

Predicting Success in Teacher Certification Testing: The Role of Academic Help Seeking

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Abstract

This study was designed to identify the help seeking behaviors of preservice teachers who are at risk for failure of state certification examinations through use of a scale adapted to the arena of teacher education, the Preservice Teacher Help Seeking Scales (PTHSS). In the past, self-report measures of help seeking behavior patterns have been problematic due to scales with limited reliability and none were designed to be used in teacher education. Results supported the adaptation of the scales developed to assess help seeking behavior in aspiring teachers. Preservice teachers with high help seeking skills were more likely to learn how to pass the certification exams than preservice teachers with low help seeking skills. The PTHSS provided evidence of a reliable assessment of preservice teachers' use of this important self-regulatory strategy to pass state certification exams.

Keywords: help seeking, preservice teacher, self-regulation, teacher certification

Introduction

The decision about whether or not to seek help in an academic situation is complex. Seeking help when solving a difficult task will depend in part on metacognitive processes that develop over time. Help seeking also depends on many cultural and interpersonal influences, such as beliefs about breaching social boundaries with members of a different group (Karabenick, 1998). This construct has invited a great deal of attention over the last twenty years, and research in this area has increased dramatically. In recent years, numerous studies have demonstrated that help seeking can be an effective strategy that self-regulated learners use to succeed in diverse areas of functioning. Help seeking, when appropriately utilized, can enable students to obtain needed assistance from parents, peers, teachers (Zimmerman & Martinez-Pons, 1986; Schunk & Zimmerman, 1994). Unfortunately, students who are in most need of assistance are often the least likely to seek it for a variety of reasons. This is especially true of college students aspiring to be teachers who often wait until it is too late to use available resources (Tellez, 1992; Karabenick, 2004) to pass state certification exams. When confronted with the reality of high stakes testing, these students often give up their dream to become teachers rather than admit their need for social support (Flores, Clark, Claeys, & Villarreal, 2007; Vogel & Armstrong, 2010). This decision has a significant impact on the number of minority teachers who enter the classroom in the USA. The following research attempts to identify help seeking behaviors of preservice teachers who are at risk for failure of state certification exams through the use of a scale adapted to the arena of teacher education.

Testing for teacher licensure has become the gatekeeper for entry into the teaching profession in the United States and England. Teacher unions and colleges of education support licensure requirements that extend beyond the passing of

college courses (Stotko, Ingram, & Beaty-O’Ferrall, 2007). In an attempt to control the flow of candidates entering the teaching system in the USA, filters, such as high stakes testing, have been added to the pipeline. Other nations surveyed by the Educational Testing Service have centralized systems of teacher education and certification, which allow tighter control over the system. This control allows for a more rigorous screening, which applies high school GPA, and national exit exams when selecting students for teacher education programs (Wang, Coleman, Coley, & Phelps, 2003). In the USA, discussions regarding how much support an educational institution should provide individuals who seek to enter the teaching field are predominantly focused on maintaining a diverse population of teachers (Gollnick & Mitchell, 2003). Nationally there is a major difference in test scores among groups. For many reasons, minority candidates pass the test at a lower rate than their white peers (Mitchell, Robinson, Plake, & Knowles, (2001); Cochran-Smith & Zeichner, 2005).

To increase students’ success on certification exams, many collegiate education departments have raised academic admission requirements, but this conservative approach often excludes minority students who are interested in a career in teaching. A decision to raise standards also threatens to exacerbate the already growing shortage of certified teachers, especially in low performing urban schools. By contrast, colleges that maintain enrollment policies, permitting nontraditional students to enter the system, confront the problem of finding a way to help these students to pass state certification exams (Byrd & MacDonald, 2005). A particular problem among minority students could be an inability or an unwillingness to seek help from available resources when it is needed.

Help Seeking Definitions and Distinctions

Searches of the research literature on “help seeking” have revealed that this construct has been used in diverse disciplines, such as, psychology, sociology, medicine, and education. Help seeking has not always been defined as a proactive, social behavior intended to gain assistance from a knowledgeable individual in order to perform more effectively (Newman, 2008; Santor, Poulin, LeBlanc, & Kusumakar, 2007). Unfortunately, seeking help in educational contexts has often been viewed as a sign of dependence or cheating, and as a result, many of those learners who have sought help have often been denigrated and stigmatized (Karabenick, 1998).

Nelson-Le Gall (1981) is widely credited with changing educators’ perspective on help seeking from an act that reflected immaturity, passivity, and incompetence to one of maturity, proactivity, and competence. She defined help seeking as a general problem solving strategy that allows learners to cope with academic difficulties by gaining the assistance of others, drawing a distinction between two forms of help seeking, instrumental and executive, based on a person’s goals.

Instrumental help seeking (also identified as adaptive help seeking) requires students’ to seek only as much assistance as is necessary to learn to complete the task successfully. This form of help seeking has the advantage of increasing a

student's learning, which can produce important benefits. By contrast, executive help seeking (also identified as nonadaptive help seeking) involves a request for someone else to perform the task, which seeks to enhance students' immediate performance but not their long-term learning. Research has shown that students' instrumental help seeking (along with its perceived benefits) is positively related to their academic motivation and achievement (Zimmerman & Martinez-Pons, 1986), whereas students' executive help seeking (along with its avoidance of needed assistance) is negatively related to their academic motivation and achievement (Karabenick, 1998).

Assessment of Help Seeking

There has been much inconsistency and unreliability in scales designed to assess academic help seeking (Pajares, Cheong, and Oberman, 2004). Cheong, Pajares, & Oberman (2004) constructed new and more reliable help seeking scales to measure instrumental and executive help seeking and adapted scales already in the literature to measure avoidance of help seeking and perceived benefits of help seeking. Psychometric properties of the new scales were evaluated by Pajares, Cheong, & Oberman (2004) in a computer classroom setting.

The Computer Science Help Seeking Scales, involved four subscales: (a) instrumental help seeking, (b) executive help seeking, (c) perceived benefits of help seeking, and (d) avoidance of help seeking. Pajares and his colleagues conducted a study, which tested the psychometric properties of the scales (Pajares, Cheong & Oberman, 2004). The data was analyzed for each scale individually and the psychometric properties of the scales were better than earlier help seeking scales. Cronbach's alpha coefficients were high for each scale (see Table 2). Pajares (2004) suggested that these help seeking scales be modified for use in other academic settings.

Students' help seeking has received considerable study at elementary, middle, high school, and college levels (Karabenick, 1998). However, there has been little investigation of help seeking among aspiring teachers (Bembenuddy, 2006). In a pilot study, White (2007) was successful in adapting Pajares and colleagues' (2004) help seeking scales for use in test preparation workshops with aspiring teachers. The adapted subscales were reliable according to Cronbach's alpha test.

Rationale for the Current Project

The present research sought to provide evidence of reliability and validity to support the use of Preservice Teacher Help Seeking Scales (PTHSS) when administered to preservice teachers who were preparing for the first in a series of three state certification exams, the test of basic skills. In addition to reliability assessments, the validity of the scales was measured using three other instruments: (1) Instructor Help Seeking Scales, an adapted version of the help seeking scales developed by the author to be completed by participants' instructors (2) an observational measure of help seeking behavior developed by the author to be used

in teacher education classroom contexts, and (3) scores on the New York State teacher certification exam entitled the Liberal Arts and Sciences Test (LAST). None of these validity measures were included in prior research by Pajares and his colleagues. The goal was to replicate the results of a pilot study, which provided evidence of reliability and validity (White, 2007).

The observational measure of help seeking behaviors provided real time evidence about whether the adapted help seeking scale could accurately measure the help seeking behaviors of preservice teachers. Reliability of the observational measures was ascertained using an index agreement between the three observers as they coded the actions of the same student. The instructor scales were designed to correspond to items in the self-report academic help seeking scale that are observable to the students' instructor. The student's LAST scores were obtained from their collegiate records.

Method

Participants

Participants in the study were preservice teacher candidates who aspire to enroll in a New York State approved teacher education program. A sample of 50 preservice teachers was drawn from a private college in New York City. The enrollment policy gives students from underprepared minority populations an opportunity to enter higher education. Students who enter underprepared for college level work must pass remedial courses before they can enroll in education courses. The student body is predominantly minority group members who mainly attended New York City Public Schools. The students who participated in the study were second semester freshmen, and first and second semester sophomores.

Forty-six per cent of the participants were between the ages of 19 and 21. Another thirty per cent fell within the 22 to 27 age range, with the remaining twenty-four per cent scattered between ages 28 to 53. Twenty-four per cent of the group was male, and seventy-six percent was female.

Participants were classified into four ethnic groups: White Non-Hispanic, Black or African American, Hispanic or Latino, and Asian or Pacific Islander. The White Non-Hispanic group was the smallest group, at 4 %, followed by the Asian or Pacific Islander group at 6%. The two largest groups of students, the Hispanic or Latino group (52%), and the Black or African American group (38%) accounted for 90% of the sample population.

Even though the participants were admitted to the college and have claimed an intention to major in education, they were not considered for admission to the education program until they had taken three general education courses, passed the first of three state exams (LAST), and maintained a cumulative GPA of 2.75. Admission to the college does not mean admission to the school of education.

Teacher certification requirements. The participants were highly motivated to pass the LAST because if they do not pass the state exam they are excluded from

the teacher education program and must choose a different major by the end of the sophomore year in college. At the time of the study, the participants were enrolled in one of several required preparatory courses in education, such as educational psychology and foundations of education.

There are many opportunities to prepare for the state certification exams. All education courses involve test preparation for the state exams, including in-class practice and feedback. Workshops are offered along with the established curriculum. They are scheduled three times per semester and are three hours in duration. The administration of instruments took place during test preparation workshops.

Measures

Help seeking was assessed by using self-report scales (PTHSS), direct observation, and instructor evaluation. The Preservice Teachers Help Seeking Scales (PTHSS) measured the four help seeking behavior constructs identified by Nelson-LeGall (1981) (see Appendix A). The Direct Observation of Help Seeking Behavior (DOHSB) measured targeted and identified real time help seeking behavior (see Appendix B) according to the same constructs. An instructor rated the students' help seeking behavior (see Appendix C) by completing an instructor version (Instructor Help Seeking Scales) of the self-report scales (PTHSS).

Preservice Teachers' Help Seeking Scales (PTHSS) (See Appendix A)

Instrumental help seeking. A ten item scale was used to measure instances in which the help requested is limited to only the amount and type that is needed to allow the student to solve the problem or attain the goal independently. Five items assessed help seeking from an instructor and five items assessed help seeking from a peer.

Executive help seeking. A ten item scale was used to measure instances in which the help requested is for an answer or have someone else solve the problem. Five items assessed executive help seeking from an instructor and five items assessed executive help seeking from a peer.

Help avoidance. Nine items were used to measure the individual's reluctance to seek help when needed.

Perceived benefits of help seeking. Seven items were used to measure whether or not the student has benefited from receiving help in the past.

For all four scales, individual items are measured with an 8 point Likert Scale with 1 being the least like the student and 8 being the most like the student. A score is calculated for each scale's assessment of a type of help seeking behavior. A breakdown of the Help Seeking Scales appears below in Table 1.

Table 1
Breakdown of Help Seeking Scales in Constructs, Items and Possible Scores

Scale	HS Behavior	Number of Items	Total Score	Lowest Score
1	Instrumental	10 (5/Peer,5/Instructor)	80	8
2	Executive	10 (5/Peer,5/Instructor)	80	8
3	Avoidance	9	72	9
4	Benefits	7	56	7

The scales taken together make-up The Preservice Teachers Help- Seeking Scales, PTHSS (see Appendix A). This measure was adapted by White (2007) from scales developed by Cheong, Pajares, & Oberman (2004) for use with students in computer learning contexts. These measures of help seeking have been appropriately extended by keeping the language of each question intact with one exception, the substitution of “state certification exam” or “LAST preparation” for “computer class”.

Unique to the Pajares, et al., (2004) scale and the adapted scale used in this present study (White, 2007) is the wording of each question. In order to insure that the decision to ask for help is required, each item is prefaced with the statement “When I am having difficulty...” or “When I ask a peer...” or “When I ask an instructor...” The psychometric properties of each original scale were examined by conducting factor and reliability analyses. The factor analyses revealed four latent structures underlying each of the four subscales. Furthermore, Cronbach’s alpha coefficients were strong for the scores of each scale. Instrumental Help Seeking = .89; executive help seeking = .92; avoidance of help seeking .86; benefits of help seeking .91.

Direct Observation of Help Seeking Behavior

The observational measure of help seeking behaviors (DOHSB) was used to provide real time evidence of actual help seeking by preservice teachers. Taking into consideration the limitations of the human observer a more reliable approach, systematic direct observation, was chosen over naturalistic/descriptive behavior observation. Systematic direct observation is distinguished by setting goals to measure a specific behavior that has been operationally defined. Observations are conducted under standardized procedures and the observed behavior is in response to a predetermined set of environmental stimuli. (Hintze, & Matthews, 2004; Riley-Tillman, Chafouleas, Briesch, & Eckert, 2008).

Specific questions framed the coding, scoring, and sequence of the observational measure helped to insure accuracy amongst the observers. The questions that guided the observers are listed below with objectives for each phase of the observation.

Question 1: Is help seeking phrased in the form of a question? Objective: In order for the observation to begin, the participant must frame his/her request for help in the form of a question. The research has defined several types of informational questions: requests for explanations, hints, confirmations, and final answers noting some more appropriate than others (Good, Slavings, Harel, & Emerson, 1987). A student's request in the form of a question was noted as the beginning of the help seeking process.

Question 2: Is the question relevant to the task at hand? Objective: Relevance is task-specific. Nelson-LeGall's (1981) model includes in its definition of help seeking both procedural and academic assistance. To be identified as relevant the help seeking request had to be procedural (Are we required to do all the examples?) or academic (Does the Pythagorean Theorem apply to number five?). Any question about the task at hand was identified as relevant or not relevant. If the question was not relevant, observation of the interaction was terminated.

Question 3: Does the help-seeker request an explanation of process (how to obtain a solution) from the helper and not an answer? Objective: Once relevancy was established, the observer identified the goal of the help seeking behavior, instrumental or executive. The question was evaluated based on Nelson-LeGall's (1981) definition of help seeking, which leads to independent problem solving (instrumental), or help seeking, which demands an answer without any explanation of the process (executive).

Question 4: Was the response acted upon an adaptive response? Objective: The observer determined if the participant was able to recognize an adaptive response that could lead to the solving of the problem. At this point, the participant would have enough information to proceed with the task independently.

Question 5: Adaptive follow-up, was the problem solved independently? Objective: The observer determined if the participant was able to solve the problem independently using the information gained from asking for assistance.

Observers

The presence of faculty and graduate assistants in the classroom has been a normal occurrence. Three raters (author, faculty member, and doctoral student) were trained using videotapes of systematic direct observation to serve as independent observers. Each rater had completed coursework and had practical experience in direct observation. The training for both systematic direct observation and targeting evidence of help seeking behavior were conducted during four, one hour sessions prior to the onset of the study by the author of the paper. All data collectors practiced systematically observing the same students in a classroom setting and evidenced greater than a 90% agreement using the scoring template of the DOHSB.

Systematic Direct Observation Data Collection

Data was collected during a regularly scheduled class session, which included LAST practice. Each participant was observed individually. Observers followed the guidelines for coding and scoring, which appear in Appendix B. All three observers rated the behaviors of participants while they were engaged in the LAST preparation task. Participants were given a choice to work independently or seek help from any other members of the class.

Without prompting, once the question posed by the preservice teacher was identified as instrumental help seeking the full turn was scored. If the question was scored as executive help seeking, the observer waited for the next question to be posed. Each observer was instructed to record as much of the dialogue as possible, verbatim. Interobserver reliability was assessed using Cohen's Kappa to measure interobserver consistency of data collected during direct observation sessions. Data collected on students common to each observer's list was compared to determine the degree of agreement. Cohen's Kappa = 1.00, $p < .03$.

Coding

Observers followed the coding and sequence detailed in Appendix B and Table 3. Once a statement was identified as a question, the observer determined whether or not the question was relevant to the task. The question was recorded on the DOHSB recording form (Appendix B). If the question was coded as relevant, the observer awarded 2 points. If the response was not relevant, one point was awarded. Only when the question was relevant did the observer continue coding the observation. The entire process awarded more points for adaptive help seeking than for nonadaptive help seeking.

Randomized Observation

Prior to the date of observation, the participants were assigned randomly to the observers.

Task Items for Direct Observation

Ten items were selected from test preparation materials published for the New York State Education Department by National Evaluation Systems, Inc., the developers of the LAST (New York State, 2006). These items have an average degree of difficulty, and, demand prior knowledge of high school mathematics as well as problem solving skills. Math tasks were chosen because most students expressed significant concerns about the math portion of the LAST over the other sections in a survey conducted earlier in the semester.

Instructor Help seeking Scales (IHSS) (see Appendix C)

Cheong, Pajares, and Oberman (2004) recommended the development of scales that could be completed by the students' academic instructor, who is in a favorable position to observe the occurrence of a student's help seeking behavior. Four scales were designed to correspond to items in the PTHSS. As a result of instructor feedback during the pilot study (White, 2007); items from the Pajares (2004) scales, which were not directly observable, by an instructor were eliminated (see Appendix C). Some of the self-report items on the student questionnaire were modified to correspond with behaviors actually observed within the interactive context of the instructor/student.

Instrumental help seeking. The scale measuring instrumental (adaptive help seeking) has five items, which measures help seeking from an instructor only.

Executive help seeking. The scale measuring executive (non-strategic help seeking) has five items, which measures help seeking from an instructor only.

Help avoidance. The scale measuring help avoidance has nine items adapted from the Pajares' scale.

Perceived benefits of help seeking. The perceived benefit of help seeking scale has seven items. The adapted version made changes in the original phrasing so an instructor could rate the student appropriately.

Both forms of the adapted scales were administered to students and instructors in the form of a questionnaire during a pilot study by the author (White, 2007). The alpha reliability of the scales, which make up the PTHSS and IHSS are presented below in Table 2 in comparison with the alpha reliability of the original scales from Pajares et al., (2004). The ratings for the PTHSS and the IHSS are uniformly high.

Table 2
Cronbach's Reliability for Pajares' Scales for Computer Science and Adapted Help seeking Scales for Preservice Teachers (PTHSS and IHSS)

Scales	Cronbach's alpha		
	Pajares: Help seeking Scales Computer Science Self-Report	White: Adapted Help seeking Scales	
		PTHSS Self Report	IHSS Instructor Rating
Instrumental	.89	.96	.99
Executive	.92	.94	.98
Avoidance	.86	.87	.98
Benefits	.91	.93	.98

Instructors were selected based on their familiarity with the student's help seeking behavior during a course of study. Two of the participating instructors were

education faculty, and four additional instructors represented the disciplines of music, mathematics, English, and study skills. Each instructor rated an average of ten students.

Liberal Arts and Science Test Scores

Scores were obtained from practice tests published by the Princeton Review (2005) and Petersons (Levy, Levy & Arco, 2004).

Data Collection Procedures

Phase 1: Direct observation. Early in the semester, two faculty members, and one doctoral student collected data during a LAST preparation session. They observed and coded individual students' help seeking behaviors in accordance with the instrument provided below in Table 3. The class instructor presented the directions for the task in the following sequence: (1) Selected items from the LAST practice test was distributed to the entire group. (2) Each student was informed that he/she was responsible for his/her task results and required to turn in all of his/her work. (3) Students were informed they could choose to seek help from a class member during the task.

Phase 2: Student self-report help seeking behavior. The PTHSS self-report measure was administered mid-semester, two weeks after the direct observation. The questionnaire was distributed and completed during an education class. The student was required to rate individual help seeking behaviors. It took approximately thirty minutes to complete.

Phase 3: Instructor evaluation of help seeking behavior. The instructor rating was distributed mid-semester to make sure each instructor had ample time to become familiar with the students help seeking behavior.

Phase 4: LAST performance. Scores from initial LAST practice exams were obtained from student records. As a matter of department policy, students are asked to take a LAST practice test when they show interest in the teacher education program. Scores from the practice test provided evidence of how the student would perform on the actual state exam. Records have been collected for the past five years for accreditation purposes.

Table 3
Direct Observation Help seeking Behavior: Observational Guidelines and Codes

1	Question? Code Q = question NQ = not a question O = Other	Is help seeking phrased in the form of a question?
2	Relevant? 1=No 2=Yes	Is the question relevant to the task at hand?
3	Instrumental (adaptive question)? 1=No 2=Yes O = Other	a. Help-seeker requests an explanation of process (how to obtain a solution) from the helper, not an answer. b. The answer sought is substantive or curricular in nature. Keywords: Hint, demonstrate, and explain. c. As opposed to the non-adaptive help seeker requesting an answer to a question or problem, without an accompanying explanation and the information sought in curricular in nature.
4	Instrumental Answer? 1=No 2=Yes O = Other	An adaptive answer is a response to the question that provides information on how to solve the problem; it does not give the answer.
5	Instrumental Follow-up? 1=No 2=Yes O = Other	Adaptive follow-up: Was the problem solved independently?

Note: Maximum possible score 8 = instrumental help seeking. Lowest possible score 0 - executive help seeking

Results

Descriptive statistics (see Table 4) were collected on all measures. The reliability of the two measures of help seeking (PTHSS and IHSS) was assessed using Cronbach's alpha for each subscale of the PTHSS and the IHSS. Support for the validity and predictive value of the scales (PTHSS) was determined using multiple regression analysis. To determine the strength of association between the PTHSS and the IHSS, simple, multiple, and canonical correlation analyses were performed.

Reliability

The PTHSS demonstrated acceptable levels of internal consistency reliability for each of the four subscales. As is evident in Table 4, Cronbach's alpha for the instrumental help seeking scale was $\alpha = .88$, for the executive help seeking scale was $\alpha = .81$, for the help avoidance and benefits of help seeking scales were both $\alpha = .96$.

The IHSS demonstrated uniformly high levels of internal consistency reliability for each of the four subscales. The reliability coefficients for the instructor's rating of student's instrumental and executive help seeking were both $\alpha = .98$, indicating a high level of reliability. Help avoidance and benefits of help seeking reliability coefficients were respectively $\alpha = .99$ and $\alpha = .98$.

Reliability of the observational measures (DOHSS) among the three raters was calculated using Cohen's Kappa. No discrepancy was found in the ratings of the three observers (Cohen's Kappa = 1.).

Table 4

Cronbach's Alpha Reliability Measures, Means and Standard Deviations for the PTHSS (Self-Report) and the IHSS (Instructor Rating) Measures of Help Seeking

Preservice Teachers Help seeking Scales	Cronbach's Alpha	<i>M</i>	<i>SD</i>	Instructor Help seeking Scales (IHSS)	Cronbach's alpha	<i>M</i>	<i>SD</i>
Instrumental Total	.88	67.8	14.1	Instrumental	.98	29.2	11.4
Executive Total	.81	14.8	7.3	Executive	.98	13.5	10.8
Help Avoidance	.96	21.2	16.1	Help-Avoidance	.99	22.0	20.8
Benefits of HS	.96	46.7	11.6	Benefits of Help seeking	.98	42.9	16.8

Validity

Results of a regression analysis confirmed that the combination of the students PTHSS subscales significantly predicted individual performance on the LAST. The multiple regression model involving these four predictors was significant, $F(4, 48) = 3.73$, $p < .01$. The multiple correlation coefficient $R = .50$ indicated the four subscales of the PTHSS accounted for 19% (adjusted R^2) of the variance in the LAST. The size and significance of the beta weights indicated the scale, which measured instrumental help seeking of the PTHSS, was the sole significant predictor of the LAST performance. This measure of each subscale determined how the four subscales work together individually to predict LAST performance, Beta = .72, $p = .02$.

A second multiple regression analysis provided further support for the validity of the PTHSS. The results of a second regression analysis confirmed that the combination of the students PTHSS subscales significantly predicted the observed help seeking behavior (DOHS). The multiple regression model involving these four predictors was significant, $F(4, 49) = 7.06, p < .00$. The multiple correlation coefficient $R = .62$ indicated the four subscales of the PTHSS accounted for 37% (adjusted R^2) of the variance in the DOHSB. The size and significance of the beta weights indicated the scale which measured instrumental help seeking of the PTHSS was the sole significant predictor of LAST performance, $Beta = .47, p = .01$. Clearly, the instrumental subscale was the most important predictor of overt help seeking behavior.

Strength of association between the PTHSS and the IHSS, was determined by performing simple, multiple, and canonical correlation analyses. Both content and construct validity of the four subscales which make up the PTHSS were indicated by their correlation with the corresponding items on the IHSS. Intercorrelations between the IHSS and the PTHSS at each level yielded significant correlations for the scales, which assessed instrumental, executive, and help avoidance. However, the self-reported benefits subscale of the students' PTHSS did not correlate significantly with the instructor rating scale of the same construct. The correlation coefficients between the two scales are reported in Table 5. There were significant correlations between the scales that measured instrumental help seeking for the self-report measure (PTHSS) and instructor measure (IHSS) ($r = .47, p < .01$); executive help seeking for the self-report (PTHSS) and instructor measure (IHSS) ($r = .50, p < .01$); and, help avoidance for the self-report measure (PTHSS) and instructor measure (IHSS) ($r = .41, p = .01$).

Table 5
Correlation Matrix of the Two Sets of Variables PTHSS (Self Report) and IHSS (Instructor Rating)

	Instructor Instrumental	Instructor Executive	Instructor Avoidance	Instructor Benefits
Self-report Instrumental	.47**	-.45**	-.44**	.53**
Self-report Executive	-.37**	.50**	.54**	-.55**
Self-report Help-Avoidance	-.26	.38**	.41**	.34*
Self-report Benefits Help	.20	-.21	.12	.05

Note. * correlation is significant at $p < 0.05$ level (2-tailed)

** correlation is significant at $p < 0.01$ level (2-tailed)

Canonical correlation analysis yielded two significant canonical functions. The first canonical function ($R_{c1} = .68$) contributed approximately 46 percent ($R_{c1} = .68^2 = .46$) to the shared variance. This root was statistically significant, $F(16) = 3.19, p = .00$; Wilk's lambda = .36. The second canonical function ($R_{c2} = .48$)

contributed approximately 23 percent ($R_2 = .48^2 = .23$) to the shared variance. The second underlying root was statistically significant, $F(16) = 2.11$, $p = .03$; Wilk's lambda = .67. Therefore, the first two canonical roots accounted for the significant relations between the PTHSS set of scales and the IHSS set of scales.

These findings provide evidence of two significant canonical functions ($R_1 = .68$, $R_2 = .48$) between the subscales for the instructor scale (IHSS) and the student scale (PTHSS). The subscales predicted as expected with the exception of the benefits scale. From the student's point of view, perceived benefits derived from help seeking experience are not a strong predictor of help seeking behavior. From the instructor point of view, benefits derived from help seeking experience were a strong predictor of help seeking behavior. As expected, for both scales, adapted measures correlated negatively with nonadaptive measures.

In summary, the construct validity of the four subscales of the PTHSS was determined through correlations of its scales with the subscales of the IHSS. The canonical correlations provided clear evidence of construct validity of the PTHSS and the IHSS. Two underlying factors measured help seeking behavior common to both scales.

Discussion

The present study provides reliability and validity evidence of a measure (PTHSS) to identify the help seeking behaviors of preservice teachers, who are at risk for failure of state certification examinations, through use of a scale adapted to the arena of teacher education. The PTHSS proved to be a reliable assessment of preservice teachers' use of this important self-regulatory strategy to pass state certification exams. Preservice teachers with high help seeking skills were more likely to learn how to pass the certification exams than preservice teachers with low help seeking skills.

Validity evidence of the PTHSS was gathered using multiple measures. The measure associated instructor rated help seeking behavior as well as the preservice teachers' overt help seeking in classroom situations. This suggests student reports of help seeking can be considered as valid measures, which, can serve as indicators of overt studying behavior. The PTHSS was also a significant predictor of student performance on the LAST exam.

What emerged from these results is evidence of two underlying factors, which measure help seeking behavior common to both scales. From the instructor point of view, all subscales were predictive of help seeking behavior, specifically adaptive help seeking. From the student point of view, subscales that measure adaptive help seeking are stronger predictors than scales, which measure nonadaptive help seeking. It is important to observe that the adaptive help seeking scale is the only scale significantly related to success on the LAST. In creating the underlying latent roots, the two most important subscales were instrumental and benefits. These results correspond with the consistent significant findings throughout this research study that single out the instrumental subscale as a reliable measure of help seeking. Help seeking research supports the perspective when students seek help to master material, using the self regulatory strategy of help

seeking academic performance is stronger and the outcome is a better performance on the LAST.

Educational Implications

Teacher education programs in the USA are mandated to graduate “highly effective teachers”, which is partially determined by a series of state certification examinations. There is a notable discrepancy between the rate of minority teachers who pass these certification exams, and their white counterparts. In our attempt to give underprepared minority teacher candidates the opportunity to become certified teachers, we must look for indicators of future success. Measurement of the important self-regulatory strategy of help seeking is one way to predetermine if an aspiring teacher will use the resources made available by teacher education programs and other supportive groups to assist them in passing a test of basic skills. It is suggested that the scales can be used by teacher education programs to evaluate aspiring teachers’ potential to pass the teacher certification exams by accounting for his/her disposition to use appropriate means to when preparing for state certification exams.

The scales provide scores that can serve as indicators of the Preservice teachers’ adaptive or nonadaptive goals when seeking help. In addition, positive or negative attitudes towards help seeking can be explored, taking into account past help seeking experiences, which have provided benefits or led to avoidance. Students with low PTHSS scores can be identified and receive specialized training in help seeking (Ley and Young, 1998).

In terms of immediate outcomes, the study confirmed that preservice teachers with high help seeking skills were more likely to master the material required to pass the certification exams than preservice teachers with low help seeking skills. In terms of delayed outcomes, the study provided evidence that minority teachers who acquire and utilize advantageous help seeking skills could, as teachers, become successful role models for minority students attending urban schools.

Limitations and Future Research

The first limitation of this study was that the benefits of help seeking scale did not show the same agreement as the other subscales of the PTHSS. These results could have been due to differences in perceptions regarding the benefits of help seeking between the instructors and the students and the targeted population. Further investigation of the content of the questions is warranted. A second limitation concerns the direct observation, which was conducted during a LAST workshop using math tasks. Future research should be conducted in workshops that include additional sample LAST tasks, such as writing and reading comprehension. A third limitation is the small sample size, which presents the data from being analyzed using a confirmatory factor analysis. A replication of the original Pajares factor structure would be an important future direction. A fourth limitation is that the present study did not address gender and ethnic differences.

Future research should explore how gender and ethnic group differences influence academic help seeking behavior.

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Appendix A

Preservice Teacher Help Seeking Scales

1

- When I ask for help with items on the LAST, I prefer to be given hints or clues rather than the answer.
- When I am having trouble with items on the LAST, and ask instructors for help, I like to be given examples of similar problems we have done.
- When I ask instructors for help with something I don't understand (relating to my LAST preparation), I ask to have it explained to me rather than just give me the answer.
- When I ask the instructor for help in preparing for the LAST, I only want as much help as is necessary to complete the work myself.
- When I ask my instructor for help understanding the material on the LAST, I prefer that the instructor help me understand the general ideas rather than simply tell me the answer.
- When I ask a peer for help with my work (LAST preparation), I don't want my peer to give away the whole answer.
- When I ask a peer for help understanding the material on the LAST, I prefer that my peer help me understand the general ideas rather than simply tell me the answer.
- When I ask a peer for help in preparing for the LAST, I want to be helped to complete the work myself rather than have the work done for me.
- When I ask a peer for help in preparing for the LAST, I prefer to be given hints or clues rather than the answer.
- When I ask a peer for help with something on the LAST I don't understand, I ask the peer to explain it to me rather than just give me the answer.

2

- When I ask the instructor for help preparing for the LAST, I prefer that the instructor do the work for me rather than explain to me how to do it.
- When I ask my instructor for help on something I don't understand, I prefer that the instructor do it for me.
- When I ask my instructor for help on something, I don't understand on the LAST, I prefer the instructor just give me the answer rather than explain it.
- When I ask my instructor for help with my work, I prefer to be given the answer rather than an explanation of how to do the work myself.
- When I ask my instructor for help, I want the instructor to do the work for me rather than help me to be able to complete the work myself.
- When I ask a peer for help on something I don't understand, I prefer that student to just give me the answer rather than to explain it.
- When I ask a peer for help with my work, I prefer that the student do the work for me rather than explain to me how to do it.
- When I ask a peer for help on something I don't understand, I ask that the student do it for me.
- When I ask a peer for help in this class, I want the work done for me rather than be helped to complete the work myself.
- When I ask a peer for help with my work, I prefer to be given the answer rather than an explanation of how to do the work myself.

3

- I don't ask for help in preparing for the LAST, even when the material is too hard to complete on my own.
- If I need help to solve a problem, I prefer to skip it rather than ask for help.
- I don't ask for help in preparing for the LAST, even though I don't understand how to respond to the test items.
- If I didn't understand something in my LAST preparation, I would guess rather than ask someone for help.
- I would rather do worse on a section of the LAST I couldn't finish than ask for help in my test preparation.
- Even if the work was too hard to do on my own, I wouldn't ask for help in my test preparation.
- I would put down any answer rather than ask for help in my test preparation.
- I don't ask questions regarding preparing for the LAST, even if I don't understand the material.
- If the work required to pass the LAST is too hard, I don't do it rather than ask for help.

4

- I like to ask questions about my test preparation for the LAST.
- I feel smart when I ask questions about my test preparation for the LAST.
- Asking questions makes preparing for the LAST more interesting for me.
- I like to ask for help about my LAST preparation because it helps me understand the material better.
- I think asking questions about my LAST preparation helps me learn.
- I enjoy preparing for the LAST more when I ask questions.
- I like to ask for help about my LAST test preparation because it helps me understand the topic more completely.

Appendix B

Direct Observation Coding Form and Instructions

Observable Behaviors:

1. One participant asks a question. (Code only if question meets the criteria of a question)
2. Is the question relevant to the task?
3. Is the question adaptive or nonadaptive?
4. Is the response adaptive or nonadaptive?
5. Is there an adaptive response to the answer?

Target: Seat Number _____ Beginning: Ending:			
1. Is the help seeking phrased in the form of a question? Write as stated.			
PROCEED IF A QUESTION HAS BEEN ASKED AND CODED			
2. Is the question relevant to the task?			
PROCEED IF QUESTION IS TASK RELEVANT			
3. Is the question adaptive?			
PROCEED			
4. Is the answer adaptive?			
PROCEED			
5. Is the follow-up to the response independent problem solving?			

Appendix C

Instructor Help seeking Scales

Directions: Please complete it for the following student regarding how he/she works with you as an instructor when it come to seeking help regarding the subject matter measured by the LAST.

1

- When this student asks for help, he/she prefers to be given hints or clues rather than the answer.
- When this student is having trouble and asks for help regarding the LAST subject materials, he/she prefers to be given examples of similar problems we have done.
- When this student asks for help with LAST subject materials that he/she doesn't understand, he/she asks to have it explained rather than just be given the answer.
- When this student asks for help, he/she only wants as much help as is necessary to complete the work independently.
- When this student asks for help understanding the material covered on the LAST, he/she prefers help to understand the general ideas rather than simply be told the answer.

2

- When this student requests help regarding LAST material, he/she prefers that the instructors do the work rather than explain how to do it.
- When this student asks the advisor for help with items similar to those on the LAST that he/she does not understand, he/she prefers that the instructor solve the problem.
- When this student asks for help with items similar to those on the LAST that he/she does not understand, he/she prefers the teacher just give the answer rather than explain it.
- When this student asks for help with items similar to those on the LAST, he/she prefers to be given the answer rather than an explanation of how to do the work independently.
- When this student asks for help with items similar to those on the LAST, he/she wants the instructor to do the work rather than help this student complete the work independently.

3

- He/she does not ask for help with LAST subject materials, even when the work is too hard to solve independently.
- If he/she needs help to solve a problem on the LAST, he/she prefers to skip it rather than ask for help.
- He/she does not ask for help even though he/she does not understand how to do the item.
- If he/she didn't understand something related to the LAST, he/she would guess rather than ask someone for help
- He/she would rather do worse on LAST preparation items that he/she could not finish than ask for help in (a) this class.
- Even if practice test items for the LAST were too hard to do independently, he/she would be reluctant to ask for help.
- This student would put down any answer rather than ask for help regarding items on the LAST.
- This student does not ask questions regarding the LAST, even if he/she does not understand the items.
- If an LAST test preparation assignment is too hard, he/she does not do it rather than ask for help.

4

- This student voluntarily asks questions in class.
- Asking questions in class appears to improve the student's self-confidence in the material.
- The student is more engaged in the class material when he/she is asking questions.
- This student benefits from seeking help with the difficult material by showing improvement in comprehension of the material.
- When this student is struggling with course-related material, he/she shows the benefits from help received
- When this student asks questions it leads to a better understanding of the course material in question.
- This student uses the support services made available for LAST preparation.

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