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Assessing the Impact of Interactive Course Activities on Students' Perceived Learning and Persistence in Online Courses

A report submitted to Dr. Kim Black, Director of Assessment

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by

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Introduction

Purpose of the Project

The **purpose** of the project is to improve online teaching and students' learning experience. Specifically, this project focuses on assessing the impact of interactive course activities on students' perceived learning and persistence in online courses.
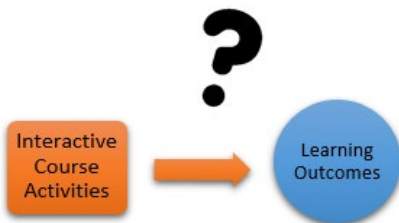
Three types of interaction are commonly discussed in the online learning literature: student-instructor (S-I) interaction, student-student (S-S) interaction, and student-content (S-C) interaction. In this study, **interactive course activities** are defined as activities that provide a structure to promote the communication between students and the instructor and among students.

Interactive course activities refer to the course activities that promote:
S-I interaction: e.g., instructor feedback via comments on the assignments, Emails, or discussion board.
S-S interaction: e.g., group projects, collective information sharing, peer feedback, and group discussion.
Non-interactive course activities refer to the course activities that focus on:
S-C interaction: e.g., lecture notes, online resources, reading assignments, and exams.

At **UNC**, during fall 2017, 18% of the undergraduate and 46% of the graduate students enrolled in at least one distance/online course[1]. This study aims to assess the usage of different online course activities at UNC, and explore how interactive course activities impact online students' perceived learning and persistence. By *perceived learning*, we refer to students' expected grade, knowledge gain, and learning satisfaction. By *persistence*, we refer to students' course completion.

Research Questions

1) RQ1: What is the current usage of different course activities, including interactive and non-interactive activities, in online courses at UNC?
2) RQ2: What are the distinct types of online learning environment based on instructors' usage of different course activities?
3) RQ3: Do students in a more interactive online learning environment have higher perceived learning (i.e., expected grade, knowledge, and learning satisfaction) and persistence (i.e. course completion rate)?

Method

Participants

A total of 371 UNC graduate and undergraduate students completed the online survey providing course activity information. The demographic characteristics of these participants are presented in Table 1. Specifically, there were 335 (90.3%) women and 36 (9.7%) men. About half of the participants were pursuing an undergraduate degree (*n* = 187, 50.4%) and taking courses in a variety of subject areas, with Special Education (11.8%), Statistics & Research Methods (9.3%), Psychology (11.8%), and Nursing (7.3%) amount the most studied areas.

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[1] UNC 2017 Fall Enrollment Profile: http://www.unco.edu/institutional-reporting-analysis-services/pdf/enrollment-stats/Fall2017Final.pdf

Instruments

Course Activities. Participants were given a list of course activities that involve student-instructor, student-student, or student-content interaction. Participants were asked to identify how frequently each course activity is used by the instructor in the online course they enroll, on a 4-point Likert scale (1 = Never, 2 = Sometimes, 3 = Often, 4 = Always). Participants taking more than one online courses were asked to provide their responses based on only one online course.

Perceived Learning. Participants will be asked to respond to questions related to their expected grade, perception of knowledge gain, and learning satisfaction. We used these three variables as a proxy for students' learning outcome.

Students' Persistence. Students' course completion data were requested from the Office of Institutional Reporting and Analysis Services (IRAS).

Procedures

Participants were recruited from graduate and undergraduate students taking at least one online course at UNC during fall 2018 and during spring 2019. We requested the email address of students who meet the above criteria from the Office of Assessment. An invitation email was sent to all the eligible students to recruit study participants. Participants were asked to complete an online survey. Upon completion of the survey, participants had a chance to win a monetary gift in a drawing (six $50 gift cards).

Key findings

RQ1: What is the current usage of different course activities, including interactive and non-interactive activities, in online courses at UNC?
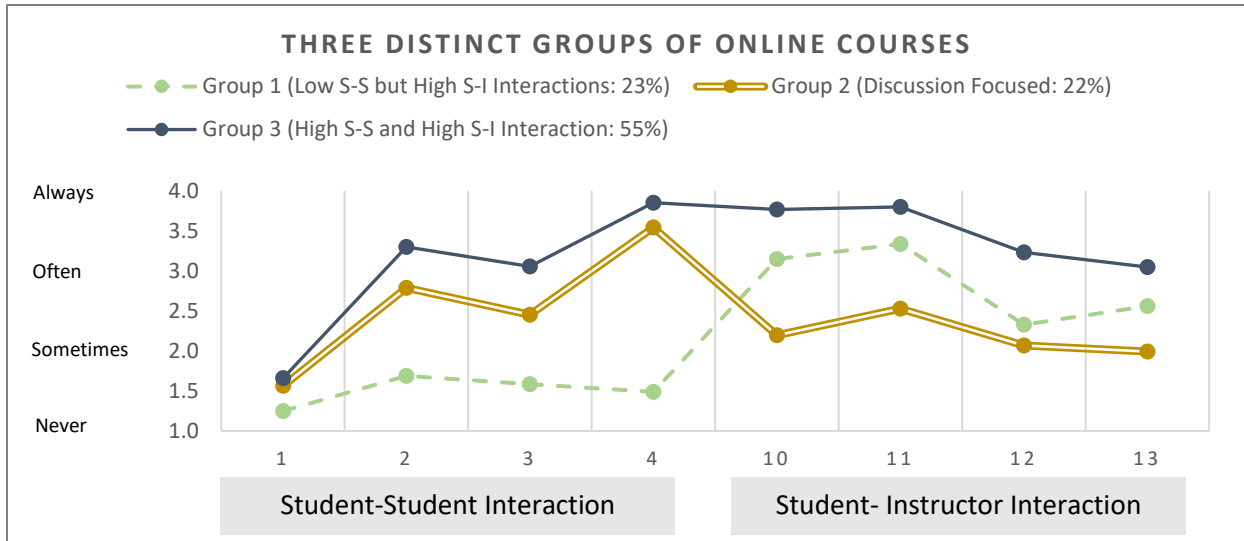
Results suggested that reading assignments (86%) were the most frequently used course activity, followed by instructor/TA answers questions via emails (82%), group discussion (75%), and instructor/TA provides feedback on the assignments (75%). Group project (13%) was the least used activity.
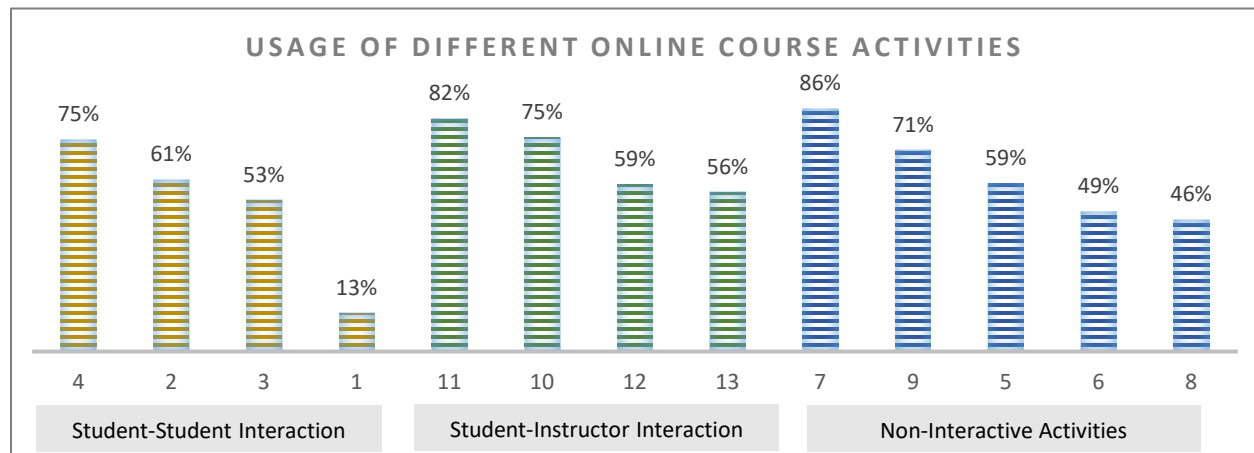
Note: 1. Group projects; 2. Collective information sharing; 3. Peer feedback/review; 4. Group discussion (e.g. online discussion board); 5. Lecture notes/slides; 6. Video lectures/announcement; 7. Reading assignments; 8. Quizzes/ exams; 9. Online resources (e.g., webpages, handouts, videos); 10 Instructor/TA provides feedback on the assignments; 11. Instructor/TA answers questions via emails; 12. Instructor/TA responds to discussion board discussion; 13. Instructors/TA offers online office hours (e.g., conference call)

RQ2: What are the distinct types of online learning environment based on instructors' usage of different course activities?

Three distinct groups of online courses were observed: (a) a group rarely involves S-S interaction but frequently involves S-I interaction (23%), (b) a group frequently uses discussion activities (22%), and (c) a group frequently involves S-S and S-I interactions (55%).

THREE DISTINCT GROUPS OF ONLINE COURSES

- - ● - Group 1 (Low S-S but High S-I Interactions: 23%) ⬤─⬤ Group 2 (Discussion Focused: 22%)
─⬤─ Group 3 (High S-S and High S-I Interaction: 55%)

Note: 1. Group projects; 2. Collective information sharing; 3. Peer feedback/review; 4. Group discussion (e.g. online discussion board); 5. Lecture notes/slides; 6. Video lectures/announcement; 7. Reading assignments; 8. Quizzes/ exams; 9. Online resources (e.g., webpages, handouts, videos); 10 Instructor/TA provides feedback on the assignments; 11. Instructor/TA answers questions via emails; 12Instructor/TA responds to discussion board discussion; 13. Instructors/TA offers online office hours (e.g., conference call)

RQ3: Do students in a more interactive online learning environment have higher perceived learning (i.e., expected grade, knowledge, and learning satisfaction) and persistence (i.e., course completion rate)?

Students in the three groups of online courses reported similar levels of perceived learning, expected grades, and course completion rate. However, students in the *High S-S and High S-I interaction* group reported a significantly higher level of learning satisfaction than students in the other two groups.
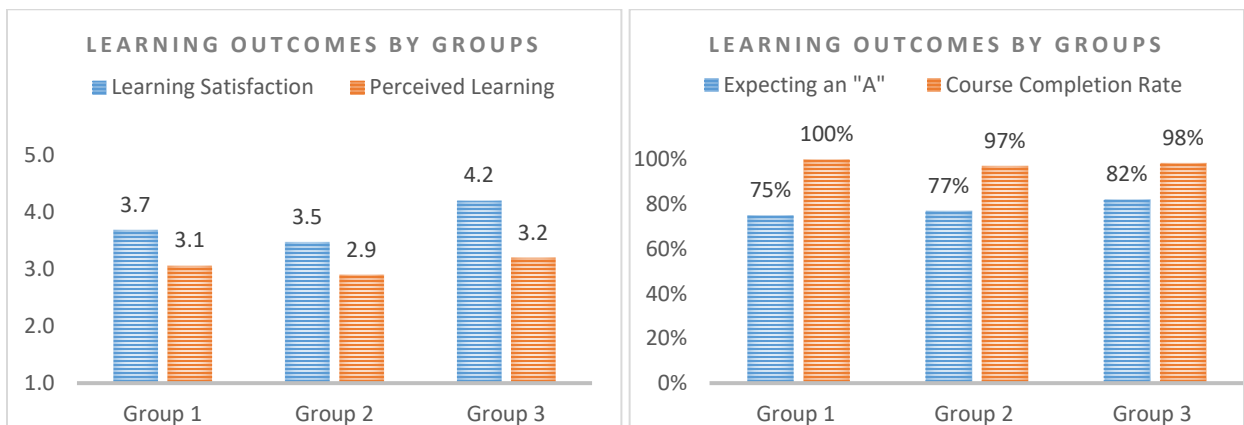
Note: $N = 346$ (emails from 25 participants were not able to match their course completion data). Group 1: Low S-S but High S-I Interactions: $n = 66$; Group 2: Discussion Focused: $n = 68$; Group 3: High S-S and High S-I Interaction: $n = 178$.

2018 Assessment Mini-Grant Project Report