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The Teacher Belief Q-Sort: A measure of teachers' priorities in relation to disciplinary practices, teaching practices, and beliefs about children

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Abstract

The present study advances a new method for assessing teacher beliefs and priorities. This paper describes the development and psychometric properties of the *Teacher Belief Q-Sort* (TBQ), an assessment technique that examines teachers' priorities and beliefs about discipline practices, classroom practices, and beliefs about children (see www.socialdevelopmentlab.org). Further, this paper describes the usefulness of this tool by examining differences in beliefs and priorities among four groups of teachers (experienced teachers trained in the *Responsive Classroom* (*RC*) Approach, experienced teachers with no such training, pre-service teachers planning on teaching elementary school, and pre-service teachers planning on teaching middle/high school) with the goal of demonstrating the way priorities are sensitive to specialized training and teaching experience. The study establishes the TBQ as a reliable, valid, and useful method. Findings showed that *RC* teachers hold discipline and teaching practice priorities consistent with training in the *RC* Approach and that pre-service teachers placed greater priority on spontaneity and collaboration and held more negative views about children's likeability and motivation than in-service teachers. Findings are discussed in

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terms of the ways in which teacher priorities are sensitive to specialized training and teaching experience and offer an early indicator of integrity of implementation.

Keywords: Teacher beliefs; Q-Sort method; Disciplinary beliefs; Classroom practices; Teaching practices; Beliefs about students

The Teacher Belief Q-Sort: a measure of teachers' priorities in relation to disciplinary practices, teaching practices, and beliefs about children

The present climate in education science presses for increased teacher accountability and use of scientifically based practices in schools, as described in No Child Left Behind (2001) legislation. As a result of this focus, there has been marked growth in research testing the efficacy and effectiveness of interventions in school environments. Researchers have increasingly focused on identifying effective interventions, understanding mechanisms by which they operate, and ascertaining for whom they are most beneficial. Such research rests on an imperfect foundation. Many interventions that are currently under scrutiny are implemented by teachers, and the contribution of the intervention is only measurable if, indeed, the teachers are implementing the practices effectively. Proper use of a given intervention, or *integrity of implementation*, has become an important issue in prevention science in relation to both strengthening the conclusions about the effectiveness of interventions as well as increasing the likelihood that replications of the intervention will reproduce the original results in another sample of children (Domitrovich & Greenberg, 2000; Flay et al., 2005).

Measures of integrity of implementation are as varied as the interventions under investigation; most of these intervention-specific tools examine the practices that teachers use in their classroom settings either by observation or self-report (Abbott et al., 1998; Battistich, Schaps, & Wilson, 2004; Rimm-Kaufman & Sawyer, 2004). However, work that looks at teacher change emphasizes the importance of considering the gradual process of change and the way in which teachers' personal philosophies and priorities shift as a result of specific training experiences (Evans, 1996). In relation to measuring this type of shift in priorities and beliefs, there are few tools available. Careful and systematic assessment of the priorities that portend changes in classroom practices have the potential to lead to the identification of professional development and training mechanisms (either in the education of pre-service teachers or training of in-service teachers) likely to improve the learning experience for children in schools.

The present study introduces a measure designed to assess teachers' priorities and beliefs. Specifically, this measure quantifies priorities in beliefs about classroom management and discipline, beliefs about teaching practices, and beliefs about children. This paper describes work related to two goals. First, this paper describes the development and psychometric properties of the *Teacher Belief Q-Sort* (TBQ). Second, this paper examines the degree to which this measure is sensitive to training experiences (e.g., training in the *Responsive Classroom*® [*RC*] Approach versus no training in this intervention) and can distinguish between groups with different levels of teaching

experience (pre-service versus in-service teachers). The ability to differentiate between groups on constructs of importance represents a critical first step for understanding the parameters of a measure that has potential to signify integrity of implementation or sensitivity to training.

Conceptualization of teacher beliefs

Teachers' beliefs have been viewed as a window on teachers' decision-making, practices, and in some cases, effectiveness (Nespor, 1987; Pajares, 1992). Seven elements constitute our definition of these beliefs, informed the development of the TBQ, and influenced the rationale for examining differences in beliefs as a measure of their sensitivity to training and experience. Teachers' beliefs: (1) are based on judgment, evaluation, and values and do not require evidence to back them up, (2) guide their thinking, meaning-making, decision-making, and behavior in the classroom, (3) may be unconscious such that the holder of beliefs is unaware of the ways in which they inform behavior, (4) cross between their personal and professional lives, reflecting both personal and cultural sources of knowledge, (5) become more personalized and richer as classroom experience grows, (6) may impede efforts to change classroom practice, and (7) are value-laden and can guide thinking and action (Borg, 2001; Evans, 1996; Kagan, 1992; Lortie, 2002; Nespor, 1987; Pajares, 1992; Richardson, 1996; Romanowski, 1998).

The present conceptualization has its limitations. Just because teachers hold a set of beliefs does not mean they translate into concrete practices in the classroom (Clark & Peterson, 1986), rather they are a framework that organize meaning and inform practices. In fact, there are studies present in the literature that present the limitations of measuring teacher beliefs in that they show little relation to practices actually used in the classroom (e.g., Simmons et al., 1999; Wilcox-Herzog, 2003). In response, two points require explanation. First, this work does not try to link teachers' belief to classroom practice explicitly, but rather, suggests that teachers' beliefs are measurable and differ among groups of teacher who vary in relation to training and teaching experience. Second, this work uses a method, the TBQ, requiring that teachers rank beliefs in relation to other beliefs, not state agreement or disagreement with each belief. As such, this paper examines teachers' priorities among various beliefs, not simply their beliefs. It is quite possible that future work may find that information about teacher priorities among their beliefs complements data on classroom practice in predicting children's growth in the classroom. The present paper offers a tool to be used toward this ultimate objective.

Important to the focus of this paper, teachers' priorities are the lens through which teachers' perceive practice decisions. Our starting premise is that each teacher–knowingly or unknowingly–ascribes to a set of principles or priorities that are loosely connected to their classroom practices. These priorities are multi-determined and stem from sociological influences including politics, values and ideologies, as well as psychological and personal experiences of teachers (Richardson, 2003). As a teacher receives training in an approach (such as the *RC* Approach in the present study) and/or has new experiences (such as the transition to the workforce, teacher education) that *explicitly* address or challenge these beliefs and principles, their existing framework shifts (e.g., Kagan, 1992; Joram & Gabriele, 1998). This shift is likely to forecast the emergence of new practices in the

classroom. Thus, examining differences in teachers' priorities among teachers varying in their classroom experience and training offers a position from which to understand teacher change (Evans, 1996; Richardson, 1994).

Methods for measurement of teachers' beliefs and priorities

Teachers' beliefs and priorities are difficult to measure (Calderhead, 1996). Typical measures offer a list of beliefs about teaching and teachers show agreement or disagreement with these beliefs by rating them on a Likert Scale (e.g., Charlesworth, Hart, Burts, & Thomasson, 1993; Witcher & Travers, 1999). The TBQ, in contrast, offers a set of statements as a starting point for prioritization. The study participants sort each statement into a category based on the degree to which these statements are more or less representative of their views. For example, the statements include "Peer interactions are best left to recess and snack time" or "A classroom runs smoothly when there are clear expectations for behavior." Teachers place each of these statements into one of five categories ranging from less to more characteristic of their approach and beliefs. The TBQ poses a constraint; only four statements can be placed into each of the five categories, requiring that teachers rank some statements over others. The instructions make it clear to teachers that placing a statement in the lowest category does not negate its importance, but rather, places it lower in priority compared to the other statements.

The Q-Sort method, borrowed from the fields of personality and developmental psychology (see Block, 1961; Stephenson, 1935), offers two major advantages over traditional methods. First, the Q-Sort method creates "forced choice" for teachers, creating the need to prioritize some practices over others, reducing, but not eliminating, the likelihood of reporting bias. This is especially important for measuring teachers' priorities. A limitation of the questionnaire method is that teachers prefer to view themselves in a positive light. This becomes less of a barrier in interpretation of the TBQ because teachers are ranking beliefs relative to one another as opposed to agreeing or disagreeing with each belief and because teachers are not necessarily aware of the constructs of primary importance (Stephenson, 1980).

Second, the Q-Sort method offers a person-oriented as well as a variable-oriented view; the data can be analyzed using simple, commonly used statistical techniques, so that people, not traits, become the experimental units (Brown, 1977; McKeown & Thomas, 1988). This is an important feature in understanding teachers' sensitivity to training. For example, alignment in priorities with a teacher trainer can be examined using the Q-method, the person-oriented method: teacher trainers that exemplify the priorities associated with a particular intervention complete a TBQ, the trainees can complete the same TBQ, and correlational methods can be used to examine the relation between the trainer and trainee, indicating congruence between the trainer and trainee's priorities. Priorities can be characterized using the R-method, the variable-oriented method: data can be factor analyzed to identify constructs of importance and teachers in different groups can be compared on these constructs.

As with other Q-Sort measures such as those used in developmental psychology, political theory, and personality psychology (Brown, 1997), the TBQ was developed using a series of steps involving the collection of statements (e.g., opinions, shared

communications about the topic) from written documents, the reduction of this collection of statements into a manageable sized set, the delineation of the conditions of instruction (specifying the way in which the above statements need to be ordered), and the establishment of validity and reliability. These steps, as fully described in the Method section, result in a measure that allows for description of teacher beliefs and priorities in relation to the three constructs of interest.

Dimensions of beliefs

Three dimensions emerged (through inductive methods) as primary constructs to conceptualize teachers' approach to instruction and their actions in the classroom. These include teachers' approach to discipline and behavior management, approach to teaching practices, and beliefs about children. Each dimension has been the focus of existing research on beliefs and practices, especially in relation to teachers' training and experience, and each appears to vary among teaching professionals.

Priorities about discipline and behavior management

Teachers hold different priorities in relation to classroom management, and these priorities reflect teachers' experience and training. For example, behavior-modification approaches to classroom management prioritize behavioral learning, emphasize the contingencies that exist in the classroom and implicate reinforcement strategies, shaping, and response costs as key techniques. (Justen & Howerton, 1993; Walker, Colvin, & Ramsey, 1995). Relational approaches to schooling hold a different set of priorities, often viewing the management of discipline issues within the larger context of fostering caring relationships among children and between teachers and children (Baker, Bridger, Terry, & Winsor, 1997; Battistich, Solomon, Kim, Watson, & Schaps, 1995; Cohen, 2001).

Priorities about teaching practices

Teachers have limited time in their classrooms, and thus, prioritize some practices over others. Teaching practices that support instruction (e.g., sustaining and confirming feedback, encouragement of student thinking and active discussion, and use of metacognitive strategies) have been associated with improved achievement and transfer of learning to new contexts (Meyer, Wardrop, Hastings, & Linn, 1993; Palinscar & Brown, 1984; Scardamalia, Bereiter, & Steinbach, 1984; Solomon, Battistich, & Hom, 1996). Practices that offer social support for learning (e.g., reflecting on social interactions in the classroom, establishing a sense of community in the classroom) have been linked to children's perception of "belonging", improved social competence and decreased delinquency, and even improved academic performance (Battistich & Hom, 1997; Battistich, Solmon, Watson, Solomon, & Schaps, 1989; Hawkins et al., 1992; Rimm-Kaufman, Fan, Chiu, & You, submitted for publication).

Priorities in beliefs about children

Teachers' beliefs about children can illuminate understanding of their interactions with them in the classroom (Nespor, 1987. Two common dimensions include: interpersonal beliefs about children (e.g., belief in children's desire to learn and likeability), and how

children learn (e.g., belief in children's need for active involvement, the transmission approach to learning, and need for choice within the classroom). In relation to teachers' interpersonal beliefs about children, teachers who are "deviance-insulative" tend to believe that all pupils are essentially good and willing to do school work and teachers who are "deviance-provocative" tend to be distrustful of students, believing that most students avoid work and are rebellious (Hargreaves, 1975). In relation to the beliefs that teachers' hold about the way that children learn, one continuum describes a dimension ranging from a "transmission" approach (e.g., it is a teachers' role to transmit information) as compared to an "absorptionist" approach (e.g., it is a teachers' role to facilitate children's development and construction of new ideas themselves) (Prawat, 1992). Another continuum describes a range of emphasis between "teacher-directed" and "child-directed" methods with implications for whether teachers perceive students' role as more active versus passive but participatory in relation to learning (Minor, Onwuegbuzie, Witcher, & James, 2002).

Factors likely to influence teachers' priorities

Priorities do not exist in isolation from their context. Rather, teachers' priorities reflect exposure to training, school climate, or a school's administrative focus (Evans, 1996; Fullan, 2001; Pajares, 1992; Rosenholtz, 1989). We posit that teachers trained in the *Responsive Classroom* Approach will have priorities that reflect this new training, pre-service teachers will prioritize beliefs reflecting their prior experience in school and current experience in college, and that in-service teachers (not trained in *RC*) will describe priorities consistent with larger school goals and their day-to-day experience with children. Thus, we expect differences among the four groups of teachers.

Experience with the RC Approach

The *RC* Approach is designed to integrate social and academic learning for children. As a Health Prevention/Positive Youth Development Program, the approach targets an entire school population with the goal of developing strengths in order to reduce the likelihood of later, high risk behaviors (Weisz, Sandler, Durlak, & Anton, 2005). Specifically, the RC Approach recommends a set of practices (e.g., regular Morning Meetings to build community, emphasis on proactive discipline strategies, focus on responding to the process of learning, not only outcomes) that help teachers create a classroom environment that fosters children's social skills, matches children's development, focuses on the development of intrinsic motivation, and, in turn, establishes a classroom climate that is conducive to academic learning (NEFC, 2003a). *RC* principles guide these practices, for example, (1) how children learn is as important as what they learn, (2) for teachers, knowing the children individually, culturally, and developmentally is as important as knowing the content, and (3) children need to learn and practice a set of social skills (including cooperation, assertion, responsibility, empathy, and self-control) to ensure their academic and social success.

How does the *RC* Approach relate to teacher beliefs and priorities? In one study, Rimm-Kaufman and Sawyer (2004) report a positive association between *RC* implementation and disciplinary self-efficacy as well as positive attitudes toward teaching. This same paper showed a correspondence between teachers' priorities in classroom discipline and

behavior management and classroom practice (as measured by the TBQ) and teachers' practices as assessed using a custom-designed questionnaire to assess integrity of implementation of the *RC* Approach. Research on other interventions with a relational orientation suggest that teachers show progressive changes in their beliefs that accompany increased exposure to and experience with the intervention (Adalbjarnardottir & Selman, 1997).

We expect that *RC* teachers, reflecting the focus of their new training as well as their day-to-day school experiences, would hold beliefs more similar to their *RC* trainers, that is, characterized by an emphasis on proactive approaches to discipline, the teaching of self-regulatory skills, opportunities for student choice, use of reflection, and a strong belief in the need for children to feel a sense of belonging in their classroom. Further, we expect these shifts in belief would be evident even in the first year of *RC* implementation.

Teacher education and experience

Pre-service teachers experience shifts as they progress through their teacher education program and make the transition into the teaching workforce, leading to our hypothesis that pre-service and in-service teachers will hold different beliefs and priorities about discipline and behavior, effective teaching practices, and children.

With regard to discipline and behavior management, pre-service teachers appear to be more nurturing in the beginning of their education, but more concerned with being an authority as they approach their transition into the workforce (Ambrose, 2001; Goodman, 1988; Hollingsworth, 1989; Richardson, 1996). As an example, Morine-Dershimer (1988) used a stimulated recall method, a method in which pre-service teachers observed videotapes of their own teaching and restated what it was they were thinking at key decision points, and found that student teachers placed a high degree of emphasis on the nurturance of students. Likewise, File and Gullo (2002) examined changes in teachers' beliefs about classroom management for students from the beginning to the end of the year for a teacher education program. As student teachers progressed through the program, they were more likely to advocate the use of classroom management strategies such as time-out and external reward systems, systems that resembled the strategies used in schools where they were student teaching. Thus, priorities appear to shift as these pre-service teachers acquire new knowledge in their teacher education programs.

Pre-service teachers have been shown to be more teacher-centered (viewing teaching as the transmission of knowledge), rather than child-centered (viewing teaching as facilitation of children's active learning) in their approach to instruction (Doyle, 1997; Holt-Reynolds, 1992). For example, beginning pre-service teachers appear to prefer direct instruction to more learner-centered approaches (Holt-Reynolds, 1992; Torff, 2003). Existing work on pre-service teachers showed that pre-service teachers early in their program viewed *teaching* as an activity that consisted of telling information to students and *learning* as students being engaged in acts of listening to the teacher and being able to repeat the information back (Feiman-Nemser & Remillard, 1995). By way of interpretation, when teachers serve as facilitators in student-centered learning, they give up some control in the classroom and often have to tolerate a classroom environment with more activity and noise, an experience that may be particularly hard for beginning teachers (Grant, 2003).

The pre-service teachers included in the present sample were enrolled in their first or second teacher education course and data were collected toward the beginning of the school year. As such, we expect that pre-service teacher priorities will appear more nurturant, place less priority on explicit classroom management techniques, and prefer more teacher-directed approaches to learning.

Research questions and hypotheses

The primary goal of the present study was to advance a new method for assessing teacher beliefs and priorities and describe its construct validity. This paper describes the development and psychometric properties of the *Teacher Belief Q-Sort* (TBQ), an assessment technique that examines teachers' priorities about discipline practices, classroom practices, and beliefs about children. The secondary goal is to describe the usefulness of this tool by examining differences in beliefs and priorities among four groups of teachers with the goal of demonstrating the way priorities are sensitive to specialized training and teaching experience. Specifically, we compare teachers who have had training in the *Responsive Classroom* Approach, a Positive Youth Development intervention; experienced teachers who have not been trained in this intervention; pre-service teachers planning to teach elementary school, and pre-service teachers planning to teach middle and high school children. In relation to our second goal, we hypothesize: (1) the TBQ will demonstrate a distinct set of priorities for *RC* teachers, specifically, *RC* teachers will prioritize proactive approaches, nurturance, and student choice more than the other groups, and (2) the TBQ will reflect teachers' priorities in relation to their experience as teachers in classrooms (e.g., pre-service teachers will hold more simplistic views of classrooms and learning than in-service teachers).

Method

Participants

The sample was comprised of 30 in-service teachers at schools implementing the *RC* Approach, 32 in-service teachers at comparison schools (schools not implementing the *RC* Approach), 61 pre-service elementary school teachers, and 74 pre-service middle or high school teachers.

One hundred forty in-service teachers (grades kindergarten through three) were recruited to participate in the *Social and Academic Learning Study* (SALS), a quasi-experimental study of the efficacy of the *Responsive Classroom* Approach. Almost half (44.3%) of the teachers enrolled resulting in a sample of 61 teachers in regular education classrooms. (The response rate was 42.9% at *RC* schools and 45.7% at comparison schools.) Some of the teachers completed the Q-Sort task inaccurately, 12 for Q-Sort 1, none for Q-Sort 2, and 1 for Q-Sort 3. The large number of inaccuracies in the first Q-Sort was because of ambiguity in the directions that have since been resolved. Specifically, these 12 teachers completed the Q-Sort 1 by placing more than four statements in each category. Although some studies using Q-Sort methods include these data regardless of

such mistakes, we chose to be conservative and excluded these data. In the time since this study was conducted, the ambiguities in directions have been resolved and future studies (requiring completion of the Q-Sort when teachers have been sent these measures by mail) show a correct completion rate of 95–98%.

Pre-service teachers were invited to participate based on their enrollment in a required *Learning and Development* class. Pre-service teachers were given the choice of participating in this study or completing an additional course project (a short paper reviewing three empirical articles). Almost 91% of the 155 pre-service teachers enrolled, viewing the completion of these tasks as easier than writing the paper, resulting in a sample of 141; 102 were third year students in a 5-year teacher education program and 39 were first year students in a 2-year masters of teaching program. Completion and recording errors occurred for 6 pre-service teachers, resulting in a final sample of 135 (61 elementary school, 74 middle or high school (MS/HS); 101 were in the 5-year program and 34 were enrolled in the 2-year masters of teaching program.)

Table 1 describes the demographic characteristics, teaching experience, and *RC* training of the sample. As shown, the pre-service teachers, on average, had less than 1 year of teaching experience. The majority of pre-service teachers (88.24%) had no teaching experience (including classroom teaching, tutoring, religious school instruction, etc.) prior to entry into the program. The amount of *RC* training refers to the number of week-long sessions attended by teachers. (Note that several teachers at comparison schools had received *RC* training; each of these teachers received minimal training two or more years

Table 1
Demographic characteristics, teaching experience and *RC* training of the sample

Characteristic	In-service				Pre-service			
	RC ($n=30$)		Comparison ($n=32$)		Elementary ($n=61$)		MS/HS ($n=74$)	
	No.	Mean S.D.	No.	Mean S.D.	No.	Mean S.D.	No.	Mean S.D.
Age		38.70 (11.74)		41.59 (11.74)		20.62 (3.07)		21.71 (1.67)
Gender								
Male	0		4		4		15	
Female	30		28		57		59	
Ethnicity								
European American	27		28		46		61	
African American	2		1		5		4	
Hispanic	0		1		0		2	
Asian American	1		2		7		3	
Other	0		0		3		4	
Teacher education								
Bachelor's only	7		3		10		24	
Masters and Bachelors	23		29		0		0	
Years of teaching experience		9.07 (8.94)		9.84 (8.40)		.07 (.36)		.16 (.64)
Training in RC								
Amount (weeks) of RC training		1.60 (.86)		0.34 (.70)		0		0

prior to the start of the present study, and *RC* implementation was not supported at the school-wide level.)

Procedures

The in-service teachers were recruited by mail initially and in person to further encourage participation. Teachers received the Q-Sort packets by mail in the fall of the first year of the SALS study. A demographic and training questionnaire plus four additional questionnaires not relevant to the present study were also included. All participating teachers read the instructions and completed the Q-Sort exercises independently between November and June of the school year and returned the completed TBQ by mail. In-service teachers received a stipend for participating.

Assessment of pre-service teachers took place within the first 7 weeks of the *Learning and Development* class, during the fall of the students' first year of course work. Pre-service teachers were invited to participate by an author who was not the course instructor. The pre-service teachers signed up for a time to complete the exercises in groups of twenty students facilitated by an assistant; the pre-service teachers read the instructions, completed their recording independently, and received course credit for completion.

Implementation of the RC Approach

Three schools were selected by the Northeast Foundation for Children, the founders of the RC Approach, for the 3- to 5-year process of full school-wide implementation. One-third of teachers received training and all teachers at *RC* schools were exposed to school-wide implementation, as described below. All training was conducted by certified *RC* consulting teachers. No training occurred during the study year for teachers at comparison schools.

The *RC* 1 training occurred during a week during the summer months and included an introduction to the philosophy and basic practices of the *RC* Approach (see NEFC, 1997, 2003a for a full description of the *RC* philosophy and practices). Teachers observed, practiced, and/or discussed key components of the *RC* Approach (i.e., Morning Meeting, Rules and Logical Consequences, Academic Choice, Guided Discovery, Understanding Children's Development, Communicating with Families). This learning was reinforced with consultation opportunities where the trainers came into teachers' classrooms to observe and consult.

The *RC* 2 training occurred on 5 individual days across the school year. This second training reinforced the *RC* 1 training and provided more depth about the philosophy and practices of the *RC* Approach. *RC* 2 focused on advanced strategies such as procedures for problem-solving class meetings, a shift in teacher language from praise to encouragement (i.e., instead of saying, "good job," saying "I noticed you were working hard on your math work"), and a greater range of strategies for working with and believing in the potential of children showing behavior problems (i.e., a move toward school-wide discipline strategies so that expectations are clear across classrooms and from year to year; use of a buddy system of teachers across classrooms to assist in the management of behavior problems). See Rimm-Kaufman and Chiu (in press) and Rimm-Kaufman and Sawyer, 2004 for further description of the intervention process.

Measures

Teacher Belief Q-Sort (TBQ)

The TBQ was comprised of three 20-item Q-Sort exercises to assess teachers' priorities among their beliefs. Q-Sort 1 focuses on teachers' priorities about discipline and behavior management, Q-Sort 2 examines teachers' teaching practice priorities, and Q-Sort 3 assesses teachers' beliefs about children. A paper version of the TBQ was used in the present study. This measure is now available on-line at www.socialdevelopmentlab.org (available March 2006). A series of steps have been recommended for the development of new Q-Sort sets (McKeown & Thomas, 1988), and each of these steps was followed in the development of the TBQ.

Collecting statements was the first step in instrument development. The researchers decided to use the "quasi-naturalistic Q-sample approach," an approach that draws from sources external to the actual study to develop the "statement cards," the cards containing statements about teaching (McKeown & Thomas, 1988, p. 26). The authors and assistants gathered 120 statements about teaching from the literature on classroom practices as well as from existing scales such as Brookover (1974), La Paro and Pianta (2000), Smith (1993), Solomon, Watson, Delucchi, Schaps, and Battistich (1988), and Wright (1980), and Burts, Hart, Charlesworth, and Kirk (1990). Efforts were made by the authors to balance the statement cards to represent wide-ranging and opposing viewpoints as recommended in McKeown and Thomas (1988), and also, to choose statements that did not reflect jargon specific to particular curricular or behavioral management approaches (including the *RC* Approach).

An "inductive approach" was used to identify the constructs under question (McKeown & Thomas, 1988, p. 28). Four research assistants (two were former teachers) and four teachers were asked to group these cards into coherent categories. The eight respondents grouped cards into between three and seven categories and identified cards that did not fit into any category. The authors and the respondents discussed the set in three separate conversations and agreed on three categories of priorities that would be the focus of the present investigation: priorities in discipline and behavior management, teaching practices, and beliefs about students. In these meetings, 14 cards were identified as not fitting into any of these three dimensions and were discarded.

Choosing items was the second step. Each of the three Q-sets was winnowed to only 20 balanced statement cards per Q-Sort, as described in McKeown and Thomas (1988). Three Q-Sort sets of between 45 and 25 cards each were given individually to 12 pilot teachers. These pilot teachers were asked to choose 20 cards from each set that they felt that were very pertinent (e.g., they had strong feelings of agreement or disagreement and/or they believed these statements were very relevant to their teaching decisions) to the general teaching experience of them and their colleagues. Further, they were asked to identify any cards with confusing wording or meaning. The researchers identified cards that were recognized as especially relevant or irrelevant to the teaching experience and held conversations with these 12 teachers (in groups of 2 to 5) in order to clarify and adjust the meaning from confusing statements. From these conversations, the Q-Sorts were reduced to 20 cards.

Establishing the conditions of instruction, or guides by which Q-Sort statements were to be sorted, constituted the third step. The authors decided to establish simple requests for agreement or disagreement to each statement and decided to follow the convention of having five "anchor cards" for each Q-Sort deck. Anchor cards described the scale upon which to rank the statements. For example, for Q-Sort 1, the anchor cards ranged from "Least characteristics of my approach or beliefs about discipline and behavior management" to "Most characteristic of my approach or beliefs about discipline and behavioral management" with intermediate points also represented.

The final TBQ consisted of five anchor cards and 20 statement cards. Q-Sort 1 assessed teachers' priorities about classroom discipline and behavioral management. Examples of statements included, "The primary goal in dealing with students' behavior is to establish and maintain control;" and "Peer interactions are best left to recess and snack time." Teachers were asked to categorize statements into one of five categories (represented by the anchor cards) ranging from "least characteristic" to "most characteristic". Q-Sort 2 assessed teachers' priorities about classroom practices. Statement cards included, "Having a morning routine;" and "Doing an activity to create a sense of community." Teachers classified statements into one of five categories designated by anchor cards ranging from "least essential" to "most essential." Q-Sort 3 assessed teachers' beliefs about children. The statement cards included, "Almost all children in my class try their best" and "Most students respect teachers and authority." Teachers were asked to categorize statements into one of five categories (represented by anchor cards) ranging from "least characteristic" to "most characteristic" of my belief system.

For each Q-Sort exercise, teachers were asked to place only four cards in each category, thus forcing the prioritization of some statements over others. Contrary to other Q-Sorts where fewer cards are allowed in the extreme categories (see McKeown & Thomas, 1988; Waters & Deane, 1985), the TBQ was designed to have equal numbers of statements per anchor to facilitate ease of independent completion, a decision that has been described as statistically inconsequential (McKeown & Thomas, 1988).

Establishing validity comprised the fourth step

To establish content validity, six teachers not involved in the TBQ development were administered informal interviews where they were specifically asked about their lowest and highest priorities in relation to the three domains of interest, prior to conducting the Q-Sort exercises. Between two and four of the lowest and highest priority items were mentioned in comparable language in all of these interviews. Afterwards, as an assessment of content validation (Crocker & Algina, 1986), these six teachers rated the degree to which each statement sampled the constructs represented by the three Q-Sort exercises on a 1 to 5 scale, resulting in a range from 4 to 5.

To establish face validity, 10 additional teachers not involved in the development of the TBQ completed the Q-Sort exercises and conducted a brief questionnaire asking them to reflect on their teaching practices and priorities and consider the degree to which they highest and lowest priorities were well matched by the statements they placed in extreme groups within their own Q-Sort. All 10 described a good to excellent match.

Establishing reliability of the Q-Sort was the fifth and final step. Forty-four teachers completed the Q-Sort sets twice within a 12-month interval. The reliability, based on

Spearman correlation coefficients, ranged from .50 to .95 with a mean of .71 and standard deviation of .11.

Demographic and training questionnaire

This questionnaire asked teachers to provide demographic and *RC* training information, such as age, years of experience, level of education, ethnicity, training in *RC*, and other characteristics.

Approach to analysis

Two methods of data analysis were used to compare to detect sensitivity to training and differences among the four groups: (1) the criterion method, and (2) the factor analytic method. These methods were selected to compare each teacher to a standard (a *RC* exemplar) and to compare groups on subsets of items, respectively. The starting point was to assign each anchor card a value from 1 to 5, ranging from "least characteristic" to "most characteristic". Then, each statement was assigned a number from 1 to 5 corresponding to the teachers' classification into categories.

The criterion method

The criterion method creates an exemplar to which other people in the sample can be compared (Block, 1961; Waters & Deane, 1985), resulting in each teacher receiving a score indicating the degree of relation between his/her ratings and those of an exemplar. Degree of relatedness to the exemplar was compared for the four different groups.

A criterion Q-Sort was computed for each Q-Sort exercise. First, four *RC* exemplars (one *RC* teacher, one *RC* teacher/trainer, and two NEFC co-founders) were asked to complete each Q-Sort exercise. Second, the criterion was computed by summing the resulting values across the four exemplars. New ranks were assigned based on the resulting sums and this new sort (reflecting the modal response among the four exemplars) was identified as the "criterion sort." (Each exemplar was asked to repeat each Q-Sort exercise 1 year later as an indicator of reliability of the criterion sort. Spearman correlation coefficients between the sorts at the two time points ranged from 0.67 to 0.93, with a mean of 0.80.)

The criterion sorts consisted of a set order of statements that represented the views of a *RC* exemplar. Examples of high priority items, for Q-Sorts 1, 2, and 3, respectively, were: "It is important to respect students' autonomy and expect them to act in a responsible manner;" "Permitting students to choose from a variety of activities;" and "Students need to feel safe and secure in their classrooms." In contrast, low priority statements for sorts 1, 2, and 3, respectively, included: "Extrinsic rewards for desirable behaviors (e.g., stickers, candy bars) undermine students' motivation; its better not to give such rewards at all;" "Talking about current events;" and "Students are more motivated by grades than they are by the acquisition of competence."

Spearman correlation coefficients were computed between each teacher's Q-Sort rankings and the *RC* criterion sort. This calculation resulted in a value (one per teacher per Q-Sort) demonstrating the relatedness between each teacher's sort and that of the *RC*

exemplars. (High values show greater relatedness to the criterion sort.) This value was standardized to a Fisher *Z* and used for subsequent analyses.

The factor analytic method

The factor analytic method clustered items into meaningful factors to enable group comparisons. This method is referred to as the R-method factor analysis and acknowledges the non-independence of responses (McKeown & Thomas, 1988). The data matrix was organized so that rows represented each participant and columns represented statements (1–20). All subjects were included in the analysis, regardless of grouping. An exploratory factor analysis was computed, as described below.

Results

Results are described separately for the criterion and factor analytic methods.

The criterion method

Means and standard deviations of Fisher *Z* values were computed for each group and are displayed in Table 2. (Higher *Z* scores show more relatedness between teachers in each group and the *RC* exemplars.) A one-way ANOVA and Scheffé post hoc tests were computed comparing the relatedness of in-service *RC* teachers, in-service comparison, pre-service elementary school, and pre-service middle school/high school (MS/HS) teachers to the exemplars.

These results show differences among the four groups in their relatedness to *RC* exemplars for the first two Q-Sort exercises (reflecting priorities for discipline and

Table 2
Average degree of relation (as Fisher *Z*) to an *RC* exemplar among four groups of teachers using the "Criterion Method"

	In-service *RC*	In-service comparison	Pre-service elementary	Pre-service MS/HS	*F* values, significance, and effect size
Q-Sort 1					
Mean	.66	.40	.47	.42	$F(3, 177)=6.35$,
S.D.	.22	.19	.21	.29	$p=.000$, $\eta^2=.10$
n	23	26	59	73	
Q-Sort 2					
Mean	.43	.23	.17	.23	$F(3, 191)=5.95$,
S.D.	.28	.32	.27	.25	$p=.001$, $\eta^2=.09$
n	29	32	58	73	
Q-Sort 3					
Mean	.72	.66	.62	.60	$F(3, 194)=1.54$,
S.D.	.22	.26	.27	.28	$p=.20$, $\eta^2=.02$
n	30	30	61	74	

behavior management, and teaching practice priorities). Specifically, *RC* teachers' discipline and management priorities were more similar to the *RC* exemplars. Scheffé post-hoc tests showed differences between the *RC* teachers and the pre-service elementary school teachers ($p = .03$), *RC* teachers and comparison teachers ($p = .003$), and *RC* teachers and middle school/high school pre-service teachers ($p = .001$). Likewise, *RC* teachers' practice priorities were more closely related to *RC* exemplars. Scheffé post-hoc tests for Q-Sort 2 also showed differences between the *RC* teachers and the pre-service elementary school teachers ($p = .001$), *RC* teachers and comparison teachers ($p = .05$), and *RC* teachers and middle school/high school pre-service teachers ($p = .02$). Caution needs to be exercised in interpreting these findings in that the effect sizes are small, suggesting only modest practical significance (Thompson, 2002). The results comparing teachers' beliefs about children show no differences among the four groups in their relatedness to the *RC* exemplars.

The factor analytic method

An exploratory factor analysis was conducted for each Q-Sort. Subsequently, parallel analysis (based on randomly generated data) was used to determine the correct number of factors to select. The probability was set at 0.05 for the decision of whether the likelihood of the factor emerging was greater than chance. Subsequently, a principal components factor analysis was conducted specifying the number of factors for each analysis and using varimax rotation. In one case, Q-Sort 2, only the first two (of four) factors were conceptually coherent and the last two factors were dropped. Factor scores were computed and compared among the four groups of teachers. Factor loadings and communalities are shown in Tables 3, 4 and 5. These solutions accounted for 21.3%, 24.1%, and 21.0% of the variance for Q1, Q2, and Q3, respectively. Factor scores were computed by summing values loading highly on each factor score, a procedure supported because of the relatively similar standard deviations among the variables (Tabachnick & Fidell, 1996). Correlations between pairs of factors were computed ($r = -.15$ for Q1, $r = -.32$ for Q2, and $r = -.44$ for Q3).

The four groups of teachers were compared using univariate ANOVAs and Scheffé post-hoc tests on the factor scores. Results of these analyses are shown in Table 6. Differences emerged for teachers' beliefs about classroom discipline and behavioral management for two factors, teacher direction and emphasis on student self regulation. Middle and high school pre-service teachers placed less importance on teacher direction of behavior than teachers at *RC* schools. Teachers at *RC* schools placed more emphasis on student self-regulation and autonomy than teachers at comparison schools. The effect sizes of these differences were small in magnitude.

There were differences in teachers' beliefs about classroom practices for two factors. Pre-service teachers (both elementary and middle/high school) valued spontaneity process, and collaboration much more than in-service teachers (both comparison and *RC*). This finding was moderate in size. Teachers at *RC* schools prioritized children's social experience and choice more than teachers at comparison schools, an effect that was small.

As for differences in their beliefs about children, pre-service teachers held more negative views of motivation and likeability than in-service teachers, a finding that was

Table 3
Factor loadings for two-factor solution Q-Sort 1 on beliefs about classroom discipline and behavior management

Item	Factor loading	Communality
Factor 1: Teacher direction		
A noisy classroom is okay as long as all students are being productive.	−.33	.14
Peer interactions are best left to recess and snack time.	.73	.61
Rules for the students' classroom behavior need to be reinforced consistently.	.34	.44
Students learn best in primarily teacher-directed classrooms.	.44	.34
If I treat students with respect, kindness, and concern there are fewer behavior problems.	−.72	.60
Factor 2: Emphasis on student's self-regulation and autonomy		
The primary goal in dealing with students' behavior is to establish and maintain control.	−.53	.35
Students must be kept busy doing activities or they soon get into trouble.	−.37	.22
Monitoring students can prevent problematic situations.	−.42	.28
Self-monitoring or self-regulation skills are important for students to develop.	.44	.24
It is important to respect students' autonomy and expect them to act in a responsible manner.	.57	.49
Verbal punishment is an unacceptable means of controlling students' behavior; I believe it's more important to use only positive management techniques.	.56	.37
Extrinsic rewards for desirable behaviors (stickers, candy bars) undermine students' motivation; it's better not to give such rewards at all.	.49	.41

$N = 181$. Total percent variance accounted for is 21.3%.

small. Specifically, the middle-school and high-school pre-service teachers held more negative views than either of the in-service groups.

Discussion

This study describes the development and use of the TBQ and produced three notable findings. First, this study advances the TBQ as a reliable and valid tool for the measurement of teachers' priorities among their beliefs. Second, RC teachers appear to hold a distinct set of practices for discipline and behavior management and classroom practices compared to the other three groups of teachers. Third, pre-service and in-service teachers appeared to hold different priorities and beliefs, especially in relation to classroom practices. This research extends what is known about teachers' belief and priorities. Specifically, this measure offers promise for understanding the degree to which personal beliefs are sensitive to training and teaching experience. Such results may offer insights into personal beliefs that forecast integrity of implementation as schools adopt new interventions or offer a clearer understanding of the beliefs of pre-service teachers that may relate to teacher quality once pre-service teachers make the transition into the classroom.

Table 4
Factor loadings for two-factor solution for Q-Sort 2 on beliefs about classroom practices

Item	Factor loading	Communality
Factor 1: Values spontaneity, process, and collaboration		
Having a morning routine.	−.79	.63
Doing an activity to create a sense of community.	.32	.29
Talking about current events.	.55	.30
Using hand signals.	−.44	.23
Discussing a written announcement or message created by the teacher.	−.43	.28
Conducting the business of the classroom following a set routine.	−.52	.39
Reflecting on the content of an academic lesson and talking about what we learned.	.39	.17
Encouraging students and giving feedback that focuses on the process of students' creations or thinking, not the outcomes or the solutions.	.35	.20
Working on group projects.	.51	.31
Factor 2: Emphasis on children's social experience and choice		
Welcoming each student by name to class.	.34	.12
Doing an activity to create a sense of community.	.43	.29
Having at least a few students share something that has happened to them.	.43	.19
Conducting the business of the classroom (e.g., lunch money) following a set routine.	−.33	.39
Reflecting and talking about something such as a social interaction that "worked" or "didn't work" in our class.	.41	.19
Using drill and recitation for factual information (math facts, etc.)	−.68	.47
Using work sheets.	−.62	.39
Permitting students to choose from a variety of activities.	.35	.19
Using whole group instruction.	−.52	.27

$N = 192$. Total percent variance accounted for is 24.1%.

How does this work fit in relation to contemporary issues in education science? A recent synthesis on the standards for evidence in prevention science states criteria for establishing integrity of implementation of an intervention (Flay et al., 2005). In relation to school-based interventions, teachers in both treatment and control groups need to be assessed on two types of indicators: the first measures the level of implementation (e.g., exposure, frequency, and quality of the training to teachers, delivery of the intervention to children), and the second, the engagement with the intervention (e.g., compliance, adherence, acceptance, and involvement in relation to the intervention principles). Engagement is the more elusive of the two indicators. In the case of assessing the contribution of a Positive Youth Development Intervention such as the *RC* Approach, it appears that the TBQ detects differences in engagement in the intervention that are process-oriented and potentially useful in predicting children's outcomes.

Public schools are not the only educational institutions challenged with the need to establish evidence for their effectiveness. Teacher preparation programs are experiencing a rekindled press for evidence-based practice (Wineburg, 2006). Conventional wisdom suggests that this focus represents a new paradigm. However, it appears that this new paradigm is actually a reinvention of an earlier movement in teacher education, known as the training model (Cochran-Smith, 2006). The underlying assumption of the training

Table 5
Factor loadings for two-factor solution for Q-Sort 3 on beliefs about children

Item	Factor loading	Communality
Factor 1: Understanding of student needs and individuality		
Many of the students in my class try to get away with doing as little work as possible.	−.54	.49
Almost all students are equally likable and enjoyable.	.32	.41
Students seldom take care of their materials if they are not supervised.	−.55	.31
Students need some choice of activities within the classroom.	.40	.16
Students need opportunities to think in a quiet classroom environment.	−.51	.26
Students need to have their strengths recognized to promote learning.	.35	.17
Students learn best by being actively involved in the classroom.	.39	.21
Students need opportunities to be creative in the classroom	.40	.23
Some students show little desire to learn.	−.39	.34
Factor 2: Negative view toward student motivation and likeability		
Almost all children in my class try their best.	−.59	.36
Many of the students in my class try to get away with doing as little work as possible.	.45	.49
Almost all students are equally likeable and enjoyable.	−.55	.40
Most students respect teachers and authority.	−.51	.27
Students meet challenges best when they feel that their teachers care about them.	−.41	.18
Some students show little desire to learn.	.42	.34
Students are more motivated by grades than they are by the acquisition of competence.	.50	.32

$N = 195$. Total percent variance accounted for is 21.0%.

model was that teaching was a technical transmission activity and teaching behaviors were assumed to be related linearly with student learning, as reflected by test scores. This model met its demise for a number of reasons, one of which was that it did not adequately consider the ways in which teachers' knowledge and beliefs mediated teachers' behaviors. Years later, teacher preparation programs are met with the same challenges for establishing links between teacher preparation and pupil outcomes. History teaches us the importance of attending to the hard to measure, intervening variables that may mediate or moderate the relation between teacher preparation and child outcomes. Teachers' beliefs and priorities may be one such intervening variable, as suggested by the present findings.

TBQ as a tool for measuring teacher beliefs

The TBQ appears to be effective for assessing teachers' priorities and belief. Pilot teachers reported on the content validity of the TBQ and pointed to the consistency between their beliefs and their response on the TBQ. Findings from the TBQ showed differences between groups in the hypothesized direction, pointing to the construct validity of this new measure (Crocker & Algina, 1986). The usefulness of the TBQ is further supported by earlier work demonstrating moderate sized associations between teachers' report of use of *RC* practices and teachers' priorities and beliefs in relation to discipline and behavior management as well as teaching practices as measured by the TBQ (Rimm-

Table 6
ANOVAs detecting differences among the four groups for Q-Sort factors

	F	*p*	Partial η^2	Direction from Scheffe post-hoc tests
Q1: Beliefs about classroom discipline and behavioral management				
Factor 1: Teacher direction	5.78	.001	.09	PreMS/HS < Int
Factor 2: Emphasis on student's self-regulation	3.62	.01	.06	Int > Comp
Q2: Beliefs about classroom practices				
Factor 1: Values spontaneity, process, and collaboration	35.04	.000	.36	PreES > Comp PreES > Int PreMS/HS > Comp PreMS/HS > Int
Factor 2: Emphasis on children's social experience and choice	4.37	.005	.07	Comp < Int
Q3: Beliefs about students				
Factor 1: Understanding student's needs and individuality	.29	n.s.	.004	
Factor 2: Negative view of motivation and likeability	10.45	.00	.14	PreES > Comp PreMS/HS > Comp PreMS/HS > Int

Kaufman & Sawyer, 2004). Measurement of teachers' beliefs is a complex issue. The TBQ offers a tool that recognizes the gradual process of change and offers insight into the degree to which teachers' personal philosophies and priorities reflect training and experience.

Teachers' priorities and the responsive classroom approach

The findings show that teachers at *RC* schools hold different priorities for discipline and behavior management and teaching practices than the other three groups of teachers. Specifically, the "criterion method" indicates that *RC* teachers are more similar to the *RC* exemplars in discipline and behavior management and teaching practices, but not beliefs about students. The factor analytic method suggests that compared to teachers at comparison schools, *RC* teachers' prioritize student self-regulation as a mechanism for handling discipline problems and prioritize classroom practices that emphasize children's social experiences and choice.

The *RC* Approach makes specific practice recommendations that link to beliefs and priorities in discipline and classroom practices. It is quite notable that these changes in priorities were evident in the first year of training and school-wide *RC* implementation; supporting our supposition that shifts in teachers' priorities may forecast changes in practices. Several observations are important as we consider the reasons why we observed shifts in discipline and teaching practice priorities (but not teacher beliefs about children) in the early stages of school-wide *RC* implementation, a process that typically takes 3 to 5 years.

The Northeast Foundation for Children, developers of the *RC* Approach, has noted a progression that is evident as teachers begin to implement *RC* Approach. In the first year,

teachers are likely to focus on the proper implementation of two components, the Morning Meeting and Rules and Logical Consequences. Later, after teachers have used these (and other) components regularly and have integrated them into their teaching repertoire, they experience a change in their beliefs about students (NEFC, 2003b). Adoption of these two *RC* components (i.e., Morning Meeting and Rules and Logical Consequences), are reflected in teachers' ratings in the TBQ, represent a change in what is considered "typical teaching," and are consistent with our findings from the comparison of factor scores. For example, one of the goals of Morning Meeting is to attend to children's social experience in school by creating a sense of community among the children in the classroom in a way that provides children with the feeling of "being known"—specifically welcoming each student by name into class and having at least a few students share something that has happened to them. A key goal of "Rules and Logical Consequences" is to teach student self-regulation and to depart from traditional behavioral management strategies (NEFC, 2003a) by eliminating use of "token economy" reinforcers. Instead, consequences of behavior infractions are selected to reflect the infraction itself. For example, if one child pushes another, she is taught to help the child up and apologize in a way that is suitable to the problem (for example, display a genuine gesture that reflects an understanding of that specific child's interests and needs) as opposed to missing recess time or losing an opportunity to receive a reward at the end of the week.

The evidence for *RC* teachers holding priorities similar to *RC* exemplars suggests that the *RC* intervention may be taking hold in these three schools. Fullan (2001) describes the ways in which school-wide change influences teachers' beliefs. Specifically, adoption of an intervention can occur at a school-wide level, but true change only occurs when individuals have developed personal meaning from the principles, practices, and implications of the new initiative. This position was further reinforced in conversations with classroom teachers. As one teacher described, "*RC* practices serve as a beacon. When I am about to discipline or praise a child, I think 'what would the *RC* Approach recommend?' and this is what I try to do." Although our findings do not reflect the ways in which teachers' translate these beliefs into practice, representing a limitation of the present study, the present findings do suggest that teachers at schools implementing *RC* are incorporating *RC* principles into their concepts of ideal practices.

In-service versus pre-service priorities

The findings show differences in priorities and beliefs in pre-service and in-service teachers, findings that are evident from the comparisons of the factor scores. In explaining these findings, it is useful to consider that these priorities are multi-determined, reflecting actual characteristics of children and adolescents, the pre-service teachers' subjective impressions of children and adolescents, as well as their own experience in school. Richardson (1996) describes the teacher education experience as "sandwiched" between two important determinants of beliefs, specifically, teachers' own life experience with school and the socialization pressures they face once they begin to teach. Results from the current study capture teachers' priorities during the several year period when pre-service teachers are reconciling their past experiences as students with their new experiences in teacher education.

The most pronounced finding from the factor analytic method was that pre-service teachers appear to set spontaneity, process, and children's collaboration at higher priority compared to in-service teachers. At least two explanations are plausible. These findings may reflect pre-service teachers' current experiences in college, describing what they prefer as young adults, not what is appropriate for youths. Alternatively, college students with virtually no teaching experience may hold more idealistic views of classroom environments, and thus, downplay the need for routine and the explicit statement of rules that are commonly held priorities by more experienced teachers (Ambrose, 2001; File & Gullo, 2002).

The results also showed that pre-service teachers, especially those planning on teaching middle and high school, held more negative views of children's motivation and likeability. We can look to the pre-service teachers' current and past experience as adolescent learners to explain these views. As students progress through adolescence, they experience declines in motivation to engage in academic activities for their own pleasure and an increased focus on evaluation of their academic work (Anderman & Maehr, 1994; Lepper, Sethi, Dialdin, & Drake, 1997). The pre-service teachers may be reflecting on their own experiences and projecting these experiences onto children. The negative regard that teachers have toward children and adolescents is concerning in light of the potency of teachers' relationships with youths for buffering stress and producing successful learning (Croninger & Lee, 2001; Hamre & Pianta, 2001).

Limitations

Four limitations require mention. First, although the TBQ describes teachers' priorities in a way that distinguishes between those trained and not trained in the *RC* Approach, it is unclear the degree to which this measure will detect associations between teachers' priorities and training in other interventions. This tool focuses on classroom discipline and management, teaching practices, and beliefs about children. Interventions geared to producing changes in these aspects of classroom social process are most likely to be measurable using the TBQ. Second, it is possible that our response rate limits the generalizability of our findings. Specifically, we had a much higher response from the pre-service teachers who were readily available in a university setting than the in-service teachers who had many other conflicting obligations. Some unknown selection factors may be influencing participation rates in this study and may have influenced some of the between group differences we detected. Third, in the *RC* schools, the assessment of the teachers occurred after the teachers were exposed to and trained in the *RC* Approach. It is possible that teachers are reporting in ways that are consistent with their recent training, not their actual priorities, a concern requiring further study. Fourth, this study examined the content validity and construct validity of the TBQ, but not the criterion validity. Future work using the TBQ needs to compare its results to those gathered using other instruments.

Future research

Future work needs to examine how teachers' prioritization of beliefs relates to measurement of integrity of implementation, and in turn, contributes additional variance to existing measures of integrity of implementation for predicting children's outcomes.

Further, the TBQ may be useful in evaluating the degree to which a teacher education program has successfully inculcated their values to students. Specifically, using the criterion method to compare the beliefs of instructors with those of completed pre-service teachers may lend insight to one aspect of training effectiveness. This is the type of work that fits well with current efforts to evaluate the effectiveness of teacher education programs (Cochran-Smith, 2006).

Closing comments

Nespor (1987), in his often-cited work on teacher beliefs states, "If we are interested in why teachers organize and run classrooms as they do we must pay much more attention to the goals they pursue (which may be multiple, conflicting, and not at all related to optimizing student learning) and to their subjective interpretations of classroom processes" (p. 325). In a time when the federal government presses for change in American schools, there is the recognition that teachers' day-to-day beliefs and practices lie at the center of any attempt to identify best practices and improve education. As such, new tools such as the TBQ offer potential for detecting teachers' priorities and situating these priorities as potential moderators or mediators in relation to children's success.

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