



all images courtesy of Pixabay.com

# Study of the Impact of Feedback on Math Instructor Performance

Peg Hohensee, Ph.D.  
Leslie Johnson, M.S.  
Kaplan University  
(Purdue NewU)



# What is Your Current Instructor Feedback Plan?

- Annual Evaluation
- Review/Observation each term
- Online courses





Prior to mid  
2012

- Typically Limited
- Primarily Corrective
- Yearly Formal Evaluation



Mid 2012  
to 2014

- Increased Frequency
- Positive and Opportunistic
- Yearly Formal Evaluation

# Kaplan Math Monitoring Background



# New Plan for Monitoring Faculty

---

- Purposes:
  - Provide Feedback to Instructors
  - Verify Quality Instruction
  - Content for Yearly Adjunct Instructor Evaluation
- Frequency - Typically Once/Term
- Scoring for Leadership and Research Purposes Only – Instructors not provided “scores” (may not be aware of scores)

1

Can providing a more holistic review paired with a frequent comprehensive feedback program improve instructor performance in online classes?

2

Will the program translate to improved student satisfaction with the instructor?

## 2014 Research Questions



# 2014 Study Sample:

- KU Math Dept: 200+ full time and adjunct faculty
- 117 adjunct faculty subjects: Taught 2 or more pre- and post-program terms







# Instructor Comment

Thanks so much for the email! I'm always happy to get an outside perspective on what I am doing well and what needs improvement. I feel terrible about the Unit 9 grading this term - I do take the grading deadlines very seriously but I've been holed up in bed with sciatica for the past few weeks and haven't been anywhere near 100%. All my final grades are posted now.

Thanks again for your feedback!

# Research Questions

- Can providing a more holistic review paired with a frequent comprehensive feedback program improve instructor performance in online classes?



	Post-Program	Pre-Program
Mean	19.55	15.41
Variance	4.23	4.90
Observations	117	117
Pearson Correlation	0.50	Cohen's d (effect size): 3.88241 – Very Large
<u>df</u>	116	
t Stat	20.91	
P(T<=t) one-tail	0.0000	

# 2014 Results

**Matched Pairs t-  
Test for  
Instrument Scores**

# Research Questions

- Will the program translate to improved student satisfaction with the instructor?



	Post-Program	Pre-Program
Mean	4.61	4.55
Variance	0.04	0.05
Observations	117	117
Pearson Correlation	0.27	Cohen's d (effect size): .47676 - Medium
<u>df</u>	116	
t Stat	2.57	
P(T<=t) one-tail	0.0058	

# 2014 Results

Matched Pairs t-Test  
for End of Term  
Survey Scores

# 2014 Study

---

Hohensee, P. & Johnson, L.  
(2014) Stepping up: How online  
instructors respond to  
monitoring feedback.

- Available via the website





**Longitudinal  
Study**

**2017**

Loading



Prior  
to mid  
2012

- Typically Limited
- Primarily Corrective

Mid  
2012 to  
2014

- Increased Frequency
- Positive and Opportunistic

2014  
to  
2016

- Same Frequency
- Improved Instrument

# Kaplan Math Monitoring Background





"The best data science, in fact, is surprisingly intuitive."

"While the methodology of good data science is often intuitive, the results are frequently counterintuitive."

*Everybody Lies: Big Data, New Data, and What the Internet Can Tell Us About Who We Really Are*

• -- Seth Stephens-Davidowitz



1

Can providing a more holistic review paired with a frequent comprehensive feedback program improve instructor performance in online classes?

2

Will the program translate to improved student satisfaction with the instructor?

3

Is student performance correlated to instructor score?

## 2017 Research Questions

# 2017 Study Instrument

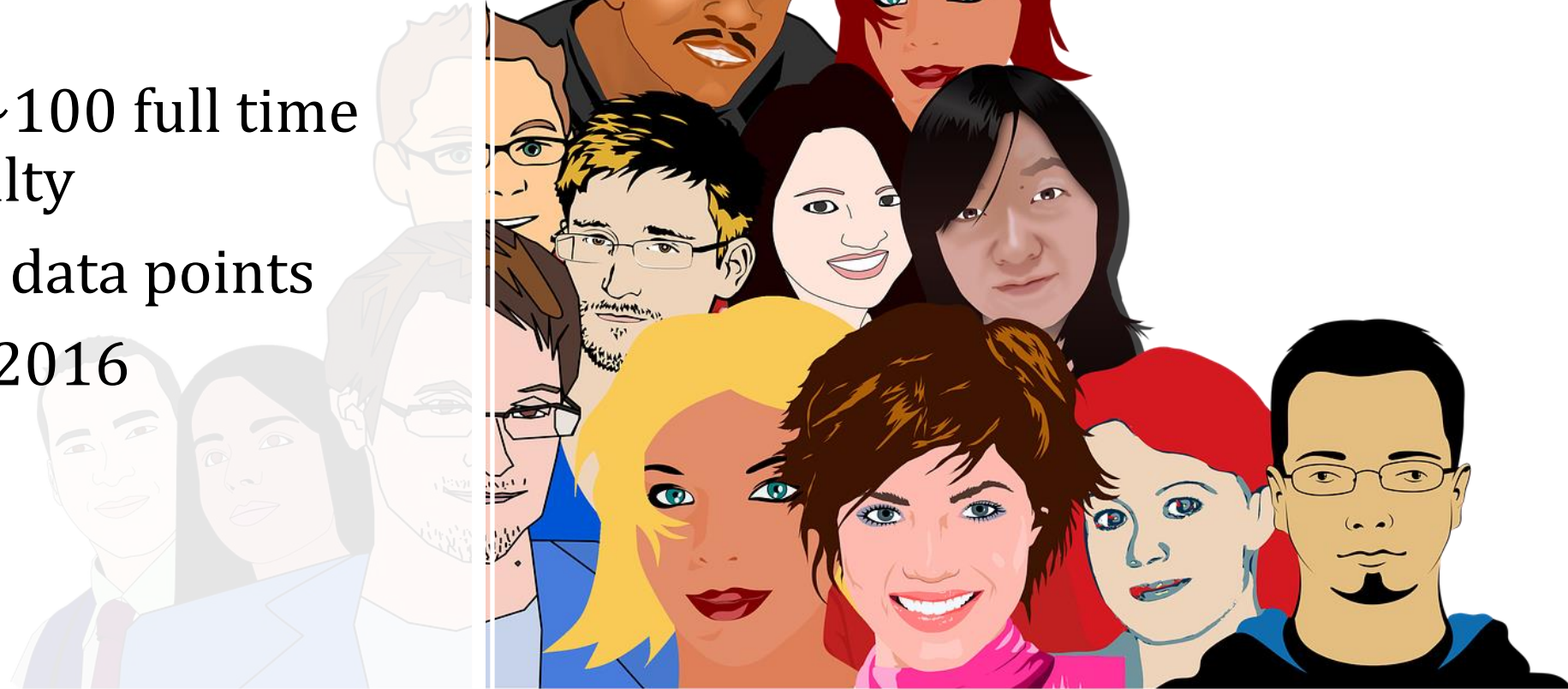
- Google Forms
- Boolean question format
- 22 scoreable items
- 2 negatively scored items
- Scoring range:  $(-2, 20)$
- Based on University Best Practices
- Same reliability and validity arguments as 2014
- Available via the website



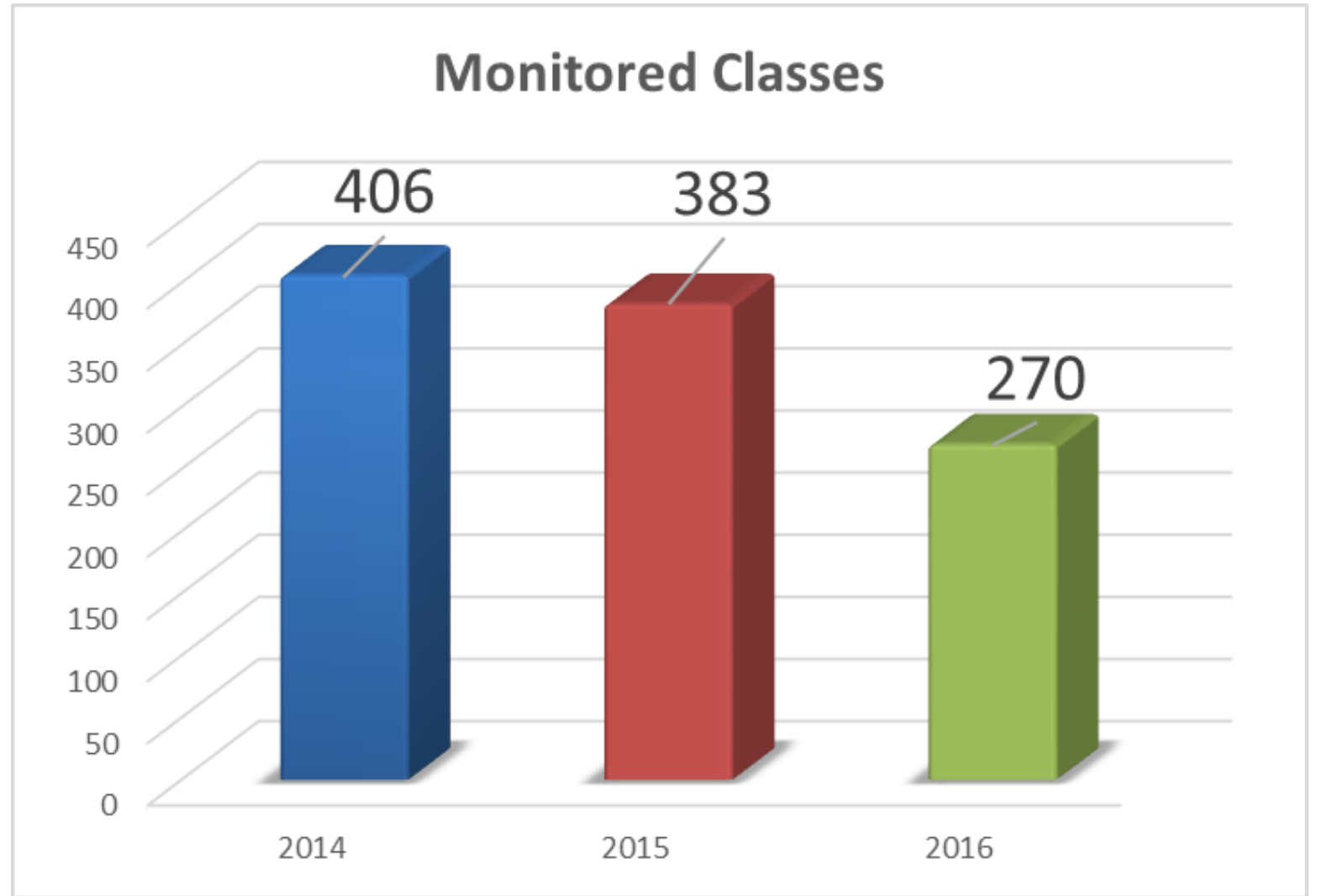


# 2017 Study Sample:

- KU Math Dept: ~100 full time and adjunct faculty
- 1000+ Available data points
- Jan. 2014 - Dec. 2016



# Number of Monitored Classes Each Year



# Research Questions

- Can providing a more holistic review paired with a frequent comprehensive feedback program improve instructor performance in online classes?



**2012:**  
15.41 for  
initial study  
baseline

19  
18.8  
18.6  
18.4  
18.2  
18  
17.8  
17.6  
17.4  
17.2  
17



Average Monitoring Score

2014

17.72

2015

18.82

2016

18.81





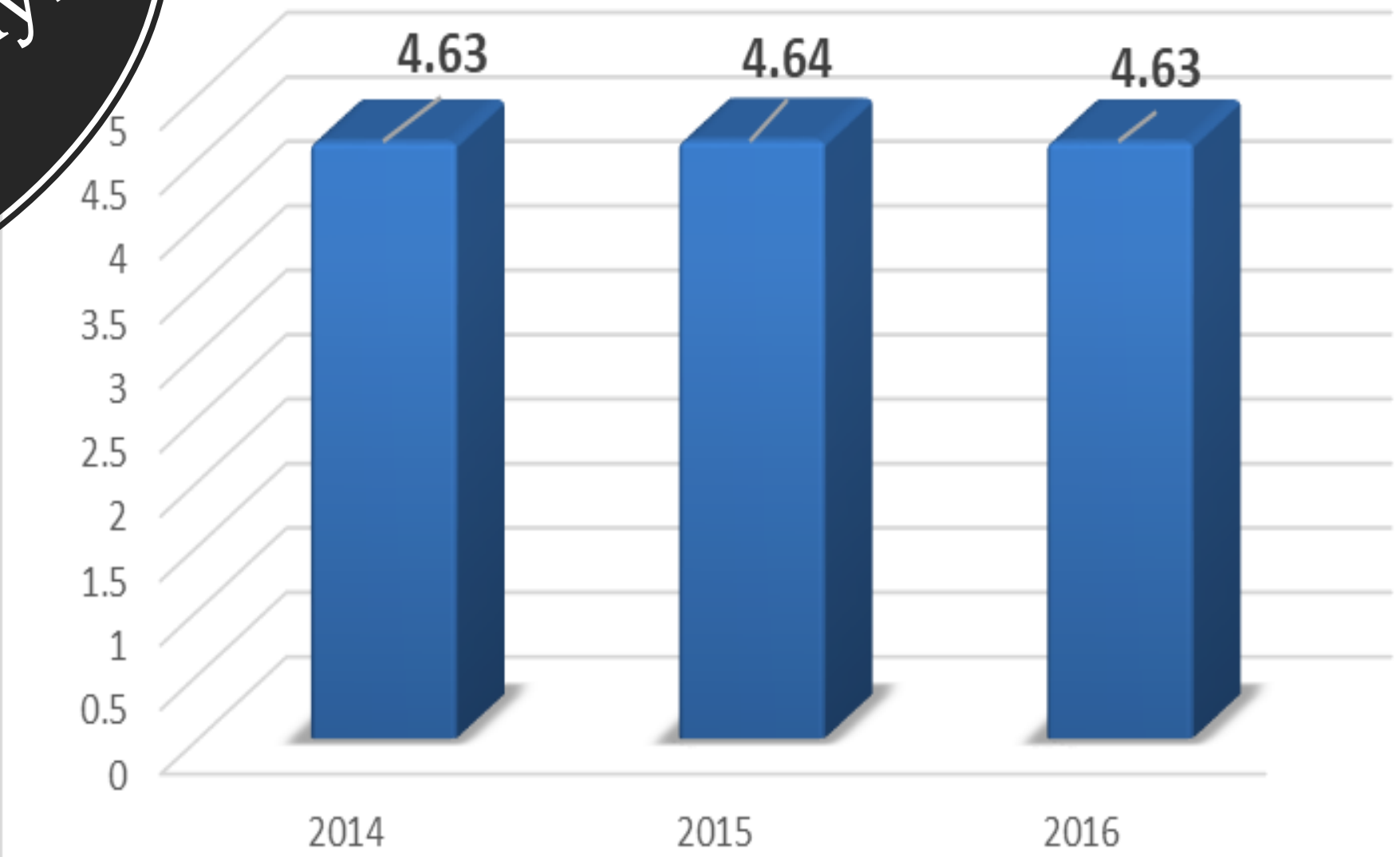
# Research Questions

- Will the program translate to improved student satisfaction with the instructor?
- 

Not  
Necessarily!

2012:  
4.55 for initial  
study baseline

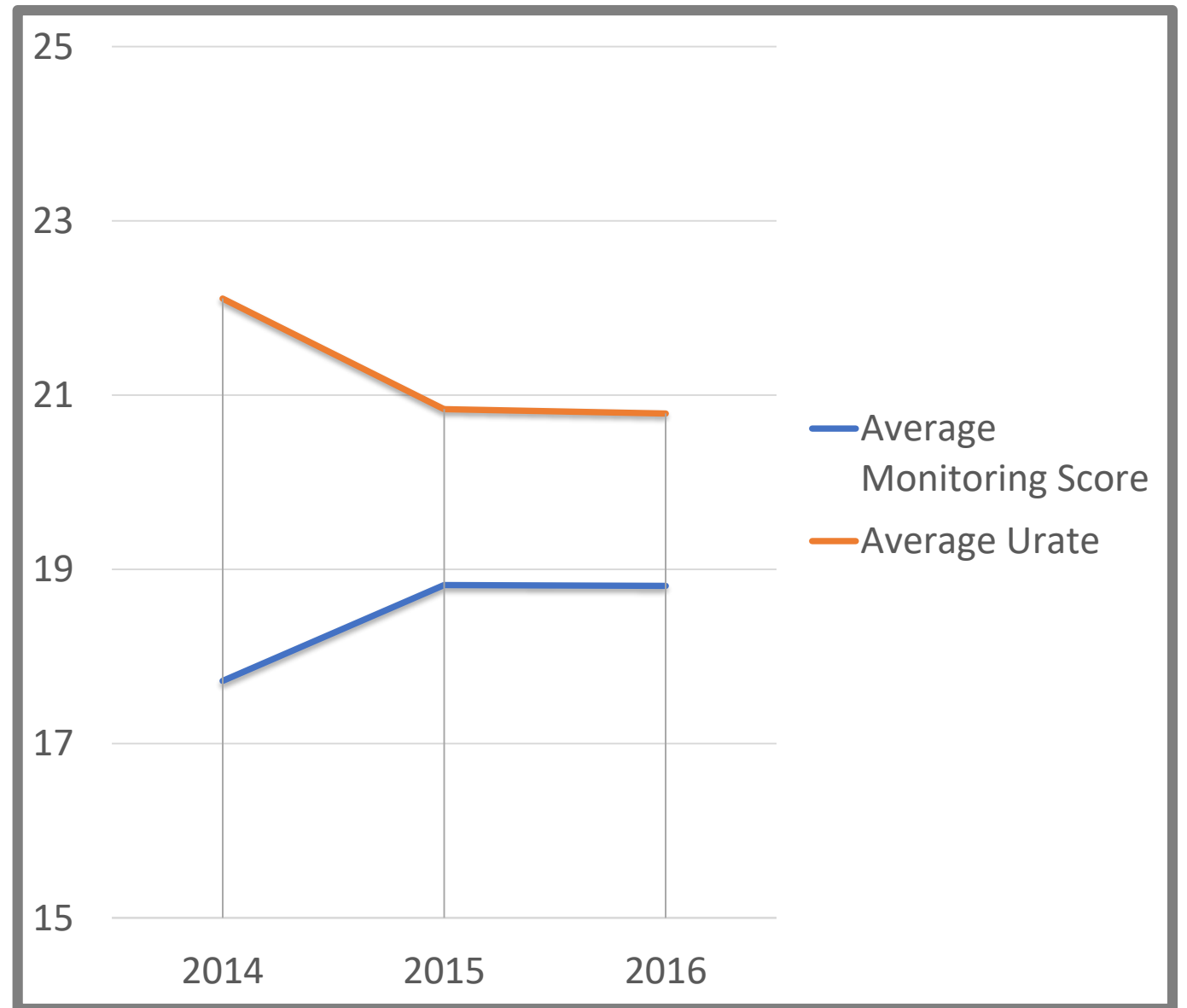
Average EOT



# Research Questions

- Is student performance correlated to instructor score?

**Likely!**





**EXTREMELY  
LIKELY!**

---

2014-2016 Monitoring and Urate		
t-Test: Paired Two Sample for Means		
	<i>Average Monitoring Score</i>	<i>Average Urate</i>
Mean	18.45	0.212466667
Variance	0.3997	5.59633E-05
Observations	3	3
Pearson Correlation	-0.99914589	
Hypothesized Mean Dif	0	
df	2	
t Stat	49.3804699	
P(T<=t) one-tail	0.000204924	
t Critical one-tail	2.91998558	
P(T<=t) two-tail	0.000409848	
t Critical two-tail	4.30265273	

# Limitations and Considerations

- Using averages for each year
- Unaccounted for variables



# Where to go from here?

---

Would you have  
documents to use for  
basis for performance  
standards?





# Contact

Peg Hohensee, Ph.D.

[phohensee@kaplan.edu](mailto:phohensee@kaplan.edu)



Leslie Johnson, M.S.

[ljohnson6@kaplan.edu](mailto:ljohnson6@kaplan.edu)