

Form for submitting extended proposals
for consideration for the
**2017 ROBERT J. MENGES AWARD FOR OUTSTANDING RESEARCH
IN EDUCATIONAL DEVELOPMENT**

Instructions:

- Boxes will expand to accommodate text
- Total **word count must not exceed 2000 words** for the body of the proposal, excluding references and appendices.
- Supporting information (e.g. tables, figures, images, references, instruments, details of experimental design) may be placed in appendices. Though not limited, the strongest proposals are typically supported by no more than 10 pages of appendices. To conserve space, for example, you can place multiple figures on one page, single-space survey instruments, etc. Keep in mind, the selection committee is not required to read beyond this general limit.
- Please be sure to include the word counts in each section, as well as the total for all sections (see below). Proposals without the word counts noted will not be read.
- Incomplete proposals will not be read.

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Add lines as necessary.		

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1. RESEARCH QUESTION(S) & WHY THEY ARE IMPORTANT TO THE FIELD:

Understanding motivations for teaching can provide a powerful window into what encourages faculty to do the work of instruction. One approach to doing so is by using self-determination theory, a widely-studied framework for human motivation (Ryan & Deci, 2017). Conceptually, self-determination theory describes several basic needs that can lead faculty to become optimally motivated to teach (Deci, Kasser, & Ryan, 1996): autonomy, competency, and relatedness. The aim of this study is to examine the relationship between these basic needs and faculty motivation to teach. This study additionally explored how these needs are met for diverse types of faculty. Deeper understanding of where faculty needs for teaching can be satisfied, as well as the relationship between those needs and motivation for instruction, can help institutions improve teaching and learning through fostering optimal motivation among faculty. This study was guided by the following research questions:

1. How do the basic needs of autonomy, competency, and relatedness relate to faculty motivation to teach?
2. How do these needs vary by faculty characteristics?

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2. DESCRIPTION OF RESEARCH DESIGN:

Data

This data comes from the 2016 administration of the Faculty Survey of Student Engagement (FSSE). FSSE was designed to explore faculty perceptions of student engagement, the importance faculty place on various areas of learning and development, the nature and frequency of student-faculty interactions, and how faculty organize their time in and out of the classroom. The focus of this study was on an extra item set about faculty motivation for teaching appended to the end of FSSE survey for a subset of participating institutions. See a listing of items in Table 1. Nineteen institutions (resulting in 1,671 faculty respondents) received this set.

Measures

Basic psychological needs. A version of the Work-related Basic Need Satisfaction scale (W-BNS) from Van den Broeck, Vansteenkiste, De Witte, Soenens, and Lens (2010) adapted for faculty (Stupnisky, Hall, Daniels, & Mensah, 2017) assessed faculty members' perceived level of need satisfaction for teaching. See Table 1.

Motivation. Items from Frenet, Guay, and Senecal (2004) adapted for faculty members (Stupnisky et al., 2017) asked about faculty motivations for teaching. See Table 1.

Faculty characteristics. Faculty demographics and characteristics were examined from the core FSSE survey. See Table 2 for information about respondents on the examined demographics and characteristics.

See Table 3 for descriptive statistics on the scales formed from the basic needs and motivation items.

Analyses

A two-step cluster analysis was conducted to categorize faculty into groups based on the basic needs autonomy, competence, and relatedness. The analysis results in three distinct clusters of faculty: those with a high degree of all three needs being met (42% of faculty), a moderate degree of all three needs being met (38% of faculty), and a low degree of all needs being met (20% of faculty). The silhouette (a measure of how well clustered the groups are) was above .5 indicating a good cluster quality (Rousseeuw, 1987). See Figure 1 for average needs scores by faculty cluster.

To answer our first research question about how faculty teaching needs related to teaching motivation, a series of Ordinary Least Squares (OLS) regression models were examined. In these models, the dependent measures were four forms of motivation: Intrinsic, Identified, Introjected, and External. All dependent measures were standardized before entry into models so that unstandardized coefficients could be interpreted as effect sizes. The independent variables of interest were the faculty clusters as defined above. Effect coding was used to code these categories so that comparisons could be made to the average faculty member as opposed to a reference group (Mayhew & Simonoff, 2015). Additional controls included faculty racial/ethnic identification, academic rank, tenure status, highest degree earned, gender identity, sexual orientation, and disciplinary area. Although not a focus of this study, institutional Carnegie classification was included as an institution-level control.

To answer our second research question about how faculty teaching needs vary by faculty characteristics, a series of OLS regression models were examined. In these models, the basic needs autonomy, competence, and relatedness served as the dependent measures. Again, dependent measures were standardized and effect coding was used to code all non-dichotomous multi-categorical faculty characteristics. Independent variables of interest included the faculty demographics and employment characteristics listed as controls in the above model. Although not a focus of this study, institutional Carnegie classification was included as an institution-level control.

Sometimes with nested data (faculty clustered within institutions), researchers use hierarchical linear modeling (HLM). Because the clear majority of variance in motivation and needs was at the faculty level and very little at the institution level, and parameter estimates tend to be similar between OLS and HLM when group-level variance is small (Astin & Denson, 2009; Niehaus, Campbell, & Inkelas, 2014), we chose to focus our analysis on individual faculty. See table 3 for Intraclass Correlation Coefficients (ICC) (the percentage of variance at the institution level).

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3. LITERATURE REVIEW & THE RELATIONSHIP OF THE LITERATURE TO YOUR RESEARCH QUESTION(S):

Relationships between effective teaching and student gains in college, both cognitively in general and at the course level, have been widely demonstrated (McKeachie, 2007; Pascarella & Terenzini, 1991, 2005). But, not all faculty members use best practices when teaching despite

their well-documented effectiveness. Motivation may be an important determinant of how faculty teach. Many professors enjoy teaching, as it is an opportunity to facilitate student learning by creatively sharing their knowledge and expertise; alternatively, other faculty find teaching a paid requirement of their job that evokes anxiety or boredom (Stupnisky, Pekrun, & Lichtenfeld, 2016). Optimally-motivated faculty may be more likely to utilize teaching best practices, as their high engagement facilitates innovation and excellence, whereas sub-optimally motivated faculty may choose less effective strategies because their goal is the shortest path to outcome completion (Deci, Kasser, & Ryan, 1996). Understanding the precursors to optimal motivation would greatly benefit faculty development officers and administrators aiming to increase teaching quality and maximize student learning.

A leading perspective on human motivation is self-determination theory (Ryan & Deci, 2017). SDT endorses a perspective on individual functioning where individuals—in this case, faculty—are inherently self-motivated to master their environment. They are eager to learn, develop their skills, and assimilate institutional values. However, other faculty may be unmotivated, feel incompetent, achieve little, and eventually leave the profession. SDT suggests that these latter behaviors could be explained, albeit in part, by the satisfaction of or failure to support faculty basic psychological needs.

Further applying this theory to a faculty population, SDT describes the factors that lead instructors to become optimally motivated to teach (Deci, Kasser, & Ryan, 1996). When faculty needs for autonomy (choice and free will), competency (mastering your environment), and relatedness (having close affectionate relationships with others) are met, the ideal state of intrinsic motivation (doing a task because you enjoy it) is realized; however, when these needs are unfulfilled in some way, varying degrees of extrinsic motivation result such as identified (task aligns with identity and values), introjected (doing a task out of guilt), or external (doing a task for rewards or to avoid punishment).

The majority of support for SDT as a sound explanation of teaching motivation comes from studies of K-12 teachers. Gorozidis and Papaioannou (2014) triangulated qualitative and quantitative methods to find high-school teachers with highly autonomous motivation were more determined to participate in training and implement innovative teaching strategies (see also Aelterman, Vansteenkiste, Van Keer, & Haerens, 2016; Hein et al., 2012; Korthagen & Evelein, 2016; and Klassen, Perry, & Frenzel, 2012).

Studies of university faculty members teaching motivation conceptualized with an SDT framework are less common. Bouwma-Gearhart (2012) interviewed STEM faculty members of all ranks to find fulfilling the needs of autonomy, competence, and relatedness motivated them to engage in teaching professional development. Cook, Ley, Crawford, and Warner (2009) found intrinsic motivation to be the most endorsed reason for faculty to teach electronic or distance courses. Wilkesmann and Schmid (2014) found the strongest predictors of intrinsic motivation for teaching were competence, relatedness with students, and autonomy. Overall, strong conceptual linkages and building empirical evidence suggest motivation to be an important predictor of faculty members' motivation for teaching, but further testing is needed to understand the conditions that support the SDT basic needs and how motivation relates to faculty teaching performance.

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4. FINDINGS, INCLUDING THEIR SIGNIFICANCE & LIMITATIONS:

Selected Results

Our first research question asked how basic psychological needs for teaching related to faculty motivations to teach. Controlling for a variety of faculty demographics and characteristics, as well as institution type, we found that faculty who had a high degree of needs met for autonomy, competency, and relatedness had higher levels of intrinsic motivation ($B = .500, p < .001$) and identified motivation ($B = .491, p < .001$) than the average faculty member. These faculty also had a moderately higher level of introjected motivation ($B = .204, p < .001$) than average. Faculty with a moderate degree of needs met were trivially more intrinsically motivated than the average faculty member ($B = .086, p < .001$) but otherwise had similar levels of motivation compared to average. Faculty with a low degree of basic needs met were greatly less motivated intrinsically ($B = -.586, p < .001$), had notably lower identified motivation ($B = -.483, p < .001$), and slightly lower introjected motivation ($B = .159, p < .001$) than the average faculty member. No relationships were found with external motivation. More details can be found in Table 4. These results suggest a strong relationship between basic psychological teaching needs and optimal motivation for teaching.

Our second research question further explored teaching needs by examining what faculty characteristics and demographics predicted greater feelings of autonomy, competence and relatedness. Detailed information on differences by academic rank, tenure status, highest degree earned, and institution type can be found in Table 5. Faculty in Biological Sciences, Agriculture, and Natural Resources felt less autonomy ($B = -.237, p < .05$) and competence ($B = -.186, p < .05$) than the average faculty member. Faculty in Health Professions fields also felt less autonomy ($B = -.276, p < .001$) than average. Faculty in Education felt more autonomy ($B = .185, p < .05$), competence ($B = .200, p < .05$), and relatedness ($B = .293, p < .001$) than average. Asian faculty felt more autonomy ($B = .270, p < .05$) and relatedness ($B = .407, p < .001$) than average. Black or African American faculty felt less relatedness ($B = -.286$) than average. White faculty felt less competence ($B = -.126, p < .05$) than average. These results indicate that differences by field and culture may lead to situations that are conducive to meeting teaching needs. Additional findings (in Table 5) point to institutional structures (rank, tenure, etc.) that similarly lead to differences in the meeting of teaching needs.

Limitations

Institutions self-select to participate in FSSE and can select their own faculty samples which may limit generalizability. Additionally, the motivation and needs variables were at the end of the survey which may mean that only the most "motivated" faculty responded. Although these limitations can be alleviated with further research, this study provides a good base for supporting SDT as a framework for examining faculty teaching.

Implications

This study provides evidence to support a framework for examining the motivations faculty hold for teaching which ultimately can positively affect teaching performance. Our findings support the tenets of SDT, showing strong relationships between needs and motivation for teaching. Although motivation may be difficult for institutions to change directly, faculty developers and administrators can do things to affect attainment of faculty need for autonomy, competence, and relatedness. Using the evidence of differences in teaching needs from this study and by pinpointing local areas where faculty are feeling less of their needs being met (in disciplinary fields, cultures, academic situations, etc.), interventions can be staged and assessed. By

acknowledging that these needs are not met uniformly as we found here, conversations focused on improving teaching needs can be more inclusive, including more diverse perspectives and innovations from different fields and cultures. Such conversations can also lead to collaboration across these areas of difference to provide more equitable teaching situations for all.

WORD COUNT

644

TOTAL WORD COUNT FOR ALL 4 SECTIONS (MAX 2000 WORDS):
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1993

REFERENCES

References do not count toward your overall word count. APA format preferred.

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Appendices: Supporting information (e.g. tables, figures, images, references, instruments, details of experimental design) may be placed in appendices. Though not limited, the strongest proposals are typically supported by no more than 10 pages of appendices. To conserve space, for example, you can place multiple figures on one page, single-space survey instruments, etc. Keep in mind, the selection committee is not required to read beyond this general limit.

Appendix
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Why Do We Teach? Examining Faculty Teaching Experiences and Motivation

Allison BrckaLorenz, Robert Stupnisky, & Bridget Yuhas

Table 1. Select Items on Teaching Needs and Motivation

Basic Psychological Needs Items	Type
<i>In your teaching, how often do you feel the following?</i>	
<i>Response options: Very often, Often, Sometimes, Never</i>	
I have a sense of freedom to make my own choices.	Autonomy
I have confidence in my ability to do things well.	Competence
The people I care about (students, colleagues, etc.) also care about me.	Relatedness
My decisions reflect what I really want.	Autonomy
I am capable at what I do.	Competence
I am supported by the people whom I care about (students, colleagues, etc.)	Relatedness
My choices express who I really am as a teacher.	Autonomy
I can competently achieve my goals.	Competence
I am close with people who are important to me (students, colleagues, etc.)	Relatedness
I do what really interests me.	Autonomy
I can successfully complete difficult tasks.	Competence
I experience warm feelings with the people I spend time with (students, colleagues, etc.)	Relatedness
Motivation Items	
To what extent are the following reasons for why you teach?	
<i>Response options: Very much, Quite a bit, Some, Very little</i>	
It is pleasant to teach.	Intrinsic
It is important for me to teach.	Identified
If I don't teach, I will feel bad.	Introjected
My work demands that I teach.	External
I find teaching interesting.	Intrinsic
Teaching allows me to attain work objectives that I consider important.	Identified
I would feel guilty not teaching.	Introjected
My university/college obliges me to teach	External
I like teaching.	Intrinsic
Teaching is important for the academic success of my students.	Identified
I do not want to feel bad if I do not teach.	Introjected
I am paid to teach.	External

Table 2. Respondent Characteristics

		Count	Percent
Disciplinary Area	Arts & Humanities	353	21.3
	Biological Sciences, Agriculture, & Natural Resources	121	7.3
	Physical Sciences, Mathematics, & Computer Sciences	176	10.6
	Social Sciences	232	14.0
	Business	168	10.1
	Communications, Media, & Public Relations	71	4.3
	Education	168	10.1
	Engineering	34	2.1
	Health Professions	145	8.7
	Social Service Professions	81	4.9
	Other disciplines	109	6.6
Academic Rank	Full Professor	397	25.3
	Associate Professor	368	23.5
	Assistant Professor	353	22.5
	Full-time Lecturer/Instructor	254	16.2
	Part-time Lecturer/Instructor	196	12.5
Tenure Status	No tenure system at this institution	194	11.9
	Not on tenure track, but this institution has a tenure system	545	33.4
	On tenure track but not tenured	265	16.2
	Tenured	630	38.6
Highest Degree Earned	Doctoral degree (Ph.D., Ed.D., etc.)	1122	68.0
	Professional degree (J.D., M.D., D.D.S., D.V.M., etc.)	40	2.4
	Master's degree (M.A., M.S., M.F.A., M.B.A., M.S.W., etc.)	456	27.6
	Bachelor's, Associate's, or other degree	32	1.9
Gender Identity	Man	766	46.6
	Woman	812	49.4
	Another gender identity	4	0.2
	I prefer not to respond	63	3.8
Racial/Ethnic Identification	American Indian or Alaska Native	7	0.4
	Asian	53	3.2
	Black or African American	83	5.0
	Hispanic or Latino	62	3.8
	Native Hawaiian or Other Pacific Islander	2	0.1
	White	1239	75.2
	Other	22	1.3
	Multiracial	45	2.7
	I prefer not to respond	134	8.1
Sexual Orientation	Heterosexual	1358	82.3
	Gay	49	3.0
	Lesbian	32	1.9
	Bisexual	19	1.2
	Another sexual orientation	4	0.2
	I prefer not to respond	189	11.4

Table 3. Scale Descriptive Statistics

Variable	Range	<i>M</i>	<i>SD</i>	Skewness	Kurtosis	Cronbach's α	ICC
<i>Basic Needs</i>							
Autonomy	15-60	50.01	9.78	-0.83	0.07	.76	.01
Competence	20-60	53.22	8.54	-1.15	0.58	.81	.03
Relatedness	0-60	46.25	12.56	-0.62	-0.40	.87	.01
<i>Motivation</i>							
Intrinsic	0-60	53.20	10.31	-1.73	2.91	.81	.02
Identified	0-60	50.92	10.94	-1.18	.924	.61	.02
Introjected	0-60	16.03	17.39	1.02	0.11	.79	.02
External	0-60	33.67	20.81	-0.18	-1.34	.80	.01

Note: Scales were transformed from a 1-4 scale to a 0-60 scale.

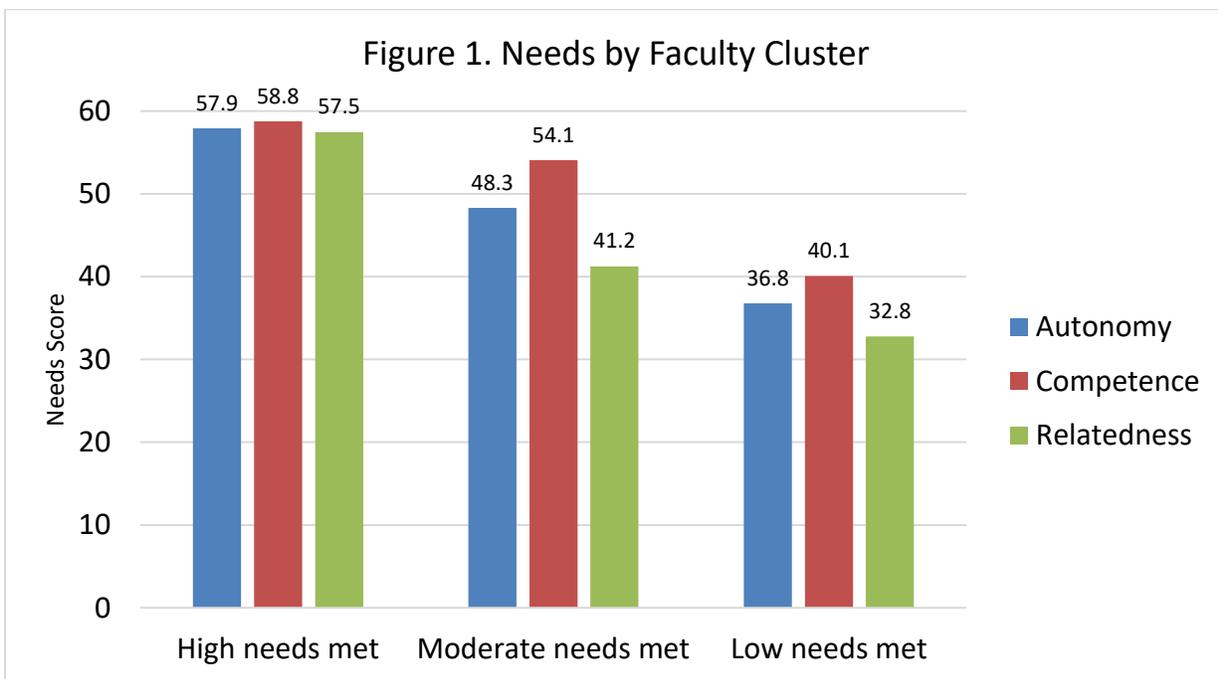


Table 4. Regression Coefficients Relating Needs and Motivation

	Intrinsic Motivation			Identified Motivation			Introjected Motivation			External Motivation		
	Unstd. B	SE	Sig	Unstd. B	SE	Sig	Unstd. B	SE	Sig	Unstd. B	SE	Sig
High Needs Met	.500	.034	***	.491	.035	***	.204	.038	***	.011	.037	
Moderate Needs Met	.086	.034	*	-.009	.036		-.045	.038		-.024	.038	
Low Needs Met	-.586	.040	***	-.483	.042	***	-.159	.045	***	.013	.045	
	$R^2 = .22, p < .001$			$R^2 = .19, p < .001$			$R^2 = .26, p < .001$			$R^2 = .08, p < .001$		

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. Effect coding was used so that coefficients could be interpreted as comparisons to the *average* faculty member as opposed to a reference group. Controls included racial/ethnic identification, academic rank, tenure status, highest degree earned, gender identity, sexual orientation, disciplinary area, and Carnegie classification. Dependent measures were standardized before entry into models.

Table 5. Regression Coefficients Relating Needs and Faculty Characteristics

	Autonomy			Competence			Relatedness		
	Unstd. B	SE	Sig	Unstd. B	SE	Sig	Unstd. B	SE	Sig
Constant	-.023	.091		.058	.091		.083	.091	
<i>Racial/Ethnic Identification</i>									
Asian	.270	.130	*	.128	.132		.407	.130	**
Black or African American	-.136	.117		.039	.119		-.268	.117	*
Hispanic or Latino	.092	.127		.019	.128		-.103	.127	
White	-.066	.060		-.126	.060	*	.022	.060	
Other	.272	.179		-.026	.179		.217	.179	
Multiracial	-.159	.140		.088	.145		-.044	.144	
Prefer not to respond	-.274	.116	*	-.121	.115		-.230	.116	*
<i>Academic Rank</i>									
Professor	.185	.071	**	.305	.071	***	.297	.071	***
Associate Professor	.015	.065		.019	.065		.033	.065	
Assistant Professor	-.076	.076		-.148	.075	*	-.116	.075	
Full-time Lecturer/Instructor	-.160	.074	*	-.168	.074	*	-.110	.074	
Part-time Lecturer/Instructor	.035	.080		-.007	.080		-.104	.080	
<i>Tenure Status</i>									
No tenure track	-.029	.067		.245	.066	***	.088	.066	
Not on tenure track	.139	.063	*	.087	.063		.049	.063	
On tenure track	.025	.076		-.053	.075		.104	.075	
Tenured	-.135	.071		-.278	.071	***	-.241	.070	**
<i>Highest-Degree Earned</i>									
Earned doctorate	.010	.073		.012	.073		-.150	.073	*
<i>Gender Identity</i>									
Man	.091	.063		.068	.063		.040	.062	
Woman	-.057	.064		-.086	.063		.071	.063	
Prefer not to respond	-.035	.113		.018	.113		-.112	.112	
<i>Sexual Orientation</i>									
Straight	.038	.052		.046	.052		-.055	.052	
Queer	-.129	.077		-.102	.077		-.002	.077	
Prefer not to respond	.091	.076		.056	.076		.057	.076	
<i>Disciplinary Area</i>									
Arts & Humanities	.042	.061		.018	.060		.071	.060	
Bio Sci, Agric, & Nat Res	-.237	.094	*	-.186	.094	*	-.147	.093	
Phys Sci, Math, & Comp Sci	-.058	.079		.010	.080		-.150	.080	
Social Sciences	.060	.071		-.036	.071		.022	.071	
Business	.107	.084		.047	.084		.048	.084	
Comm, Media, & Pub Relations	.126	.116		.193	.115		-.040	.116	
Education	.185	.081	*	.200	.082	*	.293	.081	***
Engineering	-.099	.165		-.202	.168		-.100	.165	
Health Professions	-.276	.089	**	-.041	.089		-.021	.089	
Social Service Professions	.078	.116		-.126	.118		-.018	.116	
Other disciplines	.072	.098		.122	.099		.042	.099	
<i>Institutional Carnegie Classification</i>									
Doctoral-granting	.196	.041	***	.166	.041	***	.169	.041	***
Master's-granting	-.055	.038		-.004	.039		-.088	.038	*
Bachelor's-granting	-.141	.047	**	-.162	.047	**	-.081	.047	
	R ² = .06, p < .001			R ² = .06, p < .001			R ² = .06, p < .001		

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. Effect coding was used so that coefficients could be interpreted as comparisons to the *average* faculty member as opposed to a reference group. Dependent measures were standardized before entry into models.