Variations in the Instructional Behaviors of Graduate Student Instructors

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FSSE faculty survey of student engagement

Abstract

Graduate students who teach, or graduate student instructors (GSIs), play a significant role in influencing undergraduate students' learning experiences and outcomes. Using multi-institution data from a large-scale survey of graduate student teaching practices, this project aims to explore the extent to which instructional behaviors vary across GSIs' demographic background and the types of courses they teach. The extent to which GSIs employed effective teaching practices, and relationships between setting clear course goals and employing effective teaching practices among GSIs will also be examined. This poster presentation is important to AIR members, because the findings will not only help graduate schools to ensure the quality of the classes taught by GSIs, but also provide useful information to graduate faculty advisors and academic support staff for preparing future faculty members.

Research Questions

Using data from the 2014 Faculty Survey of Student Engagement for Graduate Student Instructors (FSSE-G) (N = 824), this poster presentation will answer the following research questions:

- *How does employing effective teaching practices (ETP) and utilizing teacher support resources (TSR) on campus differ by various Graduate Student Instructor (GSIs) demographics and course characteristics?*
- *How is employing effective teaching practices (ETP) related to how GSIs set clear course goals (CG) for student gains in a variety of areas?*

Measures

Effective Teaching Practices (ETP) is a scale **(Cronbach's alpha = .82)** created by averaging eight variables that measure GSIs' organized instruction, clear explanations, illustrative examples, and effective feedback on student work.

Utilization of Teacher Support Resource (TSR) is a scale **(Cronbach's alpha = .68)** created by averaging six items that measure the extent to which GSIs visit the center for teaching and learning, attend teaching workshops or trainings, ask feedback from faculty and peers, and consult literature or online resources to enhance teaching.

Course Goals (CG) is also a scale **(Cronbach's α = .79)** composed of ten items, which measure the extent to which GSIs structure their selected courses in order to promote students' general education competencies (e.g. writing, speaking, thinking, and analyzing), professional and personal development, and civic engagement.

- The scores of ETP, TSR, and CG were converted to a 60-point scale during data analyses.
- The characteristics included in this study were: GSI's gender identity, racial/ethnic identification, disciplinary areas, course division, course format, class size, and years of teaching.

Who are Graduate Student Instructors?

- In this study, GSIs are those who teach in the same academic discipline as the degree they are currently pursuing.
- Only GSIs who have a substantial amount of control in class instruction are included in this study, such as Course Instructors, Lab Instructors, and Lectures or Discussion Instructors.

Sample (N = 824)

Woman: 52%

White: 72%

Largest disciplinary areas:
Arts and Humanities: 28%;
Phys. Sci., Math, & Com. Sci.: 19%;
Social Sciences: 15%

The average years of teaching: 2.6

Teach small-size classes (<30): 58%

Pursue a doctoral degree: 79%

Have previous teaching experiences: 80%

Teach two courses in the current academic year: 48%

Enroll at eight research institutions

Selected Ordinary Least Squares (OLS) Regression Results for GSI Characteristics' Influence on Employing Effective Teaching Practices (ETP)

GSI's gender identity, disciplinary area, and years of teaching do influence their employment of ETP (F= 4.956, p <.001). R^2 = .15 indicated that 15% of the variance in ETP can be explained by GSIs' demographic and course characteristics.

GSI's Characteristics	Beta	GSI's Characteristics	Beta
Gender Identity (Woman = ref. group)		**Disciplinary Area (Cont.)**	
Man	-.10**	Engineering	-.17***
Another gender identity	-.01	Health Professions	-.13***
Prefer not to respond	-.02	Social Service Professions	-.03
Disciplinary Area (A&H = ref. group)		Other	-.04
Bio. Sciences, Agri., & Natural Resources	-.16***	**Teaching Experience (1-2 yrs. = ref. group)**	
Phys. Sciences, Math, & CS	-.30***	0 years	-.03
Social Sciences	-.14**	3 - 4 years	.05
Business	-.11**	5 - 6 years	.13**
Comm., Media, & PR.	-.02	7 years or more	.10*
Education	.02		

Note: * p<.05, ** p<.01, ***p<.001 (2-tailed).
[a.] Dependent variable was unstandardized prior to entry into the model.

Selected OLS Regression Results for GSI Characteristics' Influence on the Utilization of Teacher Support Resource (TSR)

GSIs' gender identity and disciplinary area do influence their TSR (F = 15.26, p <.001). R^2 = .10 indicated that 10% of the variance in TSR can be explained by GSIs' demographic and course characteristics.

GSI's Characteristics	Beta	GSI's characteristics	Beta
Gender Identity (Woman = ref. group)		**Disciplinary Area (Cont.)**	
Man	-.11**	Business	-.14***
Another gender identity	.02	Comm., Media,& PR.	-.04
Prefer not to respond	-.01	Education	.00
Disciplinary Area (A&H = ref. group)		Engineering	-.14**
Bio. Sciences, Agri., & Natural Resources	-.19***	Health Professions	-.07
Phys. Sciences, Math, & CS.	-.27***	Social Service Professions	-.04
Social Sciences	-.17***	Other	-.06

Note: * p<.05, ** p<.01, ***p<.001 (2-tailed).
[a.] Dependent variable was unstandardized prior to entry into the model.

Effective Teaching Practices OLS Regression

	Effective Teaching Practices [a]		
	B	SE of B	β
(Constant)	38.62	1.18	***
Gender Identity (Woman = ref. group)			
Man	-1.70	.71	-.08*
Another gender identity,	-2.63	3.75	-.02
Prefer not to respond	-.24	2.08	.00
Disciplinary area (A&H = ref. group)			
Bio. Sci., Agri., & Nat. Resources	-4.55	1.31	-.12**
Phys. Sciences, Math, & CS	-5.48	1.06	-.20***
Social Sciences	-3.79	1.09	-.13**
Business	-7.89	2.21	-.12***
Communications, Media, & PR	-1.28	1.61	-.03
Education	-1.01	1.48	-.02
Engineering	-7.88	1.53	-.18***
Health Professions	-5.74	1.74	-.11**
Social Service Professions	-3.56	3.27	-.04
Other	-2.37	2.11	-.04
Teaching Experience (1-2 yrs. = ref. group)			
0 years	-.63	.96	-.02
3 - 4 years	1.70	.90	.07*
5 - 6 years	3.55	1.22	.10**
7 years or more	2.95	1.27	.09*
Course Goals	.32	.03	.37 ***
R^2	.29		
Adjusted R^2	.27		
F	15.26 ***		

Note: * p<.05, ** p<.01, ***p<.001 (2-tailed).
[a.] Dependent variable was unstandardized prior to entry into the model.

Conclusions and Recommendations

Graduate student instructor's (GSI) gender identity, disciplinary area, and years of teaching experience play a significant role in influencing GSI's instructional behaviors, such as employing effective teaching practices (ETP) and utilizing teacher support resources (TSR).

Women did more than men in both ETP and TSR

Graduate schools and faculty advisors should be aware of this difference in ETP and TSR between men and women GSIs, and provide more support and resources to men GSIs for adjusting pedagogies and instructional techniques.

GSIs in STEM majors have lower scores on both ETP and TSR

GSIs who taught courses in physical sciences, mathematics, and computer science had the lowest ETP and TSR among GSIs in all disciplinary areas. Future studies should further explore the potential factors influencing the lack of the employment of ETP and the utilization of TSR among STEM GSIs, such as the nature of the STEM majors, curricular design, and the available teacher support resources on campus, etc. Understanding what happens in STEM classes will help graduate schools, faculty advisors, and staff to support STEM GSIs in strengthening their teaching skills and promoting the quality of the courses taught by STEM GSIs.

Setting clear course goals is positively associated with ETP

Faculty advisors and staff should encourage and guide GSIs to set clear course goals for student gains as they prepare for classes.