

ALG Adaptive Learning Pilot for Introduction to General Psychology

Final Report

General Information

Date: 30 December 2021

Institution Name: Georgia Southern University

Participant Name: Ellen Williams

Total Number of Students Affected During Project: $N = 232$

Cost of Materials Replaced by Lumen Waymaker: \$0 (OER was used in 2020); \$145 (traditional textbook was used in fall 2019)

Estimated Textbook Cost Savings Per Year (cost of previous materials minus cost of Waymaker): -\$25; \$120 (fall 2019)

Are you going to continue the use of Lumen Waymaker in your General Psychology course after Fall 2021?: Yes, I plan to continue using Lumen Waymaker during spring 2022.

1. Narrative

- A. Students who engaged with Lumen Waymaker reported benefitting from the topical study plans. One student wrote: “An aspect of this course that contributed most to my learning was the weekly study plans.” The study plans were the number one response by students when asked ‘what contributed most to your learning.’ Out of 100 student responses, 85 students elected to leave a written comment. Thirty-four of these written comments mentioned something positive about the unit study plans. Engagement with this material kept students interested and provided them with a platform that encouraged active reading of the material.

To increase engagement with course content, I recommend that study plan participation scores be based on two components: 1) students first complete the assigned readings and demonstrate engagement with the embedded questions and then 2) self-check completion. One possibility may be to lock the self-checks until students have opened each reading. Although it cannot be confirmed that students are reading the content, making self-check access conditional on completion of readings and embedded questions is likely to encourage students to read the material first. Based on student conversations this semester, I observed that students quickly realized that they earned 5/5 participation points

simply by completing the unit self-checks and were not required to open/view assigned readings. Based on the analyses reported below, (see [Quantitative Measures: Student Learning Outcomes](#)), this participation score does not appear to be an accurate representation of active processing, helping students successfully study and prepare for upcoming exams. For this specific section of PSYC 1101 during the fall of 2021, students were required to complete each unit study plan prior to the section exam. Completion of each study plan earned the student 5/5 participation points. Study plan participation points, in combination with several other classroom learning activities, accounted for 25% of the overall course grade.

Students who completed all assigned study plans ($N = 131$) earned significantly higher overall course grades ($M = 91.1\%$, $SD = 9.4$) compared to those who did not complete all assigned study plans ($N = 101$, $M = 61.98\%$, $SD = 26.2$), $t(120.1) = 10.6$, $p < 0.001$ [$d = 1.6$].

Students who earned 90% or higher on study plan participation points ($N = 159$) earned significantly higher overall course grades ($M = 90.1\%$, $SD = 9.96$) compared to those who did not earn at least 90% of the study plan participation points ($N = 73$, $M = 53.1\%$, $SD = 24.9$), $t(82.7) = 12.2$, $p < 0.001$ [$d = 2.3$].

Students who earned 80% or more of study plan participation points ($N = 179$) earned significantly higher overall course grades ($M = 88.1\%$, $SD = 12.0$) compared to those who completed less than 80% of the study plan participation points ($N = 53$, $M = 45.8\%$, $SD = 23.9$), $t(59.9) = 12.4$, $p < 0.001$ [$d = 2.7$].

Students responded very favorably to the automated email messages sent via Waymaker. Students reported this as a strong motivating tool that encouraged them to work harder and reach their goals. One student wrote “This positive reinforcement motivated me to complete assignments and learn along the way.” During the previous semester, I made it a point to email students who earned high marks on their exams, as well as students who did not do as well, offering them additional tutoring or assistance. Although this is something that I had already been doing, Waymaker simplified this process, making it more streamlined, and saved me quite a bit of time. I found this to be a great advantage and something that puts Lumen Waymaker ahead of their competitors. One of the primary reasons that I plan to continue using Waymaker during the spring 2022 semester is because of this faculty tool and the ease of sending personalized emails to my students throughout the semester.

One challenge that I experienced early in the semester was the process of ensuring that all students were enrolled with Lumen Waymaker and set to begin the semester with access to all course content. Several students experienced technological problems and were unable to either view or access course content. Some of these issues were due to problems with registration and obtaining a proper access code for opening an account. Some of these issues were at the fault of the students and their errors in following instructions. In moving forward, I will work to streamline this process and to walk students through the process in greater detail.

- B. In thinking ahead to the spring 2022 semester, I plan to begin the semester with more detailed instruction on how to use Lumen Waymaker and to discuss how it will be beneficial to the student, specifically sharing the data reported above. I plan to share data illustrating how students who completed the study plans earned higher course grades than those who did not complete the study plans. To my surprise, study plan completion was not significantly related to either exam performance or quiz scores (see [Quantitative Measures: Student Learning Outcomes](#)). This semester, fall 2021, has been unique in that students returned to face-to-face instruction following several atypical semesters. I believe this confound led to the unexpected results reported later in this report.

To strengthen student – instructor rapport, I plan to change the automated messages once or twice during the course, likely every 4-6 weeks. I do not want students to dismiss the Waymaker messages (either those that provide the option for additional assistance or the messages of encouragement) because they are redundant. This is an excellent tool for instructor presence on an individual level in a classroom with over 200 students; however, I do not want to lose the personalized feel that Waymaker can provide.

2. Quotes

Student 1: “Through weekly study plans and quizzes I believe I absorbed much more information and was more engaged than with my other courses.”

Student 2: “The study plans were extremely helpful and helped me understand the topics much better. I also really loved how [my professor] emailed encouraging words after each quiz. It was encouraging and made me feel like she cared!”

Student 3: “The study plan on [our institution’s LMS] helped a lot as it was focused on the subject material at hand with the text but most effectively with the Show What You Know and their quizzes built in. The Show What You Know and quizzes in the study plan aided me to focus on subjects I had trouble on and review.”

3. Quantitative and Qualitative Measures

A. Uniform Measurements Questions

Student Opinion of Materials

Was the overall student opinion about Waymaker used in this course positive, neutral, or negative?

Positive

Total number of students affected in this project: 232 students completed this course; 100 students completed the survey and shared responses 100

- Positive: 100 % of 100 number of respondents
- Neutral: 0 % of 100 number of respondents
- Negative: 0 % of 100 number of respondents

Student Learning Outcomes and Grades

Was the overall comparative impact on student performance in terms of learning outcomes and grades in the semester(s) of implementation over previous semesters positive, neutral, or negative?

Choose One:

- Positive: Higher performance outcomes measured over previous semester(s)
- Neutral: Same performance outcomes over previous semester(s)
- X Negative: Lower performance outcomes over previous semester(s)
 - Students’ overall course grades were significantly lower this semester, fall 2021, $N = 232$, ($M = 78.4$, $SD = 23.6$, $Med = 88.3$) compared to the last time this course was taught with a similar enrollment size and fully face-to-face, fall 2019, $N = 214$, ($M = 84.6$, $SD = 14.6$, $Med = 88.7$), $t(390.2) = 3.36$, $p < 0.001$ [$d = 0.31$].

- In examining the data closer, I removed all additional course activities (i.e., participation points, research experience, departmental activities) and looked specifically at Waymaker assignments and student performance.
 - Students who earned 90% or more of the study plan points, $N = 159$, ($M = 79.0$, $SD = 16.8$) did not earn higher exam averages than those who did not earn at least 90% of the study plan participation points, $N = 73$, ($M = 80.8$, $SD = 15.5$), $t(230) = -0.77$, $p > 0.05$.
 - Students who earned 90% or more of the study plan points, $N = 159$, ($M = 77.9$, $SD = 27.8$) did not earn higher quiz averages than those who did not earn at least 90% of the study plan participation points, $N = 73$, ($M = 83.4$, $SD = 22.3$), $t(230) = -1.46$, $p > 0.05$.

Student Drop/Fail/Withdraw (DFW) Rates

Was the overall comparative impact on Drop/Fail/Withdraw (DFW) rates in the semester(s) of implementation over previous semesters positive, neutral, or negative?

 20 % of students, out of a total 235 students affected, dropped/failed/withdrew from the course in the final semester of implementation.

Choose One:

- Positive: This is a lower percentage of students with D/F/W than previous semester(s)
- Neutral: This is the same percentage of students with D/F/W than previous semester(s)
- X Negative: This is a higher percentage of students with D/F/W than previous semester(s)
 - In comparing to semesters prior to the COVID-19 pandemic, the D/F/W rate was much higher this semester. During the fall 2019 semester, the last time I taught a PSYC 1101 section fully face-to-face (i.e., pre-pandemic), the D/F/W rate was 9.8%. This shift illustrates that our students are likely still recovering from the pandemic and adjusting to being a student back in the classroom for face-to-face

instruction. Most students enrolled in PSYC 1101 are either freshman or sophomore level and due to the pandemic, this semester (fall 2021) was their first semester in the classroom for face-to-face instruction. During the spring 2020, fall 2020, and spring 2021 semesters, this course offered a ZOOM attendance option due to COVID-19 restrictions. During the fall 2020 and spring 2021 semesters, fewer than 20% of students attended lectures face-to-face in the classroom.

B. Measures Narrative

Students responded favorably to the use of Lumen Waymaker and personally reported the positive impact that they believed the use of the study plans had on their learning. For example, one student reported “I think the study plans really helped me to test myself and get a knowledge for what I was lacking in, and what could use work. I really thought it was effective.” Based on student feedback, the ability to access the content from their device, from any location, increased the frequency of reading and reviewing material compared to a traditional textbook.

Additionally, students reported finding it easier and more enjoyable to study and prepare for classroom lectures: “I like how the study plan was put up before the lecture so I could get a general understanding of the concepts before the lecture, so during the lecture I could focus on the key points and extra information.” When materials are available prior to lecture and students take advantage of this opportunity, we see gains in the learning experience (Moravec et al., 2017). It is my goal to encourage students to engage with course content, via assigned readings and study plans, prior to lecture. This schedule would open the possibility to include more active learning activities in the classroom.

The DFW rates for this section of PSYC 1101 were higher than previous sections that I have taught; however, as noted above, i.e., [student DFW rates](#), we are all learning how to best navigate our new situation. This fall our institution returned to ‘normal operating procedures’ and, for this course, all students were required to return to the classroom and attend face-to-face. Attending lectures via ZOOM was not an option and attendance was recorded via in-class activities. Several of my students had not been attending classes in person and this fall provided them with the opportunity to learn how to be a college student and to realize the responsibilities of someone who is a successful college student. In moving forward, based on the positive student responses received, I anticipate seeing the DFW rate for this course decrease as students adjust to college following the COVID-19 pandemic. In planning ahead, if forced to return to online instruction, I believe the high level of engagement with the study plans and the

interactive readings provided by Lumen Learning would be an asset to student learning in this environment. I intend to continue these analyses to examine student performance and the benefits offered by engagement with Waymaker in quiz, exam, and overall course performance.

4. Future Instruction Plans

I am planning to continue using Lumen Waymaker during the spring 2022 semester. I will be teaching another large section of PSYC 1101 ($N > 200$) and I was pleased with the interactions, the engagement, the personalized feedback, and the positive student responses regarding the platform.

I would like to find ways to integrate the resources provided by Waymaker into the classroom, specifically regarding in-class demonstrations and activities. I want to encourage student participation both in the classroom as well as outside of the classroom. I found that the study plans and the Waymaker messaging tool contributed positively to the student experience outside of the classroom.

To better the student experience and to intentionally work toward a learner-centered environment, I plan to encourage my students to read the assigned readings prior to coming to lecture. Research illustrates that engaging with course material, i.e., assigned readings, study plans, study guides, before attending lecture enhances one's in-class experience and retention of content (Moravec et al., 2017). Developing a procedure that would increase the number of students engaging with the readings prior to lecture would enhance the students' experience in the classroom and help students comprehend lecture material, while simultaneously providing them with confidence to contribute to classroom discussions. In looking at completion data throughout the semester, a small proportion of students completed the study plan prior to the unit lecture; however, most students waited until the end of the week to complete the readings and topical study plan. Each Lumen Waymaker topic quiz was due at the end of the week, following completion of the study plan and two lectures. In moving forward, during the spring 2022 semester, one consideration is to modify these course assignments to set the due date prior to lecture.

During the upcoming spring semester, I plan to make content available at least one week prior to that unit's lecture. I will work to encourage students to engage with course content before coming into the classroom for lecture. My hope is that this will allow me to disperse more active learning activities in the classroom. Specifically, I plan to build in one or two active learning strategies after 15-20 minutes of lectures. These active learning activities may include in-class surveys, quizzes, discussions, and/or group work.

5. Future Scholarship Plans

None at this time; however, I am interested in continuing to examine the benefits of open educational resources and how platforms such as Waymaker can enhance the student learning experience.