Why Students Withdraw from Online STEM Courses

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Background

This project is funded by the National Science Foundation under Grant DGE-2021221. The research focuses on the reasons students withdraw from STEM programs. The on-going research hopes to provide colleges with meaningful feedback as to why online students withdraw from STEM courses. The results will allow colleges to critique their modulation and improve their online resources.

Previous research shows persistence is a factor in how students are integrated into the institution academically and socially so that they have a sense of belonging (Tinto, 1987). Tinto's model has been applied to distance education, connecting student attrition to the ability to integrate their educational demands with social obligations, with lower success for students with attribution of perceiving control as external (Kember, 1995).

Research questions

- How can we, as a college, improve student persistence?
- What resources can we provide?
- What can we do to improve the quality of education found online?

Preliminary Results of Current Data

Conflict	Percentage of data
Professional	43.86%
Personal	22.22%
Course Content	15.79%
Instructor	5.85%
Medical	5.85%
Technical	3.51%
Material	1.75%
Funding	1.17%

Methodology

- Collect withdrawal reasons and associated explanations from the advising office
- Code withdrawal reasons using the coding scheme
- Analyze the frequency of codes and code categories using χ^2 analysis to compare the observed distribution of withdrawal reasons between STEM disciplines

Categories

The study focuses on the reasons students withdraw from STEM programs and concentrates on several categories:

- Administrative:
  - include the student registering for an incorrect course
  - registering for a course that is not needed for the student's degree
  - the student not receiving the required materials on time
- External and environmental
  - improper funding
  - professional or personal conflicts
  - internet issues
- Interpersonal factors
  - medical issues
  - conflicts with the instructor
  - complaints regarding course content

Feedback

What would you like to learn from this study?
Any improvements on the methodology?
Any additional categories you would like to see?

References

Tinto, V. (1987). Leaving college: Rethinking the causes and cures of student attrition. Chicago, IL: The University of Chicago Press.

Kember, D. (1995). Open learning courses for adults: A model of student progress. Englewood Cliffs, NJ: Educational Technology Publications.