Learning Management Systems (LMS) Feature Use in Core 2nd and 3rd Year Civil Engineering Courses

Matthew Cvach¹, Dr. Grace Panther², & Dr. Heidi Diefes-Dux²
¹Appalachian State University, ²University of Nebraska-Lincoln

Background

• During COVID, universities implemented policies that resulted in quick push for faculty to convert to online platforms¹
• Faculty were often frustrated they could not better accommodate their students²
• Most research focuses on student performance during COVID time period rather than how faculty adapted³
• Most research does not focus on 2nd or 3rd year courses, even though retention rates are lowest during that period⁴

Research Question:
How does engineering instructors’ LMS use change before, during and after a sudden disruption to higher education?

Methods

• Setting: Midwestern R1 University
• LMS Data
  o 2nd and 3rd Year Core Civil Engineering Courses
  o Gathered at the end of the semester from Spring 2019 through Fall 2022
  o 4-7 courses per semester
  o 16 different LMS features (4 shown in results)
• Descriptive statistics used to summarize LMS feature use frequency

Results

Instructor Communication using LMS Features

Sprin (S)
Announcements
• 100% 80% 60% 40% 20% 0%
Modules
Syllabus
Discussion

Fall (F)
Announcements
• 100% 80% 60% 40% 20% 0%
Modules
Syllabus
Discussion

Announcements by Semester

Key Findings

• Spring Semesters – Instructor Communication: LMS feature use was at its peak during the height of the pandemic
• Fall Semesters – Instructor Communication: LMS feature use has been steadily rising since 2019
• All Semesters – Announcements: General increase in announcements until Spring 21, followed by a general decrease

Conclusions

• Spring and Fall courses have different trends because they have different instructors
• Discussion usage may have been low because faculty could have used other 3rd party tools as a substitute
• More research will be needed to see if these trends hold for other departments

References


Acknowledgements

This work was made possible by a grant from the National Science Foundation (NSF REU 2244323 and NSF RFE 2105156). Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.