The Impact of Choice Theory on
Student Outcomes in Online Courses

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Abstract

Applying Choice Theory to classroom learning allows students a choice in assignments which can positively impact the outcome of their final grade by allowing students to complete assignments that appeal to their own personal learning style. This study explored student outcomes in online courses that use traditional methods of providing required assignments as compared to online courses that allow student choice in assignments. Instructors in two different information systems courses determined an appropriate variety of assignments for each lesson/course section that addressed the course objectives. Students were given a minimum of three assignment choices each week and completed assignments based on their preference and learning style. Findings show that student choice in assignments had a positive impact on student grades. Appealing to a variety of student learning styles increased student engagement in online courses.

Keywords: choice theory, assessment, student choice cafeteria-style grading, online learning, student engagement

1. INTRODUCTION

Applying Choice Theory, developed by William Glasser, to classroom learning allows students a choice in assignments and to determine the outcome of their final grade. The instructor of the course would determine an appropriate variety of assignments for each lesson/course section that address the course objectives. Most approaches that allow for student choice in assignments also allow students to complete as many assignments as they wish, rather than only requiring or allowing a certain number. A points-based grading scale is provided at the start of the course, so that students are aware of the number of points required to achieve each grade. The instructor provides more assignments than needed to obtain an A grade by offering different approaches to the course material allowing for students to choose an option that fits their learning style.

Choice Theory is based on the principle that "every individual has the power to control themselves and make choices" (Glasser, 1999). How educators manage their classrooms is an important part of achieving an effective learning environment since all students learn differently. Glasser's work impacts learning theory and has contributed to the ways that instructors deliver material. Glasser identifies teachers as managers who need to effectively work to successfully teach their students learning outcomes (Lynch, 2016). When developing assignments, educators can create activities designed to connect with a student's learning style and ability. Giving

students choice in their assignment selection allows learning to increase. Students are able to feel a sense of "power" while enjoying the learning experience. When creating lessons, teachers who practice Choice Theory ensure that students can meet the course objectives. When given a choice, "students know that they are able to connect, feel a sense of competence and power, and have freedom" (Sullo, 2009) in their learning experience.

Perks (2010) defines student choice as the practice of giving learners the ability to make choices about what they are learning in the classroom with the intention of boosting student engagement and motivation. Allowing students, a degree of independence in their learning may enhance their academic performance and engagement in school.

This study seeks to explore the potential benefits for students that are given choice in assignments, with the aim of appealing to a variety of student learning styles and thus increasing student engagement in online courses.

2. RELATED WORK

A study conducted by Dickerson et al. (1981) examined student choice in school. Thirty second and third grade students were assigned to groups. The students were randomly selected for a student-selected group or a teacher-selected group. The goal was to look at the outcomes of writing and math. In the student-selected group students could choose their writing and math assignments, compared to those in the teacher-selected group which were given the assignments to complete. After six sessions points were analyzed between the groups. Participants in the student-selected group obtained a statistically significant (p<.001) higher number of correct responses than those in the teacher-selected group.

Moes (1988) combined the scheduling of assignments with choice of work materials to be used for completing the assignments in children with autism ages 5-9 years old. The children had a higher percentage of correct responses and rate of homework completion, not to mention a lower amount of disruptive behavior when students were given a choice compared to those with the same age and condition that did not have a choice in assignments.

Patall et al. (2010) conducted a study to determine if providing choices among homework assignments would boost motivation and performance among students. The results indicated that when students were given a choice of assignment, they had greater motivation to complete the work, felt more competent in their skills to complete the assignment and had improved test scores compared to when they did not have a choice. Additional results showed that students did better on assignments when given a choice as compared to no choice. A study of teachers' beliefs suggests that allowing students flexibility in assignment options actually enhanced student learning and motivation (Flowerday et al., 2000).

Another name for student-choice in assignments is cafeteria-style grading. Students get to choose quizzes, test, and assignments that appeal to their own learning interests and styles. Normally, students do not need to complete all of the assignments to achieve an A but rather choose their desired assignments to earn the applicable points (Arendt et al., 2016; Hanewicz et al., 2017). Pinchot and Paullet (2021) conducted a study where students were given a choice of assignments and found that 47% of students completed more assignments than were necessary to earn an A grade, and that student reviews were extremely positive, noting that they felt the flexibility gave them more control over their learning. Goodwin and Gilbert (2001), developed a cafeteria-style grading for a general chemistry course. In their research they allowed students to not only choose their assignments but also to assign the points. This allowed students to find the most suitable assignments that fit their needs and later reflect in their final grades. Students who chose to participate in Workshop Chemistry increased their grades from 50% to 88% during the three terms of this study once students were given choice in their coursework. When asked, 83% of students agreed with this statement "The course components I chose matched the coverage of the course".

Jopp and Cohen (2020), identified four studies (Arendt et al., 2016; Cook, 2001; Hanewicz, et al., 2017; Rideout, 2017) where students were given a choice of assignments that resulted in a positive outcome to include increased engagement and grades. However, in a student choice study developed by Jopp and Cohen (2020), assignment choice increased satisfaction with the course but did not increase the learning outcomes.

According to Marshall (2018), "when students make decisions about their work, they are empowered to own it." Ownership of their work leads to self-direction and self-discipline because

students are personally invested "by choice" in their outcomes. A study involving choice and relevancy conducted by Dabrowski et al. (2018) gave students choice across three areas: content, product, and process. Faculty provided choice in content when they presented broad topics which allowed students options to choose subtopics of research. Choice in regard to the product allows students to decide how they will present the information they learned. Lastly, choice in process incorporates the reality that all students learn in different ways.

MacNaul et al. (2021) assessed student performance of 42 graduate students taking an online asynchronous course where student choice was an option. Quiz scores in this course were the highest at 86% when given a choice compared to 83% when no choice was given. In this study, providing students with a choice of assignments only improved performance slightly. However, there were zero negative effects reported. It must be noted that some students in this study chose the same type of assignments across all weeks of the course. It is possible that this could be attributed to the learning approach and styles of the individual students (Gijbels & Dochy, 2006).

A study published by Patel et al. (2008) analyzed data on student choice from 1974 through 2004. The authors found that student choice positively impacts motivation, effort, task, performance, competence, learning and preference for challenge. The researchers believe that enhanced motivation is due to a sense of independence and proficiency when they have choices (Patel et al., 2008).

3. PURPOSE

The purpose of this study was to explore the application of Choice Theory to allow student choice in assignments for online courses, which gives students a choice in their learning. The opportunity to select between two or more concurrently available assignments targeting different learning styles has shown to increase student engagement, exam scores and overall student satisfaction (Hanewicz et al., 2017). It is useful to compare student outcomes in courses that use the traditional method of required assignments versus allowing students choice in assignments. This was explored via the following research question:

RQ: What are the differences in student outcomes in an online course that uses the traditional method of required assignments versus an online course that allows students choice in assignments?

4. METHOD

This study compared the student outcomes between courses that used the traditional method of required assignments versus allowing student choice in assignments in four online courses with an information systems focus that were offered during the 2020-2021 academic year by two different instructors. This study was approved by the university's Institutional Review board (IRB).

Each instructor independently developed their course shells within the Blackboard Learning Management system. Within each course shell, content was organized into weeks. For the traditional courses (T1 and T2), each week included a required quiz, a required online discussion, and a required topic paper or written report. The courses also required a final project which included a written component and an oral presentation. This course format was heavily weighted toward written assignments. The list of assignment types required for the two traditional courses is shown in Table 1.

Assignment Type	Traditional Class 1 (T1)	Traditional Class 2 (T2)
Quizzes	X	X
Online Discussions	X	X
Topic Papers	X	X
Final Project	X	X
Final Project Presentation	X	X

Table 1: Assignment types required in both traditional courses studied.

For the student choice courses (SC1 and SC2), each week's content included a required quiz, plus three to four additional, optional assignments. These optional assignments were all focused on the content covered during the week, but allowed students to address the content using different learning styles. For example, topic papers provided an opportunity for those who prefer written assignments. Slide presentations gave students an opportunity to use short-form written communication as well as images and infographics to distill ideas. Podcasts and video presentations gave students who feel comfortable presenting information orally a chance to use these skills. Games allowed students to be creative and hands-on by developing learning-based games such an

interactive quizzes, Jeopardy rounds, crossword puzzles, and more that could also be shared with classmates who could play the games they developed for fun. Discussions and wikis allowed students in the courses to collaboratively engage in responding to a question or task, thus providing an opportunity for working with others. Similarly, interviewing a professional about a topic allowed students to move out of their comfort zone and learn about the current topic from someone they could contact within the field. One of the courses also included a required final project. A full list of the assignment types that were offered to students in the study are shown in Table 2.

Assignment Type	Student-Choice Class 1 (SC1)	Student-Choice Class 2 (SC2)
Quizzes (Required)	X	X
Final Project (Required)	X	
Online Discussions	X	X
Topic Papers	X	X
Game Development	X	X
Slide Presentations	X	X
Wikis	X	X
Critical Thinking Questions	X	
Video Presentations	X	X
Interview of Professional	X	X
Podcasts		X
Video Critiques		X

Table 2: Assignment types offered in both student-choice courses studied

In terms of point values, T1 and T2 used specific point values for each assignment required in the course, with performance in relation to total points graded on a traditional letter grade (A, B, C, D, F) scale where the total number of points available equaled the highest score achievable (which would be an A grade). SC1 and SC2 also used a traditional letter grade scale (A, B, C, D, F), but since most assignments in these courses were optional, there were far more points available overall than required to earn an A grade. When determining how many points should be assigned to each individual assignment, instructors considered difficulty level as well as an estimate of the time that would be required to complete it. Not all of the optional assignments for a given week had the same point values. Because of this difference, a grading scale including points was given to students in SC1 and SC2 at the beginning of the course, both in the course syllabus and in the course shell in Blackboard. This grading scale clearly listed the number of points required to achieve each letter grade.

Because of the difference from traditional courses where students are expected to complete all assignments, SC1 and SC2 also required additional instructions for students at the beginning of the course. The syllabi were written to include a detailed explanation of the assignment choice system and how students would be graded. To ensure that students had read the instructions thoroughly, a course orientation quiz was given in week 1 of both courses. This orientation quiz focused solely on understanding how the grading and assignment system worked. The quiz used the adaptive release feature in Blackboard, so that it had to be completed before the rest of the content in the online course would become available. This ensured that students were well aware of the different grading system that would be employed.

After the courses ended, assignment and grade data was collected from Blackboard for analysis. Student names were removed from the data set.

5. FINDINGS

This study addresses the following research question, "What are the differences in student outcomes in an online course that uses the traditional method of required assignments versus an online course that allows students choice in assignments?"

Percentage	Grade
93-100%	A
90-92%	A-
87-89%	B+
83-86%	B
80-82%	B-
77-79%	C+
70-76%	C
60-69%	D
Below 60%	F

Table 3: Traditional Grading Scale

T1 and T2 used a standard departmental grading scale for their traditional courses as shown in Table 3:

In SC1, students were offered a total of 1,865 points and in SC2, students were offered a total of 2,800 points. There were many more points offered than required in both student choice courses. To earn an A in both classes students needed to earn 930 points. The larger number of points allowed a student to choose the types of assignments he or she wanted to complete each week rather than needing to complete all of them, while still allowing ample opportunity to earn an A in the course. Table 4 shows the grading scale used in the student choice courses:

Points	Grade
930 or more	A
900-929	A-
870-899	B+
830-869	B
800-829	B-
770-799	C+
700-769	C
590-699	D
0-589	F

Table 4: Student Choice Grading Scale

Note that T1 and SC1 represented two different formats of the same course, taught by the same instructor. Likewise, T2 and SC2 represented two different formats of the same course, taught by the same instructor. Thus, a comparison of student outcomes of T1 and SC1 as well as a comparison of T2 and SC2 is appropriate.

Table 5 shows the percentage of students who earned each letter grade in T1 and SC1.

These results show that there was a 7% decrease in A and A- grades from T1 to SC1, with the student choice course having a lower number of students who earned a grade in this category. However, there was a significant increase of 17% from T1 to SC1, in percentage of students who earned a B+, B, or B-. In the next grade category, 15% of students earned a C or C+ in T1 while only 5% of students earned a C or C+ in SC1. No students scored a D or an F in either course. Figure 1 shows the grade percentage breakdown between the two courses.

Grade	T1 (n=20)	SC1 (n=18)
A	75%	67%
A-	10%	11%
B+	0%	11%
B	0%	6%
B-	0%	0%
C+	5%	5%
C	10%	0%
D	0%	0%
F	0%	0%

Table 5: Percentage of students who earned each letter grade in T1 and SC1
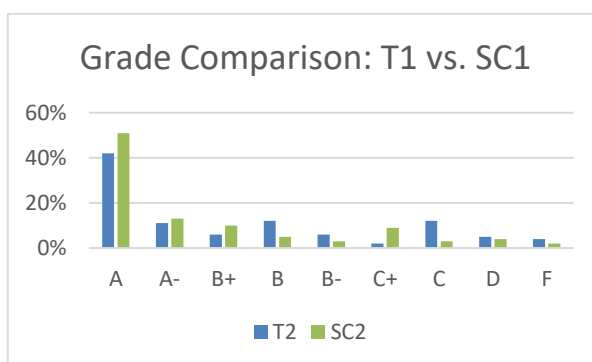
Figure 1: Grade percentage comparison between T1 (traditional) vs. SC1 (student choice)

Grade	T2 (n=20)	SC2 (n=21)
A	42%	51%
A-	11%	13%
B+	6%	10%
B	12%	5%
B-	6%	3%
C+	2%	9%
C	12%	3%
D	5%	4%
F	4%	2%

Table 6: Percentage of students who earned each letter grade in T2 and SC2

While these results do not show a clear indication of which teaching method was more successful overall, it does show that the student choice course, SC1, saw an increase in the number of

students earning a B grade or higher, with 95% of students earning a B or higher in SC1 versus 85% of students earning a B or higher in T1. Table 6 shows the percentage of students who earned each letter grade in T1 and SC1.

The breakdown of grades between these courses is very interesting. The data shows that students did better in SC2 where student choice was an option. In T2, 53% of students earned an A or A- for the final grade as compared to 64% in SC2. In T2, 24% of students earned a B+, B, or B-, compared to 18% in SC2. In the next grade category, 14% of students in T2 earned a C+ or C, while 12% of students in SC2 earned these grades. Lastly, in T2, 5% earned a D and 4% failed the course with an F grade. In SC2, 4% of students earned a D and 2% failed the course.

From these results there is a significant difference in grades between the two courses. In the student choice course, SC2, there was an 11% increase in students earning an A or A-. In comparison there is a 6% decrease in students earning a B+, B, or B- in SC2. This can be expected considering the significant increase in students earning an A or A-. Not as drastic, but important to mention, 14% of students in the traditional course, T2, earned a C+, C, or C- as compared to only 12% in SC2. Additionally, 5% of students earned a D in T2 compared to 4% in SC2 and 4% earned an F in the T2 compared to 2% in SC2. From the course data it is apparent that when given a choice, students did better than in the traditional class. Students were able to choose an assignment that fit their learning style and needs. More students earned an A or A- in the student choice course and less students earned a D or less indicating that student choice is a preference. This trend is depicted in Figure 2.
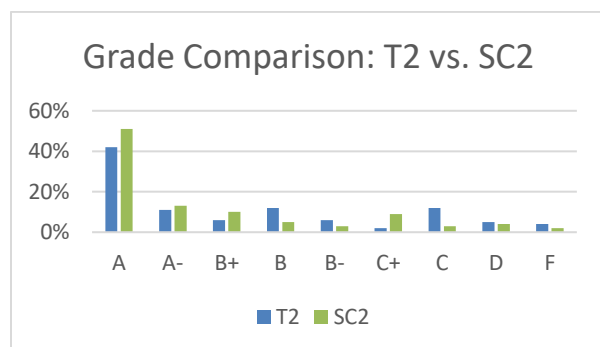

Figure 2: Grade percentage comparison between T2 (traditional) vs. SC2 (student choice)

6. LIMITATIONS

This study attempted to analyze the impact on student outcomes between online courses that were delivered traditionally versus online courses that allowed students to choose the assignments that they wished to complete in the course. A total of four courses were included, two courses in the traditional format and two courses in the student choice format. Each pair of courses represented the same course in two different formats, taught by the same instructor. While this allowed for clear comparisons between traditional and student choice teaching methods by controlling for the course content and instructor in two different cases, it still only represents a very small sample. In addition, the courses chosen were both focused on information systems and were both offered from the same university. Future studies may look at this issue on a larger scale.

Grades were primarily used to measure student outcomes in this study. While grades are one way to measure outcomes, the authors acknowledge that they are certainly not the only way. Finally, when comparing grades between the courses, it must be noted that a variety of personal factors could impact a student's grade in any given course, including personal distractions, medical issues, and number of credits or workload in a given term. The type of assignments offered in a course may be one factor impacting student grades, but they are not the sole factor.

7. CONCLUSIONS

The authors of this study analyzed the results of two online information systems courses where they applied Choice Theory, allowing students a choice in assignments. Multiple assignments were offered for students to choose from. Students were given more assignment choices than points needed to earn an A in the classes. This allowed the students to pick and choose assignments according to their preferences and learning styles. Students were able to choose assignments from an assortment of options that appeal to their learning style. Options included interviewing professionals, creating a wiki, writing papers, discussions, creating a video, building a game or even playing games created by classmates to earn points.

The results indicated that overall, students did better in both information systems classes when given a choice. The results of TC1 and SC1 only showed a minimal overall increase when looking at the breakdown of grades whereas, TC2 and

SC2 showed a substantial increase across the board when reviewing the outcomes. The difference in course outcomes could be due to the difference in information systems courses offered by the two professors.

Implications

Offering students, a choice in assignments can be most favorable when the individual has an interest in the activity at hand. By allowing students more choice, they are fundamentally becoming more independent. Students that have control over their learning tend to be more motivated in the class because their interest increases (Beymer et al., 2015). Choice in general, seems to increase interest and motivation more than other alternatives (Beymer et al., 2015, Cordova et al., 1996). If choice is to be useful in the classroom, educators must promote interest in assignments that apply to different learning styles. Building an initial interest in the topic before offering the choice may increase motivation.

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