

Measuring Teachers' Perceived Interactions with Children: A Tool for Assessing Beliefs and Intentions

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Abstract

This study examined the relationship between teachers' beliefs and intentions about the importance of teacher-child interactions. The participants were 71 early childhood teachers who had worked with children ages 3-5 for an average of 9 years (range 0-29). Roughly 35% of the teachers had majored in early childhood education, and 63% held at least a Child Development Associate (CDA) credential. In addition, approximately 66% of the sample had taken enough coursework in early childhood education to obtain a permit to work with young children. The results of this study show that beliefs are predictive of intentions. The results also indicate that depth of training influences intentions. It appears that those with the least and most training feel that they are interacting with children most appropriately. Job title was related to perceived ability to practice beliefs. Teacher aides felt more able to practice their beliefs than did teachers.

Introduction

Theories of best practice and current research findings support the need for early childhood educators to be actively involved and sensitive when interacting with young children. The National Association for the Education of Young Children (NAEYC) suggests that teachers should "accept responsibility for actively supporting children's development" and that this active involvement should occur in the context of a solid understanding of children's individual needs and interests (Bredenkamp & Copple, 1997). In addition, researchers have demonstrated that sensitive, involved care is related to positive outcomes for both children and classrooms. For instance, Howes and Smith (1995) found that frequency of adult involvement was positively related to children's play with objects and their attachment to caregivers. In addition, Howes, Phillips, and Whitebook (1992) found that type and amount of adult involvement was related to overall classroom quality.

Although scholars in the field of early childhood education promote active, involved teaching behaviors, not all teachers hold personal beliefs about teaching that match this viewpoint. Kontos and Dunn (1993) point out that although some early childhood teachers believe that children's play is enhanced when teachers interact with them in an involved, supportive manner, many others are hesitant to engage in "active" behaviors for fear of interrupting productive play. Therefore, it appears that there may be disparity between what scholars in the field would like teachers to do and what teachers actually do. Therefore, it is important to assess both the beliefs and behaviors of early childhood educators because teacher beliefs or theories may serve as a "contextual filter" through which teachers screen their classroom experiences, interpret them, and adapt their subsequent classroom practices (Clark & Peterson, 1986).

The idea that teachers' beliefs act as a screen through which behavior is enacted is not new. Lortie noted in 1975 (Lortie, 2002) that teachers form beliefs during their own schooling that create filters through which they process subsequent educational and teaching experiences. Goodman (1988) concurs and calls these pre-professionally formed beliefs "intuitive screens." He suggests that intuitive screens can be thought of as schemas that teachers bring with them to the task of teaching. Scholars have asserted that such screens create a context for acquiring new information, and they are resistant to change in the absence of a dissonance-producing experience (Goodman, 1988; Rath, 2001). Dissonance-producing experiences can be operationalized as apprenticeships, reflective practice, or educational experiences. Researchers interested in teaching beliefs have found at least minimal support for this supposition in that early childhood educators with more education typically hold different beliefs and may behave differently from teachers with less education (Elicker, Huang, & Wen, 2003; McMullen & Alat, 2002).

What is not known at this time is how *intentions* toward teaching factor into the belief-action relationship. Intentions refer to a person's desire to engage in a particular behavior (Ajzen, 1989). Although theory suggests that intentions mediate the belief-action relationship (Ajzen, 1989), to date researchers have not examined how teaching intentions influence the relationship between a teacher's beliefs and his or her actions. Therefore, when examining how teaching beliefs influence the way in which teachers interact with children, it may be potentially important to assess teaching intentions as well.

Characteristics of the teacher may also be important to measure. As noted above, evidence indicates that teachers' beliefs are influenced by education, specialized training, and experience with young children. In general, studies designed to assess components integral to early childhood teaching expertise say that education and specialized training are good predictors of beliefs and actions regarding appropriate caregiving and classroom quality and that experience is not a good predictor (Arnett, 1989; Cassidy & Buell, 1996; Elicker, Huang, & Wen, 2003; Howes, Phillips, & Whitebook, 1992; Kontos, Howes, Shinn, & Galinsky, 1995; McMullen & Alat, 2002). Therefore, this study emphasizes the amount of training and education held by teachers, rather than experience.

Finally, it is necessary to assess whether teachers feel free to act upon their beliefs. Stipek and Byler (1997) point out that many teachers do not feel that they are able to implement a program that is consistent with their beliefs. They assert that parents, administrators, and colleagues often force teachers to internalize constraints that affect their ability to enact their personal beliefs.

Development of the Beliefs-Intentions Scale

Because beliefs and actions are related to important child outcomes but a paucity of research looks at intentions, one purpose of this study is to examine beliefs as they are related to intentions. The following sections review literature relevant to the development for this project of the beliefs-intentions scale, which measured the following aspects of teacher-child interactions: (1) sensitivity of interactions with children, (2) involvement (both verbal and nonverbal) of interactions with children, and (3) play style adopted when interacting with children. These aspects of teacher-child interaction are all related to children's developmental outcomes, and all have been used observationally to assess teachers' actual interactions with children.

To date, none of these measures has been specifically adapted for use as a tool for measuring beliefs. Although other tools assess teaching beliefs, if the variable of interest is specific teacher-child interactions, it is important to utilize a belief measure that incorporates corresponding levels of measurement specificity. Ajzen (1996) notes that when attitudes and behaviors are not measured at the same level of generality or specificity, the likelihood of finding a correlation between the two is slim; therefore, beliefs and intentions need to be measured in accordance with the same context as the behavior of interest. For example, if one is interested in the relationship between what a teacher professes to believe about the purpose of free choice (i.e., when children are able to select from among a variety of developmentally appropriate activities) and what they actually do with children during free choice time, it is important to ask them only about free choice and not the purpose of early childhood education in general. Although many tools that assess teachers' beliefs about interacting with young children (such as the Teacher Beliefs Scale) are used frequently in research, these questionnaires do not specifically measure the variables of interest in this study.

Items for the questionnaire used in this study were developed by adapting categories used in four different observational tools (see descriptions below). Belief and intention statements were created to match categorical items on each observational tool. For instance, the statement "I get down on the floor and play with children" suggests elaborate caregiving in which teachers are acting as play leaders. The statement "I speak warmly to the children when I interact with them"

speaks to teacher sensitivity. Once developed, each of the questionnaire items was piloted twice prior to adoption of the final version. Twenty-six teachers completed the initial pilot version of the questionnaire, and 15 completed the second pilot version. Means, standard deviations, ranges, and frequencies were examined for each item on the pilot questionnaires, and items with the greatest range and variability were chosen for inclusion in the final version of the questionnaire. In addition, teachers completing the second pilot version were interviewed to gauge their understanding of the questions presented. Misinterpretations were corrected prior to inclusion of items in the final questionnaire.

Sensitivity

Items relating to sensitivity were adapted from the Arnett Classroom Interaction Scale (Arnett, 1989). This observational tool measures how warmly caregivers interact with children, as well as the quality of their communication, their enthusiasm, and their involvement. Researchers have shown that when teachers are more sensitive, or emotionally responsive, the children in their care have higher language development scores, they rate higher in attachment security, and they are more sociable with peers (Kontos, Howes, Shinn, & Galinsky, 1995; Whitebook, Howes, & Phillips, 1989).

Teacher Involvement (Verbal)

The level at which teachers are verbally involved with children is frequently measured in one of two ways-how often teachers talk and the types of things they say to children. Type of teacher talk can vary from not talking at all with children to asking them open-ended questions and elaborating on their comments (Kontos & Wilcox-Herzog, 1997). Current research has shown that when teachers use more suggestions, open-ended questions, and elaborative statements with children, the children exhibit higher levels of social and cognitive developmental competence (Clarke-Stewart, 1987; Erwin, Carpenter, & Kontos, 1993; Pellegrini, 1984).

In this study, the teacher verbalization scale was adapted from an observational measure created by Wilcox-Herzog and Kontos (1998). This new seven-point scale is designed to assess the level of a teacher's verbal interactions with children. This scale ranges from (1) not talking with a child to (2) talking with children about assistance (getting materials, self-help, first aid, clean up) to (3) talking with children about their behavior (restating rules, redirecting children, telling children what to do) to (4) talking with children socially to (5) making simple statements or asking close-ended questions to (6) making elaborative statements or asking open-ended questions to (7) talking with children about fantasy play (teacher takes on a role).

The rationale for this verbalization scale stems from several different sources. For instance, the category "talking with children about fantasy play" was placed at the upper end of the scale because Saltz, Dixon, and Johnson (1977) demonstrated that talking with children about fantasy play (while involved in sociodramatic play) was more highly related to mean IQ scores than was talking to children about fantasy stories or typical preschool activities (e.g., art, building).

The concepts of elaborative talk and non-elaborative talk were derived from a verbal interaction scale developed by Wilcox-Herzog and Kontos (1998). Research reviewed during the process of developing this scale suggests that teachers' verbalizations are differentially related to children's competence and can be placed on a scale. In addition, because both of these categories represent ways of talking with children about typical free-play activities (e.g., art, blocks, books), they were placed beneath "talking with children about fantasy play" on the scale.

"Talking with children socially" was placed above "talking with children about behavior management issues" because McCartney (1984) showed that while control statements were a negative predictor of children's language development and statements aimed at giving and requesting information were positive predictors of language development, expressive (or social)

utterances were unrelated to children's language development. This finding suggests that although social conversations may not enhance children's development, they do not harm it. This finding provides a rationale for placing social talk in-between directives and non-elaboratives on the verbalization scale.

Although no empirical evidence supports the placement of talk centered around personal assistance below directives on a scale of teacher verbalizations, the Howes' Adult Involvement Scale (Howes, 1990) suggests that this decision might be logical. The Howes' Adult Involvement Scale (described more fully below) asserts that when teachers interact with children for caregiving (or assistance) purposes, they are less involved than when they manage children's behavior or give them directions. Although the Howes' scale examines a broad array of teacher behaviors, teacher talk is a component of involvement. The inclusion of verbalizations in this scale suggests that it may be possible to create a hypothetical scale of teacher verbalizations based on Howes' work. Finally, the category of "not talking" was placed lowest on the scale based on the findings of Wilcox-Herzog and Kontos (1998).

Teacher Involvement (Nonverbal)

A second way to measure how involved teachers are with children is to assess both their verbal and nonverbal behaviors. Conceptualized this way, teacher involvement can range from ignoring children to sitting close to them while playing interactively (Kontos & Wilcox-Herzog, 1997). Researchers have suggested that when teachers are interacting with children at higher levels of involvement, this involvement is positively related to children's development. For instance, when teachers are more involved with children, those children rate higher in attachment security, they spend less time wandering aimlessly, and they score higher on language development assessments (Kontos, Howes, Shinn, & Galinsky, 1995; Whitebook, Howes, & Phillips, 1989).

Items related to nonverbal involvement were adapted from the Howes' Adult Involvement Scale (Howes, 1990). This scale contains six items: (1) ignoring children, (2) routine caregiving (touch child for routine care without verbal interaction), (3) minimal caregiving (touch child for discipline, answer direct questions, give verbal directives), (4) simple responsiveness (watch children play, use some unnecessary physical contact, answer children's verbal bids), (5) elaborative caregiving (make some physical gestures, sit with child, respond to a child's statements, make play suggestions), and (6) intense interactions. Previous research has shown that when teachers are interacting with children at the simple responsive level or higher, children tend to engage in more complex play with objects and peers (Howes & Stewart, 1987; Howes & Smith, 1995; Kontos, Hsu, & Dunn, 1993).

Teacher Play Styles

Teacher play style refers to the overall role that teachers take on when they are interacting with children. Examples of such roles include socializing with children, playing with children, monitoring their behavior, and assisting with self-help tasks. Teacher play styles, or roles, have previously been examined in the context of children's play. For instance, in a study of Head Start teachers, it was found that teachers typically spend most of their time playing with children and helping them to get ready to play (Kontos, 1998).

Response items related to teacher play style were adapted from play style definitions created by Enz and Christie (1994). These play style definitions represent a continuum of involvement and include (1) uninvolved, (2) caretaker (blowing a child's nose), (3) safety/behavior monitor (redirecting a child), (4) stage manager (getting materials for children), (5) play monitor (watching children play), and (6) play enhancer (actively playing with children).

In addition to describing teacher roles with children, these play styles can also be placed on a continuum according to how "play enhancing" they are. According to Enz and Christie (1994),

some experts believe that teachers should become directly involved in children's play while others think that teachers should stand back and allow children time for discovery and independent play. In defense of a more active, "interventionist" role, Enz and Christie (1994) demonstrated, via observations of teachers in the dramatic play area, that when teachers used play styles that were geared toward extending play, and when they were able to match their play styles to children's "play agendas," make-believe play and literacy activities tended to increase. In addition, when teachers took on less-involved roles, children tended to engage in less fantasy play (Enz & Christie, 1994). Similarly, Kontos (1998) found that when teachers spent more time in play-enhancing roles, they were more likely to support children's play with objects via questions.

In summary, teachers' beliefs were expected to be related to their intentions because beliefs inform intentions, which are said to be the single best predictor of a person's eventual behavior (Ajzen, 1996; Fazio & Roskos-Ewoldsen, 1994). Therefore, the primary purpose of this study was to examine the relationship between teacher beliefs and intentions. This study also examined the relationship between beliefs and intentions, perceived ability to practice beliefs, and teacher characteristics such as job description and depth of training. Teacher characteristics were expected to be differentially related to teaching beliefs and intentions.

Methods

Participants

Seventy-one early childhood educators participated in this study. Participating teachers all worked with children ages 3-5. Teachers were recruited through their center directors. Letters were sent to directors of 880 early childhood programs in southern California. Center directors were asked for permission to solicit teachers to participate in the study. Thirty-eight center directors (4%) agreed to participate in the study. Once approval was obtained from these directors, letters were then sent directly to 364 teachers and teacher aides. Teachers interested in participating completed a consent form (that included space for demographic information) that they then returned to the principal investigator. Centers included private, not-for-profit, child care ministries, Head Start, and university-based programs. All were selected from primarily urban areas. Forty-eight of the participating teachers described themselves as classroom teachers, 18 were classroom aides, and the remaining 4 were in supervisory positions in their centers (one teacher did not provide information about job title).

Participating teachers varied in terms of experience, education, and specialized training. Teachers had worked with children ages 3-5 for an average of 9 years (range = 0-29). Twenty-five teachers had high school diplomas, 4 had a Child Development Associate (CDA) credential, 20 had associate's degrees (AA), and 21 had bachelor's degrees or beyond. Of the 45 teachers in the sample with at least a CDA, 23 had majored in an early childhood related topic. In addition, 47 out of 71 teachers held teaching certificates related to early childhood (e.g., a CDA, Child Development Permit, or teaching credential) (see Table 1). Many teachers furthered their professional development via workshops, conferences, and additional courses. In California, teachers without degrees can obtain certification via the Child Development Permit Matrix, where the level of certification is dependent upon a mixture of coursework and experience with young children.

Table 1
Experience, Education, and Specialized Training of Participating Teachers (*n* = 71)

| | Number of Participating Teachers |
|--|----------------------------------|
| Teachers with a high school diploma | 25 |
| Child Development Associate (CDA) Credential | 4 |

| | |
|--|----|
| Associate's Degree | 20 |
| Bachelor's Degree | 21 |
| Minimum CDA and majored in a early childhood related topic | 23 |
| Held certificates related to early childhood development | 47 |

Measures

Depth of Training. As part of the survey, teachers were asked to provide the following information: (1) highest degree obtained (e.g., high school diploma through Ph.D.), (2) topic of study (if a degree was obtained), (3) early childhood teaching certification held, and (4) a list of child-related conferences, workshops, or classes attended. Information about education/training was used as an indicator of the training depth held by each teacher. Although level of education and teaching certification held are crude measures of depth of training, it is assumed that teachers with more training may have a deeper understanding of developmentally appropriate practice.

Depth of training was operationally defined for this study as a combination of highest degree held, major of education, and certifications held. Participants with an AA/CDA or higher in an early childhood related major were combined, participants without a terminal degree yet possessing a certificate in an early childhood area of study were combined, and the final group comprised individuals that did not qualify for the first two groups. This grouping was chosen because degrees and specialized training, although correlated, need to be examined separately because one can hold a degree but have no formal instruction related to young children.

Perceived Ability to Practice Beliefs. To identify teachers who were unable to teach in the way that they wanted, perceived ability to practice one's beliefs and intentions was measured with two items on the self-report questionnaire. The first question asked teachers whether they were able to practice their beliefs, and the second question asked teachers what was preventing them from teaching the way they would like to teach.

Teaching Beliefs and Intentions. Teachers' beliefs about the importance of varying types of teacher-child interactions and their intentions were assessed with a self-report questionnaire. As described above, this questionnaire is based on four different observational measures of teacher-child interaction.

Teacher beliefs were assessed with 17 statements. For each of these belief statements, teachers were asked to rate how often they thought teachers should engage in the following behaviors on a 5-point Likert scale with 1 being never and 5 being all of the time. Belief scores were assigned to each teacher by tallying all 17 responses. Higher scores indicated stronger beliefs about the importance of behaving in a sensitive, involved manner toward children.

Teaching intentions were assessed with 20 statements. As with teaching beliefs, teachers were asked to rate their intentions regarding potential behaviors with children on a 5-point Likert scale, and higher scores indicated intentions that were more sensitive and involved in nature. Internal consistency reliability for beliefs and intentions, as measured by Cronbach's alpha, was .85. Both scales are provided in the appendix.

Results

Perceived Ability to Practice Beliefs Differences

In general, teachers in the sample reported that they were able to practice their beliefs at least most of the time. Specifically, 22% of the sampled teachers reported that they were able to always practice their beliefs, 65% indicated that they were able to practice their beliefs most of

the time, 4% claimed that they were able to practice their beliefs only some of the time, and 7% reported that they were seldom able to practice their beliefs. Teachers cited a variety of reasons why they were unable to always implement their beliefs in the way they wanted. Frequently cited factors included parents, directors, other teachers, physical constraints, and themselves. The means showed that teachers in this study thought it was fairly important to interact with children in a sensitive, involved manner (see Table 2).

An analysis of variance was performed to examine whether the ability to practice beliefs was influenced by job title. The analysis of variance revealed a significant difference, $F(1, 64) = 7.22, p = .009$, with teachers indicating a lower ability to practice their beliefs ($M = 1.85, SD = .68$) than teacher aides ($M = 2.44, SD = 1.04$). No additional teacher characteristics were significantly correlated with perceived ability to practice beliefs, nor was job title related to teacher beliefs or intentions.

Table 2
Means, Standard Deviations, and Ranges for all Variables

| Variable | <i>M</i> | <i>SD</i> | Possible Range | Actual Range |
|--|----------|-----------|----------------|--------------|
| Teaching Beliefs | 70.72 | 6.01 | 17-85 | 56-82 |
| Teaching Intentions | 81.44 | 9.20 | 20-110 | 60-100 |
| Perceived ability to practice beliefs | 1.92 | .75 | 0-5 | 0-4 |
| <i>Teacher Characteristics</i> | | | | |
| Years of experience with young children ages 3-5 | 9.06 | 7.75 | --- | 0-29 |

The Relationship between Beliefs and Intentions

An intercorrelation analysis was performed among the belief and intention variables to determine whether there was a direct relationship between teachers' beliefs and their intentions. The intercorrelation revealed that teachers' beliefs and their intentions were significantly positively correlated $r(65) = .251, p = .05$. The link between teachers' beliefs and intentions was tested with linear regression analysis. The dependent variable was the teaching intention total score, and the predictor variable was the total belief score. The results of the regression analysis revealed that the overall model predicted teaching intentions, $F(1, 59) = 3.979, p = .05$. This model accounted for 6% of the explained variance ($R^2 = .063$) and indicated that beliefs were a small positive predictor of teachers' intentions. Stated simply, when teachers espouse the importance of interacting with children in sensitive, involved ways, they are more likely to say that they intend to behave this way also.

Teacher Training

Intercorrelations among the teacher characteristics designed to assess experience and depth of training were calculated and presented in Table 3. To determine whether depth of training influenced teacher beliefs and intentions, analysis of variance was performed to examine whether the participants differed on measures of training. For depth of training, using the Wilks' criterion, beliefs and intentions were significantly affected by depth of training, $F(2, 60) = 2.77, p = .03$. The results reveal a modest relationship between training and intentions, partial $\eta^2 = .07$. **Significant differences were noted for those with a degree in a child-related field of study (and possibly a certificate) ($M = 85.90, SD = 8.71$) from individuals with certificates (and no degree) indicating the lowest intentions ($M = 79, SD = 7.51$).** Interestingly, those without a college degree or a certificate rated themselves higher than those with a certificate but lower than those with degrees ($M = 82, SD = 11.14$). No significant findings were noted for beliefs and depth of training.

Table 3
Intercorrelations among Beliefs, Intentions, and Teacher Characteristics

| | 1 | 2 | 3 | 4 | 5 |
|-------------------------|--------|-------|---------|-------|-----|
| 1. Beliefs | 1.0 | | | | |
| 2. Intentions | .301* | 1.0 | | | |
| 3. Job Title | -.191 | .013 | 1.0 | | |
| 4. Experience | .367** | -.112 | -.364** | 1.0 | |
| 5. Certification/Degree | .029 | -.193 | -.131 | .333* | 1.0 |

* $p < .05$

** $p < .01$

Discussion

The primary purpose of this study was to examine the relationship between beliefs and intentions. The results indicate that beliefs and intentions for this group of teachers were related and that beliefs were a modest predictor of intentions. This finding is in keeping with previous research that suggests that teachers' beliefs will be related to their intentions, because beliefs inform intentions (Ajzen, 1996; Fazio & Roskos-Ewoldsen, 1994), although it appears that for this group of teachers, additional factors influence intent to perform a behavior.

The results do suggest that if teachers score high on the intentional measure, they might be more likely to interact in appropriate ways with young children. Theory suggests that intentions are a mediating factor between beliefs and actions and are the best predictor of eventual behavior (Ajzen, 1996; Fazio & Roskos-Ewoldsen, 1994). This presumed relationship is potentially useful to those working with teachers directly responsible for the care and education of young children. Assessing teachers' beliefs and intentions might be a first step in guiding them toward more appropriate practice with young children. If beliefs and intentions are indeed related to actual practice with children, then changing teachers' thoughts may actually lead to improvements in teaching behavior. Those interested in training employees in workplace settings have long recognized that helping professionals to achieve accurate self-assessment can help them to better understand assessment by others and use feedback results more productively in changing practice (London, 2003).

A secondary purpose of this study was to examine the relationship between perceived ability to practice beliefs and the other variables of interest in this study. It is interesting to note that perceived ability to practice beliefs was not differentially influenced by depth of training nor was it related to teachers' scores on the beliefs and intentions measures. For this sample of teachers, depth of training did not lead some teachers to feel more able to express their beliefs than others, perhaps because teachers with less education or specialized training do not view their beliefs as inappropriate and feel no shame in expressing beliefs not in keeping with developmentally appropriate practice. This finding could also explain why perceived ability to practice beliefs was unrelated to teachers' scores on the beliefs and intentions measures. Those with lower scores on these measures felt comfortable enough with their held beliefs and intentions to report that they held less-appropriate views regarding interactions with young children. Maybe this comfort with personal beliefs (or lack of understanding about the importance of certain types of teacher-child interactions) translates into an ability to practice without censorship.

Job title, however, did influence the perceived ability to practice beliefs. Teacher aides felt more able to practice their beliefs than did teachers. This finding is interesting and may reflect the fact that, regardless of training, teachers might have a heightened sense of how they are supposed to be interacting with young children. Typically, directors work with teachers to

improve the quality of classrooms and expect teachers to pass this message along to aides. Therefore, teachers might feel the most pressure to act in accordance with the beliefs of their direct supervisor. This type of constraint may explain why some researchers have found that teachers are not always able to implement their beliefs in their classrooms (Charlesworth, Hart, Burts, Thomasson, Mosley, & Fleege, 1993; Hatch & Freeman, 1988; Kontos & Dunn, 1993).

Finally, the results demonstrated that intentions differed by depth of training held. Regardless of job title, those with the most education and training were most likely to report engaging in developmentally appropriate behavior. Oddly enough, teachers with the least education/training were next in line to say that they engaged in high-level interactions with children. This finding may indicate that those with the least training are merely following those with the most training or that they are over-reporting the appropriateness of their own interactions with children. It is surprising that depth of training is related to intentions but not beliefs. Perhaps training is not enough to significantly sway strongly held beliefs but is enough to help teachers behave more appropriately with the young children in their care. Some scholars assert that formal experiences exert little influence on previously held "implicit" beliefs (McMullen, 1997), while others view formal experiences as a socialization process by which previously held beliefs are altered (Smith, 1997). Maybe the former is true for teachers in this sample. Perhaps the teachers in this study with the most training know how scholars want them to interact with young children and are reporting that they are enacting what they have learned, even if they do not believe deep down in the importance of certain types of interactions.

It is important to keep in mind, however, the limitations of this study. First, the sample is fairly small and is restricted to a particular geographic area. It is impossible to know whether the results of this study are generalizable to groups of teachers in other areas of the country, and the study lacks power because of the small sample size. Second, this study only measures teachers' beliefs and intentions. Although scholars believe that intentions mediate the relationship between beliefs and actions and therefore might be a good predictor of what teachers are actually doing with young children, until teachers are assessed at these three levels directly, it is difficult to know whether teachers' beliefs and intentions actually represent what they are doing with young children. In the future, it is imperative to not only ask teachers what they believe about children and intend to do with them but to actually observe their interactions with young children directly. Finally, it is important to consider additional factors that might influence intentions. As noted in the results section, beliefs accounted for only 6% of the variance in intentions; obviously additional components in this relationship need to be identified and examined.

In summary, this paper presents information that might be potentially useful to those working with early childhood teachers or those training prospective teachers. The results suggest that it is important to encourage teachers to seek degrees in an early childhood related field (rather than simply certification). In this study, teachers with degrees in the field were most likely to say that they intended to interact with children in appropriate ways. The results also suggest that it is important to help teachers understand their beliefs and intentions with young children, because this understanding may improve practice.

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Appendix Beliefs and Intentions Questionnaire

A. Teaching Beliefs (items are rated on a Likert scale)

1. When children hit each other, teachers should help them to understand each other's feelings.
2. During group time, teachers should encourage children to sit and listen most of the time.
3. Teachers should plan some novel activities that will challenge children to try new experiences (sometimes with adult assistance).
4. Teachers should encourage children to pick up their toys (with adult help) during clean-up time.
5. When a child takes a toy from another child, teachers should observe and see what happens.
6. Teachers should speak to children at their own level (e.g., use language familiar to young children, make eye contact).
7. Teachers should talk to children like adults (e.g., use long sentences and words unfamiliar to young children).
8. Teachers should encourage children to use good manners (even if children don't always use them).
9. When a child throws playdough one time, teachers should tell her to leave the playdough area.
10. Teachers should put a variety of interesting activities out during free choice time and then let children make their own activity choices.
11. When children play, teachers should sit down sometimes and talk with them about what they are doing.
12. Teachers should make children pick up all of their toys (without adult help) during clean-up time.
13. When a child throws playdough one time, teachers should remind her that playdough is for rolling.

14. When children hit each other, teachers should make them apologize (say sorry) to each other.
15. When many children in the class lose interest during story time, teachers should stop and go on to something else.
16. When many children in the class lose interest during storytime, teachers should make them sit on their bottoms until the story is finished.
17. When a child takes a toy from another child, teachers should intervene quickly.

B. Teaching Intentions (items are rated on a Likert scale)

1. I get down on the floor and play with children.
2. I speak warmly to the children when I interact with them.
3. I watch children play.
4. I ask children open-ended questions rather than yes-no ones.
5. I engage children in two-way conversations about their play.
6. I am enthusiastic about children's activities and efforts (e.g., I congratulate them when they do good job).
7. I help children use play materials.
8. I talk with children about their play.
9. I make suggestions for how to use materials.
10. I listen attentively when children speak to me.
11. I help children remember to clean up as they finish activities.
12. I hug and hold children.
13. I get involved in children's dramatic play.
14. I am firm with children when it is necessary.
15. I talk with children in order to enhance their play.
16. When children talk to me, I restate their comments.
17. When I describe what children are doing, I give extra information (e.g., "Your red car is going really fast.").
18. I help children find activities to play with.
19. I enjoy being with children.
20. I show children the appropriate way to use play materials.