Relationship Between Early Childhood Practitioner Beliefs and the Adoption of Innovative and Recommended Practices

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Abstract: Meta-analyses of the findings from 29 studies including 4,194 early childhood practitioners showed that different practitioner belief appraisals (endorsement, importance, self-efficacy) were related to the intent to use, and the adoption and use of different kinds of early childhood practices (developmentally appropriate practices, curricular content, classroom practices, instructional practices, social climate). Endorsement was assessed in terms of practitioner beliefs regarding the support for or approval of a specific type of practice. Importance was assessed in terms of the significance or value attributed to a practice by a practitioner. Self-efficacy beliefs were assessed in terms of practitioner attributions of the likelihood that their use of a practice would have expected or anticipated consequences. The average weighted effect size (correlation coefficient) between the belief and practice measures was $r = 0.63$, although there were differential relationships between the belief and practices measures depending on type of belief and type of practice. Implications of the results for both research and practice are described.

Introduction

Many years of research and literally hundreds of studies have demonstrated that personal belief appraisals are robust predictors of people's behavior in many domains of life (see especially Bandura, 1997; Skinner, 1995). The types of belief appraisals that have been the focus of investigation include, but are not limited to, self-efficacy appraisals (Holden, 1991), outcome expectations (Plourde, 2002), perceived control (Wallston, 2001), causal attributions (Porac, Ferris, & Fedor, 1983), self-beliefs (Valentine, DuBois, & Cooper, 2004), and perceived confidence (Bruder, Dunst, & Mogro-Wilson, 2011) among many other belief appraisal terms and constructs (e.g., 2001; Paczkowski & Baker, 2007; Vandenplas-Holper, 1996).

In addition to personal control belief appraisals, belief appraisals about the perceived importance (e.g., Jambunathan, 2005; Kowalski, Pretti-Frontczak, & Johnson, 2001) and the endorsed acceptance (e.g., Miltenberger, 1990; von Brock & Elliott, 1987) of different kinds of practices have been found to be determinants of people's behavior (e.g., Reimers & Wacker, 1988). These particular types of beliefs have most often been assessed in terms of the social validity of different kinds of practices and the behavioral consequences of adopting and using the interventions (e.g., Finn & Sladeczek, 2001; Foster & Mash, 1999). Studies of these kinds of belief measures have found that stronger importance and endorsement appraisals are associated with increased adoption and use of different kinds of early childhood intervention practices (e.g., Dunst, Pace, & Hamby, 2007; Trivette, Dunst, Masiello, Gorman, & Hamby, 2009).

The purpose of the research synthesis described in this Research Brief was to determine if early childhood practitioner belief appraisals were related to the adoption and use of different...
kinds of innovative and recommended early childhood practices (e.g., Bredekamp & Copple, 1997; Odom & Wolery, 2003; Sandall, Hemmeter, Smith, & McLean, 2005). The belief appraisals constituting the focus of analysis were endorsement of targeted practices (e.g., McLean, Snyder, Smith, & Sandall, 2002), perceived importance of targeted practices (e.g., Kowalski et al., 2001), and self-efficacy beliefs in terms of the successful enactment of targeted practices (e.g., Lamorey & Wilcox, 2005). Endorsement was assessed in terms of practitioner beliefs regarding the support for or approval of a specific type of practice. Importance was assessed in terms of the significance or value attributed to a practice by a practitioner. Self-efficacy beliefs were assessed in terms of practitioner attributions of the likelihood that their use of a practice would have expected or anticipated consequences.

The three types of belief measures were evaluated in terms of either the intent to adopt and implement a targeted practice or actual engagement in a targeted practice. The latter was assessed by either practitioner behavioral observations or practitioner self-report. The types of practices constituting the focus of investigation included developmentally appropriate practices (e.g., McMullen, 1997), curricular content (e.g., Lee, 2007), classroom practices (e.g., Lieber et al., 1998), instructional practices (e.g., Brown, 2005), and classroom social climate (e.g., Kontos & Dunn, 1993). The expected outcome of the research synthesis was a better understanding of which kinds of beliefs with which kinds of practices predicted practitioner intent to or adoption and use of innovative and recommended early childhood intervention practices (Campbell & Halbert, 2002; Lamorey & Wilcox, 2005; Sawyer & Campbell, 2009; Wilcox, Guimond, Campbell, & Moore, 2006).

**Search Strategy**

Studies were located using efficacy or self-efficacy or self-efficacy or confidence or self-confidence or beliefs or expectations or attitude AND early intervention or preschool or early childhood or special education or therapy or Head Start as search terms. We also searched for studies using the specific names of belief measures that have been used in studies of early childhood practitioners (e.g., Charlesworth, Hart, Burts, & Hernandez, 1991; Guimond, Wilcox, & Lamorey, 2008). Both controlled vocabulary and natural language searches were conducted (Lucas & Cutspec, 2007). Psychological Abstracts (PsychInfo), Educational Resource Information Center (ERIC), MEDLINE, Academic Search Premier, and Dissertation Abstracts International were searched. These were supplemented by Google Scholar, Scirus, and Ingenta searches as well as a search of an extensive EndNote Library maintained by our Institute. Hand searches of the reference sections of all identified journal articles, book chapters, books, dissertations, and unpublished papers were also examined to locate additional studies. Studies were included if the correlations between the practitioner belief measures and the different measures of early childhood practices were included in the research reports.

**Results**

Twenty-nine studies were located that included 4,194 early childhood practitioners (see Appendix A). The majority of the practitioners were female (97%). They had completed an average of 15 years of formal education (SD = 1.20, Range = 13 to 18). The practitioners had an average of 10 years of experience working with young children (SD = 3.30, Range = 4 to 15). Nearly all of the practitioners were regular early childhood teachers or child care providers. The studies were conducted in the United States (N = 22 studies), China, Greece, Jordan, Korea, Taiwan, Thailand, and Turkey (1 study each).

The children with whom the practitioners worked were mostly 36 to 60 (N = 10 studies) or 36 to 72 (N = 7 studies) months of age. Three studies included children 36 to 48 months of age, two studies included children birth to 60 months of age, while the other seven studies included children of different ages or age
ranges. The majority of the children served by the practitioners were typically developing (N = 15 studies) or both typically developing and environmentally at-risk (N = 8 studies). Four studies included practitioners serving only at-risk children and two studies included practitioners serving both typically developing children and children with (nonspecified) disabilities.

Endorsement beliefs were measured in 10 studies, importance beliefs were measured in 16 studies, and self-efficacy beliefs were measured in 7 studies. The most frequently used belief measures included the Teacher Beliefs Scale (8 studies) (Burts, Buchanan, Charlesworth, & Jambunathan, 2000; Charlesworth et al., 1991; Charlesworth et al., 1993) and the Teachers’ Sense of Efficacy Scale (3 studies) (Tschannen-Moran & Hoy, 2001). Each of the other studies included a study-specific belief measure developed by other investigators (10 studies) (e.g., Chippis, Simpson, & Brysiewicz, 2008; DiBella-McCarthy, McDaniel, & Miller, 1995; Rescorla, Hyson, Hirsh-Pasek, & Cone, 1990) or study investigator-developed measures (5 studies) (e.g., Islam, 1999; Wilcox-Herzog & Ward, 2004).

Developmentally appropriate practices were the focus of investigation in 8 studies, curricular content was the focus of investigation in 14 studies, classroom practices (e.g., inclusion, organization) were the focus of investigation in 5 studies, instructional practices were the focus of investigation in 7 studies, and classroom social climate was the focus of investigation in 10 studies. The early childhood practice measures included, but were not limited to, the Developmentally appropriate practices (Charlesworth et al., 1993) (Pianta, La Paro, & Hamre, 2008), Classroom Assessment Scoring System (Pianta, La Paro, & Hamre, 2008), Early Childhood Environment Rating Scale (Harms, Clifford, & Cryer, 1998), Social Interaction Practices Questionnaire (Odom & Brown, 1993), and Classroom Practices Inventory (Hyson, Hirsh-Pasek, & Rescorla, 1990).

The average pooled weighted correlations between the belief and practices measures were used as the effect sizes for the relationships among the variables constituting the focus of analysis. The 95% confidence interval for the average effect size was used to determine the precision of the average weighted correlations. (The smaller a confidence interval, the more precise the effect size estimate.) The Z-statistic was used to determine the strength of the relationships among the belief and practices measures. The relationships were examined in a number of different ways to discern which kinds of beliefs were related to which kinds of practices.

Synthesis Results

Table 1 shows the findings for the beliefs measures examined in four different ways (type of belief, type of measure, type of practice, type of outcome). The results, taken together, showed that the relationships between the belief and practice measures were all statistically significant as evidenced by Z-test with p-values beyond 0.0000. The confidence intervals for all the average effect sizes, except a few, were quite small, indicating that the average effect sizes were very good estimates of the true (population) sizes of effect. The findings indicated that stronger belief appraisals were related to the intent to use or actual engagement in the innovative and recommended practices.

Despite the fact that all of the average effect sizes were statistically significant, there was considerable variability in the sizes of effects for the variables in each of the four belief measure categories. This was especially true for both the type of belief measures and the type of outcome measures. As shown in Table 1, the relationship between endorsement beliefs and the adoption and use of targeted practices was quite large (r = 0.74) compared to either importance (r = 0.44) or self-efficacy (r = 0.16) beliefs. The relationship between the belief measures and practitioner self-report use of the targeted practices was also quite large (r = 0.80) compared to either the self-report intent to adopt the practices (r = 0.52) or the independent assessment of practitioner use of the practices (r = 0.21). The patterns of results to a large degree

are explained by the fact that in studies measuring self-efficacy beliefs, the outcome measures were more likely to be practitioner behavioral observations of targeted practices. In contrast, in studies measuring endorsement beliefs, the outcome measures were more likely to be practitioner self-reported use of the targeted practices. This was confirmed by a 3 Between Type of Belief X 3 Between Type of Outcome chi-square analysis, $\chi^2 = 21.38$, $df = 4$, $p = 0.000$.

The results from the type of practice measures showed that the belief measures were most strongly related to adoption of specific curricular content or practices ($r = 0.73$) and that the belief measures were least related to adoption of developmentally appropriate practices ($r = 0.24$). The pattern of results are best explained by the fact that studies investigating curricular content typically included a specific kind of practice (literacy, computers, mathematics, etc.), whereas studies investigating developmentally appropriate practices typically included practitioner adoption of multiple kinds of practices.

**Discussion**

Results showed that different kinds of beliefs for different kinds of practices were correlated with early childhood intervention practitioner intent to use, and both the adoption of and engagement in use of a variety of practices. The findings indicated that practitioner belief appraisals are at least one personal factor (Bronfenbrenner, 1999) that influence behavior intentions and enactment that are expected to have desired effects and consequences (Bandura, 1997). The pattern of results is very similar to those found in studies of elementary and secondary school personnel (Skaalvik & Skaalvik, 2007, 2008) and studies of allied health professionals (Chipps et al., 2008) including speech-language, physical, and occupational therapists in fields other than early childhood intervention (Harris, 2004; Minisini, Sheppard, & Jones, 2011; Salbach, Guilcher, Jaglal, & Davis, 2010; Schaper & Pervan, 2004).

The focus of investigation in this research synthesis was the relationship between early childhood practitioner belief appraisals and their adoption and use of innovative and recommended practices. This is but one dimension of the belief-behavior relationship. Another important aspect of practitioner beliefs is an understanding of the different factors that shape and influence their belief appraisals (Bandura, 1997). Studies of factors related to variations in the self-efficacy beliefs as well as other kinds of belief appraisals of early childhood intervention practitioners show that they are influenced by both intrapersonal and extrapersonal factors (e.g., Bailey, Palsha, & Simeonsson, 1991; Fritz, Miller-Heyl, Kreutzner, & MacPhee, 1995; Lamorey & Wilcox, 2005). In one large scale study of the factors influencing the self-confidence and self-competence beliefs of early childhood teachers along with physical, occupational, and speech-language therapists, Bruder et al. (2011) found that preservice preparedness (e.g., Lewis et al., 1999) and practitioner commitment to continued performance improvement (e.g., Dunst, Trivette, & Deal, 2011) were the best predictors of enhanced efficacy beliefs. In contrast, years of professional experience, licensure or credential requirements, and professional discipline were unrelated to competence and confidence beliefs.

The importance of the research synthesis is best understood when placed in the context of a determinant-belief practices framework. The results shed light on the nature of the belief-practice linkages. A next step is a synthesis of the determinant-belief relationship.

**Implications**

This research synthesis has implications for both research and practice. The major implication for research is the need for studies of early childhood intervention practitioners working with young children with disabilities to determine which kinds of beliefs influence their intent to and adoption of different kinds of practices. This is true for early childhood special educators where research evidence is very...
limited, and is especially true for physical, occupational, and speech-language therapists where research evidence is almost nonexistent. These kinds of studies would shed light on the kinds of belief appraisals held by these early childhood practitioners, and help elucidate the manner in which those beliefs influence their practices.

The implications for practice are straightforward. The findings indicated that there is a need for attention to and assessment of practitioner belief appraisals by supervisors, coaches, trainers, and others to help identify the likelihood that a practitioner will “buy into” and adopt practices that they are asked or expected to use. This type of information would be especially useful in terms of the kinds of supports provided to practitioners. This is illustrated from the results of a study of the influences of early childhood practitioner beliefs about individual and collective responsibility for performance improvement and their appraisals of adherence to learning organization principles and practice (Dunst et al., 2011). Results showed that practitioners who possessed strong belief appraisals were more likely to take responsibility for personal and organizational learning, and in turn adopt and use early childhood intervention program practices in ways intended and expected. In contrast, practitioners who believed the onus of responsibility for their learning and performance rested with others demonstrated little adherence to expected practices. Practitioners who had strong responsibility beliefs were provided considerable opportunity to engage in a wide range of personal and organizational learning opportunities. Those who had weak personal responsibility beliefs were provided support and coaching to affect changes in those beliefs.

In conclusion, practitioner personal belief appraisals were found to be related to their adoption and use of different kinds of early childhood intervention practices. The results add to the knowledge base regarding factors associated with practitioner engagement in desired or expected practices.

References


Appendix A

STUDIES INCLUDED IN THE RESEARCH SYNTHESIS


Appendix A, continued


Table 1
Average Weighted Effect Sizes (r) and 95% Confidence Intervals for Different Categorizations of Practitioner Belief Measures

<table>
<thead>
<tr>
<th>Belief Measures</th>
<th>Number</th>
<th>Average Effect Sizes (r)</th>
<th>95% Confidence Interval</th>
<th>Z-test</th>
<th>p-value</th>
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<tbody>
<tr>
<td></td>
<td>Studies</td>
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<td></td>
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<tr>
<td>Type of Belief</td>
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<td>Endorsement</td>
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<td>.65 -.68</td>
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<td>Intent to Practice</td>
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<td>.49 -.55</td>
<td>35.63</td>
<td>.0000</td>
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<tr>
<td>Type of Practice</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Curricular Content</td>
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<td>.72 -.75</td>
<td>92.68</td>
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<td>Classroom Practices</td>
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<td>.46 -.54</td>
<td>23.95</td>
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<tr>
<td>Instructional Practices</td>
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<td>.29 -.38</td>
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<td>Social Climate</td>
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<td>.0000</td>
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<tr>
<td>Type of Outcome</td>
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<td>Self-Report (Practice Use)</td>
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<tr>
<td>Self-Report (Intent to Adopt)</td>
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<td>.52</td>
<td>.49 -.55</td>
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<td>.0000</td>
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<tr>
<td>Behavioral Observations (Practice Use)</td>
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