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Investigating predictive relationships between speech-language pathology graduate students' sense of classroom community, perceived learning, and perceived anxiety.

Emily B. Schantz
University of Louisville

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INVESTIGATING PREDICTIVE RELATIONSHIPS BETWEEN SPEECH-
LANGUAGE PATHOLOGY GRADUATE STUDENTS' SENSE OF CLASSROOM
COMMUNITY, PERCEIVED LEARNING, AND PERCEIVED ANXIETY

By

Emily B. Schantz

B.A.- Indiana University, 2017

A Thesis
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A Thesis Approved on

April 22, 2019

by the following Thesis Committee:

Teresa Pitts, Ph.D.

Alan Smith, Ed.D., Thesis Advisor

Rhonda Mattingly, Ed.D.

DEDICATION

To my husband, mother, and father, thank you.

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First, I would like to express my sincerest gratitude to my thesis advisor, Dr. Smith, for believing in me throughout this process. This document would not be possible without his continuous instruction, motivation, and support. Besides my advisor, I would like to thank my thesis committee: Dr. Pitts and Dr. Mattingly, for their encouragement and guidance over the last two years of being a part of this program.

ABSTRACT

INVESTIGATING PREDICTIVE RELATIONSHIPS BETWEEN SPEECH-LANGUAGE PATHOLOGY GRADUATE STUDENTS' SENSE OF CLASSROOM COMMUNITY, PERCEIVED LEARNING, AND PERCEIVED ANXIETY

Emily B. Schantz

April 22, 2019

Mental health is an all-encompassing term that focuses on a person's ability to achieve work-life balance inclusive of positive mental health and mental ill-health. Current trends suggest an overall increase in mental ill-health for undergraduate and graduate students. McMillan and Chavis' sense of community theory provided the theoretical framework for this study. This study aimed to examine whether speech-language pathology graduate students' sense of classroom community and perceived learning predict anxiety levels while controlling for demographic variables. Three-hundred-sixteen master's level speech-language pathology students completed an online survey containing the Generalized Anxiety Disorder Questionnaire, Perceived Learning Scale, and Classroom Community Scale. Hierarchical multiple regression was used to analyze predictive relationships between the criterion and predictor variables. In the final

model, social community and learning community (i.e., classroom connectedness), as well as affective aspects of perceived learning, each made a statistically significant individual contribution to the model. In sum, the final model explained approximately 15.5% of the variance among participants.

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CHAPTER 1

INTRODUCTION

Defining Mental Health

Mental health is an all-encompassing term that focuses on a person's ability to achieve work-life balance. More specifically, its tenets involve a general state of well-being and productivity, both as individuals and members of a collective community. In effect, there are two types of mental health: positive mental health and mental ill-health (Keyes, 2002; Lehtinen, Ozamiz, Underwood, & Weiss, 2005). When personal and/or societal demands, including academic rigors, exceed one's ability to manage stress, their mental health may be negatively impacted. The result, in such cases, is often mental ill-health or mental illness (Lehtinen, Ozamiz, Underwood, & Weiss, 2005). It is important to note that both types of mental health are not mutually exclusive: it is possible that a person with mental ill-health can also have periods where they experience life satisfaction, emotional well-being or positive mental health (Keyes, 2002).

The prevalence and severity of mental illness has increased in the United States impacting approximately 18.9% or 44.6 million Americans annually (Substance Abuse and Mental Health Services Administration, 2018). Of those diagnosed, over 56% do not receive routine treatment or counseling (Substance Abuse and Mental Health Services Administration, 2018). One reason for the lack of care is due to an extreme shortage of

practicing mental health professionals. Examples of such professions include, but are not limited to, psychology, psychiatry, social work, counseling, and nursing (Mental Health America, 2018). Current statistics suggest there is one mental health professional available for every six people who have mental illness (Mental Health America, 2018). Research also shows, if left untreated, mental illness can significantly affect a person's quality of life, their ability to work, care for their families, and participate in educational settings (Study & Health, 2007).

Stress and anxiety are terms, fitting within the spectrum of mental ill-health, that are frequently interchanged by the general lay public as they share similar characteristics (Sarason, 1982). According to the American Psychological Association, over seven out of 10 adults in the United States claim to have experienced one or the other to a moderate degree daily (Anxiety and Depression Association of America, 2010-2018). Nonetheless, the literature differentiates between the two symptoms.

Stress can be defined as "a relationship between the person and the environment that is appraised by the person as relevant to his or her well-being and in which the person's resources are taxed or exceeded" (Folkman & Lazarus, 1985, p. 152). There are generally two types of stress: eustress and distress. Eustress is a short-term positive form of stress that is beneficial in increasing focus for accomplishing tasks (Quick, Cooper, Nelson, Quick, & Gavin, 2003). Distress, its counterpart, is an unhealthy form of stress that can be either temporary or chronic (Quick, Cooper, Nelson, Quick, & Gavin, 2003). Distress can lead to adverse physical health impacts including chronic fatigue, depression, arrhythmias, heart attacks, and even death (American Psychological Association, 2012). unlike eustress, leads to poor performance, difficulty accomplishing

tasks, and difficulty coping with negative feelings (Li, Cao, & Li, 2016; Parker & Ragsdale, 2015).

Anxiety refers to "subjective feelings of tension, apprehension, and worry, by activation or arousal of the autonomic nervous system" in relation to a future threat (American Psychiatric Association, 2013; Horwitz, Horwitz, & Cope, 1986, p. 125; Spielberger & Gorsuch, 1983). A previous study suggests that stress is linked to a cognitive process that relates to a person's ability to cope during situations (Jungbluth, Macfarlane, Veach, & Leroy, 2011). Anxiety is linked to a biological process related to an unpleasant affective state. Anxiety has a higher correlation with an inability to complete professional duties along with feelings of helplessness when compared to stress (Meijer, 2001).

<u>Mental Health in the Undergraduate/Graduate Populations</u>

The higher education experience often challenges students with new stressors they have yet to encounter in previous stages of life. Student response to such stressors manifests in various ways and can be impacted by a sudden life change, including increased levels of responsibility and greater independence. It is important to note that the stressors imposed on students are not necessarily the cause of mental illness; instead the stress is a consequence of the individual's perception and reaction to the stressor (Romano, 1992). In the same way, stress, when managed appropriately, can facilitate growth and improve student performance (Selye, 1974).

While current trends suggest an overall increase in the number of adults diagnosed with mental illness, studies have also shown a similar trajectory for graduate student communities (Evans, Bira, Gastelum, Weiss, & Vanderford, 2018; Pedrelli, Nyer, Yeung, Zulauf, & Wilens, 2015). There is evidence to support generational differences in

perception of mental health (Lieberman, Raisor-Becker, Sotto, & Redle, 2018). The survey concluded that Millennials (born between 1981-2000) and Gen Xers (born between 1965-1980) perceived higher levels of stress compared to older generations: Baby Boomer (born between 1946-1964) and Mature generations (born before 1945) (Lieberman, Raisor-Becker, Sotto, & Redle, 2018). According to Hunt and Eisenberg (2010), almost half of college students satisfy the diagnostic criteria for at least one mental health disorder: 17% of undergraduate students met the criteria for depression, 12% met the criteria for an anxiety disorder, and the rest were categorized under the label of *other* mental health disorders. Graduate students—as a group—also appear at risk for mental illness. A study screened members of the general public for mental illness (Evans, Bira, Gastelum, Weiss, & Vanderford, 2018). The results of the study found that 41% of the graduate student sample scored in the moderate-severe anxiety category as compared to 6% of the general population (Evans, Bira, Gastelum, Weiss, & Vanderford, 2018).

There is a myriad of decisions that plague students whether they are undergraduate or graduate students, including narrowing college choices, completing applications, deciding on majors and extracurriculars, and applying for scholarships/fellowships or stipends. To that end, years of reductions in public funding for colleges and universities have increased tuition costs and limited options for students including fewer course offerings, reduced student services, and campus closures (Mitchell, Leachman, & Masterson, 2016). Moreover, as more students seek degrees at the post-secondary level, the ratio between applicants applying to college and those that are accepted grows further apart (Altbach, Reisberg, & Rumbley, 2009; Snyder & Dillow, 2012). As such, an increase in college attendance inversely affects the chances of

securing scholarship funds at a time when costs continue to climb. From 2005-2015, tuition costs in the United States for four-year public institutions rose 34% while tuition costs at a four-year private institution rose 26% (Snyder, De Brey, & Dillow, 2018), which results in an increased demand for employment while obtaining a degree (Heckman, Lim, & Montalto, 2014). Therefore, financial strain is commonplace for many students and their families (Heckman, Lim, & Montalto, 2014).

While financial constraints and higher education options serve as assailants on students' mental health, Beiter et al. (2015) surveyed 374 undergraduate students between 18 and 24 years of age regarding challenges applicable to their daily lives. Of the sample, the top three concerns centered on students' academic performance, perceived pressure to succeed in school, and life plans following graduation (Beiter, Nash, McCrady, Rhoades, Linscomb, Clarahan, & Sammut, 2015). "Demographically, the most stressed, anxious, and depressed students were transfers, upperclassman, and those living off-campus" (Beiter, Nash, McCrady, Rhoades, Linscomb, Clarahan, & Sammut, 2015, p. 90).

<div align="center">Mental Health Among SLP Graduate Students</div>

Graduate students preparing to work in the helping professions (e.g., nursing, medicine, counseling, social work, and speech-language pathology) are noted to have elevated stress and anxiety levels (Beck & Verticchio, 2014; Jennings, 2008; Lloyd, King, & Chenoweth, 2002; Rees & Cooper, 1992; Sowa, May, & Niles, 1994). One study surveyed the stress levels and types of stress in 238 graduate students studying speech-language pathology in the United States (Lieberman, Raisor-Becker, Sotto, & Redle, 2018). Per the above sample, 228 students scored as having either moderate or high levels of stress and identified "examinations, tuition costs, and time management as causes of

extreme stress" followed by "grades, papers, and studying" as causes of moderate stress (Lieberman, Raisor-Becker, Sotto, & Redle, 2018).

The scope of practice for speech-language pathologists is complex and multifaceted. It serves as a benchmark on which training programs are based and is organized by the American Speech-Language-Hearing Association (ASHA) to include eight domains of service delivery, eight areas of service delivery, and five professional practice targets (American Speech-Language-Hearing Association, 2016). The service delivery domains are comprised of: collaboration; counseling; prevention and wellness; screening; assessment; treatment; modalities, technology, and instrumentation; and population and systems (American Speech-Language-Hearing Association, 2016). The service delivery areas include fluency; speech production; language; cognition; voice; resonance; feeding and swallowing; and auditory habilitation/rehabilitation (American Speech-Language-Hearing Association, 2016). Professional practice is comprised of: advocacy and outreach; supervision; education; research; and administration and leadership (American Speech-Language-Hearing Association, 2016).

To achieve the aforementioned objectives, students must acquire knowledge (i.e., coursework) and skills (i.e., clinic) in sufficient breadth and depth to function as "effective, well-educated, and competent" speech-language pathologists. (Council on Academic Accreditation in Audiology and Speech-Language Pathology, 2019, p. 18). This mandate may be compromised by the continuous evaluation, low social supports, and reduced emotional resilience commonplace of students in helping-profession graduate training programs (Bore, Kelly, & Nair, 2016; Crary, 2013; Hamaideh & Hamdan-Mansour, 2014).

As mental health disorder diagnoses increase in frequency, so does the need for a comprehensive understanding of their effects—specifically among those pursuing graduate educations. An exploration of the roles within the graduate school experience, including the relationships with mentor and peer communities may reveal ways to dampen the adverse effects associated with mental health disorders. To that end, McMillan and Chavis' (1986) theory of sense of community provides a plausible theoretical framework on which this study was based.

Theoretical Framework

"Sense of community is a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together" (McMillan & Chavis, 1986, p. 9). Community has previously been defined in two different ways. The first definition revolves around the idea of connectedness due to geographical location: a town, school district, city, or state. Gustfield (1975) developed a second, spiritual meaning of community outside of physical location. The second definition implies a relationship. A relational community is concerned about connectedness among individuals without reference to a physical location. Community is viewed and perceived more as a sense of togetherness through shared interests (Durkheim, 1964; McMillan & Chavis, 1986).

A sense of community relationship has also been applied to the classroom setting (Rovai, 2002a). Rovai (2002a) states that a person's sense of community is dualistic in nature and includes the tenets of connectedness and learning. Social community refers to feelings of connectedness, which relates to the feeling of belonging to a specific group with shared interests, desires, and faith that a person's needs will be met by interdependence with other members (McMillan, 1996; McMillan & Chavis, 1986;

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Rovai, 2002a). The learning aspect of community involves the enhancement of

knowledge of shared commonalities within a group of people (Lambert, 2003). A

member in a community must acknowledge their role in the community, while accepting

the values of the group, and believe that learning needs are being met by being a part of

the community (Rovai, 2002). Having a sense of community relationship has shown to

have a positive influence on student's motivation, perceived learning, and confidence

(Grobecker, 2016). Fostering a sense of community and a sense of learning within the

classroom community provides an avenue toward decreasing the stress and anxiety

experienced by students, while also increasing the persistence, motivation, collaboration

and satisfaction of students (Grobecker, 2016; Hagerty & Patusky, 1995; Levett-Jones,

Lathlean, Higgins, & McMillan, 2009).

<div align="center">Perceived Learning</div>

There are multiple methods to assess the occurrence of learning across various

populations and settings. Learning can, and often is, proven to have occurred through the

use of assessment. However, learning can be looked at through the lens of metacognition,

which is referred to as perceived learning. Perceived learning is obtained via

introspection - when an individual can report one's knowledge gain (Bacon, 2016), which

is independent of actual learning, which can be measured via assessment. "Bloom's

Taxonomy" was created in 1956, which divided perceived learning into three domains:

cognitive learning, affective learning, and psychomotor learning. Cognitive learning

relates to the learners' ability to recall and recognize information that serves in the

development of intellect (Bloom, 1956). Affective learning refers to the learners'

attitudes and feelings they have towards the content or subject matter after learning has

occurred (Rovai, Wighting, Baker, & Grooms, 2009). Last, psychomotor learning is best

explained as the use of physical motor movement to enhance learning (Rovai, Wighting, Baker, & Grooms, 2009). Pace deemed that student's self-reports of learning can be used as a valid form of measurement in understanding the perceptions of learning from students in the classroom (Pace, 1990).

Purpose

To date, research examining the mental health, sense of community, and perceived learning among speech-language pathology graduate students has been limited (Lieberman, Raisor-Becker, Sotto, & Redle, 2018). Studies on the prevalence and effects of stress and mental health disorders among college students have tended to focus on undergraduate or graduate students as a whole or to specific groups such as medical or nursing students (Cleary, Horsfall, Baines, & Happell, 2012; Grobecker, 2016; Helmers, Danoff, Steinert, Leyton, & Young, 1997; Mosley, Perrin, Neral, Dubbert, Grothues, & Pinto, 1994; Vora & Kinney, 2014). In addition, studies examining the impacts of a sense of classroom community have primarily been limited to reviewing the effects within digital learning environments (Ritter, Polnick, Fink II, & Oescher, 2010; Rovai, 2001; Rovai & Lucking, 2003)

As such, the purpose of this study was to determine whether a predictive relationship exists between speech-language pathology graduate students' perceived anxiety and their sense of classroom community (social community and learning community) and perceived learning (cognitive, affective, and psychomotor).

Hypothesis

The researchers hypothesize that there is a statistically significant predictive relationship between speech-language pathology graduate students' sense of classroom community and perceived learning on their perceived anxiety levels.

CHAPTER 2

METHODS

A predictive correlational research design was applied to McMillan and Chavis'
(1968) sense of community theory to examine whether speech-language pathology
graduate students' sense of classroom community (e.g., social community and learning
community) and perceived learning (e.g., cognitive, affective, and psychomotor) predict
anxiety levels while controlling for demographic variables. A hierarchical multiple
regression was used for the analysis.

The demographic items totaled four and queried participants' gender, ethnicity,
student status (e.g., graduate vs. undergraduate student) and the state in which the
training program was located. Gender and ethnicity served as one of three predictor
variables and were included in Block 1—as covariates—consistent with similar
educational models (Rockinson-Szapkiw, Wendt, Whighting, & Nisbet, 2016). Block 2
contained the predictor variable encompassing sense of classroom community and its
subdomains of social community and learning community. Perceived learning was
entered last into the model as Block 3. The subdomains associated with block 3 included
cognitive, affective and psychomotor aspects of learning. This model, again, is consistent
with similar studies (Rockinson-Szapkiw, Wendt, Whighting, & Nisbet, 2016). In
summary, the predictor variables were entered into blocks consistent with Table 1.

<u>Participants and Setting</u>

A convenience sample of 316 Master's level students attending accredited speech-language pathology training programs was used. This number accounts for those participants removed from the sample following data screening. The sample consisted of both males (*n*=12) and females (*n*=302); two individuals elected not to disclose their gender. The majority of participants identified their ethnicity as white (*n*=280); non-white, ethnic/racial groups were also represented (*n*=34). Again, two individuals did not provide their ethnicity. The sample included representation from across the United States (27/50 states, 54%) with distribution by state illustrated in Figure 1.

The participants were recruited through their academic program directors via email blast following approval from the University of Louisville Institutional Review Board (IRB#: 17.0014). The American Speech-Language-Hearing Association (ASHA) publishes on its website a contact list (including email addresses) of all accredited training programs and program directors in the United States. Each program director was asked to forward an explanatory email to their students. The email included possible risks or benefits of the study, informed consent, and the link to the online survey hosted via Qualtrics™ (https://www.qualtrics.com/). Participants were advised that their completion of the survey implied their consent to participate in the study. The survey was smartphone friendly; however, participants were also able to complete the instrument via tablet, laptop, or desktop computer. Reported demographic data was used to screen that applicants were either first- or second-year graduate students. The survey was rendered inactive at the end of a three-week period.

Instrumentation

The online survey used for this study was a combination of demographic questions and three reliable and validated instruments: Classroom Community Scale (Rovai, 2002a), Perceived Learning Scale (Rovai, Wighting, Baker, & Grooms, 2009) and the Generalized Anxiety Disorder Questionnaire (GAD-7) (Spitzer, Kroenke, Williams, & Löwe, 2006). Demographic questions—specifically gender and ethnicity combined—served as one of three predictor variables.

The Classroom Community Scale (Rovai, 2002a) was included in the instrument as the second predictor variable with two subdomains: connectedness (social community) and learning (learning community). The scale contains a series of 20 statements addressing each subdomain. "Connectedness represents the feelings of the community of students regarding their connectedness, cohesion, spirit, trust, and interdependence" (Rovai, 2002a, p. 206). The learning subdomain is a compilation of shared values, beliefs and whether such attributes connect with students' goals and program expectations. Response choices were made on a five-point Likert type scale reflective of each student's feelings ranging from strongly disagree to strongly agree. Scores vary from a maximum of 80 to a minimum of zero. Higher scores are indicative of a stronger sense of classroom community. The scale has both solid construct validity and reliability. Cronbach's alpha for the entire scale is .93 (Rovai, 2002a).

The CAP Perceived Learning Scale (Rovai, Wighting, Baker, & Grooms, 2009) was included as the final predictor variable. This scale has three subdomains: cognitive, affective and psychomotor. The scale contains a series of nine statements that are rated on a scale from 0-6; lower numbers reflect less agreement, and higher numbers reflect more agreement. The cognitive aspects of the scale center on recall and/or recognition of

information while the affective aspects of learning address "interests, opinions, emotions, attitudes and values" (Rovai, Wighting, Baker, & Grooms, 2009, p. 8). Psychomotor learning encompasses motor abilities. Scores on the overall scale can vary from a high score of 54 to a low score of 0. Again, higher CAP scores are indicative of higher perceptions of overall learning. The scale has both solid construct validity and reliability. Cronbach's alpha for the entire scale is .79 (Rovai, Wighting, Baker, & Grooms, 2009).

The criterion or dependent variable was the summed score on the Generalized Anxiety Disorder Screener (GAD-7). The GAD-7 is a seven item, self-report measure of anxiety normed on the general population (Lowe, Decker, Muller, Brahler, Schellberg, Herzog, & Herzberg, 2008). High scores on the GAD-7 are suggestive of possible anxiety disorder. Participants were advised that anxiety is a serious mental health issue and should only be diagnosed/treated by a competent physician and that their participation in this study was not diagnostic. The GAD-7 is a screening tool with a Cronbach's alpha of .89 (Lowe, Decker, Muller, Brahler, Schellberg, Herzog, & Herzberg, 2008).

CHAPTER 3

RESULTS

A hierarchical multiple regression was used to determine whether a predictive

relationship exists between speech-language pathology graduate students' perceived

anxiety and their sense of classroom community (social community and learning

community) and perceived learning (cognitive, affective, and psychomotor). There was

linearity as assessed by partial regression plots and a plot of studentized residuals against

the predicted values. There was independence of residuals, as assessed by a Durbin-

Watson statistic of 2.00. There was homoscedasticity, as assessed by visual inspection of

a plot of studentized residuals versus unstandardized predicted values. There was no

evidence of multicollinearity, as assessed by tolerance values greater than 0.1. There

were no studentized deleted residuals greater than ±3 standard deviations; no leverage

values greater than 0.2 and values for Cook's distance above 1. The assumption of

normality was met, as assessed by Q-Q Plot. Correlation analyses are provided in Table

2. Statistically significant relationships were observed between most of the predictor

variables with no correlation coefficients over 0.7. Descriptive statistics for both the

criterion and predictor values are reported in Table 3.

Results of the Hierarchical Regression Model

The variables were placed into three separate blocks resulting in three separate

models. The results of Block 1 contained the demographic variables of gender and

ethnicity and reached statistical significance where $F(2,313) = 3.04$, $p< .05$. The model in

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Block 1 explained 2% of the variance of perceived anxiety of speech-language pathology graduate students. Block 2 added the predictor variables of social community and learning community (i.e., classroom connectedness). Block 2 also reached statistical significance where $F(2,311) = 19.88$, $p < .001$. The addition of classroom connectedness components led to a statistically significant increase of R^2 of .11. As such, Block 2 explained 13% of the variance of perceived anxiety of speech-language pathology graduate students. In the final model, Block 3, the addition of cognitive, affective, and psychomotor aspects of perceived learning reached statistical significance where $F(3,308) = 2.99$, $p < .05$. The addition of the three perceived learning factors added an additional 2.5% to the variance of perceived anxiety of speech-language pathology graduate students. In short, the full model—Block 3—explained approximately 16% of the variance of perceived anxiety of speech-language pathology graduate students.

In the final model, social community and learning community (i.e., classroom connectedness) as well as affective aspects of perceived learning each made a statistically significant individual contribution to the model. A negative relationship appears to exist between social community and learning community (i.e., classroom connectedness) and perceived anxiety scores per speech-language graduate students. As students begin to feel less connected to their social and learning communities, their perceived anxiety levels increase. A positive relationship appears to exist between perceived affective aspects of learning and perceived anxiety levels. As students' perceived affective aspects of learning increase, their perceived anxiety levels also increase. Table 4 presents the results of the change models and the individual contributions per each variable for the final model.

Table 1

Data Source Blocks

Block	Predictor Variable(s)
Block 1	(Demographics)
	Gender
	Ethnicity
Block 2	(Classroom Community Scale)
	Social Community
	Learning Community
Block 3	(CAP Perceived Academic Learning)
	Cognitive
	Affective
	Psychomotor

Table 2

Correlation Matrix for the Predictor Variables

	1	2	3	4	5	6	7	8
1. Anxiety	-	-	-	-	-	-	-	-
2. Gender	.02	-	-	-	-	-	-	-
3. Ethnicity	-.14	-.21	-	-	-	-	-	-
4. Soc. Com.	-.27	-.06	-.08	-	-	-	-	-
5. Learning Com.	-.30	-.03	-.10	.63*	-	-	-	-
6. Cognitive	-.10	.06	-.004	.25	.37	-	-	-
7. Affective	-.03	-.01	-.08	.31	.52*	.37	-	-
8. Psychomotor	-.11	.05	-.07	.12	.18	.28	.09	-

Note. * indicates moderate positive correlation

Table 3

Descriptive Statistics for the Criterion and Predictor Variables

Variables	M	SD
Anxiety Score (GAD-7)	9.44	5.79
Classroom Community Scale (Block 2)		
Social Community	27.76	7.01
Learning Community	28.83	5.79
CAP Perceived Academic Learning (Block 3)		
Cognitive	12.53	2.71
Affective	13.09	2.76
Psychomotor	10.83	1.66

Table 4

Hierarchical Regression Analysis Results for Three Blocks

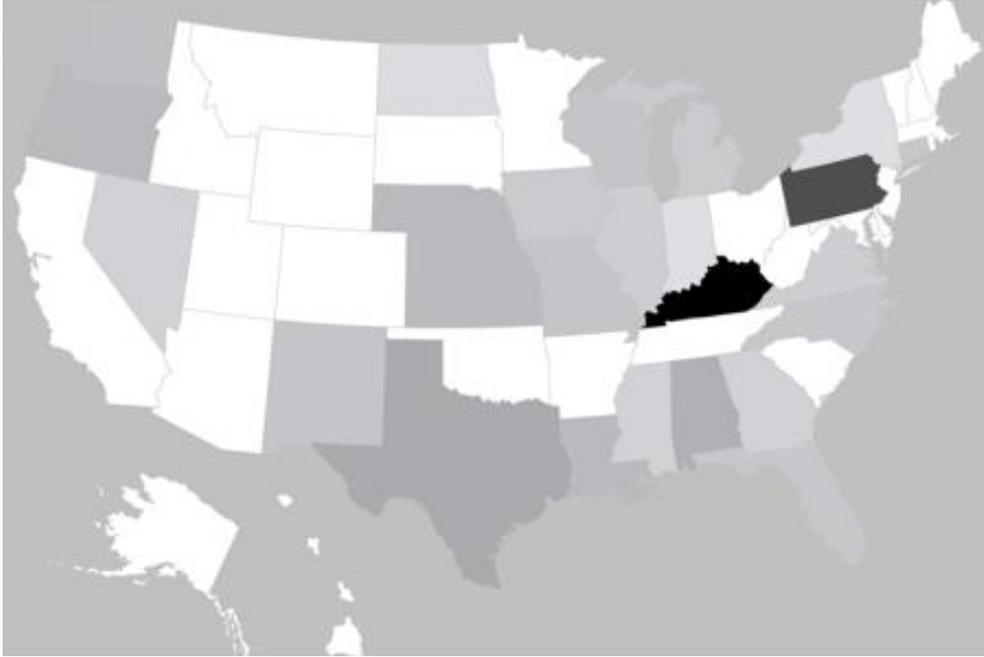|	R^2 Change	F Ratio for R^2 Change	B	SE	β	t	p
Block 1*	.02	3.03					.04
Block 2**	.11	19.88					<.001
Block 3**	.03	2.99					<.001
Gender			-.89	1.50	-.03	-.59	.55
Ethnicity**			-2.98	.91	-.17	-3.28	<.001
Social*			-.11	.05	-.13	-2.05	.04
Learning**			-.30	.07	-.30	-3.99	<.001
Cognitive			.03	.12	.01	.27	.78
Affective*			.33	.13	.16	2.54	.01
Psychomotor			-.25	.19	-.07	-1.32	.18

Note. *p<.05, **p<.001.

Figure 1. Distribution of Survey Participants by State

CHAPTER 4

DISCUSSION

Disability has become a ubiquitous term in many industrialized nations. In the

United States alone, one of the most common causes of disability is mental illness

(Center for Behavioral Health Statistics and Quality, 2015). A person's mental health is

strongly correlated with their physical well-being in that mental ill-health may facilitate

poor physical health and vice versa (Lando, Williams & Sturgis, 2006). For example,

depression and anxiety may negate involvement in health-promoting behaviors while

chronic diseases (e.g., cancer) may promote depression and anxiety and an inability for

follow-through with medical care (Office of Disease Prevention and Health Promotion,

2019).

Mental illness and associated comorbidities are commonplace along the age

continuum. This study elected to focus on graduate students in higher education,

specifically those seeking master's degrees in speech-language pathology. Speech-

language pathology is a growing field; however, there is limited research in

understanding the effects of mental ill-health within this population, even though it has

been determined that this population is at-risk (Toews, Lockyer, Dobson, Simpson,

Brownell, Brenneis, MacPherson, & Cohen, 1997). As such, this study aimed to

contribute to the literature on mental illness by determining whether a statistically

significant association was present between speech-language pathology graduate

students' sense of classroom community (e.g., social community and learning

community) and perceived learning (cognitive, affective, and psychomotor learning) on the criterion variable of perceived anxiety.

Connectedness, at its core, is about partnership, trust, and belonging. Its applications extend beyond the traditional classroom setting to social gatherings that are external to academics. However, principles inherent in connectedness apply to both settings.

From a learning community perspective, students acknowledge their membership in the community while believing that their academic needs will be met through group connections (Rovai, 2002b). The learning aspect of community describes how shared commonalities via group membership enhances knowledge (Lambert, 2003). For this study, students who felt a stronger connection to their learning community reported significantly less anxiety. Specifically, the learning community—for this context—is equated with a single common denominator: graduate training/educational experiences in speech-language pathology. As such, one can conclude—per this sample—that when students feel more connected within a community of fellow cohort members, their levels of anxiety are reduced. Excessive amounts of academic or generalized anxiety have shown time and time again to negatively influence academic achievement among students (Bensoussan, 2012; Clark & Schwartz, 1989; Hembree, 1988). Students who feel a stronger sense of community are more likely to persist in their academic coursework and have shown to have decreased attrition rates, in comparison to students who feel alienated from their classmates (Royal & Rossi, 1996; Tinto, 1993). Therefore, having a sense of community within the academic setting has shown to reduce anxiety

levels, which in turn has shown to improve academic performance among students (Astin, 1984).

From a social community perspective, students who felt they belonged to a social community also reported lower anxiety levels. A person in a social community shares interests, wants, and/or needs through interdependence on one another (McMillan, 1996; McMillan & Chavis, 1986; Rovai, 2002b). Having a social support network has also been shown to influence emotional and physical well-being (Cohen, 2004). Additionally, student perceptions surrounding the concept of social community implies an understanding of member expectations, group dependability, and overall community stability (Jason, Stevens, & Ram, 2015; Sarason, 1974). Social community equates with harmony. Social communities become weak when there is "little interaction, mistrust, competition, the presence of social cliques that reinforce their own identities and exclude others," an occurrence of one-way communications, or when there is a decrease in the cohesion of goals and values (Rovai, 2002b, p. 322). The results of this study served to provide evidence that McMillan and Chavis' (1986) sense of community theory held true when applied in this context and with this population.

From a demographic standpoint, this study examined two factors: gender and ethnicity. Due to the small sample size of males and minority groups within this population, it is inappropriate to claim a sure finding of predictiveness of anxiety in the scope of demographics, which is a limitation to studying this specific field. Previous literature has mixed results regarding gender and anxiety. Some literature concludes that females are more anxious than men. (Rovai, 2002b; Siddiqui & Rehman, 2014) Conversely, research has also found the contrary - male students have been shown to

have significantly higher levels of anxiety (Robinson, 1966). Nonetheless, literature has shown that female students tend to cultivate a stronger sense of learning community than their male counterparts (Rovai, 2001). This finding was also replicated in a study involving female nursing students (Ditzel, 2017). As speech-language pathology graduate programs across the United States have significantly higher female-to-male ratios (American Speech-Language-Hearing Association, 2017), it is possible that gender was not found to be a significant predictor of anxiety, as females appear better able to counteract academic anxiety by promoting stronger communities within their cohorts.

Ethnicity was found to be a significant variable in the prediction of anxiety per this sample. There are mixed results from previous research regarding the prevalence of mental ill-health in non-white/racial groups as compared to whites; however, it is essential to look at this issue within the appropriate context (Asnaani, Richey, Dimaite, Hinton, & Hofmann, 2010; Li, Cao, & Li, 2016; Malat, Mayorga-Gallo, & Williams, 2018; Study & Health, 2007). Secondary to the varying degrees and types of anxiety, there is not a perfect model that appropriately fits all ethnicity types when considering high versus low anxiety levels. Past research has indicated that non-white individuals have higher anxiety rates than white individuals when the anxiety is caused by post-traumatic stress disorder (Asnaani, Richey, Dimaite, Hinton, & Hofmann, 2010). White individuals demonstrate significantly higher levels of generalized anxiety disorders, social anxiety disorders, and panic disorders—overall—than do their non-white counterparts (Asnaani, Richey, Dimaite, Hinton, & Hofmann, 2010). The findings of this study are grounded within the scope of higher education.

As generalized anxiety disorder and panic disorder are the most common types of anxiety found within the graduate student population (Eisenberg, Gollust, Golberstein, & Hefner, 2007), the results of this study support previous research findings suggesting there are higher instances of anxiety within the white group (Budhwani, Hearld, & Chavez-Yenter, 2015; Keyes, 2002; Malat, Mayorga-Gallo, & Williams, 2018; Rosenfield & Mouzon, 2013). It is important to note that these findings may not apply to international students. International students have shown higher levels of anxiety in comparison to minority students who have not emigrated to a different country (J. A. Bell, 2008). This variable was not included in this study.

Perceived learning was also included as a predictor variable in this study. Perceived learning is the use of self-introspection to reflect on knowledge gained and has shown to be an accurate representation of actual learning (Pace, 1990). The following domains of perceived learning targeted included: cognitive learning, affective learning, and psychomotor learning. The results did not statistically link anxiety with the cognitive or psychomotor domains of learning but did find an association between affective learning and anxiety. In short, as students' perceived affective aspects of learning increased, their perceived anxiety levels also increased.

Affective learning is characterized by positive feelings toward learning (Rovai, Wighting, Baker, & Grooms, 2009). This domain can also include self-reliance, attitudes, and motivation. Previous research has concluded that students who report experiencing higher affective learning are more engaged with course material and perform better academically (Rockinson-Szapkiw, Wendt, Whighting, & Nisbet, 2016). Moreover, motivation is a crucial indicator of higher affective learning (Rodríguez, Plax, &

Kearney, 1996). Nonetheless, the perception of *needing* to learn large amounts of information has inversely caused students to become more anxious, specifically female students (Dahlin, Joneborg, & Runeson, 2005). The findings of this research conclude that students in speech-language pathology graduate programs have tendencies toward increased affective learning, which may also lead to higher levels of anxiety. This is likely due to the vast amount of material addressed in coursework (i.e., knowledge), the resultant application of such material during practical experience (i.e., skills), and the *need* to perform well.

Cognitive learning is the ability to recognize and recall information that has been learned (Bloom, 1956). It can also include organization and critical reflection (Rovai, 2002b). For this sample, perceived cognitive learning was not a predictor of anxiety. Nonetheless, cognitive learning has shown to relate to affective learning (Rockinson-Szapkiw, Wendt, Whighting, & Nisbet, 2016). Higher affective learning implies increased cognitive load and higher anxiety levels. However, not all levels of anxiety are harmful to academic achievement as mild levels of anxiety have shown to increase motivation and learning in students overall (Rodríguez, Plax, & Kearney, 1996; Shakir, 2014).

The mean level of anxiety for this sample fell within the mild-to-moderate range, which in turn could be viewed as a possible motivator, rather than a hindrance to academic achievement. As such, higher perceptions of cognitive learning have been shown to be predictive of higher grade-point averages (Kang, Liew, Kim, & Jung, 2011; Rockinson-Szapkiw, Wendt, Whighting, & Nisbet, 2016; Russo & Benson, 2005). Conversely, students with high levels of anxiety have been shown to perform poorly in

academics. Therefore, it is plausible that students who perform better academically do not typically suffer from higher levels of anxiety (Nail, Christofferson, Ginsburg, Drake, Kendall, McCracken, Birmaher, Walkup, Compton, & Keeton, 2015). Since affective learning has shown to correlate with better academic performance, we can predict that the cognitive domain of perceived learning, was not a predictive variable of anxiety because the majority of students were doing well academically, due to the results concluding high levels of affective learning (Rockinson-Szapkiw, Wendt, Whighting, & Nisbet, 2016). Therefore, increased academic performance implies a positive reflection of knowledge and thus, lower levels of anxiety.

The psychomotor component of learning was not found to be a statistically significant predictor of anxiety in this sample. Psychomotor learning is related to the physical use of motor movement to enhance learning (Rovai, 2002b). Oxendine (1972) found that student's with high levels of anxiety were unable to complete physical psychomotor tasks inclusive of coordination, fine motor movements, steadiness, and concentration to their highest ability. Anxiety related to psychomotor learning is common among nursing students (Aldridge, 2017; M. L. Bell, 1991). Nursing students must frequently use precise fine-motor skills in order to complete essential job duties such as starting intravenous lines and administering injections. The field of speech-language pathology requires fewer such motor-based skill sets. As such, the fact that speech-language pathology graduate students did not associate higher levels of anxiety from a perceived psychomotor learning perspective is not surprising.

Although this study was supported by current literature and grounded in theory, it is not without limitations. The study was designed to focus on a particular population,

and so generalization of the findings to other groups should be applied cautiously. Additionally, participants were recruited via convenience sampling. This negates the possibility of randomization and serves to threaten internal validity. Lastly, the data was collected via an online platform. This approach inhibits response rate calculations and, in some cases, access to the survey itself. Future studies examining mental health and mental ill-health in speech-language pathology students may seek to investigate comparisons between undergraduate and graduate samples; the potential for heightened anxiety levels at certain points of time during training; as well as age-related and previous career differences on anxiety. Additionally, future studies might include variables such as interpersonal factors (e.g., relationships, roommates, social activities), intrapersonal factors (e.g., sleeping habits, financial difficulties, death of family/friend, etc.), and academic items (e.g., increased workload, post-graduate job search, difficulties with work-school balance) (Ross, Niebling, & Heckert, 1999).

The overarching intent of this study was to contribute to the knowledge base related to the mental health of speech-language pathology graduate students by determining whether a predictive relationship exists between perceived anxiety and sense of classroom community (social community and learning community) and perceived learning (cognitive, affective, and psychomotor). The present study was able to account for 15.5% of the variance of perceived anxiety in speech-language pathology graduate students. When students feel less connected to their social and learning communities, their perceived anxiety levels increase. Conversely, when students' perceived affective aspects of learning increase, their perceived anxiety levels also rise.

Whereas the prevalence and severity of mental illness is increased in the United States (Substance Abuse and Mental Health Services Administration, 2018) and appears to impact the helping professions—namely speech-language pathology (Beck & Verticchio, 2014; Jennings, 2008; Lloyd, King, & Chenoweth, 2002; Rees & Cooper, 1992; Sowa, May, & Niles, 1994), it is necessary that training programs consider ways to assist students in ameliorating anxiety. Evidenced-based techniques include but are not limited to: mindfulness meditation (Shearer, Hunt, Chowdhury, & Nicol, 2016), resource appraisals (Jamieson, Peters, Greenwood, & Altose, 2016), and involvement in extracurricular activities, mentorship, career counseling, and life coaching (Fares, Al Tabosh, Saadeddin, El Mouhayyar, & Aridi, 2016).

While having a strong sense of community is an important consideration in the negation of the effects of anxiety, it is but one piece of a much larger puzzle. There is a need for a more comprehensive understanding of the additional factors that influence student anxiety within this population in order to improve students' program experiences and ultimately, their knowledge and application bases related to speech-language pathology practice. It is our hope that this study has helped to narrow the gap in the available literature on mental illness with respect to graduate students in the field of speech-language pathology.

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APPENDIX: ABBREVIATIONS

ASHA   American Speech-Language-Hearing Association

CAP   Cognitive, Affective, and Psychomotor

GAD-7   Generalized Anxiety Disorder 7

SLP   Speech-language pathologist

CURRICULUM VITAE

NAME: Emily Blaire Schantz

ADDRESS: Department of Communicative Disorders
                   Speech-Language Pathology
                   MDA Building School of Medicine
                   627 S. Preston St., Suite 620
                   University of Louisville
                   Louisville, KY 40292

DOB: Fort Wayne, IN – October 03, 1994

EDUCATION
& TRAINING: B.A., Speech and Hearing Sciences
                          Indiana University Bloomington
                          2013-2017

                          M. S., Communicative Disorders
                          University of Louisville
                          2017-2019

PROFESSIONAL
SOCIETIES: National Student Speech Language Hearing Association
                   University of Louisville, Louisville, KY
                   August 2017 – present

                   Kentucky Speech-Language-Hearing Association
                   January 2019 – present

PRESENTATIONS: Schantz, E., Pitts, T., & Smith, A. (2018). Investigating predictive
                   relationships between speech-language pathology graduate
                   students' sense of classroom community, academic learning, and
                   perceived anxiety. Poster presentation at the Kentucky Speech-
                   Language-Hearing Association annual meeting, February 21,
                   Lexington, KY.