

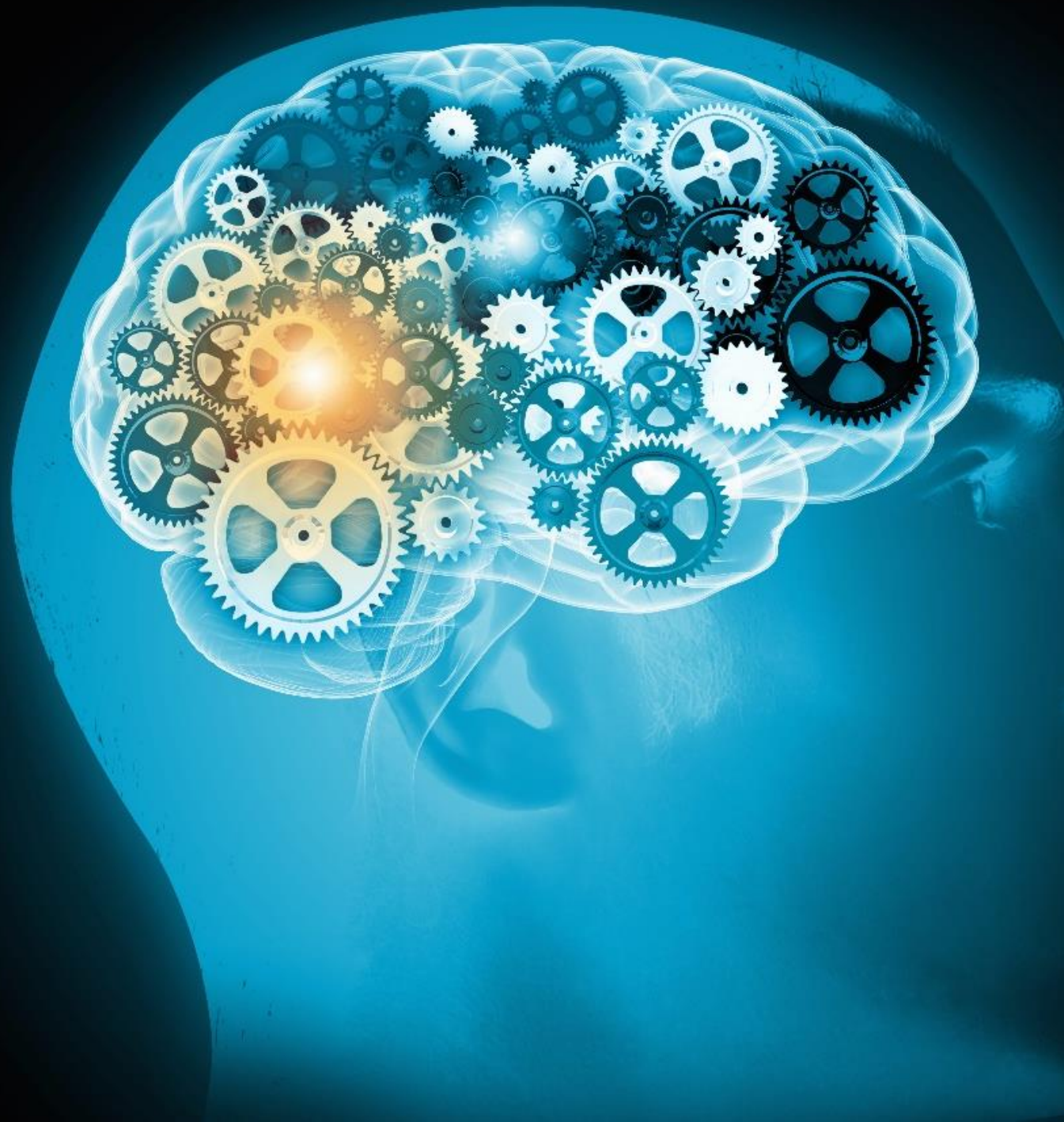
# Online Learning: Predicting Success in Higher Education

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# What does student success look like?

Students attend online classes, and hope to gain knowledge and wisdom while completing a degree.



Can we predict  
who will  
succeed?



- This study considered factors that could lead to two directions.

College  
Dropouts Lose  
Twice: 400,000  
per year

- **They lose money**
  - The tuition they paid can't be replaced. The books they never used are doorstops or digital dust.
- 
- **They lose market power**
  - They feel like failures.
  - They have “some” college, which is not marketable for a job.

# Ansoff's Environmental Turbulence to Strategic Response

Environmental Turbulence	Level 1 Repetitive	Level 2 Expanding	Level 3 Changing	Level 4 Discontinuous	Level 5 Surpriseful
Strategic Aggressiveness	Stable Based on Precedents	Reactive Incremental Based on Experience	Anticipatory Incremental Based on Extrapolation	Entrepreneurial Discontinuous Based on Expected Futures	Creative Discontinuous Based on Creativity
General Management Capability	Custodial Precedent	Production Efficiency	Marketing Market	Strategic Environment	Flexible Seeks to

# Research: To what extent does the...



1. date of entry to a class  
predict the final grade?



2. date of entry influence  
the student perception of  
learning level?



3. number of  
keyboard/course clicks in  
the online class predict  
learning outcomes?



4. number of  
keyboard/course clicks  
predict student perception  
of learning?

# Findings

- 1. Date of entry was more correlated with undergraduates (.14) than with graduates (.06). Undergraduates may have been less experienced with the learning platform and with education resources in general, so date of entry was a significant factor. The first day they access could help determine what their grade is, all other factors being equal. Those who start early may be more prepared and earn higher grades (Tables 1 and 2).

## Findings (cont)

2. Keyboard clicks impacted the student grades only to a certain level. The study found the more they clicked, the higher the grade; after a point, these clicks indicated the desperation of a student struggling with the content (Figure 2).

3. The number of keyboard clicks has a correlation ( $R^2=.152$ ) that can indicate a positive perception of learning to a certain threshold (Table 6, 7, Figure 3).



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**Table 1: Undergraduate Students First  
Access Day to Total Grade**

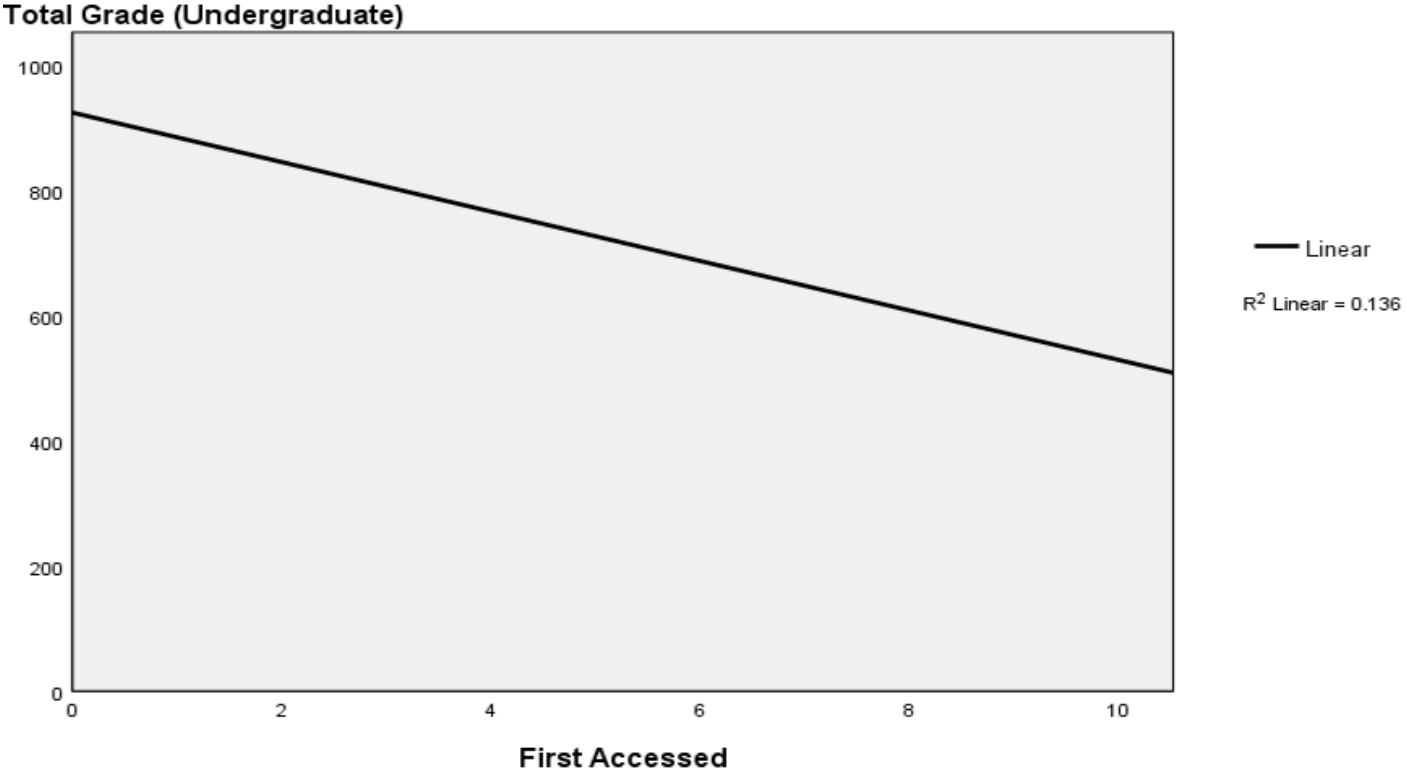
<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>
<b>.369<sup>a</sup></b>	<b>.136</b>	<b>.133</b>

**a. Predictors: (Constant), First Accessed**

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Total Grade: Undergrad to First Assess Day

Total Grade:  
Undergrad  
to First  
Assess



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**Table 2: Graduate Students First Access Day to Total Grade**

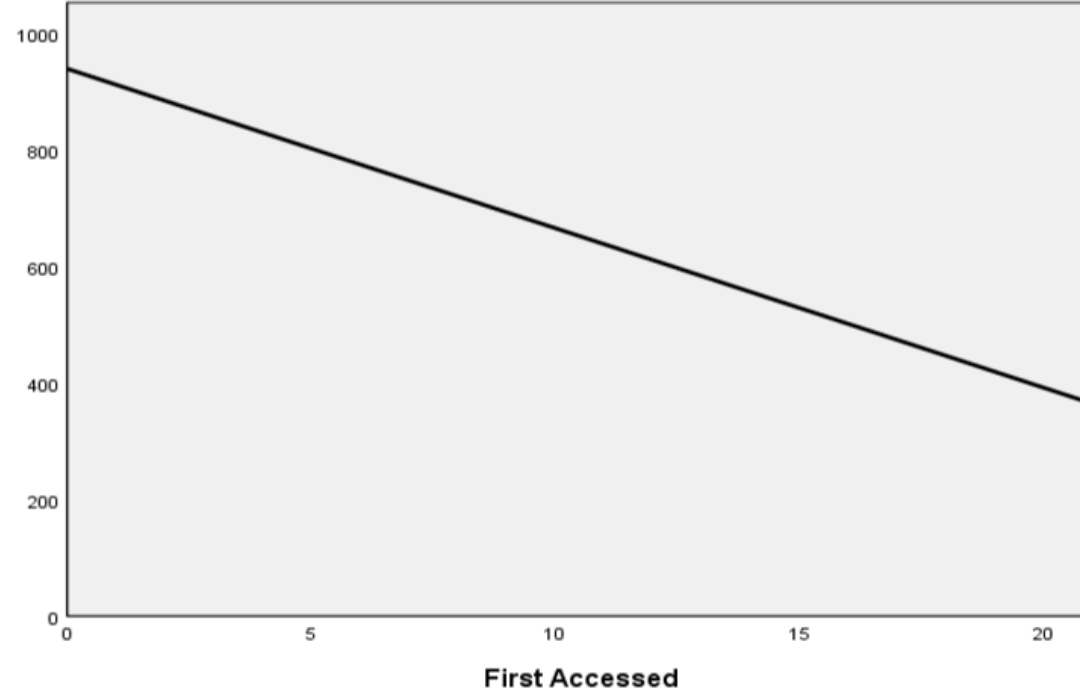
<b>R</b>	<b>R Square</b>	<b>Adjusted Square</b>	<b>R</b>	<b>Std. Error of the Estimate</b>
<b>.236<sup>a</sup></b>	<b>.055</b>	<b>.051</b>		<b>169.9516</b>

**a. Predictors: (Constant), First Accessed**

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Total Grade:  
Graduate to  
First Assess  
Day

Total Grade - Graduate

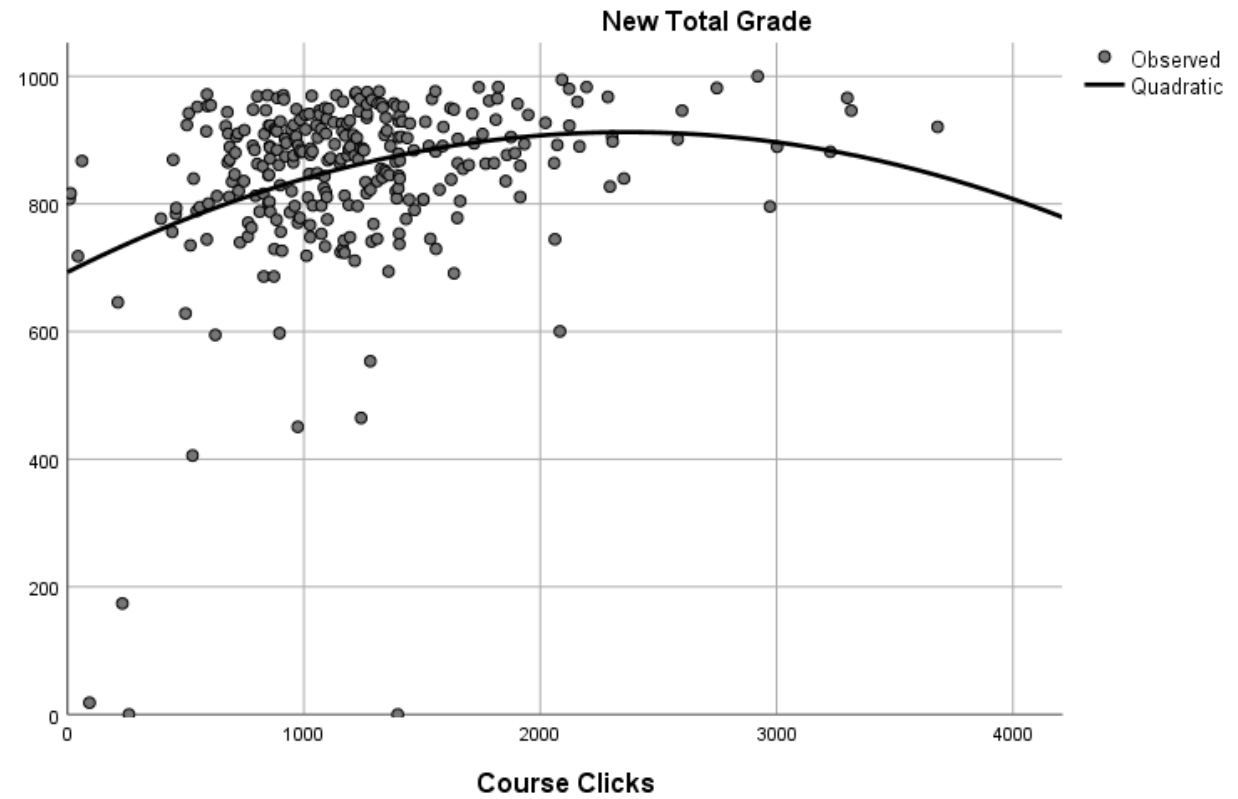


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**Table 5: Graduate Students Course Clicks and Total Grade**

<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
<b>.271<sup>a</sup></b>	<b>.073</b>	<b>.069</b>	<b>168.3367</b>
<b>a. Predictors: (Constant), Course clicks</b>			

Undergraduate  
Students Total  
Grade to Course  
Clicks Squared

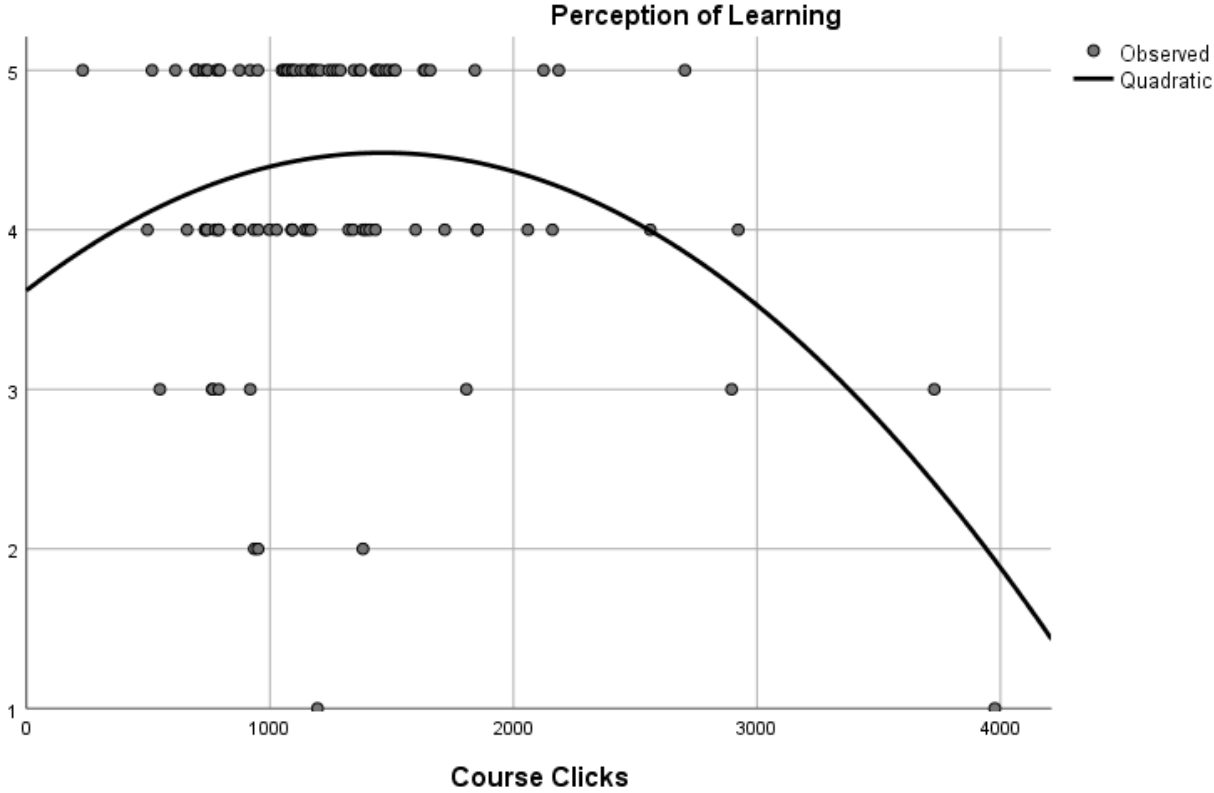


**Table 7: Graduate Students Perception of Learning to Course Clicks Coefficients<sup>a</sup>**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.620	.389		9.304	.000
Course Clicks	.001	.000	.822	2.469	.015
CourseClicksSQ (Squared Term)	-4.037E-7	.000	-1.100	-3.303	.001

**a. Dependent Variable: Perception of Learning**

# Perception of Learning to Course Clicks





# Curriculum Design Applications



CONSIDER DATES OF COURSE  
ACCESS, ESPECIALLY IF THEIR  
FIRST CLASS ONLINE



ENCOURAGE BETTER  
PLANNING FOR WEEK 1,  
ESPECIALLY UNDERGRADS

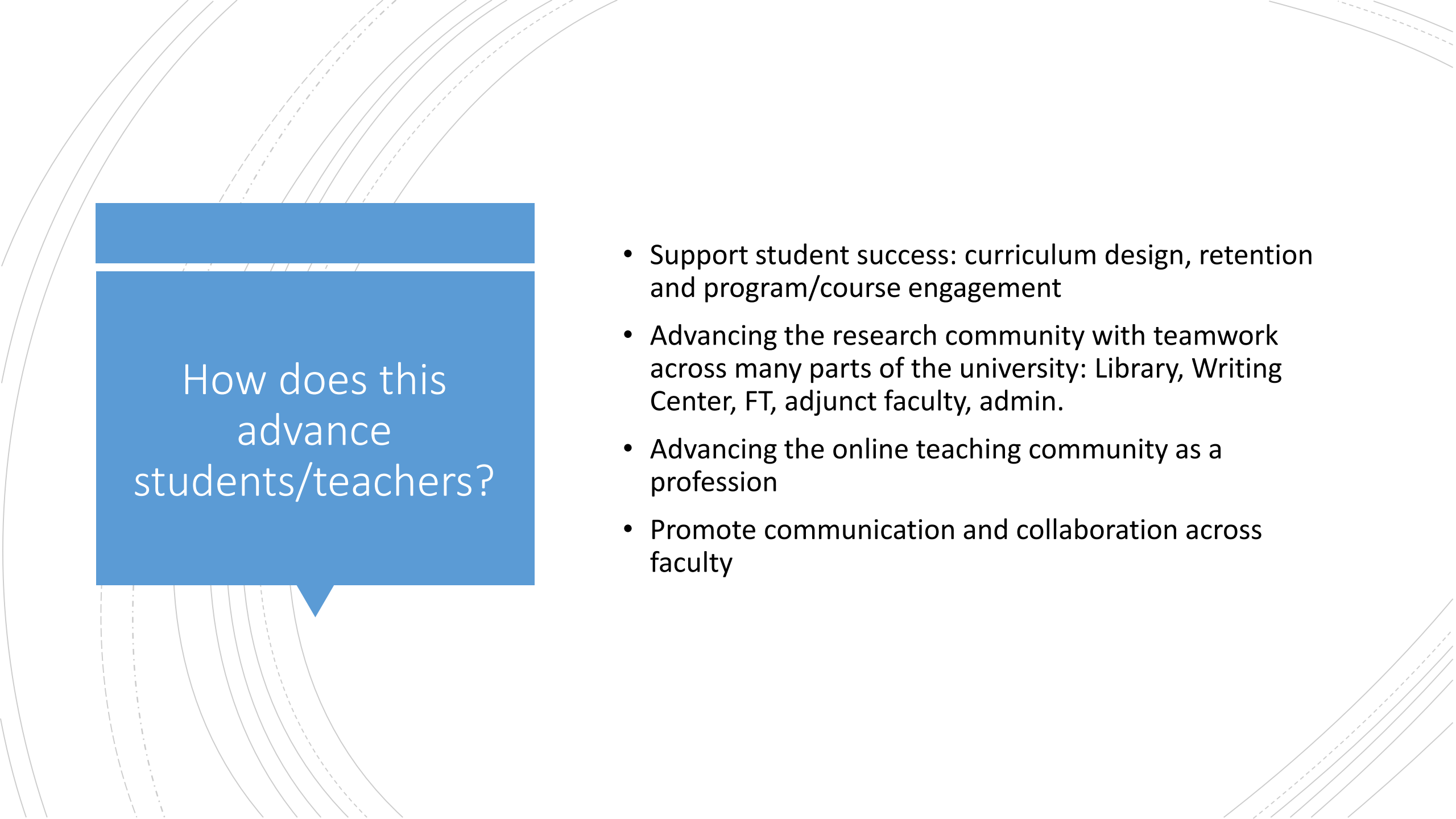


PAY ATTENTION TO COURSE  
CLICKS, FOR HIGH ACHIEVERS  
AND STRUGGLING STUDENTS



## Study Challenges and Limitations

- Challenges
  - Access, preparation, cleaning of the data
  - Combining two databases at enterprise
  - Knowledge of how to use the data
  - Collecting insights
- Limitations of study
  - Only one discipline, one university
  - No demographic data collected
  - Self-selection for perception of learning data (33%)
  - Student satisfaction data too small to measure (10%)



How does this  
advance  
students/teachers?

- Support student success: curriculum design, retention and program/course engagement
- Advancing the research community with teamwork across many parts of the university: Library, Writing Center, FT, adjunct faculty, admin.
- Advancing the online teaching community as a profession
- Promote communication and collaboration across faculty