

An Investigation of Teacher Beliefs and Actions

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Abstract

The National Research Council challenged colleges of agriculture to make changes to instructional practices for undergraduate students. Education in any context seeks to enhance student learning. One of the facets of the learning process is teacher instructional practices. The theory of planned behavior describes the ability to predict behaviors based on an understanding of beliefs. This study investigated the influence of beliefs of inclusion on the usage of teacher immediacy activities. Inclusion is defined as the control students are given over the learning process. The beliefs on inclusion for five faculty members of the College of Agricultural and Life Sciences (CALS) at the University of Florida were assessed using the Heimlich/Van Tilburg Teacher Beliefs Scale and the teaching behaviors of the instructors were documented using observational techniques. Results indicated that 62% (n = 21) of the behaviors were utilized more frequently by highly inclusive instructors. Apparently, beliefs about the inclusivity do influence the frequency of teacher immediacy behaviors. Additional research should seek to have a more diverse population of teacher beliefs represented. For practical application, development of a teacher diagnostic tool should occur

which could help predict or describe teacher's classroom practices and needs. Such a tool could help those who deliver professional development to college faculty deliver more appropriate programs.

Introduction

In 2009, the National Research Council (NRC) challenged colleges of agriculture and related sciences to make changes to curricula and instructional practices. The NRC recommended these changes be made as a result of the need for college graduates to be able to solve complex global problems (NRC, 2009). The NRC also noted that an update to methods of instruction and curricula should occur, although they acknowledged that there are currently numerous examples of professors who have already embraced new pedagogies and are working to prepared society-ready graduates.

With that in mind, research has indicated students are more engaged in the learning processes when they are involved with the faculty in the collective process of education (Umbach and Wawrzynski, 2005). Dunkin and Biddle (1974) laid the descriptive foundation for the formal teaching process. Their model describes

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the complexities of the formal teaching/process, which involves the interactions between the teacher, learners, content and the learning environment (Dunkin and Biddle, 1974). One component of the process, which should be elucidated, is an understanding of the internal beliefs a teacher holds and the corresponding teacher behaviors from such beliefs.

Theoretical Frame

According to Ajzen's (1991) Theory of Planned Behavior, a person's beliefs influence their intentions for behavior outcomes, which in turn directly influence their observable behaviors. When correlated to the goal of teaching, the classroom behaviors of teachers ultimately affect student achievement (Fang, 1996). Clark and Peterson (1986) showed a relation of Ajzen's theory to teaching; describing the interaction of two domains, (a) teachers' thought processes and (b) teachers' actions and their observable affects, as the opportune interaction of study to enhance or inhibit student performance.

The Theory of Planned behavior served as the theoretical frame for this study (Ajzen, 1991). The major constructs of attitudes, subjective norms, perceived control, are operationalized as internal beliefs, or teacher beliefs for this study (Ajzen, 1991). For the purposes of this study, teacher beliefs were operationalized as their score on the teacher belief scale (Heimlich, 1990) and teacher behavior was operationalized as the frequency of teacher immediacy behaviors (Christophel, 1990) exhibited in the classroom.

Teacher Beliefs

Heimlich (1990) delimited the two key dimensions of a teacher's beliefs, related to their thoughts and actions, as sensitivity and inclusion. Sensitivity relates to the understanding of the group (learners) needs, while inclusion refers to the amount of control students have over their learning within an instructor's classroom. Heimlich asserted these two key dimensions stem from the belief that a teacher's success relates to their ability to be sensitive to the cultural interactions within the learning environment; as well as, the teacher's ability to relinquish control. He also asserted that the measurement and subsequent intersection of these two dimensions will indicate a preferential teaching style (Heimlich, 1990).

As described, Heimlich (1990) stated that the teacher outcomes or activities associated with each dimension change the focus from teacher to learner (inclusion) and from content to process (sensitivity) as one increases on either axis. The theorized value of the dimensions is that they serve as the predictor for how an educator will perform within the educational process (Heimlich, 1990). Clark and Peterson (1986) further validated these

dimensional beliefs as predictors by stating that teacher beliefs are a vector for perception, process and action related to classroom activities.

Heimlich (1990) assessed adult educators in Ohio and found that 95% of those educators were highly sensitive and 95% were highly inclusive, using the conventions previously mentioned. In 1992, Cano et al. applied the conventions to preservice teachers in agricultural education and found that 56% of those preservice teachers were both highly sensitive and highly inclusive and only 20% were only highly inclusive or highly sensitive. Whittington and Raven (1995) conducted similar research assessing teaching beliefs of student teachers and found 87% of student teachers were both highly sensitive and highly inclusive. Most recently, Giorgi and Roberts (2011a) found that 91% of excellent undergraduate professors were highly sensitive and 82% of the same population were highly inclusive.

Teacher Immediacy

Teacher immediacy has been defined as the perceived closeness between people, both physically and psychologically (Christophel, 1990). For the purposes of this study, teacher immediacy was operationalized as teacher behaviors, verbal and nonverbal, that facilitate the perceived feeling of closeness (Wilson et al., 2010). Velez (2008) suggested the value of researching teacher immediacy in agricultural education at all levels, relates to the suspected effect of teacher immediacy on student motivational processes.

The theoretical foundation of teacher immediacy was derived from the implicit communication theory and communication behaviors research of Mehrabian (1969, 1981). Mehrabian (1981) produced three dimensions, which described the various emotional responses elicited based on diverse communication stimuli.

Furthermore Andersen (1978) defined nonverbal teacher immediacy as nonverbal behaviors that reduce either the physical or the psychological distance between people. Nonverbal interactions have been attributed to upwards of 90% of the meaning of messages in the classroom, proving the extent of importance for such interactions (Andersen, 1978; Velez, 2008). Additionally Andersen found that as much as 81.6% of all teacher behaviors are nonverbal and Crump (1996) found that students preferred the nonverbal immediacy behaviors that translated into dynamic content delivery and vocal variations (Crump, 1996).

Velez (2008) stated, "*Verbal teacher immediacy refers directly to stylistic verbal expressions used by teachers to develop within students a degree of like or dislike towards the teacher*" (p. 42). Examples of stylistic expressions pertinent to teacher beliefs of inclusion are

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usage of past or present verb tense, probability (will vs. may), inclusivity (we vs. I), ownership (my vs. our class) and adjective variations (that vs. this person; Gorham 1988). Research has indicated that there is an association between verbal immediacy behaviors and an increase in cognitive, affective and behavioral learning (Christophel, 1990; Gorham, 1988; Gorham and Christophel, 1990; Plax et al., 1987; Rodriguez et al., 1996).

What is more, Wilson et al. (2010) investigated the relationship between immediacy behaviors and rapport within the classroom. Wilson et al. found that immediacy correlated to the level of professor/student rapport. Wilson et al. (2010) also investigated the relationship between teacher immediacy and the outcome variables of course grades and amount learned and discovered teacher immediacy predicted 23% of the variability of amount learned as self-reported by students and 6% of the variance for student self-reported grades was explained by immediacy. In relation to student motivational processes, literature has suggested a positive relationship between nonverbal immediacy and motivation (Christophel, 1990; Christophel and Gorham, 1995; Kalish, 2009; Wilson and Locker Jr., 2008).

In addition, Mehrabian (1981) indicated the relationship between emotional responses and liking. Accordingly, “the more arousing a pleasurable entity is, the more it is liked” (Mehrabian, 1981, p. 11). Teachers who exhibit high levels of nonverbal immediacy should possess higher levels of affect and liking from their students (Andersen, 1978). Previously, Giorgi and Roberts (2011a) demonstrated student desire for more control over the educational process, the definition of inclusion. If the concepts of student desire for inclusion and liking are applied to a classroom setting, teachers who exhibit more behaviors are seen as more inclusive towards students and the teacher will be more liked and vice versa.

Purpose and Research Questions

The purpose of this study was to explore the relationship between teacher beliefs and teacher behaviors. The study sought to answer the following question: How do a teacher’s beliefs influence their behaviors in the classroom?

Methodology

This study used a case-study approach to examine the potential linkage between teacher beliefs and classroom teaching immediacy behaviors (Gall et al., 2003). Five professors from the College of Agricultural and Life Sciences (CALs) at the University of Florida (UF) were identified as excellent instructors. The five professors were selected for this study due to their achievements as

instructors based on a multifaceted recognition process using multiple measures of effectiveness, such as the UF’s CALs teaching award selection process and the NACTA Teacher Fellow’s award system. Four of the five faculty members have received awards at or above the college level and the final faculty member is widely known for their inventive teaching style. Additionally, only five instructors were chosen due to the time requirements of the coding process and data analysis. A description of each instructor is provided below.

Instructor 1

Instructor 1 is a white male in his early 60’s. He holds the rank of professor in forestry, with a specialization in fire ecology. He has worked at UF for twenty-five years. His typical teaching load consists of four undergraduate and two graduate courses per year. He is the recipient of the 2004-05 CALs Undergraduate Teaching Award and a NACTA Teacher Fellow. While working on his PhD at North Carolina State University, he served as graduate teaching assistant. He stated that participation in a variety of teaching-related workshops and his graduate teaching assistantship have aided his growth as an educator. Instructor 1’s observed class was a combination graduate and upper-division undergraduate class designed for students in the major. There were approximately 14 students enrolled in the class and the classroom had fixed desks that would accommodate approximately 40 students. Instructor 1 was classified as a Provider on the teacher belief instrument; he had a low inclusion score.

Instructor 2

Instructor 2 is a white male in his late 40’s. He holds the rank of associate professor in agricultural economics, with a specialization in agricultural sales. He has worked at UF for thirteen years and typically teaches four undergraduate and two graduate courses per year. He is the recipient of the 2001-02 CALs Undergraduate Teaching Award and a NACTA Teacher Fellow. While working on his PhD at Michigan State University, he served as a graduate teaching assistant. Participating in coursework, workshops, independent reading and consulting with teaching experts are all activities he considers to have improved his teaching. His observed class was an upper-division undergraduate course that had a mixture of students from inside and outside the major and there were approximately 105 students enrolled in the class. The lecture hall was equipped with fixed desks that would accommodate approximately 200 students. Instructor 2 was classified as an Enabler on the teacher belief instrument; he had a high inclusion score.

Instructor 3

Instructor 3 is an African-American female in her mid-30's and she holds the rank of assistant professor in family studies, with a specialization in family structure. She has worked at UF for six years, with a typical teaching load of six undergraduate courses per year. She was selected to receive the CALS Undergraduate Teaching Award in 2008-09. While working on her PhD at Florida State University, she served as a graduate teaching assistant. Participating in coursework, workshops, independent reading and consulting with teaching experts are all activities she considers to have improved her teaching. Her observed class was an upper-division undergraduate course with a mixture of students from inside and outside the major. There were approximately 88 students enrolled in the class. The lecture hall had fixed desks that would accommodate approximately 160 students. Instructor 3 was classified as an Enabler on the teacher belief instrument; she had a high inclusion score.

Instructor 4

Instructor 4 is a white male in his early 30's. His is an assistant professor in agricultural economics, with a specialization in agribusiness. He has worked at UF for five years, with a typical teaching load of four undergraduate and two graduate classes per year. He was awarded the CALS Undergraduate Teaching Award for 2010-11. While working on his PhD at Perdue University, he served as a graduate teaching assistant. Participating in coursework, workshops, independent reading and consulting with teaching experts are all activities he considers to have improved his teaching. His observed class was an upper-division undergraduate course for students within the major and there were approximately 43 students enrolled in the class. The lecture hall had fixed desks that would accommodate approximately 100 students. Instructor 4 was classified as a Provider on the teacher belief instrument; he had a low inclusion score.

Instructor 5

Instructor 5 is a white female in her late 40's. She holds the rank of lecturer in agronomy, with a specialization in plant production. She has worked for UF since 2008 and her typical teaching load consists of five undergraduate and two graduate courses. Instructor 5 has been through the Process Oriented Guided Inquiry Learning (POGIL, www.pogil.org) training and has implemented those practices in her classroom. This has spawned the wide recognition of her as an innovator in the classroom. She earned her PhD from Florida State University. However, she was not a graduate teaching assistant. Participation in workshops, independent reading and consultations

with teaching experts are all activities she considers to have improved her teaching. Her observed course was an upper-division undergraduate class with a mixture of students from a variety of major and there were approximately 38 students enrolled in the class, which was held in a classroom with movable desks accommodating approximately 40 students. Instructor 5 was classified as an Enabler; he had a high inclusion score.

Data Collection/Instrumentation

Data were collected during the 2009-2010 academic year, in the fall and spring semesters. Each faculty provided background information related to their teaching experiences and completed the Van Tilburg/Heimlich Teaching Belief Scale (Heimlich, 1990). The scale has two axes, which measure the dimensions of sensitivity and inclusion. The resulting scores on each axis categorize teachers as Experts (low sensitivity, low inclusion), Facilitators (low sensitivity, high inclusion), Providers (high sensitivity, low inclusion) and Enablers (high sensitivity, high inclusion). The transition from low to high, along the dimension of inclusion deals with the amount of educator control that is exerted, while transitioning from low to high along sensitivity moves from a process-driven to a learner-driven educational environment (Heimlich, 1990).

The Van Tilburg/Heimlich Teaching Belief Scale is a twenty-two item instrument. The items relate to the two bipolar dimensions of sensitivity and inclusion (Heimlich, 1990). A score is determined for each dimension based on respondents' agreement to the various items and predetermined values for each of the statements. Heimlich (1990) defines a low score as zero to six and high as six to eleven for each axis. Numeric scores are plotted on a grid with defined quadrants in order to label the respondents' Teacher Belief Scale type.

The teaching behaviors of the instructors were documented using observational techniques. A minimum of two class sessions were identified and then video recorded by the researchers. A high-definition video camera was placed in the rear of the classroom to capture the actions of the instructor. The video recordings were converted to an appropriate format and loaded in to the Noldus Observer © software suite for analysis.

Furthermore, Christophel's (1990) Immediacy Behavior Scale was modified for use in this study. The Immediacy Behavior Scale was designed to allow students to rate their instructor on a 1 to 5 rating scale for 34 behaviors, 20 verbal and 14 nonverbal (Christophel, 1990). The instrument was modified by the researchers to allow frequencies of each behavior to be visualized with the software. Behaviors were noted each time instructors demonstrated them.

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Data Analysis

A user-defined index was developed within the Noldus Observer © software to visually assess the recorded class sections. The index was as a modified version of the Immediacy Behavior Scale (Christophel, 1990).

According to Gall et al. (2003), the quality of observational data is critical when conducting observational research. Three key elements are considered to establish reliability in the data: criterion-related observer reliability, intra-observer reliability and inter-observer reliability (Gall et al, 2003). Criterion-related observer reliability is the degree that an observer's evaluations agree with a known expert (Gall et al., 2003). Intra-observer reliability is the degree that an observer is able to consistently code an observation (Gall et al., 2003). Inter-observer reliability is the extent that two raters are able to code observations in a similar way (Gall et al., 2003). To ensure criterion-related observer reliability, training of each observer occurred and then periodic comparisons with the lead researcher's ratings were conducted. A system of multiple raters, focusing on each aspect of the observation was established to ensure intra-observer and inter-observer reliability. Each researcher coded the video independently and then compared ratings for each class session, which allowed continuous benchmarking for consistency. If discrepancies were found between observers, the pair of observers jointly re-analyzed the periods in which the discrepancies were noted and come to a consensus code.

Next, frequency counts were totaled from the codes for each class session. Class sessions ranged from 46 minutes to 110 minutes. Sessions and frequencies were standardized, a 60 minute period. This yielded the frequency of behaviors per a standardized teaching period. Class sessions were categorized into sessions taught by high inclusion professors and sessions taught by low inclusion professors based on the scores instructors received for the dimension of inclusion on the teacher beliefs scale. Thus, the class session became the unit of analysis. Using this approach there were eight high inclusion sessions and five low inclusion sessions. An average frequency of individual behaviors was then assessed for high inclusion sessions and for low inclusion sessions independently.

Results

The intent of the results presented here is not for generalization to any population. The study sought to explore if a potential relationship exists between internalized beliefs of inclusion and verbal and nonverbal teacher immediacy behaviors. For this group of instructors the findings can serve as the foundation for future inquiry in this area.

Nonverbal Immediacy Behaviors

Frequencies for nonverbal immediacy teacher behaviors are presented in Table 1. The frequencies are presented for each class session and then averaged for high and low inclusion instructor sessions independently. The following behaviors were exhibited more frequently by high inclusion instructors per class session, than by low inclusion instructors: gestures while talking to class ($f = 42.83$), uses a variety of vocal expressions when talking to the class ($f = 21.62$), looks at the class while talking ($f = 17.62$), moves around the classroom while teaching ($f = 16.97$), has a relaxed body position while talking to the class ($f = 15.35$), smiles at individual students in the class ($f = 5.50$), stands behind desk or podium while teaching ($f = 8.69$), uses monotone/dull voice when talking to the class ($f = 1.80$) and sits behind desk while teaching ($f = 0.78$; Table 1). Only one nonverbal behavior occurred more frequently in low inclusion class periods: looks at board or notes while talking to the class ($f = 6.82$). The faculty did not demonstrate four behaviors, including: touches students in class, smiles at the class while talking, sits on a desk or in a chair while teaching and has a very tense body position while talking to the class.

Verbal Immediacy Behaviors

Frequencies for verbal immediacy teacher behaviors are presented in Table 2. The frequencies are presented for each class session and then averaged for high and low inclusion instructor sessions independently. The following behaviors were exhibited more frequently by high inclusion instructors per class session, than by low inclusion instructors: asks questions to solicit viewpoints or opinions ($f = 24.38$), uses humor in class ($f = 18.60$), addresses students by name ($f = 12.40$), asks questions that have a specific, correct answer ($f = 12.20$), gets into discussions based on something a student brings up even when this doesn't seem to be part of his/her lecture plan ($f = 11.91$), uses personal examples or talks about experiences he/she has had outside class ($f = 9.69$), praises students' work, actions, or comments ($f = 3.60$), asks students how they feel about an assignment, due date, or discussion topic ($f = 0.61$), invites students to telephone or meet with him/her outside of class if they have questions or want to discuss something ($f = 0.45$), asks questions that have specific, correct answer ($f = 12.20$) and calls on students to answer questions even if they have not indicated they want to talk ($f = 0.28$; Table 2).

The following behaviors were exhibited more frequently by low inclusions instructors per class session, than by high inclusion instructors: asks questions to encourage students to talk ($f = 29.34$), refers to class

Table 1 Frequencies of Nonverbal Teacher Immediacy Behaviors for Instructors by Class Sessions

Nonverbal Behaviors	High Inclusion Class Sessions									Low Inclusion Class Sessions					
	1	2	3	4	5	6	7	8	Average	1	2	3	4	5	Average
Gestures while talking	5.8	84.5	23.6	14.9	45.2	110.4	41.8	16.5	42.83	38.1	-	12.3	35.4	18.0	20.76
Uses a variety of vocal expressions	4.4	49.9	34.7	7.4	31.6	19.2	11.0	14.6	21.62	20.3	-	9.0	-	-	5.86
Looks at class while talking	1.5	24.3	9.9	3.7	31.6	40.8	13.2	15.9	17.62	22.9	1.2	10.1	10.9	16.0	12.20
Moves around the classroom	2.9	2.6	-	9.9	27.1	67.2	18.7	7.3	16.97	43.2	-	13.4	5.4	-	12.41
Has relaxed body position while talking in class	1.5	7.7	17.4	12.4	27.1	28.8	12.1	15.9	15.35	38.1	-	11.2	10.9	-	12.04
Stands behind podium or desk	4.4	28.2	18.6	1.2	2.3	7.2	7.7	-	8.69	-	-	-	19.0	18.0	7.41
Looks at board or notes while talking	-	16.6	-	-	2.3	21.6	9.9	-	6.30	20.3	-	5.6	8.2	-	6.82
Smiles at individual students	1.5	11.5	2.5	7.4	5.6	12	2.2	1.2	5.50	19.1	-	2.8	2.7	-	4.91
Monotone/ dull voice	-	1.3	-	-	-	12	1.1	-	1.80	-	-	-	1.4	-	0.27
Sits behind desk	-	-	-	6.2	-	-	-	-	0.78	-	-	-	-	-	0.00
Physical contact	-	-	-	-	-	-	-	-	0.00	-	-	-	-	-	0.00
Sits on a desk or in a chair while teaching	-	-	-	-	-	-	-	-	0.00	-	-	-	-	-	0.00
Has a very tense body position when talking to class	-	-	-	-	-	-	-	-	0.00	-	-	-	-	-	0.00

Note. Class sessions were standardized to 60 minutes.

Table 2 Frequencies of Verbal Teacher Immediacy Behaviors for Instructors by Class Sessions

Verbal Behaviors	High Inclusion Class Session									Low Inclusion Class Session					
	1	2	3	4	5	6	7	8	Average	1	2	3	4	5	Average
Solicits opinions	7.3	42.2	45.9	-	22.6	28.8	44.6	3.7	24.38	38.1	7.2	7.8	13.6	52.0	23.79
Encourages students to talk	2.9	60.2	27.3	2.5	15.8	33.6	22.0	18.9	22.90	66.0	2.4	21.3	49.0	8.0	29.34
Uses humor in class	26.3	55.0	32.2	-	2.3	16.8	6.6	9.8	18.60	15.2	2.4	2.2	2.7	11.0	6.72
Addresses students by name	1.5	24.3	5.0	11.2	6.8	14.4	15.4	20.7	12.40	7.6	-	12.3	2.7	6.0	5.73
Asks questions that have specific, correct answers	1.5	33.3	3.7	1.2	-	33.6	23.1	1.2	12.20	7.6	-	3.4	13.6	12.0	7.32
Has unrelated discussion based on student comments	2.9	17.9	18.6	21.1	15.8	7.2	4.4	7.3	11.91	2.5	2.4	4.5	2.7	2.0	2.83
Uses personal examples	2.9	11.5	8.7	-	6.8	28.8	6.6	12.2	9.69	2.5	-	-	10.9	-	2.68
Refers to class as "our" class or what "we" are doing	-	3.8	13.6	1.2	9.0	-	7.7	4.9	5.04	2.5	-	-	49.0	14.0	13.10
Praises students	1.5	15.4	3.7	1.2	2.3	2.4	1.1	1.2	3.60	12.7	4.8	-	-	-	3.50
Refers to class as "my" class or what "I" am doing	-	-	2.5	8.7	-	2.4	1.1	-	1.83	-	-	-	8.2	2.0	2.03
Holds conversations with individual students before or after class	-	1.3	1.2	-	3.4	-	2.2	0.6	1.09	1.27	2.4	1.7	1.4	1.0	1.54
Asks how students feel about coursework	1.5	-	-	-	-	-	2.2	1.2	0.61	-	-	-	-	2.0	0.40
Invites students to meet with him/her outside of class for discussions	-	-	-	2.5	-	-	1.1	-	0.45	-	-	-	-	-	0.00
Will start discussions about things unrelated to class	-	-	-	-	-	-	-	-	0.00	-	1.2	-	2.7	-	0.78
Calls on specific students to answer questions	-	-	-	-	-	-	2.2	-	0.28	-	-	-	-	-	0.00
Criticizes or points out faults in students' work	-	1.3	-	-	-	-	-	-	0.16	-	2.4	-	-	-	0.48
Is addressed by his/her first name by the students	-	-	-	-	-	-	-	-	0.00	-	-	-	-	-	0.00

Note. Class sessions were standardized to 60 minutes.

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as “our” or what “we” are doing ($f = 13.1$), gets into conversation with individual students before or after class ($f = 1.54$), will have discussion about things unrelated to class with individual students or with the class as a whole ($f = 0.78$), refers to class as “my” class or what “I” am doing ($f = 2.03$) and criticizes or points out faults in students’ work, actions, or comments ($f = 0.48$). The following verbal behaviors were never exhibited in class sessions: addresses me by name, has initiated conversations with me before, after, or outside of class, provides feedback on my individual work through comments on papers, oral discussions, etc. and is addressed by his/her first name by the students.

Summary and Discussions

Following Ajzen’s (1990) theory of planned behavior, defining beliefs should allow for predictions of behavior. This study investigated whether or not the beliefs of inclusion had an influence on the usage of immediacy behaviors. The intended hope was to continue to build a model of successful teacher practices for novice teachers to follow and answer the NRC (2009) challenge for enhanced instruction.

The data indicated that beliefs of inclusion do appear to influence the usage of immediacy behaviors. Therefore, for this group of instructors, the findings were congruent with the theory of planned behavior. When comparing class sessions taught by high inclusion instructors to those taught by low inclusion instructors, there were differences in the frequency of usage between 21 of the 34 immediacy behaviors. The differences of frequencies showed that high inclusion teachers exhibited the verbal behaviors: (a) uses humor in class, (b) addresses students by name, (c) gets into discussions based on something a student brings up even when this doesn’t seem to be part of his/her lecture plan, (d) uses personal examples or talks about experiences she/he has had outside class, (e) praises students’ work, actions, or comments and (f) asks questions that have specific, correct answers notably more often. The differences of frequencies which occurred between the nonverbal behaviors revealed that high inclusion teachers more frequently: (a) gesture while talking, (b) use a variety of vocal expressions and (c) look at class while talking most notably more often.

Based on the definition of inclusion, the notable differences of addresses students by name and discussion based on unrelated student comments are the most exemplary behaviors that demonstrate the influence of beliefs on behaviors. Overall, the fact that 62% of the immediacy behaviors had frequency differences indicates the influence of inclusion beliefs as well. The findings showed that teachers who believe in a more

inclusive learning environment, exhibit behaviors more frequently demonstrating inclusive behaviors in the classroom.

A few observations contradicted what would be expected. Two notable differences occurred where behavior frequencies were higher for low inclusion class sessions. Low inclusion sessions referred to class ownership more frequently, both in the “our/we,” and “my/I,” possessive forms. Additionally, low inclusion classes encouraged students to talk more frequently. The concept of ownership is paramount to the inclusion definition, the class is owned jointly; of note however, low inclusion instructors tended to refer to the class more frequently overall, as stated, in both possessive forms. To have low inclusion instructors exhibit this behavior more frequently and be more encouraging of student talking is worthy of further investigation into potential reasons why.

These findings are congruent with other research in this area. Giorgi and Roberts (2011b) found that professors mirrored their beliefs for both dimensions, sensitivity and inclusion, in their teaching philosophies. Within that study, philosophies were considered espousals of beliefs and were operationalized as the intentions component of the theory of planned behavior (Ajzen, 1990). Additionally, similar immediacy behavior research conducted by Connor et al. (2011) concluded that using teacher immediacy behaviors could allow for students to feel more engaged in the content and feel comfortable within the learning environment. These previous findings add merit to the description of a potential model for successful teaching practices.

The findings of this study should not be generalized to any population; it sought to investigate the phenomenon within this small group of instructors. To further validate the findings and conclusions, further research with a larger group of faculty should be conducted. Additional research should seek to have a more diverse population of teacher beliefs represented.

For practical application, development of a teacher diagnostic tool should occur. As research in this area continues to grow, the findings and conclusions could be applied to the development of such a tool. A diagnostic tool could help predict or describe teacher’s classroom practices and needs. Such a tool could help to develop appropriate professional development programs for faculty.

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