. The first group that correctly finishes each activity is the winner. Scores are kept and tallied at the end to declare one group the overall winner.

Principle

Analyzing the data from the demographic survey, including prior library usage, and the pretest scores for outliers helps to control for differences between the two groups. Including the pretest and demographic survey data in the posttest performance calculations will function as additional control measures. Calculating the mean, the standard deviation, and the analysis of variance of posttest scores combined with Cohen's *d* will serve as the best methods for determining if any significant differences occurred between the two groups.

Type of Design

This study uses a mixed-methods design, as both quantitative and qualitative data will be gathered with the purpose of proving the null hypothesis correct. A quasi-experimental approach in the form of a pretest/posttest method is used to test the hypothesis. The study is a modification of the approach used by Kiger, Herro, and Prunty (2012) during their research. Satisfaction data

is used to prove that GBL yields more engaged students as well as students that are more satisfied with a GBL approach to instruction over those who attend a TI approach for a one-time library orientation.

Independent Variables

The independent variable in this study is the method of instruction, GBL or traditional. Student demographics and prior library usage are extraneous variables that could affect student test results and the group distributions, which is why the demographic survey, including prior library usage, and a pretest are given to all students at the beginning of the library orientations. The data will be analyzed to help control for group differences.

Dependent Variables

The dependent variables in this study are the posttest scores of the students and the open-ended responses pertaining to student satisfaction and level of engagement. The study uses the same test for the pretest and the posttest. The questions test students' abilities to find, locate, and evaluate company data using online library resources. The timed tests are given via paper-and-pencil. Students have ten minutes to answer twenty questions.

Factors Jeopardizing Internal and External Validity

Testing could jeopardize internal validity as being exposed to the pretest could skew posttest scores. Since the students will not be randomly selected, selection bias and history could also skew posttest performance, as the two groups may not be truly equivalent. In addition, the effect of experimentation could skew results as the newness of using GBL with the experimental group could cause students to act differently, which could influence their posttest results.

Sample and Participants

Participants in this study are sixty business undergraduate students from a business school at a medium-sized private-not-for-profit university in the southern region of the United States. Students are either sophomores or juniors and cover various ethnicities. Students register for the library orientations online. One group (N=30) is designated as the TI group and the other (N=30) designated as the GBL instruction group. Although random selection will not be employed in this experiment as not all business undergraduate students will have an equal chance to participate as some students have already attended previous library orientations, the selected students should approximately represent the business undergraduate population of sophomores and juniors.

Data Collection

The demographic survey asks the following questions: gender, grade level, ethnicity, area of concentration, and level of familiarity with the library. The pretest and posttest are the same. Sample questions from the test are the following: What is the ticker of Apple Inc.? Who is a national competitor of Alphabet Inc.? What is the Standard Industrial Classification (SIC) code and description for Diamondback Energy?

The satisfaction survey uses both quantitative data in the form of five Likert-scale questions and qualitative data in the form of three open-ended questions. Sample survey questions are the following: On a scale of 1 to 5, rate your level of satisfaction with the library orientation with 1 being least satisfied and 5 being most satisfied. On a scale of 1 to 5, rate your level of engagement with the library orientation with 1 being no involvement and 5 being heavily involved. Open-ended questions are the following: What did you like most about the library orientation? What did you like least about the library orientation? What is your opinion of the library after attending this orientation and why?

Data Analysis Procedures

Demographic data will be analyzed to determine how evenly the groups are distributed and to discover outliers, such as students who are already extremely familiar with using library resources. Outlier scores will not be used in the posttest calculations. The author along with a librarian, not involved in teaching the students, will assess the pretests and posttests for correct responses. SPSS software will be used to help analyze the data from the tests. The pretest scores and demographic data along with the mean, standard deviation, and analysis of variance will be used in the calculations of posttest performance. Cohen's *d* will be used to measure if any effect sizes occurred (Kiger et al., 2012). The author will analyze the open-ended responses for similar responses and overarching themes. NVivo software will be used to assist in analyzing the open-ended responses.

Anticipated Results

The author expects that the results from this study will prove the null hypothesis in that posttest performance will show no significant differences between the two groups. The author believes that GBL will be as effective as TI in improving students' knowledge of using library resources and that both groups' posttest performance will be similar. Furthermore, the author believes that the students who attend the GBL orientation will be more engaged throughout the session and that the open-ended responses for this group will yield themes indicative of greater satisfaction with the library orientation and a more positive view of the library compared to the students who attend the TI session.

Future Research

Future research concerned with library orientations that use GBL could focus on larger class sizes as this study is limited to only two classes of thirty business undergraduate students

each. Additional research could be conducted using students from different disciplines, students from different age levels, including graduate students, and use different teachers for the orientations. The small sample size and similar discipline of study limits generalizability of these results; however, the findings will demonstrate the relevancy and power of GBL and should encourage other librarians to use this method in orientations.

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