

Assessing Beliefs of Preservice Early Childhood Education Teachers Using Q-Sort Methodology

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LaParo, K. M., Siepak, K., & Scott-Little, C. (2009). Assessing beliefs of preservice early childhood education teachers using Q-Sort methodology. *Journal of Early Childhood Teacher Education*, 30(1), 22-36.

This is an Accepted Manuscript of an article published by Taylor & Francis Group in *Journal of Early Childhood Teacher Education* on 05 Feb 2009, available online at: <http://www.tandfonline.com/10.1080/10901020802667805>.

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Abstract:

The purpose of this study was to assess the beliefs of students and faculty in a 4-year birth–kindergarten teacher preparation program using the Teacher Belief Q-Sort (TBQ). Data were collected over one academic year from a total of 63 students, 35 students at the beginning of their coursework and 28 students at the end of their program, completing their student teaching experience. The faculty (n = 8) in the program completed the TBQ to provide a criterion sort as well as to assess the consistency in philosophy across faculty members who teach preservice teachers. Compilations of rankings are presented to describe beliefs related to children, discipline, and teaching practices held by students who are at different points in their education program. Criterion comparison results indicate that student teachers at the end of their education program report beliefs more similar to faculty beliefs than students at the beginning of their education program. However, findings suggest that the student teaching experience does not appear to significantly alter beliefs about children, discipline and teaching practices. These results are discussed in terms of child-directed versus teacher-directed styles of preservice teachers and implications of assessing beliefs for teacher preparation programs.

Keywords: Teacher education | Early childhood education | Teaching practices | Preservice teachers | Teacher beliefs

Article:

A belief can be defined as a conviction of truth of a proposition without its verification. That is, beliefs are generally considered to be subjective mental interpretations based on perceptions, reasoning or communication. The beliefs of teachers have been the focus of several studies in terms of classroom practices and the relation to developmentally appropriate practice (Bryant,

Clifford, & Peisner, 1991; Maxwell, McWilliam, Hemmeter, Ault, & Schuster, 2001; Stipek & Byler, 1997). Although beliefs can be unconscious, research has indicated that beliefs may guide action, exerting important influence on teacher behaviors in the classroom (Calderhead, 1996; Hargreaves, 1975; Kagan, 1992). Given research that cites the wide variability in classroom practices, it may be that personal characteristics such as beliefs are, in part, driving teaching behaviors (Baum & King, 2006; Oliver, 1953; Pianta et al., 2004).

Recent research has provided a Q-sort methodology to assess teachers' beliefs about teaching and has been used to collect data from over 500 teachers (Decker & Rimm-Kaufman, 2005; Rimm-Kaufman & Sawyer, 2004; Rimm-Kaufman, Storm, Sawyer, Pianta, & La Paro, 2006). The present study uses this Q-Sort approach to examine the beliefs of students enrolled in a 4-year birth-kindergarten teacher preparation program and provides comparisons of the beliefs of these students with the beliefs of the faculty who teach them.

Teacher Beliefs

Many factors link quality teaching to positive outcomes for young children. Teaching credentials, level of education, and type of education all relate to quality teaching and quality in the classroom (Bowman, Donovan, & Burns, 2001; Kontos & Wilcox-Herzog, 2001; Whitebook, Howes, & Phillips, 1989). However, a more fundamental variable related to issues of quality may be the beliefs teachers hold about teaching and children. Although the literature is mixed about the relation between beliefs and practices (Bracken & Fischel, 2006; Fang, 1996), findings from several studies support this relation (Maxwell et al., 2001; Vartuli, 1999). In one such study, beliefs about developmentally appropriate and inappropriate practices were gathered from 69 teachers in kindergarten through third-grade classrooms. The teachers' reported beliefs accounted for almost half of the variability observed in classroom practices (Maxwell et al.). In a study of teachers in Head Start classrooms through third-grade classrooms, moderate relations were found between the developmentally appropriate beliefs that teachers reported and their observed practices (Vartuli).

How belief systems are created is not clearly understood, but teachers' own education experiences may contribute to the development of their beliefs. (Lortie, 1975; Pajares, 1992). Unlike many professions and disciplines, students in the field of education enter the program with a wealth of experience from their own education, also known as "the apprenticeship of observation" (Lortie, p. 61). Personal experiences within education often serve as the basis for students' beliefs about teaching and children as well as their teaching practices (Borg, 2004; Ginsburg & Newman, 1985; Kagan, 1992; Lortie; Pajares, 1992). In spite of years of education, teachers may rely on these practices and strategies that they remember from their own education experience (Lortie). These existing belief structures can present a challenge to teacher preparation programs. However, recent studies have indicated that with increasing experiences and challenges to their beliefs, teachers may change their beliefs over time (Brownlee, Purdie, & Boutlon-Lewis, 2001; Doyle, 1997; So & Watkins, 2005). For example, findings by McMullen

and Alat (2002) indicate that teachers with a 4-year degree report more developmentally appropriate beliefs than teachers with less education, suggesting a relation between education and beliefs.

Q-Sort Methodology in Education

Beliefs are not observable so when respondents report beliefs using surveys and questionnaires, they often default to social desirability and report what they assume are *accepted* beliefs. The Teacher Beliefs Scale (Charlesworth, Hart, & Burts, 1991), the Early Childhood Survey of Beliefs and Practices (Marcon, 1999), and the Beliefs and Intentions Questionnaire (Wilcox-Herzog & Ward, 2004) all use Likert-style rating scales on which participants can conceivably rate all beliefs as either “high” or “low” in value (Kazdin, 1998).

The TBQ is based on Q-Sort methodology developed in the field of psychology, specifically personality and attachment research. The *original* Q-sort was developed by William Stephenson as a means to examine subjectivity (Brown, 1980). Q-Sort methodology creates an exercise in forced choice; respondents must prioritize their beliefs, despite a desire to rate most practices as highly valued (or devalued) in their belief system. A set of statement cards is used as the starting point for prioritization. The study participants sort each statement into a category based on the degree to which these statements are representative or unrepresentative of their views. The resulting Q-sort is a reflection of each participant's subjective beliefs with regard to the topic under investigation, such as approaches to discipline, classroom practices and beliefs about how children learn. A more detailed description of the development of the TBQ is available in Rimm-Kaufman et al. (2006).

Previous studies using the TBQ have examined the beliefs of teachers at the elementary, middle, and high school level. Rimm-Kaufman et al. (2006) administered the TBQ to almost 200 preservice and in-service teachers. Summative results for the entire sample in relation to beliefs about discipline indicated that in general, teachers reported strong beliefs about the importance of children's interests and peer interactions, proactive discipline strategies, and children's self-regulation. In another study using the TBQ, Decker & Rimm-Kaufman (2005) found that preservice teachers enrolled in their second teacher education course held beliefs consistent with *best practice*. Students participating in this study prioritized child-centeredness and creating a community as important classroom practices. Together these studies present the Q-Sort as an innovative approach to gathering information on students' beliefs as well as a view of preservice teachers reporting beliefs that have been characterized as important for positive student outcomes.

The purpose of the current study is to examine the beliefs of preservice teachers who are at different points in their education. Using the Teacher Belief Q-Sort (TBQ), we examined the influence of education and classroom experience in shaping the beliefs of a cross-section of students enrolled in a birth-to-kindergarten teacher preparation program. More specifically, this

study investigated three major questions. First, do students at different points in their education program report different beliefs about classroom practices, behavior management and children? Second, at which point in their education are students' beliefs most similar to the faculty who teach them? Finally, are students' beliefs at the end of student teaching different than at the beginning of student teaching?

Method

Participants

The sample of students was recruited from two courses in a 4-year birth–kindergarten (B–K) teacher preparation program at a university in a midsized southeastern city. The first course in which students were enrolled marks their entry into the program, Introduction to Birth through Kindergarten Education: Teaching in Early Care and Education Programs and the second course is taken just before exiting the program and graduation: Supervised Student Teaching and Seminar. Each course includes experiences in the classroom, the Introduction course includes 5 hours of observation in various early childhood programs, and Student Teaching included a full-time 16-week student teaching experience.

Data were collected over two semesters of one academic year. Of the total 56 students enrolled in the Introduction course, 46 returned completed Q-sorts. Of those, 3 students withheld consent, 7 did not complete the survey within the required time period and 1 student completed the Q-sort incorrectly, leaving a final sample of 35 in the Introduction to Birth through Kindergarten Education (Intro) group. One student made an error on Q-sort 2, so the sample was 34 for Q-sort 2. Student teachers completed the Q-sort two times, once at the beginning of their semester of student teaching (ST1) and again at the end of their 16-week student teaching experience (ST2). All students enrolled in Student Teaching (N = 28) completed the Q-sort correctly, on time, and gave consent. At the completion of student teaching, 1 student did the Q-sort incorrectly, and 1 did not return a Q-sort, yielding a sample of 26 in the end of student teaching group (ST2).

Students in the Introduction course ranged in age from 18 to 51 ($M = 22$, $SD = 6.956$) and all were female. The ethnic composition of the group was 60% Caucasian, 23% African American, 9% mixed, 6% other and 3% Latino/Hispanic. Two thirds of the students (66%) had experience working with young children in a professional setting and 11% had their own children. Student teachers ranged in age from 21 to 48 years of age ($M = 22$, $SD = 6.64$). The ethnic composition was 63% Caucasian, 33% African American and 4% Native American. All but one were female. Two-thirds of these students (67%) had experience working formally with young children and 15% had children of their own.

Measures

Demographics

A demographic questionnaire was used to gather data regarding students' age, ethnicity, gender, experiences with young children, and their future teaching plans.

Teacher Beliefs

The *Teacher Beliefs Q-Sort* (TBQ) (Rimm-Kaufman, 2004) was used to collect data on students' beliefs. The measure consists of 60 statements divided into three separate Q-sorts, Beliefs About Behavior Management (QS1), Beliefs About Teaching Practices (QS2), and Beliefs About Children (QS3). Each Q-sort has five anchor cards in a Likert-style continuum, ranging from least characteristic (1) to most/very (5) characteristic of the respondents' beliefs, and 20 statement cards that represent a variety of beliefs. For example, the anchors of QS1 range from *Least characteristic of my approach or beliefs about discipline and behavior management* to *Very characteristic of my approach or beliefs about discipline and behavior management*. Statement cards were developed based on reviews of the literature, including discussion with local teachers and piloting with 40 experienced teachers (see Rimm-Kaufman et al., 2006). Sample statements in QS1 include, "Rules for the children's classroom behavior need to be reinforced consistently," and, "Praise from me is an effective way to change children's behavior." Statements in QS2 include, "Permitting children to choose from a variety of activities," and, "Using drill and recitation for factual information (math facts, etc.)." Statements in QS3 include, "Children need to feel safe and secure in the classroom," and, "Many of the children in my class show little effort." Participants are restricted to placing only four statements under each of the five anchor cards. This feature distinguishes the Q-sort from traditional Likert-style surveys.

A criterion Q-sort, a set order of statements representing the beliefs of the faculty, was computed for each Q-sort. Faculty completed the same Q-sorts as the students had completed, using the same process. The statement rankings of the 8 full-time B–K faculty members were averaged, representing the B–K faculty beliefs regarding behavior management, classroom activities, and children. Each faculty member was asked to complete the Q-sort 1 year later as an indicator of reliability. Spearman correlation coefficients between the sorts at the two time points ranged from .79 to .92 with a mean of .89. Given the high level of reliability across time, further analyses are based on faculty responses to the first administration of the Q-Sort.

Procedure

During the first 2 weeks of class, a demographic questionnaire and Q-sort packet containing the three Q-sorts, directions, and a recoding sheet, were distributed in class to students. A research assistant provided instructions for completing the Q-sort and obtained informed consent from the students. To accommodate time constraints in different courses, students completed the Q-sort either in class or at home but were asked to spend no longer than 1 hour on the task. Faculty completed Q-sorts independent of students and did not have access to student Q-sorts at any point during the data collection.

Results

Summative Analysis

To describe students' priorities and understand the differences in beliefs about classroom practices, discipline, and children at different points in the teacher preparation program, we used a summative analysis of the TBQ data. To examine which beliefs were prioritized over others by different groups of students, we summed and averaged the statement rankings within each group. The statements were then sorted by means to determine which were ranked most important and which were least important to each group of students and for the student teachers (ST1 and ST2) at each time period. If statement means tied, then both statements are reported.

Q-Sort 1 Beliefs About Behavior Management

Table 1 displays the average group rankings of the statements related to discipline and behavior management. Generally, students ranked statements related to routines and expectations for behavior as most important and statements related to a teacher-imposed perspective and constrained peer interactions as the least characteristic of their beliefs. Most valued by all students were the statements, “A classroom runs smoothly when there are clear expectations for behavior,” and, “If I treat students with respect, kindness and concern, there are fewer behavior problems.” The statements least valued by all students were, “Peer interactions are best left to recess and snack time,” along with, “Children learn best in primarily teacher-directed classrooms,” and, “Children must be kept busy doing activities or they soon get into trouble.” Students at the beginning and end of student teaching also included the statement, “The curriculum and class schedule need to be prioritized over children's specific interests,” as least characteristic of their approach to discipline and classroom management.

Table 1 Summative results of Q-Sort 1, beliefs about discipline and behavior management, for intro students and students teachers at time 1 and time 2

VERY characteristic of my approach or beliefs about discipline and behavior management.
Intro
• Classroom rules should be discussed and posted.
• A classroom runs smoothly when there are clear expectations for behavior.
• If I treat students with respect, kindness and concern, there are fewer behavior problems.
• Praise from me is an effective way to change children's behavior.
ST1
• Self-monitoring skills (or self-regulation) are important skills for children to develop.
• A classroom runs smoothly when there are clear expectations for behavior.
• Rules should be discussed and posted.
• If I treat students with respect, kindness and concern, there are fewer behavior problems.
ST2
• Self-monitoring skills (or self-regulation) are important skills for children to develop.
• A noisy classroom is okay as long as all the children are being productive.

• A classroom runs smoothly when there are clear expectations for behavior.
• If I treat students with respect, kindness and concern, there are fewer behavior problems.
• Children should try to solve conflicts on their own before going to the teacher.
LEAST characteristic of my approach or beliefs about discipline and behavior management.
Intro
• Peer interactions are best left to recess and snack time.
• Extrinsic rewards for desirable behaviors (e.g., stickers, candy bars, etc.) undermine students' motivation; it is better not to give such rewards at all.
• Children learn best in primarily teacher-directed classrooms.
• Children must be kept busy doing activities or they soon get into trouble.
ST1
• Peer interactions are best left to recess and snack time.
• Children learn best in primarily teacher-directed classrooms.
• The curriculum and class schedule need to be prioritized over children's specific interests.
• Children must be kept busy doing activities or they soon get into trouble.
ST2
• Peer interactions are best left to recess and snack time.
• Children learn best in primarily teacher-directed classrooms.
• Children must be kept busy doing activities or they soon get into trouble.
• The curriculum and class schedule need to be prioritized over children's specific interests.

Q-Sort 2 Beliefs About Teaching Practices

Table 2 presents the rankings of the statements related to teaching practices. Generally, students prioritized beliefs about being sensitive and responsive as most essential to their teaching. “Welcoming each child by name to class,” “Modeling behaviors for children,” “Encouraging children and giving feedback that focuses on the process of children's creations or thinking, not the outcomes or the solution,” and, “Permitting children to choose from a variety of activities” were ranked as the top priorities for all students, regardless of their year in the teacher education program. Teaching practices which are considered rote, such as “Using drill and recitation for factual information,” and, “Using work sheets,” were least essential to all students.

Table 2 Summative results of Q-Sort 2, beliefs about teaching practices, for intro students and students teachers at time 1 and time 2

Those practices that are MOST essential and/or characteristic of my teaching.
Intro
• Welcoming each child by name to class.
• Permitting children to choose from a variety of activities.
• Modeling behaviors for children.
• Encouraging children and giving feedback that focuses on the process of children's creations or thinking, not the outcomes or the solution.
ST1
• Welcoming each child by name to class.

• Modeling behaviors for children.
• Encouraging children and giving feedback that focuses on the process of children's creations or thinking, not the outcomes or the solution.
• Permitting children to choose from a variety of activities.
ST2
• Welcoming each child by name to class.
• Modeling behaviors for children.
• Encouraging children and giving feedback that focuses on the process of children's creations or thinking, not the outcomes or the solution.
• Permitting children to choose from a variety of activities.
Those practices that are LEAST essential and/or characteristic of my teaching.
Intro
• Discussing a written announcement or message created by the teacher.
• Using work sheets.
• Using hand signals/gestures.
• Using drill and recitation for factual information (math facts, etc.).
ST1
• Using drill and recitation for factual information (math facts, etc.).
• Using work sheets.
• Using a theme-based approach to instruction.
• Using hand signals/gestures.
ST2
• Using work sheets.
• Using drill and recitation for factual information (math facts, etc.).
• Discussing a written announcement or message created by the teacher.
• Using a theme-based approach to instruction.

Q-Sort 3 Beliefs About Children

As evident in Table 3, all students prioritized statements related to respecting children and their desire to learn as being most integral to their beliefs about children. Students beginning the program and student teachers at both time points ranked the statements, “Children need to feel safe and secure in the classroom,” and, “Children need opportunities to be creative in the classroom,” as most characteristic of their belief systems. The four beliefs that were least characteristic of all three groups of students were, “Some children show little desire to learn,” “Children seldom take care of their materials if they are not supervised,” “Children are more motivated by rewards/grades than they are by the acquisition of competence,” and “Many of the children in my class show little effort.”

Table 3 Summative results of Q-Sort 3, beliefs about children, for intro students and students teachers at time 1 and time 2

MOST characteristic of my belief system.
Intro

• Children need to feel safe and secure in the classroom.
• Children learn best by being actively involved in lessons/activities.
• Children need opportunities to be creative in the classroom.
• Each one of my children teaches me something.
• Children meet challenges best when they feel that their teachers care about them.
ST1
• Children need to feel safe and secure in the classroom.
• Children need opportunities to be creative in the classroom.
• Children need to have their strengths recognized to promote learning.
• Children should feel as though they are “known” and “recognized” in the classroom.
• Children learn best by being actively involved in lessons/activities.
ST2
• Children need to feel safe and secure in the classroom.
• Children learn best by being actively involved in lessons/activities.
• Children need opportunities to be creative in the classroom.
• Children need to be met where they are in terms of ability.
• Each one of my children teaches me something.
LEAST characteristic of my belief system.
Intro
• Many of the children in my class show little effort.
• Some children show little desire to learn.
• Children seldom take care of their materials if they are not supervised.
• Children are more motivated by rewards/grades than they are by the acquisition of competence.
ST1
• Children seldom take care of their materials if they are not supervised.
• Many of the children in my class show little effort.
• Children are more motivated by rewards/grades than they are by the acquisition of competence.
• Some children show little desire to learn.
ST2
• Some children show little desire to learn.
• Children seldom take care of their materials if they are not supervised.
• Children are more motivated by rewards/grades than they are by the acquisition of competence.
• Many of the children in my class show little effort.

Criterion Analysis

Whereas the summative analysis provides a description of students' beliefs at the beginning and end of their teacher preparation program, the criterion analysis provides a comparison of students' beliefs with the faculty's beliefs. Once this comparison is made, it is possible to compare different groups of students with each other across time. The Fisher Z transformation was used to achieve a normal distribution in the data and standardize the scores for

comparison. Table 4 displays the statement rankings by the faculty for each Q-sort. Table 5 displays the relatedness between the faculty beliefs and the reported beliefs of each group of students. (Higher Z scores show more relatedness between teachers in each group and the faculty.) Results from the criterion analysis indicate that students at the end of their coursework (ST1 and ST2) report beliefs more similar to the beliefs held by the faculty in relation to discipline and behavior management than students at the beginning of their program (Intro; $p < .01$). A similar pattern exists for teaching practices ($p < .01$). However, beliefs about children were similar between students both at the beginning of their program and at the end of student teaching as well as with the teacher education faculty. There were no significant differences in relatedness to faculty beliefs between the beginning and end of student teaching (ST1 and ST2). In addition, the overall degree of relatedness between students and faculty was higher for beliefs about children than for beliefs about discipline and behavior management and teaching practices. It is important to note that although students had similar rankings of beliefs when looking at the extremes, (i.e., most and least), the criterion method examines all the statements for the degree of relatedness providing a more thorough examination of differences in priorities of beliefs.

Table 4 Criterion sort of faculty beliefs

Q-Sort 1 Beliefs about Discipline and Behavior Management
VERY characteristic of my approach or beliefs about discipline and behavior management.
<ul style="list-style-type: none"> • When children are engaged in interesting problems and challenging activities they tend to have very few discipline problems. • Self-monitoring skills (or self-regulation) are important skills for children to develop. • If I treat students with respect, kindness and concern, there are fewer behavior problems. • If I anticipate problems before they happen and discuss them with students, I have fewer discipline problems.
LEAST characteristic of my approach or beliefs about discipline and behavior management.
<ul style="list-style-type: none"> • The curriculum and class schedule need to be prioritized over children's specific interests. • Peer interactions are best left to recess and snack time. • The primary goal in dealing with children's behavior is to establish and maintain control. • Praise from me is an effective way to change children's behavior.
Q-Sort 2 Beliefs about Teaching Practices
Those practices that are MOST essential and/or characteristic of my teaching.
<ul style="list-style-type: none"> • Doing an activity to create a sense of community. • Welcoming each child by name to class. • Encouraging children and giving feedback that focuses on the process of children's creations or thinking, not the outcomes or the solution. • Permitting children to choose from a variety of activities.
Those practices that are LEAST essential and/or characteristic of my teaching.
<ul style="list-style-type: none"> • Discussing a written announcement or message created by the teacher. • Using hand signals/gestures. • Using whole group instruction. • Using drill and recitation for factual information (math facts, etc.). • Using work sheets.

Q-Sort 3 Beliefs about Children
MOST characteristic of my belief system.
• Children cannot be understood without knowing something about their families.
• Children meet challenges best when they feel that their teachers care about them.
• Children need to feel safe and secure in the classroom.
• Children learn best by being actively involved in lessons/activities.
LEAST characteristic of my belief system.
• Children are more motivated by rewards/grades than they are by the acquisition of competence.
• Some children show little desire to learn.
• Children seldom take care of their materials if they are not supervised.
• Many of the children in my class show little effort.

Table 5 Average degree of relation (as Fisher Z standard score) to the B–K faculty among two groups of preservice teachers using criterion method

	Intro students	Student teachers time 1 (ST1)	Student teachers time 2 (ST2)	F values significance effect size
Q-Sort 1 Beliefs about Discipline and Behavior Management				
Mean	.34	.58	.61	F(2, 88) = 5.48
SD	.30	.37	.41	p = .006
n	35	28	26	$\eta^2 = .113$
Q-Sort 2 Beliefs about Teaching Practices				
Mean	.48	.76	.79	F(2, 87) = 8.02
SD	.36	.30	.35	p = .001
n	34	28	26	$\eta^2 = .162$
Q-Sort 3 Beliefs about Children				
Mean	.76	.83	.88	F(2, 87) = .848
SD	.28	.43	.41	p = .432
n	35	28	25	$\eta^2 = .02$

Discussion

This study provides data about the beliefs, related to behavior management, teaching practices, and children, of preservice teachers enrolled in an early childhood education program. Overall, preservice teachers report beliefs related to valuing children with an emphasis on the importance of children feeling a sense of belonging and security in the classroom. In addition, preservice teachers show a relatively high degree of relatedness to faculty beliefs about children and their development. However, results from the current study also indicate differences in beliefs related to behavior management and classroom practices between students at the beginning of their program and students at the end of their program as they relate to faculty beliefs. Furthermore,

the student teaching experience does not appear to affect the degree of relatedness between student and faculty beliefs.

Summative results from the TBQ suggest generally common beliefs among the students enrolled in a teacher preparation program, regardless of what point they were in their education program. All groups of students reported that modeling respectful and kind behavior could help in issues of discipline and management. Beliefs about teaching practices reflected a high regard for giving children choices in the classroom and providing encouragement to children. At the other end of the spectrum, least valued teaching practices were practices that focused on rote learning.

Beliefs about children also were similar among the students in the program. Students reported that children needed to feel a sense of security in their classroom and have opportunities to express creativity. Least valued by students both at the beginning and end of their education were beliefs that children are unmotivated to learn and irresponsible with materials. Overall, the beliefs reported in the current study are similar to findings in a study of 397 preservice teachers in which the authors characterized reported beliefs as being sensitive to children with a low priority on rote learning and routine (Decker & Rimm-Kaufman, 2005), and a study using the Preschool Classroom Practices (PCP) Q-sort in which teachers reported more Socioemotional Development Activities such as encouraging children to take responsibility and teaching children school rules than Cognitive Development activities including writing alphabet letters and teaching the difference between letters and numbers (Bracken & Fischel, 2006). These findings support teachers' perceptions of *good* teaching as including respect and child-centeredness (Brophy, 1986; Murphy, Delli, & Edwards, 2004).

Despite these overall similarities in beliefs across groups of students in the current study, specific differences exist between faculty and students' prioritization of beliefs in relation to behavior management and teaching practices when one examines criterion results or comparisons of beliefs between students and faculty. Whereas faculty and student teachers, whether at the beginning or end of their classroom teaching experience, believed that children can and should share responsibility in the classroom, giving high priority to beliefs related to child autonomy, beginning students valued the belief that teachers can control children's behavior, for instance, with praise. These differences in beliefs about classroom management between students at different points in their education replicate findings by Doyle (1997) that preservice teachers' beliefs shift from being teacher-directed and viewing students as passive learners to a view of teaching as facilitating learning and viewing students as active learners.

Jacobs (1968) reported a similar pattern of teacher development: students entered teacher education programs with authoritative views of education, but as they progressed through their program, they developed a more *democratic* approach to education. Beginning students in the study listed teacher-directed management approaches at the bottom of their priorities (i.e., using extrinsic rewards) as well as at the top (i.e., using praise to change behavior). This pattern of beliefs may highlight the struggle in the area of discipline and guidance and misunderstandings

about discipline and control that are dispelled as students learn more about children through classes in child development and have more guided experiences in the classroom (Woolfolk-Hoy & Murphy, 2001).

In fact, discipline and guidance in the classroom may be one of the areas of teaching that is greatly influenced by beliefs, attitudes, and values. Certainly the issue of teacher-directed versus child-focused styles surfaces in discussions of the best teaching approach for young children (Bredekamp & Copple, 1997; Stipek & Byler, 1997; Stipek, Feiler, Daniels, & Milburn, 1995). It seems that the data from the current study suggest that students initially may believe that a teacher-directed approach works well with young children: If you tell the children what to do, the teacher can establish control in the classroom. However, as students have more experiences in the classroom and receive feedback from supervising teachers and cooperating teachers, they may come to understand that allowing children to take responsibility in the classroom fosters the development of self-discipline and lessens direct reliance on the teacher to establish control (Doyle, 1997; Woolfolk-Hoy & Murphy, 2001).

This disparity in beliefs between beginning students and faculty also was found in the area of general teaching practices. Students at the end of their program and the faculty reported beliefs related to sensitive interactions with children and providing feedback to children. Students at the beginning of their program, however, prioritized these beliefs lower than B–K faculty and emphasized “working on group projects or introducing new objects or new activities in the room through demonstration.” It stands to reason that students' initial emphasis and focus is on curriculum, planning, and materials and understanding general routines in the classroom.

Also of note in this study, is the finding that the beliefs of student teachers did not significantly change from the beginning of student teaching to the end or in relation to the beliefs of faculty, suggesting that the beliefs they hold at the end of their coursework remain somewhat constant through student teaching. Other researchers have also reported stability in student teachers' beliefs across their student teaching placement experience (McDiarmid, 1990; Nettle, 1998; Smith, 1997). In fact, in one study, Tabachnick and Zeichner (1984) found that the student teaching experience actually strengthened students' preexisting beliefs. It is possible that the short time between assessments for student teachers may not capture changes in beliefs. The student teaching experience alone may not shift students' beliefs in the 16-week classroom experience, but the practicum and classrooms experiences as well as coursework over four semesters may make an overall contribution to the shift in beliefs from the beginning to the end of the education program. However, findings from the current study indicate that students may hold different beliefs at the beginning and end of their education program, so that if students' beliefs change as a result of their practicum experiences and coursework, the beliefs that they hold when entering student teaching may be more similar to faculty and more child-centered, than when they entered the program.

There are limitations in the study that must be acknowledged. The sample size is small and from one institution of higher education, which does not allow broad generalizations to be made across students in teacher education programs. Certainly a larger sample from diverse programs may allow comparisons of program philosophy as well as other variables to be examined in relations to preservice teachers' beliefs. Also, the Q-sort methodology has not been used widely in studying beliefs. Additional studies are warranted that examine the factor structure of the Q-sort and compare it with survey and questionnaire measures of beliefs.

Even with these limitations, the results from the current study suggest implications for teacher preparation programs. Previous research has indicated that beliefs can change over time (Doyle 1997; Lim & Chan, 2007); although certainly there has been some evidence that the earlier beliefs are formed, the more challenging they are to change (Nisbett & Ross, 1980). The idea that beliefs can change serves not only as the foundation for examining beliefs at the preservice level, but also for education and training. Although much is still unknown about how education and professional development shape high quality teachers, the intent of the education program is to present students with knowledge, research, and experiences regarding best practices in the classroom which contribute to positive outcomes for children (Kontos & Wilcox-Herzog, 1997, 2001). The current study provides two pieces of information related to this discussion. First, having faculty complete the TBQ to examine the beliefs of the faculty offers information about the consistency in the philosophy and beliefs of the faculty teaching preservice teachers. Second, the differences in beliefs between students in the beginning and end of the program lend support to the discussions of the relation between education and beliefs as well as the potential role of dispositions in teacher preparation.

Studies that have focused on changes in students through their education programs support shifts in beliefs and practices over time. For example, in a study of 310 preservice teachers at the elementary level, Doyle (1997) examined the change in beliefs about teaching from preservice teacher to teacher. Her findings suggest that with time, education, and experience, students' initial beliefs about teaching change. Students in her study entered their program with a teacher-directed approach to learning, but through coursework and classroom experiences, they learned a more child-centered approach in which teachers take a facilitating role rather than directive (Doyle; Woolfolk-Hoy & Murphy, 2001).

All students enter a teacher preparation program with their own experiences of education, and some enter having experience with children or with some teaching experience, but typically students have not been guided in these experiences with a philosophy or belief system that underscores best practice. Students also enter programs with a set of values or dispositions. Findings from the current study support that idea of the malleability of beliefs in that students may enter the program with beliefs about children, discipline, and teaching perhaps from their own experiences, but that are different from the philosophy of the program or beliefs of the faculty. Over time through coursework and classroom experiences within the education program, students' beliefs may change based on experiences and interactions with faculty and in their

practicum placements. Dispositions as put forth in the Interstate New Teacher Assessment and Support Consortium (INTASC) principles call for teachers to not only have strong beliefs about teaching, but also to have the affect to be a good teacher (Council of Chief State School Officers[CCSSO], 1992). Although a student can meet the *mechanics* of being a good teacher, it has long been a challenge to assess whether students had the values to be a good teacher (Wilkerson & Lang, 2007). The current study and specifically the Q-sort offers a methodology that may allow an assessment of values related to dispositions that are related to good teachers.

Future studies need to take a longitudinal approach to study cohorts of students as they move through their education program and then examine teachers in the classrooms to assess whether they have become *good teachers*. Longitudinal studies could provide information related to change in individual students. The influence of beliefs on practices continues to be an area for study as well. Examination of beliefs and observation of teaching in the classroom could provide information related to the influence of beliefs in teaching. Similarly, examining the role of beliefs in terms of the *success* of teachers in terms of self-efficacy as well as child outcomes could provide further information related to quality teaching.

Clearly beliefs have a role in teaching. The current study indicates that differences exist in beliefs for students at different points in their education program and suggest that studies of teacher education programs examining faculty beliefs and student beliefs may provide important information for teacher preparation programs.

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