Further Evidence for the Validity of the Asset-Based Context Matrix

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ABSTRACT

The validity of an asset-based assessment/intervention planning tool for providing young children interest-based natural learning opportunities was assessed in two studies of early childhood practitioners. Forty-nine (49) practitioners completed a 28-item survey three to six months after participating in training on the Asset-Based Context (ABC) Matrix. Findings from both studies indicated that the practitioners rated the ABC Matrix more useful for its intended than non-intended purposes. Next steps in further establishing the validity of the ABC Matrix are discussed.

INTRODUCTION

The purpose of the studies described in this *CASEinPoint* was to assess the validity of the Asset-Based Context (ABC) Matrix by determining its usefulness to practitioners in six key practice areas. The ABC Matrix is an assessment tool for developing interventions for children in natural learning environments (Wilson, Mott, & Batman, 2004). The studies assessed the degree to which practitioners using the ABC Matrix found it to be useful for its intended purposes.

The ABC Matrix is a contextually-based assessment tool that uses children's everyday interests and abilities as factors promoting children's participation in natural learning environments (Dunst, 2006; Dunst et al., 2001; Raab, 2005). The tool is designed to help practitioners and parents gather functional and meaningful information for developing and implementing activities and interventions in natural learning environments. The reader is referred to Wilson, Mott, and Batman (2004) for a description of the development and initial field testing of the ABC Matrix.

The ABC Matrix is based on the premise that "natural environments are not places, but the everyday routines, experiences, and activities occurring in different social and nonsocial contexts as part of family and community life" (Raab & Dunst, 2004, p. 16). The framework guiding the development of the ABC Matrix focuses on outcomes constituting the benefits of children's opportunities to express interests and assets; children's use of functional and meaningful interactions with people and objects; and children's involvement in everyday activities as part of a child's participation in family life, community life, and early childhood settings.

The need for tools like the ABC Matrix is perhaps best illustrated by the fact child and family outcomes on Individual Family Service Plans (IFSP) and Individual Education Plans (IEP) typically do not use natural environments as contexts for child learning (Campbell & Halbert, 2002; Dunst, Bruder, Trivette, Raab, & McLean, 1998; McWilliam, Ferguson, Harbin, Porter, & Vaderviere, 1998): Dunst et al. (1998), for example, examined the content of IFSPs and IEPs from early intervention and preschool programs in eight states to determine the extent to which more than 3,000 IFSP outcome statements and IEP objectives were described in the context of natural environments. They found that only 1.3% of outcomes and objectives examined were described in terms of everyday family activities, and only 0.4% of these statements were described in the context of everyday community activities. In addition, more than half (57%) of the outcomes examined on IFSPs were deemed to have little or no likelihood of promoting a child's participation in everyday family or community activities.

A previous ABC Matrix validation study (Wilson & Mott, 2005) examined the extent to which practitioners found the instrument useful for its intended purposes (i.e., promoting parent involvement in the assessment process, identifying natural environments-based learning opportunities, and intervention planning) compared to its non-intended purposes (i.e., making child diagnoses/addressing parents' developmental concerns). Seven practitioners from different disciplines used the ABC Matrix with nine children and their families during a six-month period and then completed a nine-item rating scale that measured three different dimensions of child assessment and intervention practices: (1) parent participation in the assessment process, (2) intervention planning, and (3) child diagnostic and developmental concerns. Results showed no significant differences between the assessment process and intervention planning subscale scores, but significant differences between both of those subscale scores and the diagnosis/development concern subscale score.

PROCEDURE

Participants

The studies were conducted with early childhood practitioners in North Carolina and Nebraska.

North Carolina Sample. The NC participants were 17 practitioners from six different disciplines (early childhood education, nursing, occupational therapy, psychology, speech and language therapy, and other human services). They were all employed by the same early childhood intervention program in western NC, serving children birth to eight years of age. The practitioners had two to seven years experience working in early childhood intervention programs. The practitioners had been

implementing natural environments practices for two to 36 months. They implemented the ABC Matrix with one to four children during a three-month period following their participation in ABC Matrix training.

Nebraska Sample. The NE participants were 32 practitioners from nine different disciplines (child development, early childhood education, nursing, occupational therapy, physical therapy, psychology, social work, speech and language therapy, and other human services). They were employed by regional educational service units throughout NE, all of which served children birth to five years of age. The practitioners had one to eight years experience working in early childhood programs. The practitioners had been implementing natural environments practices for two months to 11 years. They implemented the ABC Matrix with one to 40 children during a six-month period following their participation in ABC Matrix training.

Procedure

NC Sample. The NC practitioners participated in a six-hour training session on the ABC Matrix, during which they were asked to use the tool with at least one child with whom they worked during the subsequent three months. After three months, the practitioners were sent a survey asking for their feedback about the usefulness of the ABC Matrix. Seventeen (17) of 21 practitioners (81%) who participated in the training returned the survey.

NE Sample. The NE practitioners participated in training on the ABC Matrix for 12 hours over two consecutive days. Practitioners had the option of using the ABC Matrix in their subsequent practice with children and families. After six months, the practitioners were sent a survey asking for their feedback about the usefulness of the ABC Matrix. Thirty-two (32) of 122 practitioners (26%) who participated in the training returned the survey.

Survey

The survey asked respondents for information about their professional discipline, education level, age, and the number of children for whom they had implemented the ABC Matrix. In addition, the survey asked the practitioners to rate the usefulness of the ABC Matrix for 28 child/family intervention practices. (Sample items from the scale are shown in Table 1.) The items measured seven different dimensions of child assessment and intervention practices:

- Promoting parents' involvement in their children's assessment processes
- Assessing children's natural environment learning opportunities
- Planning natural environments based interventions for children

Table 1

Sample Items on the Practitioner Survey

Dimension	Scale Item
Parent Involvement in the Assessment Process	How helpful was the ABC Matrix in acknowledging parents as knowledgeable about their child and family?
	How helpful was the ABC Matrix in engaging parents in conversations about their child's learning contexts?
Natural Learning Environment Assessment	How helpful was the ABC Matrix in identifying children's strengths and assets?
	How helpful was the ABC Matrix in identifying opportunities for a child to be involved in development-enhancing activity settings?
Intervention Planning	How helpful was the ABC Matrix in producing information useful for developing IFSP or IEP outcomes?
	How helpful was the ABC Matrix in planning children's involvement in everyday learning opportunities based on their interests and assets?
Parent-Mediated Child Learning	How helpful was the ABC Matrix in mediating parents' ability to plan ways to increase their child's involvement in activity settings based on their interests and assets?
	How helpful was the ABC Matrix in mediating parents' ability to identify activity settings that allow expression of their child's interests and assets?
Parenting Outcomes	How helpful was the ABC Matrix in increasing parents' awareness about the key characteristics of children's natural environments-based learning?
	How helpful was the ABC Matrix in increasing parents' knowledge that children's participation in everyday activity settings is an important and necessary goal of intervention?
Child Outcomes	How helpful was the ABC Matrix in increasing children's involvement in socially and culturally meaningful activity settings valued by their families?
	How helpful was the ABC Matrix in increasing children's functional/meaningful behaviors (i.e., critical and useful behavior that promotes the child's participation in activities in an independent, competent, and satisfying manner)?
Child Diagnosis Parental Concerns	How helpful was the ABC Matrix in discerning the child's diagnosis, disability and/or specific developmental problems?
	How helpful was the ABC Matrix in establishing the child's developmental functioning level (i.e., age scores or standard scores)?

- Parent-mediated child learning
- Promoting positive parenting outcomes
- Promoting positive child outcomes
- Identifying diagnoses/addressing developmental concerns

Data Analysis

The validity of the ABC Matrix was examined by comparing the six asset-based assessment practices scores with each other and with the diagnostic/developmental concerns score. We hypothesized that for both groups of practitioners, the asset-based assessment practices would be highly correlated with each other and significantly differ from the diagnostic/developmental concern scores. The former was expected because the ABC Matrix focuses on practices that are consistent with the different asset-based assessment dimensions. The latter was expected because determination of child diagnosis or developmental status are not foci of the ABC Matrix assessment process (Wilson, Mott, & Batman, 2004).

Table 2

T-test Results (Above Diagonal) and Effect Sizes (Below Diagonal) for the Comparison of the Mean Scores on the ABC Matrix Survey Domains (NC Sample)

			Survey Domains						
Subscales	Mean	SD	PI	NE	PM	PO	IP	CO	CD
Parent Involvement (PI)	23.47	3.54	---	1.07	1.85	2.76*	2.76*	2.50*	8.50***
Natural Environments (NE)	22.82	4.02	0.17	---	1.16	1.61	1.67	2.00	7.68***
Parent Mediation (PM)	22.06	3.47	0.40	0.20	---	0.46	-0.09	1.51	7.59***
Parent Outcomes (PO)	21.88	3.02	0.48	0.26	0.06	---	-0.25	0.13	8.73***
Intervention Planning (IP)	21.71	4.16	0.46	0.27	-0.43	-0.05	---	0.07	7.30***
Child Outcomes (CO)	21.41	4.39	0.52	0.34	0.16	1.00	0.40	---	7.12***
Child Diagnosis (CD)	12.45	5.01	2.54	2.28	2.23	2.28	2.17	1.90	---

* $p < .05$, ** $p < .01$, *** $p < .001$

Shadish, Cook, and Campbell (2002) describe this type of differential hypothesis testing as one way of ascertaining the validity of a measurement scale.

A quasi-experimental within group design (Shadish, Cook, & Campbell, 2002) was used to analyze the data. T-tests were used to determine whether differences between mean scores for each of the subscales were statistically significant. Cohen's d effect sizes (ES) for the differences between mean scores were determined by dividing these differences by the pooled standard deviation for the subscale scores. Effect sizes measure the magnitude of the associations that exist between variables (Cohen, 1988; Denis, 2003) and often are a more reliable indicator of relationships between variables than statistical analysis based on significance testing (Chow, 1996; Cohen, 1994; Denis, 2003; Oakes, 1986). Some researchers suggest that using both effect sizes and significance testing, as was done in these studies, is an optimal strategy for understanding relationships between variables (e.g., Denis, 2003).

RESULTS

Tables 2 and 3 show, respectively, the mean subscale scores and standard deviations for practitioner ratings in the NC and NE samples, and the t-test results and effect sizes for the between subscale comparisons. Results from both sets of analyses indicate that practitioners found the ABC Matrix more useful for its intended purposes (i.e., promoting parent involvement in the assessment process, identifying natural environments-based learning opportunities, and intervention planning) than for its non-intended purposes (e.g., diagnosing children and addressing parents' concerns about their children's development). Both samples of practitioners rated the usefulness of all six asset-based practices significantly higher than the child diagnosis/developmental concerns

subscale. The effect sizes for differences between the child diagnosis/developmental concerns subscale score and all the other subscale scores were .80 or greater.

Most of the t-tests produced significant differences between the mean scores for the asset-based assessment and intervention planning subscales, indicating that the ABC Matrix training may have had differential effects on the respondents' ratings of the usefulness of the practices. In both samples, the highest subscale scores were those measuring parent involvement in the assessment process and identifying everyday child learning opportunities. There was some variation in the order of the other dimensions' usefulness, with the largest variation between samples occurring in the *parent-mediated child learning* characteristic, which was the third-highest rated subscale in NC but the sixth-highest in NE. This may have been the result of differences in the training experienced by the practitioners in the two samples, or may have been the result of the NC practitioners' understanding of the importance of parent-mediated child learning as an early childhood intervention strategy, because that concept had been emphasized in previous training in the NC agency.

DISCUSSION

The ABC Matrix is an assessment tool specifically designed for developing asset-based interventions for children in natural learning environments (Wilson, Mott, & Batman, 2004). The tool is useful for promoting practitioners' and parents' information-gathering about children's interests, assets, and opportunities for learning in meaningful interactions in family and community life. Findings from this study indicate that practitioners in both study samples found the ABC Matrix more useful for conducting asset-based assessment and intervention planning than for making child

Table 3

T-test Results (Above Diagonal) and Effect Sizes (Below Diagonal) for the Comparison of the Mean Scores on the ABC Matrix Survey Domains (NE Sample)

			Survey Domains						
Subscales	Mean	SD	PI	NE	IP	PO	CO	PM	CD
Parent Involvement (PI)	23.94	3.16	---	2.81**	4.33***	5.15***	5.48***	8.26***	9.92***
Natural Environments (NE)	23.38	3.52	0.16	---	2.69*	3.01**	3.55**	5.91***	8.70***
Intervention Planning (IP)	22.25	3.36	0.52	0.33	---	0.47	1.63	3.24**	7.53***
Parent Outcomes (PO)	22.08	2.89	0.61	0.39	0.05	---	1.43	-2.78**	7.95***
Child Outcomes (CO)	21.60	3.42	0.71	0.51	0.19	0.15	---	-1.34	7.20***
Parent-Mediated Child Learning (PM)	21.13	3.18	0.89	0.67	0.34	-0.31	-0.14	---	6.72***
Child Diagnosis (CD)	15.40	4.16	2.30	2.07	1.81	1.86	1.63	1.54	---

$* p <.05, ** p <.01, *** p <.001$

diagnoses or addressing parents' developmental concerns.

It is notable that practitioners in both states rated the ABC Matrix most useful for promoting parents' involvement in the assessment process, because such involvement is one way to increase parents' understanding of their children's interests and abilities, as well as to increase parents' participation in intervention planning and their participation in activities to promote their children's learning. It is also worth noting that practitioners in both states rated the identification of natural environments learning opportunities as the second-highest subscale. This is important because evidence now indicates that children learn best in natural environments-based learning opportunities (e.g., Dunst, 2006; Dunst, Trivette, Humphries, Raab, & Roper, 2001; Hanft & Pilkington, 2000), yet there are few assessment procedures for early childhood practitioners to use to systematically identify such opportunities for individual children (e.g., Neisworth & Bagnato, 2004; Wilson, Mott, & Batman, 2004).

As expected, the findings indicate that the ABC Matrix was not judged to be very useful for diagnostic purposes. This is consistent with the purpose for which the ABC Matrix is designed, specifically to provide asset-based, functional, and contextually-based information that is not readily available from assessment procedures that are used for diagnosis. The ABC Matrix is not meant to replace such procedures, but to complement them.

The next steps in the validation of the ABC Matrix are to: (1) Further evaluate the extent to which practitioners using the ABC Matrix show improvement in their abilities to develop asset-based, functional, and contextual IFSP and IEP outcomes, (2) identify characteristics of practitioners (such as professional background, years of professional experience, work setting, or discipline) that influence both the use of the ABC Matrix and the extent to which they find the ABC Matrix useful for asset-based assessment and intervention planning, and (3) identify optimal training strategies promoting utilization of the ABC Matrix. These next steps will be addressed by completing additional analyses on the data presented in this paper (e.g., by analyzing practitioner characteristics in the two States to determine the extent to which these characteristics influenced the practitioners' ratings of the usefulness of the ABC Matrix). Additionally, the studies described in this paper will be replicated in at least two other States where ABC Matrix training has already occurred, providing additional evidence about the usefulness of the ABC Matrix, as well as providing additional data for inter-State comparisons.

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