

Teacher Learning through National Board Candidacy: A Conceptual Model

By Jana Hunzicker

Since 1987, nearly 82,000 teachers nationwide have become National Board certified (National Board for Professional Teaching Standards [NBPTS], 2009a). National Board certification is a voluntary process that recognizes teachers who demonstrate accomplished teaching practice as defined by the National Board for Professional Teaching Standards (NBPTS). Its purpose is “to advance the quality of teaching and learning by developing professional standards for accomplished teaching” (NBPTS, 2010a, p. 1).

The certification is offered in 25 different subject areas and developmental levels (NBPTS, 2010b). All certificates reflect the NBPTS Five Core Propositions (NBPTS, 2010c):

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- Teachers are committed to students and their learning.
- Teachers know the subjects they teach and how to teach those subjects to their students.
- Teachers are responsible for managing and monitoring student learning.
- Teachers think systematically about their practice and learn from experience.

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- Teachers are members of learning communities.

Each NBPTS certificate is customized by standards specific to the particular subject area and developmental level.

Teachers with three or more years of teaching experience, a bachelor's degree, and a valid state teaching license are eligible to pursue National Board certification (NBPTS, 2010d). To achieve the certification, a teacher must demonstrate accomplished teaching through four portfolio entries and a six-section, online assessment. Two of the portfolio entries require videotapes of actual lessons, one requires submission of assessed student work, and the fourth requires documentation of ongoing professional learning and leadership (NBPTS, 2010e). Each portfolio entry requires a 12-page written description and analysis of the artifacts submitted for review. The online assessment requires candidates to demonstrate understanding of content and pedagogy in their certificate area. Candidates have 30 minutes to respond in writing to six different exercises (NBPTS, 2010f). The entire certification process takes 200 to 400 clock hours to complete (Boyd & Reece, 2006; Hunzicker, 2006).

Upon completion, each candidate's portfolio and online assessment responses are scored by multiple NBPTS-trained assessors using a four-point rubric based on the Five Core Propositions and customized to the particular certificate (NBPTS, 2010g). However, completion does not guarantee certification. Only about half of National Board candidates are successful on their first attempt (Boyd & Reese, 2006). Fortunately, candidates can "bank" their scores for up to two years, re-submitting portfolio entries and sections of the online assessment that do not meet NBPTS standards the first time (NBPTS, 2010h).

Problem and Purpose

Most teachers who have experienced National Board candidacy describe it as the best professional development they have ever experienced—even when they do not achieve the certification (Kanter, Bergee, & Unrath, 2000; Keiffer-Barone, Mulvaney, Hillman, & Parker, 1999; Linqanti & Peterson, 2001; Rotberg, Futrell, & Holmes, 2000). In one study, 78% of teachers who achieved the certification reported learning, as evidenced by strengthened teaching practices (Center for the Future of Teaching and Learning [CFTL], 2002). One National Board Certified Teacher (NBCT) explains, "National Board Certification isn't only about showcasing what you do well, it's also about facing what you don't do well, creating a self-improvement plan and recognizing that you, the teacher, are a learner too" (Moseley & Rains, 2002, p. 47). However, as this article will explore, some studies find that teacher learning through National Board candidacy varies significantly from teacher to teacher (Burroughs, Schwartz, & Hendricks-Lee, 2000; Hunzicker, 2006; Lustick, 2002; Lustick & Sykes, 2006).

This conceptual article presents an original model of teacher learning, called learning leverage. Characterized by the interactive dynamics of rigor, reward, and

risk, learning leverage creates uncomfortable yet positive pressure that usually results in substantial teacher learning (Hunzicker, 2008). The model, which offers a graphic for understanding teacher learning through National Board candidacy useful to National Board candidates, NBPTS mentors, and others interested in teacher learning through the NBPTS certification process, helps explain why many teachers consider National Board candidacy a powerful learning experience and provides insight as to why some teachers learn much and others learn little through the experience.

With general understanding of National Board certification established, the remaining pages of the article build readers' understanding of learning leverage by summarizing the study from which the model originated, reviewing five studies that influenced the author's thinking about teacher learning during National Board candidacy, describing the model itself, and illustrating what learning leverage might "look" like through the different certification experiences of three teachers. Throughout the article, the author articulates the sequencing, research, and thought processes that supported the model's conception to strengthen its credibility (Jane-sick, 2000; Morse & Richards, 2002; Strauss & Corbin, 1998).

The Original Study

The concept of learning leverage is based on findings from a study of NBPTS influence on teacher learning during National Board candidacy (Hunzicker, 2006; Hunzicker, 2010). The study followed three teachers who pursued National Board certification during the 2004-2005 school year. All three were employed by large, suburban school districts in Illinois at the time of the study, and all three sought certification as Middle Childhood Generalists.

All three teachers (whose names have been changed) pursued National Board certification because they were ready for a new professional challenge. Anne was a fifth grade teacher who wanted to continue developing professionally without leaving her classroom. Barbara was a fourth grade teacher seeking affirmation and professional recognition of her teaching practice. Jamie was a fifth grade teacher searching for an alternative to graduate courses. At the time of the study, all three teachers had between 16 and 20 years of teaching experience and all held a minimum of a master's degree. Further, all three taught in progressive, learner-centered school environments.

Research Design

The study's methodology was ethnographic comparative case study grounded in the social constructivist belief that individuals "make sense" of their worlds by attributing meaning to their experiences (Bogdan & Biklen, 2003; Creswell, 2003; Schwandt, 2000). My role as researcher was interpretation of participants' meanings to better understand the definitions and processes by which meaning—about the

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influence of National Board candidacy on teacher learning—was created (Bogdan & Biklen, 2003; Creswell, 2003). However, to preserve the ethnographic nature of the study, description was emphasized over interpretation in the final report (Wolcott, 2002).

Data were collected from November 2004 to November 2005. During that time, each teacher was interviewed seven times and observed teaching four times. Additionally, two students and one principal were interviewed for each teacher, and photocopies of two students' school work was collected over ten days' time. QSR Nvivo qualitative research software was used to manage the data. Open coding (Strauss & Corbin, 1998) was used extensively with some coding to Danielson's Framework for Teaching (Danielson, 1996). "Thick description" (Morse & Richards, 2002) of each teacher's behaviors, recollections, thoughts, and feelings about teacher learning during National Board candidacy was recorded through verbatim interview transcripts, observation notes, and vignettes. Moreover, member checking through formal interim case summaries and informal e-mail communications was employed to strengthen the authenticity of the descriptions (Creswell, 2003; Janesick, 2000; Strauss & Corbin, 1998).

Findings

Common learning outcomes for the three teachers were increased respect for student individuality and improved capacity for intentional teaching. NBPTS influences on teacher learning were reflection and analysis of teaching practice through completion of the NBPTS portfolio and professional reading/preparation for the NBPTS online assessment. In addition, both Anne and Barbara reported increased teacher leadership opportunities after achieving the certification.

These findings are consistent with other studies of teacher learning during National Board candidacy, with one exception: Anne, Barbara, and Jamie identified professional reading/preparation for the NBPTS online assessment as key learning influences whereas candidates in other studies have reported learning primarily through completion of the NBPTS portfolio (CFTL, 2002; Chittenden & Jones, 1997; Lustick, 2002; Sato, 2000; Tracz, Sienty, Todorov, Snyder, Takashima, Pensabene, Olsen, Pauls, & Sork, 1995; Tracz, Daughtry, Henderson-Sparks, Newman, & Sienty, 2005; Vandevort, Amrein-Beardsley, & Berliner, 2004). One reason for the difference may be that traditional learning strategies such as professional reading and test preparation were more familiar to Anne, Barbara, and Jamie and therefore were more easily recognized.

Viewing the three teachers individually, Anne reported that she refined her teaching practice in numerous ways as a result of National Board candidacy, most notably through closer alignment between instructional goals, lessons/activities, and assessments. Anne was successful in achieving National Board certification. Barbara also reported making changes to her teaching practice, but overall felt professionally recognized for the things she was already doing in her classroom and

for her students. Barbara, too, achieved National Board certification. Jamie reported learning “little things” through the certification experience but was disappointed with the process overall. Jamie did not achieve National Board certification.

Jamie’s difficult experience. Of the three teachers, Jamie struggled most during National Board candidacy. Several possible reasons exist for her difficult certification experience. First, Jamie experienced limited collaborative support during her certification year. Although she engaged in an NBPTS-focused independent study, attended regional candidate support meetings, and consulted regularly with a fellow NBPTS candidate, she was the only Middle Childhood Generalist candidate in her region during the 2004-2005 school year. Numerous studies document the importance of NBPTS candidate support (Kanter et al., 2000; Keiffer-Barone et al., 1999; Linquanti & Peterson, 2001; Rotberg et al., 2000). However, some teachers working in isolation or with limited support are successful in achieving National Board certification. In one study, 31% of NBCTs reported that they completed the certification requirements with no support or guidance from their local school district, a cohort group, or individual mentors (Kanter et al., 2000).

Second, it is possible that Jamie approached her certification year in low alignment to the NBPTS standards. In his study of 10 Michigan science teachers, Lustick (2002) found that teachers approach National Board candidacy at varying levels of accomplished teaching practice, which can affect the amount of learning that occurs through the certification experience. In Jamie’s case, this possibility may have been complicated by the fact that she was unwilling to make adjustments to her teaching practice to more closely align with National Board standards because she felt that doing so would create a false representation of her teaching practice. “The portfolio should represent what I normally do, and if it meets the qualifications, wonderful. But if I’m changing what I’m doing only long enough to earn the certification, then I shouldn’t be doing it,” she stated during her certification year (Hunzicker, 2006, p. 276).

Third, Jamie may have experienced difficulty demonstrating accomplished teaching practice through the medium of written language. Studies show that to successfully complete NBPTS certification requirements, teachers must articulate their tacit knowledge (Sato, 2000; Vandevort et al., 2004) and recognize that the teaching/learning process is influenced by a multitude of extraneous variables (Chittenden & Jones, 1997; Danielson, 1996; Lustick, 2002). In addition, several studies document that when candidates have difficulty articulating their teaching practices in writing, they may not be able to successfully complete the NBPTS portfolio (Burroughs et al., 2000; Sato, 2000; Vandevort et al., 2004).

Fourth, it is possible that Jamie rejected the NBPTS discourse; the values, knowledge, language, and practices required of National Board candidates and expected of NBCTs (Burroughs et al., 2000). This possibility is supported by the fact that Jamie initially approached her certification experience with a mixture of

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curiosity and willingness to try, but once she immersed herself in the process she began questioning the NBPTS descriptions of accomplished teaching as well as the validity and reliability of the certification itself. Any of these possibilities, or some combination, may have kept Jamie from achieving National Board certification.

New research questions. As stated previously, studies of teacher learning during National Board candidacy consistently indicate that most candidates view the process as a valuable learning experience in terms of improved teaching practice (CFTL, 2002; Chittenden & Jones, 1997; Lustick, 2002; Sato, 2000; Tracz et al., 1995). In fact, only one study reports mixed findings. Although a self-evaluation by 48 National Board candidates showed a statistically significant difference in level of teaching performance from outset to completion of the NBPTS portfolio, “a few” candidates in the study reported that their teaching did not change as a result of their NBPTS certification experience (Tracz et. al, 1995).

So, Jamie’s NBPTS certification experience is atypical in that she is one of few teachers who reports learning little through National Board candidacy. However, in 2004-2005, 36% of NBPTS candidates earned the certification and 64% did not (Sandy-Hanson, personal communication, February 10, 2006). This places Jamie in the majority. Moreover, during my study of Anne, Barbara, and Jamie, I saw numerous examples of accomplished teaching practice while observing in Jamie’s classroom. Puzzled by the fact that she did not achieve National Board certification, I found myself asking two new research questions:

- Why do most teachers consider National Board candidacy such a powerful learning experience?
- Why do some teachers learn much and others learn little through the experience?

Through continued review of the literature, my conception of learning leverage took shape.

Teacher Learning during National Board Candidacy

My conception of learning leverage was influenced by five studies of teacher learning through National Board candidacy. The first study followed four NBPTS candidates over a year’s time to explain the difficulties teachers experience as they complete the certification process (Burroughs et al., 2000). While completing their NBPTS portfolios, all four teachers experienced writing anxiety in three specific ways: general writing ability, writing in the specified NBPTS genre, and representing best teaching practices within the confines of page-limited portfolio entries. The researchers explain that National Board certification is a written discourse, meaning that the values, knowledge, language, and practices required to complete the certification process are specific to the NBPTS and may or may not “cross over” to

the values, knowledge, language, and practices of teachers seeking the certification. In other words, if a candidate does not accept or adapt to the NBPTS discourse, he/she may experience difficulty completing the certification requirements and the likelihood of earning the certification may diminish.

In the end, three of the study's candidates overcame their difficulties and achieved National Board certification, but one did not. The fourth candidate explained, "I can do it, I can say it, but I may not have written it so that you see it, or you may not see it in the video" (p. 359). She felt that the NBPTS discourse should be adapted to include classroom observations by NBPTS assessors. Burroughs and colleagues conclude, "Our study suggests that teachers' movement toward a national, professional discourse might not be natural, nor an easy process" (2000, p. 369).

This study influenced my thinking about learning leverage because it indicates that teacher learning through National Board candidacy is supported when candidates interact positively (or at least somewhat positively) with the NBPTS discourse. Specifically, the NBPTS discourse/candidate interaction provides a "foundation" of sorts that can positively or negatively influence teacher learning.

Supporting the notion of NBPTS discourse/candidate interaction as a foundation for teacher learning, four additional studies document that teacher learning through National Board candidacy varies widely. Gaddis (2002) studied four NBPTS candidates during completion of their portfolios to describe their decision making processes. She found that when candidates compared their teaching practices to the National Board standards and noticed significant differences, they experienced cognitive disequilibrium. To resolve it, they either scrutinized their teaching practices further to find evidence of standards they may have overlooked the first time, or altered their teaching to include evidence of the NBPTS standards. Ultimately, they decided what to include in their portfolios based on their beliefs about what was best for students paired with what was most likely to result in NBPTS certification.

Although candidates in the study analyzed their teaching practices in light of the NBPTS standards, Gaddis found that they did not engage in critical reflection as defined by Brookfield (1995) because (a) they did not examine their underlying assumptions, values, and beliefs, (b) they did not compare their beliefs to the NBPTS standards, and (c) they did not demonstrate an awareness of how they reflected or made decisions. She suggests that the limited reflection may be due to the fact that the NBPTS does not require candidates to engage in Brookfield's conception of critical reflection. She also suggests that National Board candidates may not have time to reflect critically due to the complexity of the tasks required for portfolio completion.

It stands to reason that National Board candidates who do not reflect critically may not learn as much or as deeply as those who do. This made me wonder what factors support critical reflection (and therefore teacher learning) during the NBPTS certification process. Another study of teacher learning during National Board

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candidacy suggests that a teacher's tendency to reflect critically may be related to candidate type.

Lustick (2002) compared five teachers who had recently completed NBPTS certification requirements with five who had paid the registration fee but had not yet begun the process. He found that candidates' varying knowledge and skills at the outset of National Board candidacy influences the amount they learn through the experience as well as their likelihood of achieving the certification. Specifically, teachers already demonstrating accomplished teaching practice when they begin the certification process may not learn as much yet successfully achieve certification (Type A). Teachers who begin the certification process with lower alignment to the NBPTS standards may learn a considerable amount and achieve the certification (Type B). Other teachers may begin with low alignment and learn a great deal, but not enough to achieve the certification (Type C). Still others may begin the process with low alignment, learn little through the experience, and not achieve the certification (Type D).

In addition, Lustick found that teachers who earned National Board certification were more likely to articulate and analyze their teaching decisions, value evidence as the primary indicator of student learning, and rely on multiple sources of assessment to confirm student learning. They also were more likely to identify and take responsibility for failures and seek input from others before making decisions. Like Gaddis (2002), Lustick found little evidence of teachers extensively changing their beliefs or teaching practices as a result of National Board candidacy although "certain details of their practice may have been 'tweaked' or 'adjusted' to be more in line with the standards of accomplished teaching" (2002, p. 18).

This study suggests that candidates more closely aligned to the National Board standards at the outset of their certification experience may or may not learn more, but they are more likely to earn the certification. Closely related to candidate types, candidate learning responses may also influence teacher learning during National Board candidacy.

In a study of 120 science teachers seeking National Board certification, Lustick and Sykes (2006) identified three NBPTS candidate learning responses: dynamic learning, technical learning, and deferred learning. Dynamic learning, which occurs about 50% of the time, focuses on student learning. It involves immediate changes in teaching practice, including "meaningful change in a teacher's beliefs, understandings, and actions in the classroom" (p. 25). Dynamic learning occurs when teachers become deeply engaged in learning during National Board candidacy, internalize what they have learned, and apply new knowledge and skills beyond National Board candidacy to subsequent teaching practice.

Technical learning, which occurs about 25% of the time, focuses on earning National Board certification. It involves using new teaching strategies to complete the certification requirements without necessarily making the transfer to subsequent teaching practice. Technical learning can be genuine, such as learning to represent

accomplished teaching practice through writing; or it can be a means of “jumping through the hoops”, such as engaging students in learning activities that closely align with NBPTS standards only long enough to complete the portfolio entries. Some degree of technical learning is usually required—and appropriate—for successful completion of National Board certification. In fact, Lustick and Sykes (2006) state that some teachers may feel limited to technical learning during their NBPTS certification year because they cannot teach at an accomplished level *and* successfully complete the certification requirements. This supports Gaddis’ (2002) observation that teachers may not engage in critical reflection during National Board candidacy due to the complexity of the tasks required for NBPTS portfolio completion.

Deferred learning, which also occurs about 25% of the time, suggests the possibility of genuine changes in teaching practice sometime in the future. For some teachers, dynamic learning may be delayed due to the stress of technical learning. Deferred learning suggests that even when teacher learning occurs during National Board candidacy, it is not always recognized. Following completion of the certification requirements, when stress has diminished, some teachers may reflect on and apply the knowledge and skills acquired during National Board candidacy, demonstrating that learning did indeed occur through the process. However, there is no guarantee that deferred learning will materialize at some later time.

This study suggests that about 75% of National Board candidates, and perhaps more, experience some type of learning through National Board candidacy. However, Lustick and Sykes (2006) caution that the learning transfer from National Board candidacy to classroom teaching practice is not yet clear. A final study documenting the vast range of teaching performance among recently-certified NBCTs illustrates their point.

Pool, Ellett, Schiavone, and Carey-Lewis (2001) interviewed and observed in the classrooms of six recently-certified NBCTs at various grade levels in one large, K-12 school district. NBCT’s administrators and colleagues also were interviewed. Data were evaluated according to seven domains of teaching practice: planning for teaching and learning, managing the learning environment, teacher/learner relationships, enhancing and enabling learning, enabling thinking, classroom-based assessment of learning, and professional responsibilities.

The researchers found considerable variation in the quality of teaching and learning among the six NBCTs, with two demonstrating outstanding teaching practices, two demonstrating average teaching practices, and two demonstrating highly ineffective teaching practices. Examples of outstanding teaching practices included engaging students in higher order thinking and metacognition, demonstrating deep knowledge of content (e.g. interdisciplinary connections, rich examples and explanations, strong examples, etc.), and substantive self-reflection about teaching practices. Examples of highly ineffective teaching practices included severe organizational and classroom management problems, inaccurate, untimely, and/or vague content information, and difficulty giving specific examples of self-reflection about teaching practices.

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Moreover, in three of the six cases, administrators' and colleagues' perceptions of NBCTs' teaching effectiveness were inconsistent with data collected through classroom observations and NBCT interviews. In particular, the two least effective NBCTs were viewed by their peers as outstanding, as was one of the average teachers. Pool and colleagues note, "These findings suggest that halo effects within schools can result from the NBPTS certification process, and may have influenced other educators' perceptions of a particular teacher" (2001, p. 41). This finding implies that the label of NBCT may positively skew others' perceptions of NBCTs' teaching effectiveness about 50% of the time. Additionally, the fact that four of the six NBCTs in the study demonstrated teaching practices that were average to highly ineffective shows that some teachers learn very little through National Board candidacy.

These five studies, paired with the NBPTS certification experiences of the three teachers in my original study, influenced my conception of learning leverage as it occurs through National Board candidacy. In the final section of this article, I will describe the characteristics of learning leverage and offer three different illustrations of what it might "look" like based on the certification experiences of Anne, Barbara, and Jamie.

Learning Leverage

As explained previously, learning leverage is uncomfortable yet positive pressure experienced by National Board candidates that usually results in substantial teacher learning. Learning leverage is characterized by the interactive dynamics of rigor, reward, and risk (Hunzicker, 2008).

Rigor, Reward, and Risk

The first dynamic, *rigor*, requires National Board candidates to actively pursue mastery of the NBPTS standards. To achieve National Board certification, teachers must scrutinize their professional practices, master the use of technology, demonstrate knowledge of content and pedagogy, provide evidence of student learning, participate in educational initiatives and professional organizations, and articulate accomplished teaching practices through written language. With the exception of Take One!, which allows teachers to complete one NBPTS portfolio entry to "try out" National Board certification (NBPTS, 2009b), most candidates complete the certification requirements within an intense, 12-month time period.

Research supports the dynamic of rigor as a catalyst for teacher learning during National Board candidacy. Several studies reveal that most teachers describe their NBPTS certification experience as very demanding (Burroughs et al., 2000; Linqanti & Peterson, 2001; Rotberg et al., 2000). In a study of 519 California NBCTs, 92% described their certification experience as challenging (CFTL, 2002). In particular, candidates express difficulties with analytical writing, preparation of portfolios and videotapes, finding examples of successful portfolio submissions,

and locating specific materials to guide preparation for the written assessment (Rotberg et al., 2000). One NBCT reflected, “This is one of the most grueling, yet rewarding experiences I have ever undertaken” (Tracz, et al., 1995, p. 9).

To increase their chances of earning the certification, candidates often alter their teaching practices to align with the NBPTS standards as they work to complete the certification requirements (Gaddis, 2002; Lustick, 2002; Lustick & Sykes, 2006). It is through this ongoing process of professional reflection, analysis, and initiative over several months’ time that National Board candidates report learning the most (CFTL, 2002; Chittenden & Jones, 1997; Lustick, 2002; Sato, 2000; Tracz, et al., 1995; Tracz et al., 2005; Vandevort et al., 2004).

Reward, the second dynamic of learning leverage, influences the motivation and incentives surrounding National Board certification. Because the certification is difficult to achieve, becoming a NBCT is a significant accomplishment. Indeed, National Board certification is “the teaching profession’s highest credential” (Council for Exceptional Children [CEC], 2009, p. 3). In addition to increased status, respect, and professional authority (Hunzicker, 2006), teachers seek National Board certification for personal fulfillment, salary increases, state stipends, opportunities for teacher leadership, and expanded career options (CFTL, 2002; NBPTS, 2009c; Vandevort et al., 2004).

In one study of 35 Arizona NBCTs, the top three reasons teachers pursued National Board certification were professional/personal challenge (37.5%), professional growth (31.3%), and validation of teaching practice (25%) (Vandevort et al., 2004) demonstrating that intrinsic rewards are powerful motivators for many National Board candidates. In addition, many teachers receive some form of financial incentive or support before, during, and/or following National Board candidacy (Lustick & Sykes, 2006; Vandevort et al., 2004) which provides further reward for their efforts. One study of 251,567 North Carolina teachers found that NBCTs were 50% more likely to teach in school districts that offered at least one type of financial incentive (Goldhaber, Perry, & Anthony, 2003). Indeed, policymakers are aware that monetary rewards can encourage teachers to pursue the certification. During the 2009-2010 school year, 33 of 51 states (including Washington D.C.) offered an annual financial bonus of \$1,000 to \$10,000 to teachers who have achieved National Board certification (NBPTS, 2009d).

The third dynamic, *risk*, pushes National Board candidates out of their professional comfort zones. Because only about half of NBPTS candidates earn the certification on their first attempt (Boyd & Reese, 2006), pursuing National Board certification is a considerable professional risk. After months of intense professional reflection, analysis, and initiative in an effort to demonstrate mastery of the NBPTS standards, not achieving National Board certification is a huge blow to experienced, otherwise successful teachers. Due to this professional risk, some teachers never attempt the NBPTS certification process, and many who do feel anxious throughout the experience.

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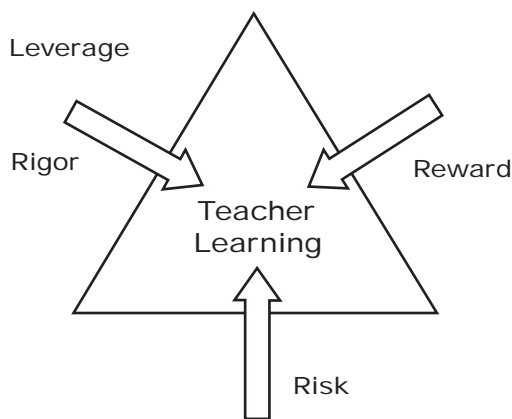
Additionally, the pursuit of National Board certification is both public and confrontational. Unlike earning a master's degree, which can be accomplished comfortably, quietly, and even intermittently, National Board candidates must confront and remediate their professional weaknesses, complete the certification requirements within a narrow timeframe, and receive their pass-or-fail certification results on the same well-publicized date nationwide. Even the strongest candidates must rely on personal and professional support networks, NBCT mentors, and large blocks of uninterrupted work time to endure their NBPTS certification year (Hunzicker, 2006).

All teachers experience risk during National Board candidacy, but the intensity depends on a combination of aptitude and self efficacy. For example, a teacher in close alignment to the NBPTS standards at the outset of National Board candidacy (Lustick, 2002) is likely to experience less risk than a teacher with more room for professional growth. Similarly, a teacher who believes she can successfully adapt to the NBPTS discourse (Burroughs et al., 2000) will experience less risk than a candidate who doubts she can adapt.

Several studies confirm that the NBPTS certification experience can be uncomfortable (Burroughs et al., 2000; CFTL, 2002; Linqanti & Peterson, 2001; Rotberg et al., 2000). This discomfort is essential because it fuels the motivation that leads to teacher learning (Chittenden & Jones, 1997; Gaddis, 2002; Keiffer-Barone, et al., 1999). However, for some teachers, the discomfort of risk becomes overwhelming, which may prevent them from achieving the certification (Burroughs et al., 2000; Hunzicker, 2006).

Together, the dynamics of rigor, reward, and risk create uncomfortable yet positive pressure that usually results in substantial teacher learning (Hunzicker, 2008). To visualize learning leverage, picture a triangle. The triangle itself represents a candidate's learning experience; its three sides represent the pressures of rigor, reward, and risk (see Figure 2).

Figure 1
Learning Leverage



Learning Leverage is Interactive

Rigor, reward, and risk work together to create learning leverage. However, teachers rarely experience the three dynamics in equal amounts. Rather, the triangular model of learning leverage varies from teacher to teacher (Hunzicker, 2008). This is because candidates interact with the NBPTS discourse in different ways (Burroughs et al., 2000). The interactive nature of learning leverage helps explain why some teachers learn much and others learn little through National Board candidacy.

For example, candidates who respond strongly to the dynamic of rigor are most interested in learning. They are invigorated by challenge and determined to meet or exceed the high standards of the NBPTS. Candidates motivated by the dynamic of reward are most interested in the prestige of National Board certification. Confident in their ability to demonstrate accomplished teaching, they seek professional affirmation or recognition. Teachers most concerned with the dynamic of risk are motivated by fear. Worried that they may not successfully complete the NBPTS certification requirements, they may become passive with doubt or overwhelmed with skepticism. Conversely, teachers affected by risk may become fueled with determination, even if only to avoid the frustration and embarrassment of not achieving the certification.

What Learning Leverage Might “Look” Like

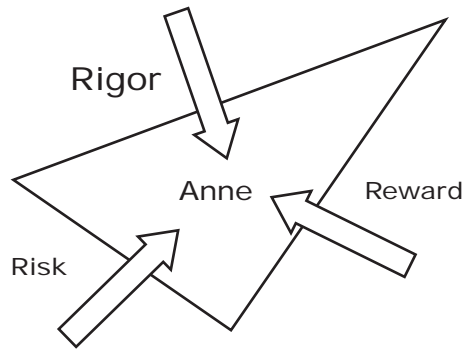
Because candidates interact differently with the NBPTS discourse, individual responses to rigor, reward, and risk customize the experience of National Board candidacy, which influences candidates’ learning as well as their likelihood of earning the certification (Hunzicker, 2008). Based on the NBPTS certification experiences of Anne, Barbara, and Jamie, the following examples illustrate three different ways learning leverage might display itself during National Board candidacy.

Anne. Determined to achieve NBPTS certification, Anne persisted in re-adjusting her teaching practice throughout her certification experience to more closely align with the standards and expectations of the National Board (see Figure 2). The longest side of Anne’s leverage triangle was probably rigor because this dynamic most influenced her during National Board candidacy.

Reward was second most influential for Anne. Valuing the prestige of National Board certification, she looked forward to holding the NBCT title as she worked and learned through the certification process. Although her awareness of professional risk was present, it was the least influential of the three dynamics that created her experience of learning leverage during National Board candidacy. For Anne, the dynamic of risk motivated her to sustain her efforts, even during periods of self-doubt.

Classroom observations and interviews throughout Anne’s certification year demonstrated her complete acceptance of the NBPTS discourse. In terms of Lustick’s (2002) candidate types, she was most likely a Type B candidate. Although she approached the certification process with some alignment to the NBPTS standards,

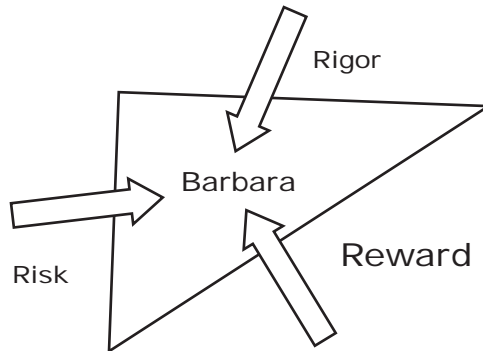
Figure 2
Anne's Learning Leverage



she had to work persistently to meet the high standards of the National Board, and she learned a great deal as a result. In terms of Lustick and Sykes' (2006) learning responses, Anne most likely experienced dynamic learning.

Barbara. Barbara exhibited a different learning leverage triangle (see Figure 3). Above all else, she sought affirmation of her teaching practices through NBPTS certification. Although she was interested in learning through the experience, it was holding the NBCT title that motivated her most. With the dynamic of reward creating the longest side of her leverage triangle, and rigor close behind, the dynamic of risk played the smallest role in Barbara's certification experience. Similar to Anne, the idea of not achieving the certification motivated Barbara to do everything in her

Figure 3
Barbara's Learning Leverage



power to successfully complete the certification requirements. However, because of her confidence in her teaching ability, her perception of risk was less pronounced than Anne's.

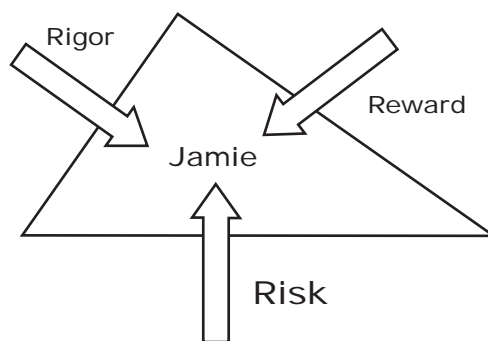
Like Anne, Barbara fully accepted the NBPTS discourse. In terms of Lustick's (2002) candidate types, she was most likely a Type A candidate. She approached the certification in close alignment to the NBPTS standards, made minor adjustments to her teaching practice to align even more closely, and achieved the certification. According to Lustick and Sykes' (2006) learning responses, Barbara probably experienced a combination of dynamic and technical learning.

Jamie. As might be expected, Jamie's leverage triangle was shaped differently than either Anne's or Barbara's (see Figure 4). Jamie welcomed the reward of becoming a NBCT and initially expressed willingness to learn through the experience. But over time, doubt and skepticism overshadowed the constructive aspects of her certification experience. Jamie's growing distrust and eventual rejection of the NBPTS discourse prevented the positive pressure of learning leverage from prevailing. Unfortunately, risk dominated her certification experience, and as a result claimed the longest side of her leverage triangle. Reward was the second most influential dynamic, with rigor the least dominant of the three.

In terms of Lustick's (2002) candidate types, Jamie was most likely a Type D candidate. She was probably not in close alignment with the NBPTS standards at the outset of her certification experience and she was not successful in achieving the certification in her first year. Because Jamie reports not learning much through National Board candidacy, she probably experienced a great deal of deferred learning (Lustick & Sykes, 2006).

It is important to recall that deferred learning does not necessarily mean non-learning. Rather, it can be learning that lies dormant until some later time (Lustick

Figure 4
Jamie's Learning Leverage



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& Sykes, 2006). This proved true in Jamie's case. She chose to continue her pursuit of National Board certification into a second year, during which time she accomplished her goal of becoming National Board certified. Most likely, in her second year of candidacy, Jamie was a Type B candidate who experienced a great deal of dynamic learning.

Conclusion

This conceptual article presented an original model of teacher learning, called learning leverage. Characterized by the interactive dynamics of rigor, reward, and risk, learning leverage creates uncomfortable yet positive pressure that usually results in substantial teacher learning (Hunzicker, 2008). The model helps explain why many teachers consider National Board candidacy a powerful learning experience and provides insight as to why some teachers learn much and others learn little through the experience.

Following a brief overview of National Board certification, the article summarized the study from which the model originated, reviewed five studies that influenced the author's thinking about teacher learning during National Board candidacy, described the model itself, and illustrated what learning leverage might "look" like through the different certification experiences of three teachers. Throughout the article, the author articulated the sequencing, research, and thought processes that supported the model's conception to strengthen its credibility (Janesick, 2000; Morse & Richards, 2002; Strauss & Corbin, 1998).

Although consistent with current research on teacher learning during National Board candidacy, the learning leverage model has limitations. First, it was conceptualized based on only a handful of studies about teacher learning during National Board candidacy, paired with the NBPTS certification experiences of only three teachers. Second, because the model was conceptualized following completion of the original study, the research participants (Anne, Barbara, and Jamie) were not asked to provide feedback about the model itself or the learning leverage illustrations based on their NBPTS certification experiences. Clearly, empirical research is needed to explore and refine the model further. Even so, the learning leverage model offers an original graphic for understanding teacher learning through National Board candidacy that may be useful to National Board candidates, NBPTS mentors, and others interested in teacher learning through the NBPTS certification process.

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