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Do the Goal Orientations of National Board Certified Teachers Differ from Their Non-Certified Counterparts?

Carrie Newby
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DO THE GOAL ORIENTATIONS OF NATIONAL BOARD CERTIFIED TEACHERS DIFFER FROM THEIR NON-CERTIFIED COUNTERPARTS?

A Thesis
Presented to
The Faculty of the Department of Psychology
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements for the Degree
Specialist in Education

By
Carrie A. Newby

August 2006
DO THE GOAL ORIENTATIONS OF NATIONAL BOARD CERTIFIED TEACHERS DIFFER FROM THEIR NON-CERTIFIED COUNTERPARTS?

Date Recommended 8/7/06

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Dean, Graduate Studies and Research  Date
Acknowledgements

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Carrie A. Newby
August 2006
Pages 57

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Given the increasing number of those achieving certification through National Board for Professional Teaching Standards (NBPTS) and the amount of federal money NBPTS has been awarded to design the assessment of identifying teachers, the majority of research has focused on whether National Board Certified teachers impact student achievement and whether NBPTS effectively measures teacher quality. There is very little, if any, published research that addresses other factors that could possibly distinguish teachers that have obtained National Board Certification, however. In the current study, it was presumed that goal orientation might be an important factor that could distinguish those who have achieved National Board Certification from those who have not. Therefore, the following research question was addressed: Are the goal orientations of those who are NBPTS certified different from those who have not attempted and those who were unsuccessful in obtaining NBPTS certification.

To address this question, the author surveyed 165 teachers using the Patterns of Adaptive Learning Scales (PALS) to obtain a measure of their goal orientations. The teachers were in one of three groups, successful NBPTS applicants, unsuccessful NBPTS applicants, or non-applicant teachers. The results revealed no significant differences among the three different groups of teachers in terms of their goal orientations. Thus, there was no support that those who had earned national certification had differing goal
orientations than their non-certified counterparts, evidenced by the data which suggested that all the teachers appeared to exhibit a stronger mastery goal orientation compared to performance-approach or performance-avoidance goal orientations.
Introduction

Education reform is an increasingly popular topic and has drastically evolved over the past twenty years. In 1983, *A Nation at Risk: The Imperative Educational Reform* (National Commission on Excellence in Education, 1983) was published citing that the American education system was failing to stay current. The report was based on eighteen months of study that sought to initiate the reform of our educational system. The authors cited concerns pertaining to educational dimensions of risk based on research. For example, “about 13 percent of all seventeen year olds in the United States can be considered functionally illiterate; average achievement of high school students on most standardized tests is now lower than 26 years ago; over half the population of gifted students do not match their tested ability with comparable achievement in school” (National Commission on Excellence in Education, 1983, p. 3).

This report elicited a variety of responses. One particular response came from the Carnegie Forum on Education and the Economy. The Carnegie Forum established the Task Force on Teaching as a Profession, whose role involved critically evaluating the teaching profession. In 1986, the task force issued a report titled *A Nation Prepared: Teachers for the 21st Century*. The chief recommendation offered by the task force was to devise a National Board for Professional Teaching Standards (NBPTS) in order to prepare well-educated teachers for the future. The NBPTS would develop high standards for what teachers need to know and certify those who demonstrate abilities to meet the standards.
Founded in 1987, the National Board for Professional Teaching Standards (NBPTS) is a private organization of educators. The NBPTS followed the recommendations of the task force and based its premise on articulating standards for accomplished teaching and certifying teachers who meet these standards. Since the inception of the NBPTS, thirty-five states and more than 400 districts offer teachers incentives to seek National Board Certification. The federal government has contributed almost $120 million to support the NBPTS process. The number of nationally certified teachers has grown considerably since the first cohort of applicants in the 1993-94 school year in which 177 teachers achieved certification (Ballou, 2003). As of 2003, a total of 32,000 teachers have earned national certification (NBPTS, 2004). Thus, means have been provided for verifying and documenting that an ever-increasing number of teachers have met the standards that NBTS first introduced in 1991. These standards include: (1) teachers are committed to students and their students’ learning; (2) teachers know the subjects they teach and how to teach those subjects, (3) teachers are responsible for managing and monitoring student learning, (4) teachers think systematically about their practice and learn from experience, and (5) teachers are members of learning communities.

The NBPTS assessment and certification process requires that teachers submit ten entries that assist in documenting their teaching performance. The teacher compiles a portfolio that contains the following entries: two videos of classroom activities and the teacher’s written commentary; student work samples and written commentary; and documentation of involvement outside of the classroom, which involves working with families, colleagues, organizations, and the community. The applicants, in addition to the
portfolio, complete six exercises at an assessment center. These exercises comprise essays that test teachers’ knowledge of content and their ability to communicate it to their students.

After receiving the portfolio, the NBPTS separates the four entries, sending them to different teams to be assessed. Applicants are scored on a scale of 75 to 425, which incorporates both the portfolio and assessment center exercises. Responses to each of the ten entries are scored on a 4-point rubric and assessors receive intense training on the rubrics. These detailed scoring rubrics were developed for each area in the National Board assessment. Assessors can add or subtract 0.25 from each point on the scale, distinguishing, for example a “3” from a “3 plus” (3.25) and a “3 minus” (2.75). A weighted average is used, giving 60% weight to the portfolio entries and 40% to assessment center exercises. The score is then multiplied by 100 in order to provide participants with a whole number score. To receive certification the teacher must obtain an average score of 275.

Unsuccessful applicants may retake each portfolio entry or assessment center exercise in which they did not receive a score of 2.75 up to two times during a twenty-four month period once they receive their initial score notification. They have the opportunity to retake each exercise or entry once every twelve months. Each time a portfolio entry or assessment center exercise is retaken and a response is submitted for score, the retake score replaces the previous or initial score.

Given the increasing number of those achieving certification through NBPTS and the amount of federal money NBPTS has been awarded to design the assessment, much discussion has focused on whether National Board Certified teachers impact student
achievement and whether NBPTS effectively measures teacher quality. So what
difference is the NBPTS making? Researchers at the University of Washington and the
Urban Institute conducted a large scale study examining the effectiveness of nationally
certified teachers (Goldhaber & Anthony, 2004). They examined more than 600,000
North Carolina elementary school test scores and matched them to teacher credentials.
The researchers found that students who received instruction from nationally certified
teachers had slightly higher though significant ($\alpha = .01$) achievement gains in state
mandated assessments of reading and math compared to those students taught by
unsuccessful applicants of the NBPTS process as well as those that had not applied for
NBPTS certification (Goldhaber & Anthony, 2004). According to Goldhaber and
Anthony (2004), gains for students of nationally certified teachers averaged 6.18 points in
reading and 10.21 points in math. Gains for students of teachers that were unsuccessful
in achieving NBPTS certification averaged 5.83 points in reading and 9.13 points in
math. Gains for students of teachers that had not applied for NBPTS certification
averaged 5.69 points in reading and 9.75 points in math.

Researchers at Arizona State University compared the academic performance of
students in the elementary classrooms (Grades 3 – 6) of 35 National Board Certified
Teachers and their non-certified counterparts in a total of 14 Arizona school districts
(Vandevoort, Amrein-Beardsley, & Berliner, 2004). The certified teachers and their
principals provided information via surveys that were completed on the Internet. The
results from the Stanford Achievement Test – 9th Edition were examined over four years
in the areas of reading, mathematics, and language arts. There were 48 comparisons
(four grades, four years of data, and three measures of academic performance) conducted
using adjusted scores based on students’ entering ability. The comparison results indicated that students with National Board Certified Teachers had greater gains than students in the classrooms of non-certified teachers in almost three fourths of the comparisons. One-third of these comparison differences between NBPTS certified and non-certified were considered to be statistically significant ($\alpha = .05$). Effect sizes (ES) were used in this study to provide a “standardized measure of the strength of a relationship and indicate the relative importance for the pretest effect” (Vandevoort et al., 2004, p. 23). The effect sizes were calculated by dividing the adjusted gain scores (in each subject and at each grade) for both of the groups by the standard deviation obtained for that group. Significant gains were observed during the 1999-2000 school year for 3rd graders in the area of math (ES = 1.408) and 5th graders in reading (ES = .836) and math (ES = 1.725). During the 2000-2001 school year, significant gains were noted for 3rd graders in reading (ES = 1.326) and for 6th graders in reading (ES = .910) and language (ES = 1.075). Significant gains found during the 2002-2003 school year included 3rd graders for reading (ES = 1.526) and math (ES = 1.208), and 4th graders in reading (ES = 1.438), math (ES =1.459), and language (ES = .829). Instances where the students of non-certified teachers achieved more in an academic school year were not found to be statistically significant. As a result of these trends, it was concluded by the researchers that NBPTS certified teachers, on average, appear to be more effective teachers based on students’ academic achievement (Vandevoort et al., 2004)

Is the NBPTS certification process successful in measuring teacher quality? The Accomplished Teaching Validation Study, conducted by a team of researchers based at the University of North Carolina at Greensboro (Bond, Smith, Baker, & Hattie, 2000),
examined whether nationally certified teachers differed significantly from teachers who
did not earn certification in terms of the quality of their teaching practices, the quality of
work produced by students, and their post-assessment professional activities. The
researchers’ sample consisted of 65 teachers who had gone through the NBPTS
certification process from three geographic regions: Ohio, North Carolina, and
Washington D.C. Of the 65 teachers in the study, 31 of the teachers had earned NBPTS
certification and 34 teachers had not obtained NBPTS certification. The authors based
their comparisons on a comprehensive review of literature examining comparative
teacher practice, studies of schooling effects and outcomes, and scholarly research on
expert/novice comparisons. From the literature reviewed, the two groups were compared
on different dimensions, with 13 dimensions focusing on skills and abilities of excellent
teachers and 2 dimensions related to student learning. The evidence compiled in the
study was obtained from a variety of sources: teachers’ instructional objectives and
lesson plans for a particular instructional unit; classroom observations of all 65 teachers’
classrooms; and scripted interviews of the teachers and their students.

The study revealed that certified teachers scored higher on all 13 dimensions of
teaching expertise than did teachers who did not achieve National Board Certification.
The differences were statistically significant on 11 of the 13 dimensions. The effect size
of 11 of the 13 dimensions were .57 or greater. Only one of the effect sizes was less than
.40. Effect sizes were calculated by dividing the mean differences by the total sample
standard deviation. Overall, certified teachers were more able to: 1) improvise and alter
instruction in response to contextual features of the classroom situation; 2) more easily
improvise when things are not going smoothly; 3) more able to generate hypotheses
about reasons for student failure/success; 4) more able to anticipate and plan for student’s
difficulty with new material; 5) exhibited a better understanding of students, thus
allowing them to provide appropriate learning tasks that engage students versus boring or
overwhelming them; 6) possess pedagogical content knowledge that is implemented in a
more flexible manner; and 7) exhibit a deep commitment to their student’s success.

To investigate how certified teachers impact student learning, the researchers
observed student responses pertaining to an assignment given by the teacher, which was
tied to the instructional unit. These responses were scored based on an external measure
of writing in response to a prompt. The observations of student responses to assignments
provided evidence that students with a nationally certified teacher appear to exhibit an
understanding of the concepts in a more integrated, coherent, and higher level of
abstraction. The writing response scores indicated that the differences between the scores
of the full complement of students, while in the expected direction, were not considered
to be statistically significant. This study therefore provides evidence that the National
Board for Professional Teaching Standards, through its assessment process, is successful
in identifying skilled teachers, and also provides partial support that teachers with
NBPTS certification positively impact student learning (Bond, Smith, Baker, & Hattie,
2000).

Since the focus has primarily been on the impact of NBPTS on student
achievement and certification validity, little published empirical research on why teachers
seek certification and receive certification has been conducted. One particular study
conducted by Goldhaber, Perry, and Anthony (2003) examined factors that are related to
why teachers seek certification and the candidates’ success in receiving certification. The
authors analyzed North Carolina Department of Public Instruction (NCDPI) teacher records provided on all teachers employed by North Carolina from 1997 through 2000; school performance measures based on student state testing from the NCDPI website; NBPTS assessment results from 1997 to 2000 provided by NBPTS and Educational Testing Service (ETS); individual school district incentives for becoming certified; and school-wide and district/community characteristics from 1997 to 2000 gathered from the Common Core of Data (CCD). These year datasets were merged with one another to create a four-year panel of teachers. From the data, two samples were established from the information: the full NBPTS-eligible teacher sample (251,567 teachers) and the applicant sample (4,246 teachers). The full sample included teachers with three or more years of experience and those who had not previously been certified. The applicant sample included teachers with at least three years’ experience and who had actually applied for certification from 1997 to 2000.

The authors conducted various regression analyses in order to better understand why teachers seek and are successful in receiving NBPTS certification. In the first stage of the regression analysis the researchers used the full NBPTS-eligible sample to explore factors associated with the decision to apply for certification. The second stage of the analysis utilized the applicant sample to explore the probability of success among applicants. In final stage, the researchers examined the applicant sample to estimate the factors influencing the NBPTS assessment score achieved by applicants.

In terms of who applies for certification, the following characteristics were found: 1) females were 75 percent more likely to apply than males, 2) African American teachers were 30 percent more likely to apply than Caucasian teachers, 3) teachers who
earned higher salaries were more likely to apply, 4) teachers who performed better on standardized tests (e.g., Praxis, GRE) were more likely to apply, and 5) teachers who have an advanced degree and a permanent teaching license were more likely to apply for National Board Certification.

When examining the applicant sample in terms of characteristics for the probability of certification, the researchers noted the following trends: 1) female applicants are about 30 percent more likely to be certified than male applicants, 2) Caucasian applicants are about 65 to 70 percent more likely to be certified than African American applicants, 3) applicants with higher standardized test scores (e.g., Praxis, GRE) are more likely to be certified, and 4) applicants employed by more affluent schools are increasingly more likely to be certified.

The examination of the NBPTS assessment scores found that African Americans and males attain significantly lower scores than Caucasians and females by margins of approximately 25 and 14 points. Applicants with a master’s degree obtained an increase of 6 points in their assessment score. The researchers also found that lower minority student representation at the school level, lower child poverty rates at the district level, and higher median housing values in the community were also associated with higher NBPTS assessment scores.

When exploring the likelihood of application for NBPTS, the researchers found that teachers who were African American, female, younger, and/or earning higher salaries, and who have been teaching for less time were more likely to apply for certification. They also found that when teachers have others in their districts that are going through the certification process, those teachers are more likely to apply.
However, if the teacher is in a district where others have been unsuccessful in obtaining certification, they are less likely to apply.

In summary, the researchers noted that teacher gender, race, and teacher standardized test scores were highly associated with a candidate’s success in obtaining certification. They also found that school poverty level, individual age, years of teacher experience and salary level were influential variables in achieving certification (Goldhaber et al., 2003).

Walker and Klotz (2001) conducted an investigation of the relationship between teacher personality and National Board Certification among 201 south Mississippi teachers. The participants were teachers who had already achieved certification, teachers in the process of fulfilling requirements for certification, and teachers who had not attempted certification. The teachers were surveyed using Cattell’s 16 PF Questionnaire – fifth edition. The purpose of this particular study involved establishing a profile of adult personality for the three different groups, establishing a profile of adult personality factors on teachers who teach the same subject and age, and finally comparing the personality factors of the three groups of teachers.

Cattell’s 16 PF Questionnaire is a measure of the following primary 16 personality factors: Warmth, Reasoning, Emotional Stability, Dominance, Liveliness, Rule-consciousness, Social Boldness, Sensitivity, Vigilance, Abstractedness, Private-ness, Apprehension, Openness to Change, Self-reliance, Perfectionism, and Tension. This questionnaire also provided the following global factors: Extroversion, Anxiety, Tough-Mindedness, Independence, and Self-control. Participants completed
demographic information about age, gender, race, years of experience, grade teaching, subject teaching, and area of certification sought or currently seeking.

The demographic data indicated some information that might influence the results. The group not seeking certification included more males versus the other two groups; the certified group was considered to have more overall education compared to the other groups and also had more teaching experience. The grade level taught by participants was compared and the results showed that the group differences were not significant.

The examination of the 16 primary personality factors revealed that a significant difference occurred among the three groups within the Reasoning personality factor, which compared abstract and conceptual reasoning versus concrete reasoning. It appears that certified teachers were stronger in abstract and analytical reasoning compared to those who had not attempted certification (Walker & Klotz, 2001).

Statement of the Problem

Although some empirical research exists that has addressed the impact of NBPTS certification, questions still remain as to why teachers apply for and obtain their national certification. For example, it is uncertain as to whether teachers regard National Board Certification as something that will help them to become a more valued contributor to the teaching profession overall, or if they merely regard National Certification as a useful credential that will lead to both monetary gain and positive regard from others. In other words, why is it that teachers establish the goal to become National Board Certified? It seems that research on goal orientations might prove helpful in better understanding this
question. Although the design of the study addressed in this paper will not directly answer this question, it is believed that it might provide some useful inferences.

Currently research supports three types of goal orientation: mastery goal orientation, performance-approach goal orientation and performance-avoidance goal orientation. Mastery goals orient individuals to a focus on mastery or acquiring knowledge of the content, performance-approach goals orient individuals to doing better than others and demonstrating their competence to others, and performance-avoidance goals involve the individual trying to avoid appearing incompetent to others (Elliot & Harachiewiz, 1996). Exploration of these three types of goal orientations can therefore provide valuable information about teacher motivation.

Purpose of the Study

The purpose of this study is to explore contextual motivation in terms of the goal orientations for the teaching profession. Therefore, the following research question is addressed: *Are the goal orientations of those who are NBPTS certified different from those who have not attempted and those who were unsuccessful in obtaining NBPTS certification.* In the study, three different groups will be utilized: those that are National Board Certified, those that have applied for but were unsuccessful in receiving National Board Certification, and those that have never applied for National Board Certification. Before examining this question, however, it is necessary to examine research on goal orientation in order to illustrate how goal orientation may pertain to the pursuit of National Board Certification.
Goal Orientation

Former Secretary of Education, Terrell Bell, may have a legitimate argument when he stated, “There are three things to remember about education. The first is motivation. The second one is motivation. The third one is motivation” (Ames, 1990, p.24). Goals appear to be critical when examining motivation and performance. Through this research, goal orientation has become increasingly popular as a construct that is related to performance expectations, task choice, persistence, effort, and response to failure (Brett & VandeWalle, 1999; Elliot, McGregor, & Gable, 1999; Farr, Hoffman, & Ringenbach, 1993).

What is goal orientation? Goal orientation incorporates the reasons involved for engaging in tasks (Anderman, Austin, & Johnson, 2002). Even though the definition appears to be straightforward, there is some confusion in the goal orientation literature (Pintrich, 2000). Several different types of goal orientation have been identified over the years. Although most of the definitions are similar, some differences in the terms and interpretations do exist.

The goal orientation construct originated with Carol Dweck’s early work researching children’s achievement motivation (Diener & Dweck, 1978; Dweck, 1975; Dweck & Reppucci, 1973). Dweck and colleagues noticed two different response patterns, which they termed either a “helpless” response or a “mastery-oriented” response. The “helpless” maladaptive response involved avoiding challenges and a decrease in performance when the task was difficult. The “mastery-oriented” adaptive response involved seeking out challenges and being able to thrive regardless of failure. Dweck (1983) noted that children equal in ability can demonstrate either response;
therefore, the different patterns can not be attributed to weak skills, persistent failure, or inability to effectively strive during difficult tasks. This phenomenon led to the examination of two types of goals in the domain of intellectual achievement (Dweck & Elliott, 1983). The two goals identified later became known as performance goals, which involve concern of receiving favorable judgments of one's competence and learning goals, which involve increasing one's competence (Dweck & Elliott, 1983).

Other researchers have found similar findings to that of Dweck and her colleagues; however, they have used different classification labels. Ames (1984) examined competitive versus individualistic goal structures by having subjects relate to evaluating their ability compared to a peer or to improving their individual ability. Ames found that participants in the competitive group were significantly more likely to focus on ability attributions compared to the individualistic group. It was also found that the individualistic group was more likely to focus on self-instructions with the least emphasis on ability attributions. Nicholls (1984) explored achievement behavior as a behavior directed at developing or demonstrating high rather than low ability. According to Nicholls, ability can be conceived in two ways: ability can be judged high or low with reference to the individual's own past performance or knowledge, or ability can be judged as capacity relative to that of others. In the first context, gains in mastery indicated competence (task-involved individuals) and in the second context, a gain in mastery alone does not indicate high ability. To demonstrate high capacity in the second context, one must achieve more with equal effort or use less effort than do others for an equal performance (ego-involved individuals).
Dweck and Leggett (1988) discovered that learning goals tend to produce an adaptive behavior pattern, where individuals seek challenging tasks and have high persistence toward the tasks. The pattern produced by performance goals depends on the individual’s perceived ability level. If one perceives ability to be high, then he or she follows the adaptive pattern. However, if ability is viewed to be low, then a maladaptive pattern is formed involving little persistence and avoiding challenges (Dweck & Leggett, 1988).

Dweck (1986) examined the question pertaining to why individuals in the same situation choose either performance or learning goals. This examination led to the theory that goal orientations differences are rooted in implicit theories of intelligence. Some individuals favor an incremental theory of intelligence, meaning they believe that intelligence is malleable. Others favor an entity theory of intelligence, meaning they view intelligence as being a fixed trait. Individuals that believe intelligence is fixed are more likely to adopt performance goals and therefore hold the notion that improvement is not attainable. Whereas, individuals that believe intelligence is malleable are more likely to adopt learning goals and conceive that competence can be increased.

Dweck and Leggett (1988) found that individuals who were performance goal orientated tended to put forth less effort. These individuals believed that the more effort one had to put forth reflected less actual ability. Individuals who were learning goal orientated tended to put forth more effort and believed that effort was a strategy that assisted in mastering a task.

Researchers have developed a three-dimensional view of goal orientation by dividing performance goals into performance-approach and performance-avoidance.
Performance-approach goal orientation (also termed performance-prove) involves comparing one’s competence to that of other peers in order to gain favorable judgments. Performance-avoidance goal orientation involves avoiding demonstrating incompetence and thus receiving negative judgments from others. Mastery goal orientation is the same as previously defined, therefore resulting in three dimensions of goal orientation: mastery (learning), performance-approach, and performance-avoidance (Elliot, 1999).

Elliot and Haraciewicz (1996) provided evidence for the three dimensional model by conducting two experiments examining the difference between performance-approach and performance-avoidance goal conceptualization in terms of undermining intrinsic motivation. The two experiments established a normative referent for performance evaluation and differentially highlighted potential achievement outcomes. The target task was described as diagnostic of success (performance-approach) or failure (performance-avoidance) only; thus, participants could demonstrate high but not low ability in the former case and low but not high ability in the latter. In experiment 2, a more subtle manipulation simply focused participants’ attention on the possibility of performing well (performance-approach) or poorly (performance-avoidance) on an achievement task. Both experiments also included a mastery goal condition that focused participant’s attention on the task itself and established task-based performance referents. They provided instructions to participants that promoted learning (mastery), instructions that prompted participants to believe that they have the opportunity to do better than peers (performance-approach), or instructions that promoted participants to believe that they may not be as competent as others (performance-avoidance). Their results provide support for the alternative three dimensional framework. Participants only experienced
the undermining of intrinsic motivation while in the performance-avoidance orientation, thus providing support for the two variations of performance goals (Elliot & Haraciewicz, 1996).

Elliot and Church (1997) applied research and tested the hierarchical model in a college classroom. Their results showed that mastery goals related to achievement motivation and high competence expectancies. Performance-avoidance orientation was correlated to a fear of failure and low competency expectancies. Performance-approach goal orientation related to achievement motivation, fear of failure, and high competency expectancies. The findings provide more research support for the three dimension model of goal orientation. It appears that the performance-approach and performance-avoidance do not appear to be unitary in nature, but instead are independent with distinct outcomes.

Elliot, McGregor, and Gable (1999) examined achievement goals in relation to exam performance. Their results support the three dimensional model of goal orientation. Mastery goals (learning) were not related to exam performance; however, a relationship existed when examining persistence and effort. Performance-approach goal orientation positively related to exam performance, persistence and effort as well. Performance-avoidance goal orientation was negatively related to exam performance and positively predicted disorganization of studying.

Why should goal orientations be presumed relevant to National Board Certification? Goal orientations can help predict performance in educational contexts (Dweck, 1991) and researchers have found some evidence that goal orientation has implications for training and motivating individuals (Ford, Smith, Weissbein, Gully & Salas, 1998). For example, Ford et al. (1998) conducted a study examining how goal
orientation (performance and mastery) influenced the learning of a complex skill during a training session. The authors concluded that mastery-oriented goals were influential in knowledge acquisition, skilled performance, and self-efficacy.

Brett and VandeWalle (1999) researched the content of goals set by individuals in a training program on business presentations. The authors found that learning (mastery) orientation was positively related to setting goals pertaining to developing and refining presentation skills. Also, performance-prove (or performance-approach) goal orientation was positively related to that of comparing themselves to and attempting to outperform their colleagues. Performance-avoidance goal orientation was related to the avoidance of appearing incompetent (Brett & VandeWalle, 1999). This particular study reflects the relationship between the goal orientation dimensions and work-specific goals.

Goal orientation research appears to have relevance to teachers and the National Board of Professional Teaching Standards. This area of research can assist in the understanding of why teachers seek out certification. For example, is the goal of attaining NBPTS Board Certification based on the fact that teachers want to gain and improve personal competence or do they want to gain a higher status than that of their colleagues?
Method

Participants

Participants were in one of three groups: successful NBPTS applicants, unsuccessful NBPTS applicants, and non-applicant teachers. All participants had at least three years’ experience as classroom teachers. This restriction was applied due to the fact that teachers must have at least three years of experience before they can apply for NBPTS certification. Due to this study’s focus on NBPTS certification along with the somewhat exploratory nature of the research question addressed, convenience sampling was used in obtaining participants. The successful applicant group and the unsuccessful applicant group participants were selected from a database compiled by Lynn Hines, NBCT, NBPTS Program Administrator and Program Manager of NBPTS Mentoring Program located at Western Kentucky University in Bowling Green, Kentucky. The non-applicant teacher participants were teachers enrolled in graduate education courses at Western Kentucky University who volunteered to participate and teachers currently practicing in Kentucky schools identified by the researcher and supervisors of the researcher who were asked to participate.

Participants were recruited via email, which included a URL address linking participants to the demographic questionnaire. Overall, 170 teachers participated including successful NBPTS applicants (n= 91), unsuccessful NBPTS applicants (n=45), and non-applicant teachers (n=34). Tables 1, 2, and 3 provide a complete breakdown of all of the demographic information requested of the participants.
Table 1

*Categorical Demographic Variables: Teacher Characteristics*

<table>
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<tr>
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<th>Never Attempted</th>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td>1 (3 %)</td>
</tr>
<tr>
<td><strong>License Type</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permanent</td>
<td>85 (93 %)</td>
<td>42 (93 %)</td>
<td>31 (91 %)</td>
</tr>
<tr>
<td>Temporary</td>
<td>6 (7 %)</td>
<td>3 (7 %)</td>
<td>3 (9 %)</td>
</tr>
<tr>
<td><strong>Highest Degree</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor’s</td>
<td>1 (1 %)</td>
<td></td>
<td>5 (15 %)</td>
</tr>
<tr>
<td>Rank I&lt;sup&gt;b&lt;/sup&gt;</td>
<td>65 (71 %)</td>
<td>8 (18 %)</td>
<td>8 (24 %)</td>
</tr>
<tr>
<td>Rank II&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1 (1 %)</td>
<td>3 (7 %)</td>
<td></td>
</tr>
<tr>
<td>Master’s</td>
<td>19 (21 %)</td>
<td>34 (76 %)</td>
<td>18 (53 %)</td>
</tr>
<tr>
<td>Ph.D.</td>
<td></td>
<td></td>
<td>1 (3 %)</td>
</tr>
<tr>
<td>Other</td>
<td>5 (5 %)</td>
<td></td>
<td>2 (6 %)</td>
</tr>
<tr>
<td><strong>Currently enrolled in Education courses</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>6 (7%)</td>
<td>4 (9 %)</td>
<td>7 (21 %)</td>
</tr>
<tr>
<td>No</td>
<td>85 (93%)</td>
<td>41 (91 %)</td>
<td>27 (79 %)</td>
</tr>
</tbody>
</table>
Prepare with colleagues?  
- Yes: 65 (71%)  
- No: 26 (29%)  

Plan on attempting/attempting again?  
- Yes: NA  
- No: 21 (48%)  

Salary increase for certification?  
- Yes: 89 (98%)  
- No: 2 (2%)  

NBCT financial assistance?  
- Yes: 23 (25%)  
- No: 68 (75%)  

Location of School:
- Metro: 4 (4%)  
- Urban Large: 3 (3%)  
- Urban Middle: 10 (11%)  
- Town Large: 21 (23%)  
- Town Small: 31 (34%)  
- Rural: 21 (23%)  

School:
- Public: 89 (98%)  

Note: aNational Board for Professional Teaching Standards. Rank I: Kentucky Teacher Certification, which requires a minimum of 60 hours if a Master's program is included or a minimum of 30 additional hours after completion of a Rank II. Rank II: Kentucky Teacher Certification, which requires minimum 32 semester hours after completion of bachelor's degree.

Table 2
Categorical Demographic Variables: School Characteristics

<table>
<thead>
<tr>
<th></th>
<th>NBPTS(^a)</th>
<th>NBPTS</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Certified</td>
<td>Attempted</td>
<td>Attempted</td>
</tr>
<tr>
<td>Salary increase for certification?</td>
<td>Yes</td>
<td>89 (98%)</td>
<td>36 (82%)</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>2 (2%)</td>
<td>8 (18%)</td>
</tr>
<tr>
<td>NBCT financial assistance?</td>
<td>Yes</td>
<td>23 (25%)</td>
<td>14 (31%)</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>68 (75%)</td>
<td>31 (69%)</td>
</tr>
<tr>
<td>Location of School(b)</td>
<td>Metro</td>
<td>4 (4%)</td>
<td>2 (6%)</td>
</tr>
<tr>
<td></td>
<td>Urban Large</td>
<td>3 (3%)</td>
<td>2 (4%)</td>
</tr>
<tr>
<td></td>
<td>Urban Middle</td>
<td>10 (11%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td></td>
<td>Town Large</td>
<td>21 (23%)</td>
<td>7 (16%)</td>
</tr>
<tr>
<td></td>
<td>Town Small</td>
<td>31 (34%)</td>
<td>20 (44%)</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>21 (23%)</td>
<td>15 (33%)</td>
</tr>
<tr>
<td>School</td>
<td>Public</td>
<td>89 (98%)</td>
<td>43 (98%)</td>
</tr>
</tbody>
</table>
Private   2 (2 %)   1 (2 %)   0 (0 %)

Note: "National Board for Professional Teaching Standards. Metro = 250,000 or more, Urban Large =
100,000 – 249,999, Urban Middle = 50,000 – 99,999, Town Large = 25,000 – 49,999, Town Small = 2,500
– 24,999, Rural = less than 2,500.

Table 3

*Continuous demographic variables:

<table>
<thead>
<tr>
<th></th>
<th>NBPTS certified</th>
<th>NBPTS attempted</th>
<th>Never attempted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>M 41.20</td>
<td>M 40.93</td>
<td>M 41.09</td>
</tr>
<tr>
<td></td>
<td>SD 8.40</td>
<td>SD 8.92</td>
<td>SD 10.79</td>
</tr>
<tr>
<td>Total years teaching</td>
<td>M 14.21</td>
<td>M 12.84</td>
<td>M 12.57</td>
</tr>
<tr>
<td></td>
<td>SD 6.37</td>
<td>SD 5.91</td>
<td>SD 8.88</td>
</tr>
<tr>
<td>Years teaching in area of certification</td>
<td>M 12.13</td>
<td>M 9.98</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>SD 6.13</td>
<td>SD 5.19</td>
<td>NA</td>
</tr>
<tr>
<td>Number of students currently teaching</td>
<td>M 120.67</td>
<td>M 113.16</td>
<td>M 98.42</td>
</tr>
<tr>
<td></td>
<td>SD 155.64</td>
<td>SD 205.14</td>
<td>SD 124.89</td>
</tr>
<tr>
<td>Average number of students per class</td>
<td>M 21.66</td>
<td>M 20.69</td>
<td>M 18.97</td>
</tr>
<tr>
<td></td>
<td>SD 7.23</td>
<td>SD 5.42</td>
<td>SD 7.80</td>
</tr>
<tr>
<td>Number of times attempted certification</td>
<td>M 1.60</td>
<td>M 1.84</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>SD .72</td>
<td>SD .77</td>
<td>NA</td>
</tr>
<tr>
<td>NBPTS score</td>
<td>M 288.23</td>
<td>M 234.51</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>SD 90.61</td>
<td>SD 66.02</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>Number of students in</td>
<td>4041.48</td>
<td>2498.09</td>
<td>4920.97</td>
</tr>
<tr>
<td>school district</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>14679.40</td>
<td>3304.87</td>
<td>16597.84</td>
</tr>
<tr>
<td>Number of free/reduced</td>
<td>203.23</td>
<td>176.32</td>
<td>166.00</td>
</tr>
<tr>
<td>lunch students in school</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>243.96</td>
<td>143.38</td>
<td>192.32</td>
</tr>
</tbody>
</table>

*National Board for Professional Teaching Standards.

**Measures**

*Demographic Questionnaire.* Participants completed a demographic questionnaire with personal items on age, race/ethnicity, gender, years of teaching experience, highest level of education (bachelor’s, master’s, etc.), area of certification that is being sought, and whether they have previously applied for certification. They also completed school related items pertaining to what grade they currently teach or education area, school locale (urban/rural), SES of students (number of free/reduced lunches), number of students in their classroom, and whether they teach at a public or private school (See Appendix A).

*Patterns of Adaptive Learning Scales.* The Personal Achievement Goal Orientations scale from the Patterns of Adaptive Learning Scales (PALS; Midgley et al., 1998) was administered to participants to obtain a measure of their personal goal orientations. This 14-item, 5-point Likert type scale (See Appendix B) includes questions pertaining to cognitive, affective, and behavioral components which refer “to the reasons and purposes for engaging in academic behavior” (Midgley, et al., 2000, p. 7). Three different goal orientations are indexed: mastery, performance-approach, and performance-avoidance. In the current study, this scale was slightly modified so that the scale items pertain to teaching behavior rather than academic behavior.
Five questions address the mastery goal orientation. Scores for this index range from 5 to 25 with high scores indicative of high mastery goal orientation. Some examples of questions that index this orientation include: “It’s important to me that I learn a lot of new concepts this year” or “One of my goals is to master a lot of new skills this year.” Midgley et al. (2000) report strong internal consistency for the questions measuring mastery orientation (α = .85). Acceptable internal consistency (α = .76) for this index is seen in the current study. Five questions pertain to the performance-approach goal orientation. Scores for this index range from 5 to 25 with high scores indicative of high performance-approach goal orientation. Some examples of questions that index this orientation are: “It’s important to me that other teachers in my school think I am good at teaching” or “One of my goals is to look smart in comparison to the other teachers in my school.” Midgley et al. (2000) report strong internal consistency for the questions measuring the performance-approach orientation (α = .89). Strong internal consistency (α = .87) for this index is seen in the current study. Four questions reference the performance-avoidance goal orientation. Scores for this index range from 4 to 20 with high scores indicative of high performance-avoidance goal orientation. Examples of these questions include: “It’s important to me that I don’t look stupid teaching” or “One of my goals is to avoid looking like I have trouble teaching.” Midgley et al. (2000) cite acceptable internal consistency for the questions measuring the performance-avoidance orientation (α = .74). Acceptable internal consistency (α = .70) for this index is seen in the current study.

Research (Midgley et al., 1998) supports the PALS as a valid measurement of goal orientations based on a confirmatory factor analysis of the fourteen personal goal
orientation items. This model was confirmed by LISREL VIII and goodness of fit indices suggesting that the model fits the data (GFI = .97, TLI = .95, CFI = .96, RMSEA = .049). Questions addressing the three dimensions (mastery, performance-approach, and performance-avoidance) all loaded on different latent factors. An examination of the output indicated that the range of factor loadings of items on their respective scales was .42 to .81 with only four items loading below .60. None of the items had loadings above .25 on latent variables other than the designated one (Midgley, et al., 2000).

Although the majority of the research conducted on the PALS measure has been limited to school-aged students and not on teachers, research has been conducted to confirm the usefulness of the PALS as a measure of goal orientation overall (Jagacinski & Duda, 2001; Ross, Blackburn, & Forbes, 2005). A reliability generalization of the PALS measure was conducted by reviewing eleven different studies that used the PALS measure (Ross et. al, 2005). The results of this analysis did not yield statistically significant differences across the scales. The authors concluded that the PALS yields adequately reliable scores to varying degrees depending on the scale used and context. Given this, along with the above psychometric information, it appears that the PALS is valid and appropriate as a measure of goal orientation.

Procedure

A total of 882 teachers (successful NBPTS applicants = 292, unsuccessful NBPTS applicants = 338, and non-applicant teachers = 252) were sent an email requesting their participation in this study. Of the 882 contacted teachers, 165 (successful NBPTS applicants = 89, unsuccessful NBPTS applicants = 42, and non-applicant teachers = 34) participated in full resulting in a 19% response rate overall and a
30% response rate for successful NBPTS applicants, 12% response rate for unsuccessful NBPTS applicants, and a 13% response rate for non-applicant teachers. The participants were contacted via email by the researcher and were provided with a URL address that linked them to the questionnaires on the Internet. The 882 teachers received an email twice during the Spring 2006 semester from the researcher requesting their participation. The two emails were sent three weeks apart and it was clearly stated that they were to participate only once. Participants completed the demographic questionnaire first, next they completed the PALS measure, and lastly they completed the Teachers’ Sense of Efficacy Scale (TSES; Tschannen-Moran & Hoy, 2000). Responses to the TSES were considered in a separate study and were not addressed in the current study. The participants’ questionnaire responses remained confidential and were stored in a database for analysis. Individuals that completed the survey were automatically entered in a drawing for the potential to win one of fifteen $50.00 gift certificates.
Results

Demographic characteristics cited as relevant to National Board Certification (see Goldhaber et al., 2003) were compared to demographic data made available in the previously reviewed studies (e.g., Bond et al., 2000; Goldhaber et al., 2003; Goldhaber & Anthony, 2004; Vandevooit et al., 2004; and Walker & Klotz, 2001). Some important distinctions were noted. The most consistent distinction is evident for ethnicity as statistically significant differences in the percentage of Caucasians were seen. In particular, those in the NBPTS certification group had higher percentages over that which was reported for Goldhaber et al. (2003) \( (p < .001, \eta^2 = .18) \), Goldhaber and Anthony (2004) \( (p < .001, \eta^2 = .24) \), and Bond et al. (2000) \( (p < .001, \eta^2 = .56) \); those in the attempted NBPTS certification but failed group had higher percentages over that which was reported for Goldhaber et al. (2003) \( (p < .001, \eta^2 = .69) \), Goldhaber and Anthony (2004) \( (p < .001, \eta^2 = .70) \), and Bond et al. (2000) \( (p < .007, \eta^2 = .67) \); and those in the never attempted NBPTS certification group had higher percentages over that which was reported for Goldhaber et al. (2003) \( (p < .05, \eta^2 = .16) \) and Goldhaber and Anthony (2004) \( (p < .05, \eta^2 = .13) \).

Some other distinctions were also noted though they are not as consistently prevalent. For example, there were two statistically significant distinctions in age. Specifically, those in the NBPTS certified group were younger \( (p < .001, \eta^2 = .40) \) than what was reported for teachers with NBPTS certification in Vandevooit et al. (2004). Those in the never attempted NBPTS certification group were significantly younger \( (p < .001, \eta^2 = .35) \) than what was reported for a similar group in Goldhaber et al. (2003). Where the number of years' teaching experience is concerned, three statistically
significant distinctions were seen in comparing the NBPTS certification group. Though this group had more teaching experience \( (p < .05, \eta^2 = .07) \) than what was reported in Goldhaber and Anthony (2004), they had less teaching experience than what was reported in Vandevoort et al. (2004) \( (p < .001, \eta^2 = .43) \) and Walker and Klotz \( (p < .05, \eta^2 = .04) \). Although females tended to predominate this study and the other studies where information on gender is provided, one statistically significant distinction is noted in that those in the NBPTS certification group in this study had increased females and decreased males \( (p < .05, \eta^2 = .05) \), compared to what was reported in Goldhaber et al. (2003).

In terms of the PALS mastery-oriented scale, the three different teacher groups scored the highest on this scale in comparison to the other two scales (See Table 4). As Table 4 illustrates, statistically significant differences existed within each group among the indexed goal orientations. Specifically, the mastery goal orientations of those in each group were significantly more advanced than their performance-approach and performance-avoidance goal orientations. Additionally, the performance-avoidance goal orientations of those in each group were significantly more advanced than the performance-approach goal orientations in each group. These trends appear to rival that which Midgley et al. (2000) reported in validating the PALS in that mastery scores are almost double that of the performance-approach and performance-avoidance scores. However, statistically significant differences were seen in comparing this sample to Midgley et al. (2000). Among those with NBPTS certification, mastery scores were higher \( (p < .05, \eta^2 = .06) \), while performance-approach \( (p < .001, \eta^2 = .26) \) and performance-avoidance \( (p < .005, \eta^2 = .10) \) were lower. Among those who did not achieve NBPTS certification, mastery scores were higher \( (p < .05, \eta^2 = .11) \) and
performance-approach scores were lower \((p < .005, \eta^2 = .20)\). Among those that never attempted NBPTS certification, mastery scores were higher \((p < .05, \eta^2 = .13)\) and performance-approach scores were lower \((p < .05, \eta^2 = .16)\). Within the sample as a whole, statistically significant correlations existed among the three PALS indices. Specifically, a small correlation existed between PALS mastery and PALS performance-approach \((r = .185, p = .017)\), a moderate correlation existed between PALS mastery and PALS performance-avoidance \((r = .310, p < .001)\), and a strong correlation existed between PALS performance-approach and PALS performance avoidance \((r = .603, p < .001)\).

In analyzing potential mean differences in the PALS indices of the three groups of teachers, analysis for the current study consisted of a Multivariate Analysis of Covariance.

Table 4

**Descriptive Statistics for PALS Indices**

<table>
<thead>
<tr>
<th></th>
<th>NBPTS Certified Mean</th>
<th>NBPTS Attempted Mean</th>
<th>Never Attempted Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SD</td>
<td>SD</td>
<td>SD</td>
</tr>
<tr>
<td>Mastery</td>
<td>21.54(^{ab})</td>
<td>3.02</td>
<td>21.62(^{ab})</td>
</tr>
<tr>
<td>Performance-approach</td>
<td>9.75(^{ac})</td>
<td>4.34</td>
<td>9.57(^{ac})</td>
</tr>
<tr>
<td>Performance-avoidance</td>
<td>10.91(^{bc})</td>
<td>3.82</td>
<td>10.43(^{bc})</td>
</tr>
</tbody>
</table>

Note: Mastery ranged from 14-25 in NBPTS certified, 15-25 in NBPTS attempted, and 15-25 in Never attempted. Performance-approach ranged from 5-23 in NBPTS certified, 5-25 in NBPTS attempted, and 5-25 in Never attempted. Performance-avoidance ranged from 4-20 in NBPTS certified, 4-20 in NBPTS attempted, and 4-18 in Never attempted. Bonferroni pairwise comparisons: \(^{a} = (p < .001)\), \(^{b} = (p < .001)\), \(^{c} = (p < .001)\). PALS indices were adjusted for within-group analyses so that each was on the same scale.
(MANCOVA) with Highest Degree employed as a covariate. Although Highest Degree is noted as a categorical variable in Table 1, it is employed as a covariate rather than an additional fixed factor since each group represents an advancement in terms of education overall and, therefore, possesses properties of scale data.

No significant differences were reported at the multivariate level \( (F[6, 320] = .349, p = .910, \eta^2 = .006) \). Univariate analysis revealed that no significant differences exist among groups for PALS mastery-oriented \( (F[2, 161] = .176, p = .839, \eta^2 = .002) \), PALS performance-approach \( (F[2, 161] = .084, p = .919, \eta^2 = .001) \), and PALS performance-avoidance \( (F[2, 161] = .436, p = .647, \eta^2 = .005) \).

Covariate statistical information for highest degree revealed no significance at the multivariate level \( (F[3, 159] = .789, p = .502, \eta^2 = .015) \). Highest degree was not a significant covariate at the univariate level for all three PALS indices including PALS mastery-oriented \( (F[1, 161] = .176, p = .443, \eta^2 = .004) \), PALS performance-approach \( (F[1, 161] = .084, p = .919, \eta^2 = .001) \), and PALS performance-avoidance \( (F[1, 161] = .436, p = .647, \eta^2 = .140) \).
Discussion

The purpose of this study was to determine whether the goal orientations of teachers with National Board Certification were distinct from those without this certification. Three specific goal orientations were considered including mastery-goal orientation, performance-approach goal orientation, and performance-avoidance goal orientation. It was proposed that the results of this study could potentially suggest that teachers who apply for and receive certification do so based on the notion that their goal is to obtain knowledge and become an overall more skilled teacher as a result of a mastery goal orientation and that teachers who have failed or not attempted the certification process may rate higher on one or both of the performance orientations. It was felt that this study had the potential to impact the teaching profession as a whole by providing an indication of why teachers want to obtain certification and providing information as to how to target teachers for the certification process. The research question for the study follows: *Are the goal orientations of those who are NBPTS certified different from those who have not attempted and those who were unsuccessful in obtaining NBPTS certification?*

The data presented in this study indicate that there was no significance among the three different groups in terms of their goal orientation. Thus, there was no support that those who had earned national certification had differing goal orientation scores than their non-certified counterparts. This is evidenced by the findings in which all groups of teachers appeared to exhibit stronger mastery-goal orientation in comparison to performance-approach and performance-avoidance goal orientations in conjunction with
the fact that no statistically significant differences existed among groups on any of the three goal orientation indices.

The prominence of mastery goal orientation relative to performance orientation for teachers does make some intuitive sense. No matter how proficient a teacher is in organizing, pacing and structuring the lesson, and other components of education, she or he must teach students to complete and engage in the principal part of all lessons. Analyzing each lesson, identifying when and what kind of modifications are needed for the individual student(s) being taught, practicing to achieve smooth execution of the lesson, and the like are all essential steps in teaching and could be linked to the central components of mastery goal orientation. Although this has not been tested empirically, this possibility seems plausible if one considers research on intrinsic motivation. Similar to the mastery goal orientation, intrinsic motivation is manifested in the enjoyment and interest of an activity for its own sake (Ryan, 1992), and this approach of motivation is identified as an important component of the achievement goal framework (Ames, 1992; Dweck, 1986; Nicholls, 1984). Many achievement goal and intrinsic motivation researchers contend that mastery goals facilitate intrinsic motivation, whereas performance goals tend to have negative effects (Deci & Ryan, 1990; Dweck, 1991; Nicholls, 1984). That is, mastery goals are said to promote intrinsic motivation by promoting challenge and task involvement. Finding satisfaction in learning, improvement, and practice (e.g., the realms of mastery goal orientation), then, could possibly be a prerequisite for all teachers who seek certification and all teachers as a whole. If true, it may be that the mastery goal orientation is a necessary but not sufficient condition for National Board Certification. In other words, while the mastery orientation
is a necessary ingredient for achieving certification, it is not a principal component responsible for success in National Board Certification.

It appears that all three groups of teachers in this particular study were low in terms of their performance-approach and performance-avoidance goal orientations. This could be possibly linked to the response rate of participants to the survey which overall was only 19%, with the NBPTS certified group response rate being slightly higher than the other two groups. When examining the observed trends in terms of survey participation and the three types of goal orientations, a plausible explanation exists. Teachers that received the survey email who were performance-approach goal oriented may not have seen participation as worth their while since they were not likely to get anything out of it. Teachers with performance-avoidance orientations may have been less than inclined to participate in the survey because it would have been another reminder of their deficiencies. Teachers with mastery goal orientations may have viewed participation as an opportunity for self-reflection and personal growth, thus increasing the likelihood of their participation in the study.

On the other hand, mastery and performance orientation scores may not have significantly differentiated certified teachers as a result of certain psychometric conditions of the utilized measurement. It may be that the Personal Achievement Goal Orientation scale of the PALS is not sensitive enough to measure these orientations with the precision needed to detect differences that actually exist. Inclusion of additional items that pertain to actual situations involving certification might prove effective in revealing differences among those that pass, those that do not, and those that do not attempt National Board Certification.
Another psychometric concern may be that, in some circumstances, respondents may be inclined to provide the socially desirable response rather than respond with what they actually think, believe or do. Social desirability has often been assumed to be a function of two factors, the general strength of need for approval felt by an individual and the demands of a particular situation (Phillips & Clancy, 1972). With a survey the demands of a particular situation or need for approval would involve the perceived desirability or undesirability of the behavior referred to in the statement (say, “One of my goals is to learn as much as I can” versus “One of my goals is to keep others from thinking I’m not smart”). One must consider the possibility that the participants in this particular study were inclined to present themselves in a manner that would be viewed favorably by the researcher or others in general. There is some credence to this possibility when one examines the Cronbach alphas of the mastery and performance-avoidance PAL indices, which are both in the .70s. Although these alphas are acceptable, they are lower than what others have reported (e.g., Midgley et al., 2000) and therefore indicate that those in this study were not as consistent in their responses as participants in previous studies have been. The fact that the mastery scores of the sample were generally higher and performance-approach scores were generally lower than what has previously been reported also supports this.

At the same time, it is also possible that teachers who enter the field with a high performance goal orientations leave the field quickly if they do not receive recognition quickly (in the case of those oriented towards performance-approach goals) or if they struggle in the field (in the case of those oriented toward the performance-avoidance orientation). These individuals may be unwilling to invest the time that is necessary to
achieve success in the field. As with all professions, the time, effort, and practice needed to become proficient as an educator can seem tedious to some especially if the goal is to show advancement and achievement relative to others.

Strengths and Limitations

Several limitations of this study must be addressed. Most of the research on achievement goals has used either survey or experimental methods (Brophy, 1999). With this particular survey, the participants indicated on a Likert-type scale their agreement with a mastery, performance-approach or performance-avoidance goal items. Because the survey allowed the researcher to provide the wording for the participants and the research design did not allow the researcher to follow up on particular responses with additional questions, it is possible that participants varied in their interpretation of the goal items. Asking participants to respond to survey items may produce a sort of “now-that-you-mention-it” effect whereby teachers agree they want to do better than others when asked about it, but if they were not asked about it, they would rarely think in such terms. Some research suggests that when students are not directly asked about mastery, performance-approach, and performance-avoidance goals, they tend to mention other concerns much more often, such as getting good grades, avoiding trouble, and going to college (Lemos, 1996).

One more concern created by using the survey is that it limits the amount of information teachers can offer about their goal pursuits. Although two teachers may equally endorse a mastery-goal orientation on a survey measure, it is possible that one teacher is concerned primarily with gaining normative information for the sake of learning and another teacher wants to personally challenge himself or herself. These
different reasons may be associated with a different pattern of motivational beliefs and behaviors in the classroom, which might be impossible to decipher from survey measures of achievement goals.

The web-based approach to data collection raises some concerns, though such a methodology has certain advantages. By emailing participants, the researcher can eliminate some cost associated with mailing surveys and also save time from having to personally mail the surveys. Since the information gathered is already in electronic form, data entry is also quicker. However, one must still acknowledge the possible methodological concerns with email or web surveys. Some studies suggest that electronic surveys do not measure up to other formats of survey delivery (Cook, Heath, & Thompson, 2000; Couper, 2000). An important reason for this has to do with the fact that web-based surveys often yield decreased response rates, which could skew obtained data. According to Cook et al. (2000) there are many explanations for decreased response rates to web-based surveys. Considering the amount of junk mail or “spam” that individuals receive each day, it is possible that the emailed survey may be deleted without even a glance. Another explanation for lower response rates of electronic measures may have to do with less attention to means that promote participation (Dillman, 2000). Perhaps the response rate may have been higher in the current study if all participants would have been guaranteed remuneration instead of being entered in a raffle.

It should be noted, however, that Cook et al. (2000) suggest that the actual response rate percentage may not be as important as having a representative sample. When looking at the particular sample of this study in comparison to other samples, it
was determined that this sample featured a significantly greater number of Caucasian participants than have previous studies addressing National Board Certification. Certainly, factors such as a low response rate typical of web-based surveys and convenience sampling are reasons why this may have occurred. Nonetheless, it is difficult to generalize the findings of this study to other ethnicities. However, it is important to note that the other reviewed studies addressing National Board Certification have predominantly featured Caucasians, just not to the extent that this one did. In conjunction with the fact that this sample was not found to be largely distinct from other samples for other demographic variables, however, it cannot be stated that this sample is atypical of the kinds of samples that have been obtained in prior study of National Board Certification.

Another limitation of this study is the use of the PALS measure. Even though the measure has been validated (Jagacinski & Duda, 2001), limited research has been conducted on the individual goal orientations of teachers. Most of the research involving the PALS has considered the personal goal orientations of students, instead of teachers. Thus, the ramifications of adapting the PALS to teaching for the current study are unknown. One area where this may have been a problem, may have been on the mastery goal orientation index. As seen in Appendix B, the items comprising this index tend to be more global in nature. This may have resulted in interpretations that focused on one’s life overall rather than on teaching itself.

Similarly, the internal consistency for the PALS measure for this study leads to concerns with social desirability bias, which can cause confound collected data in psychological research. Research has suggested that when responding to goal orientation
in the domains of work and academics, social desirability can influence responses (Tan & Hall, 2005). In particular, Tan and Hall (2005) found that social desirability was statistically significant in negatively influencing responses to mastery goal items and in positively influencing responses to performance-avoidance goal items. Tan and Hall (2005) cited that social desirability had minimal effects on performance-approach goal items. These findings therefore provide further support the possibility that social desirability may have been a factor in the current study.

The primary strength of this study is that it is the first known study that has addressed the goal orientations in the context of National Board Certification. Another strength of this study was the incorporation of the detailed demographic questionnaire. This questionnaire allowed the researcher to gain valuable categorical and continuous variable information and assisted determining if confounds existed. The demographic information collected could be utilized in the future for further analysis.

Future Directions

In the future, the current study should be replicated with both pre- and post-certification data collection. It would be interesting to investigate if the National Board Certification process impacts or modifies the goal orientation of those who attempt. Because the sample size was somewhat small, the findings presented should be considered preliminary and in need of replication. Furthermore, the sample was homogeneous for the most part. The use of a homogeneous sample allows a starting place for understanding goal orientation and understanding how motivational climates may influence this change; however, it limits the generalizability of these findings
outside of the specific population studied. To further relationships, if applicable, more diverse samples need to be considered in the future.

One issue unaddressed in this study is the cost of seeking National Board certification. Research has shown that teachers are more likely to be certified if they are teaching in more affluent schools and districts (Goldhaber, Perry, & Anthony, 2003). Based on trends such as these, it appears that financing is a relevant issue that may impact a teacher’s decision to go through the certification process. The $2,300 application fee may deter many teachers from even attempting the certification process since there are no guarantees that this money would be an investment of sorts. For example, where understanding the role of goal orientation is concerned, it may be that only those who are certain that they have mastered areas necessary for certification are the only ones willing to pay to go through the process. If cost could be eliminated or considerably decreased in future study, the likelihood of a more diverse sample in terms of goal orientations might be obtained.

Another future direction would be to take a qualitative research approach to examining the goal orientations of teachers. By interviewing participants the researcher could gain useful information about the certification process from both those who were successful and those who were unsuccessful in obtaining certification. The researcher would be able to expand upon participants’ responses and further explore their views and understanding of the NBPTS certification process. Perhaps most importantly, such an approach might yield the determination as to why teachers are motivated to apply for NBPTS certification to begin with, something that the findings of this study were unable to elucidate.
Conclusion

In conclusion, no evidence was found to support the notion that NBPTS certified teachers' goal orientation were different from their non-certified counterparts. Based on the analysis, it appears the certified and non-certified teachers hold a mastery-goal orientation above performance-approach and performance-avoidance goal orientations. This suggests that those who were surveyed overall are oriented to a focus on mastery or acquiring knowledge of the content. As such, questions remain about why teachers seek out and obtain National Board Certification.
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Appendix A

Demographic Questionnaire
Appendix A – Demographic Questionnaire

SECTION 1: EVERYONE please complete this section.

1. Age:

2. Race/Ethnicity (African American, Asian, Caucasian, Hispanic, Native American, or Other):

3. Gender (male/female):

4. Total Years of Teaching Experience:

5. Number of Years Teaching in Particular Area of Certification Sought (if applicable):

6. License Type (permanent or temporary basis):

7. Highest Degree Earned (Bachelors, Rank I, Rank II, Master’s, Ph.D., or other advanced degree):

8. Grade(s)/Subject(s) Teaching:

9. Number of Students Currently Teaching Total:

10. Average Number of Students Currently Teaching per Class:

11. Currently Enrolled in Additional Education Courses at the College/University Level (yes or no):

SECTION 2: Complete Section 2 only if you HAVE BEEN successful in obtaining NBPTS certification.

12. Number of times you attempted certification:

13. Year you became certified:

14. NBPTS Area of Certification:

15. How long did it take you to complete the National Board process:

16. What was your National Board Certification overall score:

17. Did you receive an incentive from your school for attempting National Certification:
18. Did you receive a salary increase after becoming Nationally Certified:

19. Did your school district provide financial assistance for the National Board $2,300 fee:

20. Did you prepare for National Board certification with other colleagues:

21. What do you attribute your success in obtaining National Certification to?
   a. Strategy/Approach (how I studied)
   b. Uncontrollable circumstances (good health, good mood)
   c. Ability (intelligence)
   d. Help from others (others attempting certification, others who have completed certification, or lenient evaluators)
   e. Difficulty of certification process (certification process was easy)
   f. Instruction (received good instruction from structured program designed to facilitate certification)
   g. Effort put forth during certification process
   h. Good luck

SECTION 3: Complete Section 3 if you were UNSUCCESSFUL in obtaining NBPTS certification.

22. Number of times you have attempted certification:

23. What was your overall National Board score:

24. Do you plan on attempting certification again:

25. NBPTS area(s) of certification attempted:

26. How long did it take you to complete the National Board certification process:

27. Did your school provide you with an incentive to attempt National Board Certification:

28. Did your school district provide financial assistance for the National Board $2,300 fee:

29. Does your school district offer a salary increase for obtaining National Board Certification:

30. Did you prepare for National Board certification with other colleagues:

31. What do you attribute your success in obtaining National Certification to?
   a. Strategy/Approach (how I studied)
   b. Uncontrollable circumstances (illness, personal stressor, etc.)
c. Ability (intelligence)
d. Help from others (others attempting certification, others who have completed certification were not much help or provided poor help)
e. Difficulty of certification process (certification process was hard)
f. Instruction (received poor instruction from structured program designed to facilitate certification)
g. Effort put forth during certification process
h. Bad luck

SECTION 4: Complete Section 4 if you have NEVER attempted NBPTS certification.

32. Do you plan on attempting for certification in the future:

33. If you plan to attempt NBPTS certification in the future, indicate the academic year in which you plan to attempt certification:

34. Does your school provide an incentive for those attempting National Certification:

35. Does your school district provide a salary increase for achieving National Certification:

36. Does your school district provide financial assistance for the National Board $2,300 fee:

SECTION 5: EVERYONE please provide information about your school. If you do not know the answers to any of the questions that follow, please locate this information by opening your web browser a second time and cut and paste the following link: http://www.dpmr.kde.state.ky.us/district/%20profile/mainpage.cfm.

37. Location of School:
   a. Metro (250,000)
   b. Urban Large (100,000 – 249,999)
   c. Urban Middle (50,000 – 99,999)
   d. Town Large (25,000 – 49,999)
   e. Town Small (2,500 – 24,999)
   f. Rural (less than 2,500)

38. Total Number of Students in Building:

39. Total number of students in school district:

40. Number of Free/Reduced Lunch Students in the School:

41. Do you currently Teach in a Public or Private School?: 
Appendix B

Patterns of Adaptive Learning Scales (PALS)
Appendix B: Patterns of Adaptive Learning Scales (PALS)

Please write the number beside the statement that best describes what you think. Your responses will remain confidential.

1  2  3  4  5

NOT AT ALL TRUE  SOMewhat TRUE  VERY TRUE

Personal Achievement Goal Orientations

Mastery Goal Orientation (Revised):
It’s important to me that I learn a lot of new concepts this year.
One of my goals is to learn as much as I can.
One of my goals is to master a lot of new skills this year.
It’s important to me that I thoroughly understand my work.
It’s important to me that I improve my skills this year.

Performance-Approach Goal Orientation (Revised):
It’s important to me that other teachers in my school think I am good at my work.
One of my goals is to show others that I’m good at my work.
One of my goals is to show others that teaching is easy for me.
One of my goals is to look smart in comparison to the other teachers in my school.
It’s important to me that I look smart compared to other teachers in my school.

Performance-avoidance Goal Orientation (Revised):
It’s important to me that I don’t look stupid teaching.
One of my goals is to keep others from thinking I’m not smart.
It’s important to me that others don’t think that I know less then them.
One of my goals in teaching is to avoid looking like I have trouble teaching.
Appendix C

Informed Consent Document
INFORMED CONSENT DOCUMENT

Project Title: National Board Certification: Goal Orientation and Teacher Efficacy

Investigator: Sarah Glasgow  
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Psychology Department  
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Faculty Sponsor: W. Pitt Derryberry, Ph.D.

Psychology Department  
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You are being asked to participate in a project conducted through Western Kentucky University. The University requires that you give your agreement to participate in this project.

This document will explain to you in detail the purpose of the project, the procedures to be used, and the potential benefits and possible risks of participation. You may contact the investigators for this project with any questions you have to help you understand the project. A basic explanation of the project is written below. Please read this explanation and contact the researchers with any questions you may have.

1. **Nature and Purpose of the Project:** There is limited research available towards the determination of what identifiable characteristics are associated with applying for and obtaining National Board Certification. One purpose of this study is to explore the motivation in terms of the goal orientations behind why teachers apply for and obtain National Board Certification. Another purpose is to identify the influence of teacher efficacy in the attainment of National Board Certification.

2. **Explanation of Procedures:** If you agree to participate, three web-based surveys will follow this document that you will complete on-line. These surveys will include a demographic questionnaire, a questionnaire which pertains to your goals, and a questionnaire that asks you to consider your thoughts about your efficacy about teaching. There will be no participant identifying information provided or submitted through these surveys. All the completed surveys will be submitted to our URL address for analysis. Upon completion of these three surveys you will be given the chance to enter a raffle for gift certificates of varying amounts. You will forward your contact information to the researchers via a prompt once you have completed the surveys. This information will be
separate from and untraceable to the information you provide in the three surveys.

3. **Discomfort and Risks:** There are no known or anticipated risks.

4. **Benefits:** It is hoped that this study will generate important information regarding the impact of applying for and/or receiving National Board Certification.

5. **Confidentiality:** Your participation in this study is completely anonymous and no identifying information is required.

6. **Refusal/Withdrawal:** Individuals have the right to refuse to participate in this study. Refusal to participate is indicated by not completing the surveys. Refusal to participate in this study will have no effect on any future services you may be entitled to from the University. Anyone who agrees to participate is free to withdraw from the study at any time.

If you have read and understand the parameters of this study and wish to participate, please read the statement that follows and then click the submit button below:

*I understand that it is not possible to identify all potential risks in an experimental procedure, and I believe that reasonable safeguards have been taken to minimize both the known and potential but unknown risks.*

**-BY SUBMITTING THIS DOCUMENT, YOU ARE PROVIDING YOUR CONSENT TO PARTICIPATE IN THIS RESEARCH PROJECT –**

SUBMIT (wish to participate) DON’T SUBMIT (do not wish to participate)

PROJECT START DATE: February 8, 2006 PROJECT END DATE: May 31, 2006

THE DATED APPROVAL ON THIS CONSENT FORM INDICATES THAT THIS PROJECT HAS BEEN REVIEWED AND APPROVED BY THE WESTERN KENTUCKY UNIVERSITY HUMAN SUBJECTS REVIEW BOARD
Dr. Phillip E. Myers, Human Protections Administrator
TELEPHONE: (270) 745-4652
Appendix D

Human Subjects Review Board Approval
In future correspondence please refer to HS06-088, February 7, 2006

Sarah Glasgow
 c/o Dr. Pitt Derryberry
 224 TPH
 Department of Psychology
 WKU

Dear Sarah:

Your revision to your research project, “National Board Certification: Examining Goal Orientations & Teacher Efficacy” was reviewed by the HSRB and it has been determined that risks to subjects are: (1) minimized and reasonable; and that (2) research procedures are consistent with a sound research design and do not expose the subjects to unnecessary risk. Reviewers determined that: (1) benefits to subjects are considered along with the importance of the topic and that outcomes are reasonable; (2) selection of subjects is equitable; and (3) the purposes of the research and the research setting is amenable to subjects’ welfare and producing desired outcomes; that indications of coercion or prejudice are absent, and that participation is clearly voluntary.

1. In addition, the IRB found that you need to orient participants as follows: (1) signed informed consent is not required from each human subject as “clicking” on the on-line submit button will imply consent; (2) Provision is made for collecting, using and storing data in a manner that protects the safety and privacy of the subjects and the confidentiality of the data. (3) Appropriate safeguards are included to protect the rights and welfare of the subjects.

This project is therefore approved at the Expedited Review Level until May 31, 2006.

2. Please note that the institution is not responsible for any actions regarding this protocol before approval. If you expand the project at a later date to use other instruments please re-apply. Copies of your request for human subjects review, your application, and this approval, are maintained in the Office of Sponsored Programs at the above address. Please report any changes to this approved protocol to this office. Also, please use the stamped preamble letter/questionnaire attached to this letter. A Continuing Review protocol will be sent to you in the future to determine the status of the project.
Sincerely,

Sean Rubino, M.P.A.
Compliance Manager
Office of Sponsored Programs
Western Kentucky University

cc: HS file number Glasgow HS06-088