

Operation Graduating Gilbert: Student Perceptions of a Unique Course Design

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Abstract: The growth of online learning in post-secondary education has made it imperative to find models for improving the quality of online course design. As part of a grant project, an instructional team of designers and subject matter experts aimed to enhance the engagement of online psychology courses. Preliminary results from the grant study were promising, however, the engagement enhancing elements needed to be evaluated further to determine what elements students found most engaging. Operation Graduation Gilbert (OGG) is an online psychology course that incorporates high-engagement elements such as a narrative structure, gamification, growth mindset, and active collaboration. Survey data from an initial deployment of the course design broadly confirmed the value of most of these elements and suggested which to emphasize in the revised course. It is hoped that OGG will serve as an example of how an engaging online course can be developed using collaborative design and evaluation.

Introduction

Student engagement, performance, and retention in online education is a major concern for school administrators (Allen & Seaman, 2014). One suggestion for improving student performance and retention in online classes is to create more engaging courses that reflect the interests of the students and create opportunities for social interaction (Lee & Hammer, 2011; Jagers & Hu, 2016; McInnerney & Roberts, 2004). “Operation Graduating Gilbert” (OGG) is a gamified online introductory psychology Blackboard course designed as part of a grant project to improve engagement and performance of at-risk and minority students. Conceived and developed as a collaborative project between an instructional design team and a subject matter expert, OGG is one of the courses in the treatment group of the grant’s experiment that uses the Community of Inquiry theoretical framework (Garrison, Anderson, & Archer, 2000) to guide the development of the course.

The instructional team was critical to the development of the OGG course. The advantage to implementing an instructional team is that good andragogy and technology are more easily integrated into course design by the cooperative efforts of team members with complimentary skills. The instructional team consisted of the subject matter expert (the course instructor), an instructional designer, an instructional technologist, and a media specialist. The team members participated in brainstorming sessions on the gamification and spy premise included in the course. The instructional designer and instructional technologist ensured that learning outcomes were measurable and aligned with all content and assessments. The media specialist was instrumental in producing the spy-themed videos and creating graphic representations of characters. As well, the instructor gained knowledge about

instructional design principles and appreciated the addition of more effective instructions, authentic assessments, real-world discussion topics, and the enriched visual appeal of the Blackboard course.

The purpose of this study was to investigate student perceptions of engagement enhancing elements and to determine if differences exist between their perceptions of the level of engagement of these elements. A survey was conducted to investigate student perceptions of, and make comparisons between, the engaging elements in two pilot sections of the OGG online introductory psychology course. Initial data from action research indicated treatment group courses included in the grant project had significantly higher teacher presence ($p < .05$) and social presence ($p < .05$) when compared to courses in the control group. The OGG courses were selected from among the treatment group courses to further analyze their unique features that contribute to the higher levels of presence among these courses. Because the OGG courses are part of a larger research study, and the CoI survey was conducted anonymously, the CoI data for these courses of interest were not available, but course development based on the CoI model will be described.

OGG Course Design and Theoretical Framework

The design of the OGG course was guided by the Community of Inquiry (CoI) model. The CoI is a collaborative-constructivist theoretical framework that creates a meaningful learning experience through the development of three essential elements: teaching, social and cognitive presence (Garrison et al., 2000). Teaching presence is described as “the design, facilitation, and direction of cognitive and social processes” that supports achieving meaningful learning outcomes (Anderson, Rourke, Garrison, & Archer, 2001, p. 5). According to Anderson et al. (2001), before the course starts, teaching presence begins through the design and plans for the course.

The OGG course design demonstrates teacher presence through the creative use of a weekly “Gilbert” narrative about college students, a second spy-themed narrative with video announcements and homework “missions”, and gamified elements. These features reveal the instructor’s creativity and unique teaching style. The instructor also uses Adobe Connect synchronous video conferencing and a texting application in which teaching presence is evident.

Social presence allows members of the community of inquiry to present themselves as “real people” through projection of personal characteristics into the community (Garrison et al., 2000). Social presence is enhanced in the OGG course through the use of a collaborative assignment and weekly webinars. The group assignment provides the opportunity for student-to-student interaction in small groups of 3 to 4 students. Working collaboratively toward a common goal increases the sense of community. The design team also included multicultural characters in the weekly Gilbert narratives with which students can identify, as they face challenges familiar to college students. Additionally, students interact with each other and the instructor through the synchronous video conferences using Adobe Connect and on discussion boards.

Cognitive presence, which reflects the process of acquiring higher-order knowledge and its application (Garrison, Anderson, & Archer, 2001) is evident through the homework “missions”. These assignments require the use of critical thinking skills and knowledge of campus resources to solve the “problems” faced by the community college student characters in the story. Also, cognitive presence is evident in the growth mindset journaling activities in which students reflect on their attitudes and beliefs about success and learning. Growth mindset is an understanding that talents and abilities are not fixed, but can be developed through hard work and persistence (Dweck, 2006). Students are further challenged to think critically when they discuss course concepts during synchronous Adobe Connect video chats with their instructor.

Narrative Structure and Gamification

Two thematic enhancements were included in OGG, a strong narrative structure featuring a multiethnic cast of students, and a second spy-themed narrative element. The OGG course is structured around the Gilbert narrative that follows Gilbert and his multicultural cast of roommates as they face the typical challenges of being college students. Each week’s “episode” contains a school-related challenge for one of the characters that frames the week’s activities. The weekly discussion activity and homework relate to the Gilbert narrative, with the homework typically being an application of the week’s content to help solve the challenge, allowing for real-world application of course material. On top of this, a voluntary gamification element with a spy theme is also included in the course, with both individual and group achievements for students who choose to participate. In this game, students take on the role of spies called “operators” that work to fight against the agents of S.T.R.E.S.S. (Society to Ruthlessly

Endanger Student Success). Each week students may view a “Rally Point” video in which the instructor, known as “Chief”, provides important updates and discusses tasks that must be completed. The weekly homework assignment also includes a video that provides tips for success.

Two gamified elements related to the narratives including individual badging and a group goal were also added to the course. As part of the spy-themed narrative, students collect individual medals (virtual medals from the Blackboard Achievements tool) by completing course activities, and build individual rank as they accumulate more medals. Since superordinate goals help foster a sense of group cohesion (Gaertner & Dovidio, 2000; Sherif et al., 1961), a group achievement is included within the Gilbert narrative. The group goal is to help “Gilbert” graduate. At the beginning of the semester, the students are told that Gilbert needs to move ten steps to graduate. Each week, if the class as a whole meets a performance standard, Gilbert will move one step closer to graduation. Feedback for the group goal is provided to the class in the form of a “status report” that informs students how many steps Gilbert has achieved toward graduation.

Other Engaging Elements

Also embedded in the course were four journaling activities designed to develop a growth mindset and activities that encouraged group collaboration. A growth mindset is the belief that intelligence and abilities have the capacity to change and can be developed through hard work (Powell, 2016). Students develop a growth mindset through journaling, in which they reflect on the learning process and situations in which they overcame obstacles, emphasizing the value of effort. According to Hochanadel and Finamore (2015), students who value effort possess a growth mindset. Teachers are in a position to teach students how to persist (Hochanadel & Finamore, 2015), which is achieved in the OGG course by directing students to campus resources based on the needs of the characters in the weekly Gilbert narrative. These resources included a tutoring center, advising, financial assistance, student disability services, wellness/counseling center, and clubs/activities. Even the game goal models the growth mindset as students incrementally push Gilbert toward graduation on a weekly basis.

Two types of collaborative group enhancements were included in OGG, with one requiring more active collaboration and one group activity allowing more passive collaboration. For the active collaboration activities, students were asked to complete two of their weekly homework activities as group assignments, which each student required to show active participation in the collaborative process. The more passive collaborative activity involved a week synchronous lecture. In this environment, students were allowed, but not required to actively collaborate in the group discussion.

Methods

The purpose of this descriptive study was to assess student perceptions of engagement with the variety of enhanced elements of the OGG course and to determine if differences exist between student perceptions of the level of engagement of these elements. A survey (see Appendix) was created using Google forms to gather basic demographic information and student perceptions on the narrative structures, gamification elements, and other elements used to enhance engagement in the OGG course. The survey used a 5 point Likert scale. Community college students enrolled during the Fall 2017 Semester in two sections of online psychology courses with the OGG course design were invited to participate. The students were provided a link to the survey in the discussion forum of their psychology course and were asked to provide a rating from 1 to 5 (higher numbers indicated more positive ratings). The survey is included in the Appendix. SPSS was used to conduct paired samples t-tests to analyze the data.

Results

Narrative Structure and Gamification

The participants in this study included 33 community college students ($N=33$) enrolled in two online psychology courses OGG courses, a response rate of 69%. The raw survey results suggested that students were engaged by the use of the narrative structures. According to student responses, 73% found the weekly Gilbert narratives engaging or very engaging and 82% of students were interested or very interested in seeing Gilbert graduate. Most students (85%) also found the weekly homework missions, to be interesting or very interesting. Survey responses indicated students were engaged by the use of gamification elements. Seventy percent of students

responded that they were engaged or very engaged in the OGG spy-themed elements. The majority of students (71%) expressed they were interested or very interested in earning badges.

Paired sample *t*-tests were conducted to determine if significant differences exist between students' perceptions of engagement with the narratives and gamification elements. Students found the weekly Gilbert narrative to be no more engaging ($M = 4.03, SD = .98$) than the spy-themed narrative ($M = 3.70, SD = 1.45$); $t(1, 32) = 1.48, p = .148$. However, a comparison of the gamification elements did suggest a significant preference for the group goal, with participants reporting more interest in seeing Gilbert graduate ($M = 4.58, SD = .80$) than in earning individual badges ($M = 3.81, SD = 1.14$); $t(1,30) = 3.92, p < .001$.

Other Engagement Enhancing Elements

The other elements used to enhance engagement such as the growth mindset journals, weekly synchronous Adobe Connect seminars, and collaborative assignments revealed mixed results according to the raw data. Over half of the students (55%) responded that journal activities were engaging or very engaging. The weekly synchronous webinars were also reported to be engaging or very engaging by 81% of participants. In contrast, 61% of student responses indicated they did not find the group assignment engaging.

Paired *t*-tests were conducted to determine if significant differences exist between students' perceptions of the level of engagement between the two collaboration activities and the journaling activity. Students found both the weekly synchronous lectures ($M = 4.41, SD = 1.13$) and the journaling activities ($M = 3.58, SD = 1.11$) to be significantly more engaging than the group assignments ($M = 2.28, SD = 1.19$); $t(1,31) = 7.81, p < .001$ for lectures compared to group assignments; $t(1, 31) = 5.07, p < .001$ for journal activities compared to group assignments). Participants found the weekly synchronous lectures to be significantly more engaging than the journaling activity; $t(1,31) = 3.91, p < .001$.

Discussion and Recommendations

There are several conclusions that can be drawn from the survey data. The first is that by and large the students had favorable perceptions of the engagement enhancements. Descriptive statistics showed that most of the engagement enhancements were rated very favorably by students, with the exception of the collaborative assignment. The reasons for the students' negative opinion of the collaborative assignment may have to do with the classic problems of group work (inactive, less-motivated groupmates, difficulty meeting with groupmates, anxiety). However, this negative perception may represent a poorly operationalized element, or maybe one that does not work as planned. Ekblaw (2016) identifies the diversity of technology and variable schedules of group members as the greatest challenges to online collaboration. It is recommended that the instructor suggests to students an appropriate online tool for managing documents (Ekblaw, 2016). In the OGG course, a discussion board was provided to each group to use for the project. Students may need additional technology tools to truly collaborate on the assignment, to avoid a "jigsaw style" of group work where each group member completes a portion of the work separately and then submit the pieces together. The nature of student dissatisfaction with the group assignment will be a focal point of the OGG revision and analysis.

The second conclusion is that, while there was no difference between student perceptions of the weekly Gilbert narrative and spy-themed narrative, students found the graduating Gilbert group goal to be more interesting than the individual badging associated with the spy-themed narrative. Since the aim of most online students is to graduate, students may have preferred the group goal since they could closely identify with the character. Whether this preference was related to its association to the Gilbert narrative or the intragroup cooperation was not clear, and will be evaluated further in the next version of this enhanced course.

One final takeaway is that students seemed to find the weekly synchronous webinars to be the most engaging element in the online course. This finding supports the work of Gedera (2014) in which students showed strong preference for Adobe connect because they liked the 'human' interactions. While there are limits to the instructor's ability to mandate synchronous interaction in online courses, it may be useful to develop these opportunities and encourage students to participate.

Since the engagement-enhancing elements included in this course were founded upon the CoI model, future research should include the use of the CoI survey to determine how these elements impact teaching presence, social presence, and cognitive presence. Finally, this course should serve as one example of how to develop a more engaging online course through a process of collaborative revision and analysis. As subject matter experts and instructional developers begin to work more closely together, they should be striving for more nuanced, integrative, and evidence-based course design.

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Appendix

1. How engaging do you find the weekly Gilbert narratives?
1 2 3 4 5
Not engaging very
at all engaging
2. How interesting do you find the weekly assignment “missions”?
1 2 3 4 5
Not interesting very
at all interesting
3. How interested are you in seeing Gilbert graduate?
1 2 3 4 5
Not interested very
at all interested
4. How engaging do you find the spy-themed narrative of OGG?
1 2 3 4 5
Not engaging very
at all engaging
5. How interested are you in the badges that you can earn in OGG?
1 2 3 4 5
Not interested very
at all interested
6. How interesting do you find the mission videos?
1 2 3 4 5
Not engaging very
at all engaging
7. How engaging do you find the journal activities?
1 2 3 4 5
Not engaging very
at all engaging
8. How engaging do you find the Wednesday seminars?
1 2 3 4 5
Not engaging very
at all engaging
9. How engaging did you find the group assignment?
1 2 3 4 5
Not engaging very
at all engaging