Reports from the Field

The Family and Child Education (FACE) Program and School Readiness: A Structural Model Approach in an American Indian Reservation Context

Judy Pfannenstiel and Debbie Lente-Jojola

This study investigates the effects of the Family and Child Education (FACE) pre-kindergarten program on school readiness. The FACE program is located in Bureau of Indian Education-funded schools on some of the most rural American Indian (AI) reservations in the United States. It explicitly integrates the language and culture of the communities in home-based services for children pre-birth to age three and their parents and in a center-based program providing preschool, adult education, and parenting education. This study addresses the question: Is the trajectory for lowered school achievement for American Indian children altered at school entry by pre-kindergarten early childhood opportunities such as the FACE program? A structural equation model tested the direct and indirect ways that background characteristics, FACE participation, preschool attendance, and home literacy contribute to school readiness. Direct assessment with standardized tests and teacher observational ratings of school readiness were employed in the study, which found that FACE participation indirectly predicts school readiness through its effects on preschool attendance and increased home literacy activity.

This study investigates the effects of the Family and Child Education (FACE) program on school readiness and other desired outcomes such as increased home literacy activity, preschool attendance, and early identification and remediation of special needs. The FACE program is a pre-birth to kindergarten family education program operating on some of the most isolated and rural American Indian (AI) reservations in the United States. It was designed in the

late 1970s, subsequent to the publication of a report citing the critical need for parent-focused early childhood education programs for AI children (U.S. Bureau of Indian Affairs, 1976). Not until 1991 did this program receive funding to address the achievement gap for AI children and to better prepare children for school.

The FACE program was designed to address the common characteristics of low-achieving AI children; namely, poverty, low levels of parental education, high levels of teen pregnancy, single parent status, the fact that the language of the larger culture may not be spoken at home, the presence of speech and learning disabilities, low frequency of reading to children, few books in the home, and lower participation in and quality of preschools and schools (Demmert & Grissmer, 2005). The FACE program is based on two national models: the Parents as Teachers (PAT) program, which provides home-based services for children pre-birth to age three and their parents; and the National Center for Family Literacy (NCFL), which provides center-based preschool and adult education programs. Parent education and parent-child interaction time are provided in both home- and center-based settings. Both models were continually modified over time in ways that explicitly integrated the language and culture of the tribal communities through processes that have been found effective, including ongoing communication with parents and the community about teaching within a culturally relevant context, building a sense of belonging and community through ritual and cultural events, and respecting children, families, and community (Gilliard & Moore, 2007; Romero-Little, 2010).

The major goal of the FACE program is to support the Indigenous understanding that parents are their child's first and most influential teacher. Additional goals are to increase family literacy, strengthen family-school-community connections, promote the early identification of children with special needs, increase parent participation in their child's learning and expectations for academic achievement, promote lifelong learning, and support and celebrate the cultural and linguistic diversity of each AI community served by the program.

The FACE program sought to integrate culture into the program by providing young children with authentic language and culture opportunities and interactions with Native home-based parent educators, teachers and elders. In the early years of FACE implementation, few AI applicants had the skills or educational background required by the national models for the roles of early childhood teacher, co-teacher, and parent educator. The FACE program focused on the credentialing of AI staff, who were often identified from among program participants. After 10 years of development and training (and in all subsequent years), approximately 60 percent of early childhood and adult education teachers, and *almost all* center-based early childhood co-teachers and home-visiting parent educators are AI (Yarnell, Pfannenstiel, Lambson, & Treffeisen, 2002).

In 2004, the Office of Management and Budget (OMB) mandated a study of the FACE program as part of its accountability efforts to ascertain program effectiveness. The OMB required the administration of a standardized norm-

referenced achievement test in reading and mathematics as the measure of school readiness for kindergartners who had participated in the FACE program and those who had not. The direct assessment of children using a standardized test was not a practice employed in the FACE program or in most of the Head Start programs kindergartners had attended. Thus, most kindergartners had no prior experience with this type of assessment. Through additional BIE funding, the BIE expanded the study design to include (1) teacher observational assessments of domains that represented the whole child and to include a broader range of variables that measure FACE program goals, such as increased usage of the Native language; and (2) background variables related to school readiness, such as mother's educational level, frequency of home literacy activity, and preschool attendance. The collection of this additional data allowed for the use of analytical techniques that could control for background and educational differences between FACE participants and non-participants.

Data Sources

All FACE programs that had been implemented for a sufficient number of years to have children of school age participated in the study (n=31). The Stanford Early School Achievement Test (SESAT), 10th edition, was administered to all kindergartners at these 31 FACE program sites in fall 2004. This test and edition was selected because the prior strict time limitations for its administration were no longer required. Students with individual education plans were excluded from testing only if their plan so specified.

Meisel's Work Sampling System (WSS) provided a second measure of kindergarten readiness. The WSS employs teacher observational rating checklists completed during six weeks of observation at the beginning of the kindergarten year on domains that include language and literacy, mathematics, personal and social, art, social studies, science, and physical development. With permission of the publisher, the response categories for the WSS were expanded from the three-point *not yet, in process,* and *proficient* Likert scale to a four-point scale that included *not yet, in process-emerging, in process-partially proficient,* and *proficient for age/grade.*[1]

A third measure of kindergarten readiness was comprised of five teacher-reported items of conventional knowledge: recognizes some basic shapes, counts by rote to 10, recognizes and names some numbers to 10, recognizes and names letters of the alphabet, and expresses self clearly through competent use of language. These items are benchmarks used in other studies of kindergarten readiness and provide a national comparison for teacher-assessed readiness (U.S. Department of Education, National Center for Education Statistics, 2000). Finally, teachers rated each child as having below average, average, or above average preparation for school.

A longitudinal database maintained by external evaluators was used to identify which kindergartners were former FACE program participants. Thirty-six percent of children entering kindergarten had participated in the FACE program:

18 percent had participated in home visits only, seven percent had participated in the center-based preschool only, and 11 percent had participated in both.

Parents were surveyed to provide information on their child's pre-kindergarten experiences. The survey, completed by parents at the beginning of the school year, consisted of questions about preschool attendance, the receipt of special education services prior to kindergarten entry, and the frequency of home literacy activities. Parents reported whether, and for how long, children had participated in a number of preschool experiences: early childhood special education, Early Head Start, Head Start, public preschool, and private preschool. A home literacy factor was constructed, comprised of the frequency that a child is read to at home (1 = *rarely or never,* 2 = *monthly,* 3 = *weekly,* 4 = *almost daily,* and 5 = *daily or several times a day*), times the number of children's books in the home, times achievement expectations for the child (1 = *complete 8th grade,* 2 = *complete high school,* 3 = *attend college,* and 4 = *complete a college degree*). Parents also indicated whether a native language was used at home (0 = English only households and 1 = dual languages spoken in the home) and the number of years of formal school the mother had completed at the time of the child's birth. Background characteristics included gender (scored 0 for females and 1 for males), and age at school entry. Means, standard deviations, and correlations among variables are provided in Table 1.

Sample

Teachers used the WSS to rate children's school readiness and completed it on 84 percent of entering kindergartners. Eighty-seven percent of kindergartners were tested with the SESAT, but only 71 percent of those tested produced scorable results. This was largely due to the fact that these children had no prior experience with the direct assessment skills required for completing a standardized test and did not complete enough items to be scored above the chance level. Sixty-nine percent of kindergarten parents returned survey data. Of the 1,114 kindergartners

Table 1. Means, standard deviations, and intercorrelations of variables in the school readiness model

	Mean	sd	1	2	3	4	5	6	7
1. SESAT Reading NCE	39.20	21.96							
2. Participation in FACE	.37	.48	-.06						
3. Gender	.50	.50	-.14	.05					
4. Age	5.50	.45	.23	-.01	.07				
5. Mother's education at child's birth (years completed)	11.85	1.79	.11	-.10	.06	-.02			
6. English only or native language use at home	.60	.49	-.18	.23	.08	-.13	-.01		
7. Length of preschool participation	1.89	1.31	-.08	.39	.03	.02	-.03	.19	
8. Home literacy and achievement expectations factor	303.05	182.01	.22	.14	-.02	-02	.29	.10	.11

Note: N=530

at the 31 FACE sites, 530 had complete data for all variables included in the structural model.

Effects on School Readiness

The primary question addressed is: Is the trajectory for lowered school achievement for AI children altered at school entry by pre-kindergarten early childhood opportunities such as the FACE program? The study employed several strategies for establishing evidence of causality: Data was collected that has an established temporal order, the program's logic model was used to identify the intervening mechanisms by which the FACE program intends to promote kindergarten readiness, treatment/response relationships were measured (e.g., intensity of program participation and preschool attendance), and the use of control techniques for background characteristics (e.g., gender) was made explicit (Johnson, 2001).

A structural equation model was hypothesized to empirically test the direct and indirect ways that background characteristics (i.e., mother's educational level at child's birth, child's age at school entry, use of Native language in the home, and gender), participation in the FACE program, frequency of home literacy and achievement expectations, and length of preschool attendance contribute to school readiness. The model was estimated using the Statistical Analysis System (SAS) CALIS procedure for structural equation models. Goodness of fit of the model was assessed through multiple means: examination of the residuals, significance of the chi square for the overall model, and a number of fit indices (Bentler & Bonett, 1980). A non-significant chi-square test, fit indices that approximate 1.0 or greater, and an RMSEA estimate <.05 are indicators of good model fit.

The hypothesized model was successfully fitted and explains almost 20 percent of the variation on school readiness measures. The direct and indirect effects on school readiness as measured by the SESAT Reading NCE score is provided in Figure 1. Goodness of fit statistics is provided in Table 2. Each variable in the model is labeled (e.g., V1 to V8) and paths are identified by the variables labeling first the dependent variable (e.g., V1) and then the independent variable (V2), generating a V1-V2 path.

Table 2 also provides results for models for all dependent variables and subpopulations: SESAT reading and mathematics, WSS literacy and mathematics, and results by gender. For simplicity of presentation, findings from models using alternative measures of school readiness (i.e., WSS for literacy and mathematics) and different subpopulations (male/female) are integrated in the presentation of SESAT reading results to demonstrate consistency or differences for different measurement methods.

Path V1-V2: Controlling for all other variables in the model, the intensity of home literacy activities and parental achievement expectations is a direct, significant, and meaningful predictor of children's readiness for kindergarten. The magnitude of the coefficient measuring the effects of home literacy on kindergarten readiness (.22) is roughly twice the size the authors found in a

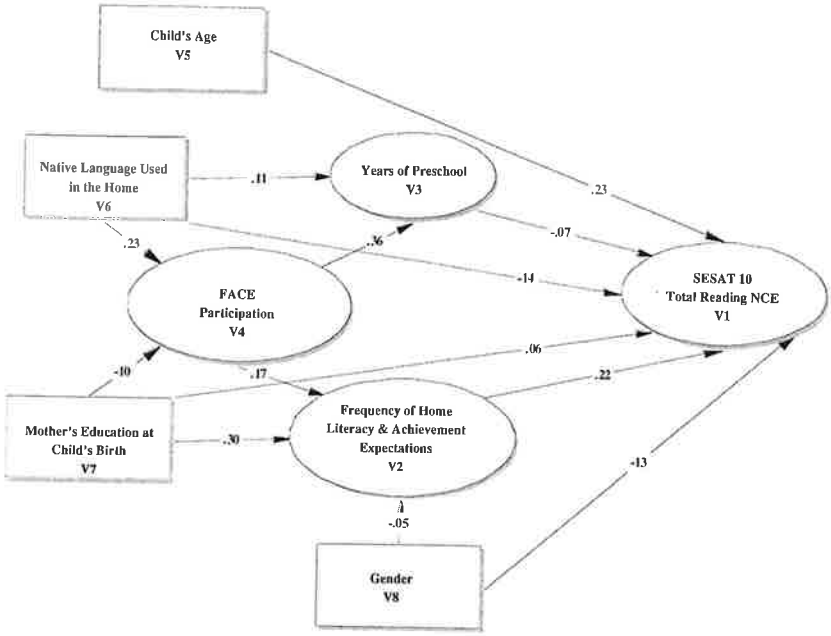

Figure 1. Model of predictors of kindergarten readiness measured with SESAT total reading NCE scores

Table 2. Goodness of fit indices for tested school readiness models

Model	Null Model X^2	df	Model X^2	df	P	NFI	NNFI	CFI	RMSEA	R^2
SESAT Reading	310.78	28	5.03	8	.75	.98	1.0	1.0	<.0001	.17
WSS Literacy	273.02	28	4.84	8	.77	.98	1.0	1.0	<.0001	.13
SESAT Math	298.50	28	5.14	8	.74	.98	1.0	1.0	<.0001	.16
WSS Math	250.05	28	4.25	8	.83	.98	1.1	1.0	<.0001	.09
SESAT Reading/Males	157.78	21	2.39	6	.88	.98	1.1	1.0	<.0001	.20
SESAT Reading/Females	151.38	21	6.22	6	.40	.96	.99	1.0	<.01	.12
WSS Literacy/Males	145.26	21	5.39	6	.49	.96	1.0	1.0	<.0001	.17
WSS Literacy/Females	137.32	21	6.00	6	.42	.96	1.0	1.0	<.0001	.09
SESAT Math/Males	145.14	21	4.89	6	.56	.97	1.0	1.0	<.0001	.17
SESAT Math/Females	166.34	21	8.60	6	.20	.95	.94	.98	<.05	.17
WSS Math/Males	124.59	21	3.13	6	.79	.97	1.1	1.0	<.0001	.11
WSS Math/Females	128.60	21	5.60	6	.47	.96	1.0	1.0	<.0001	.07

similar research effort for non-reservation children (Pfannenstiel, Seitz, & Zigler, 2002). Additionally, the importance of home literacy activity in predicting school readiness is virtually identical for other WSS measures of school readiness. Aside from child's age, the magnitude of the path from home literacy activity to school readiness is two to four times the size of other predictors of school readiness.

Home literacy activity and high achievement expectations are especially important for AI males; the coefficient increased to .34 for males.

Path V1-V3: Length of preschool attendance is a significant but small *negative* predictor of children's readiness for school as measured by the SESAT reading and math scores. Excluding children who were identified for early childhood special education reduces this -.07 coefficient to a meaningless magnitude of -.04. Thus, the negative relationship of length of preschool attendance to school readiness is a spurious relationship due to the lengthier preschool attendance of children identified with special needs (3.3 compared with 1.5 years). For WSS measures of school readiness, the length of preschool attendance is a direct, significant, meaningful and *positive* predictor of school readiness — even when including early childhood special education children. The magnitude of the path coefficient from length of preschool attendance to school readiness is consistent for males and females at approximately .10.

Path V1-V5: The child's age at kindergarten entry is a direct, significant, and meaningful predictor of kindergarten readiness. The magnitude of the path coefficient (.23) is virtually identical for WSS measures of school readiness. It is somewhat larger for the SESAT mathematics NCE (.31), and even higher for females on SESAT mathematics (.36).

Path V1-V6: Use of the Native language in the home negatively predicts school readiness on both the SESAT reading test and the WSS. The magnitude of the coefficient is similar for both reading measures (i.e., -.14 and -.12) but closer to half the size for mathematics (i.e., -.07 and -.09). The magnitude of these path coefficients did not differ by gender.

Path V1-V7: Mother's educational level at child's birth meets the minimum criterion for meaningfulness, demonstrating a .06 path coefficient to school readiness for all measures. Children of mothers with higher levels of education engage in significantly more frequent home literacy activity than do children of lower education level mothers (coefficient of .30 for path V2-V7), and it is this increased home literacy activity that explains in part how mothers with higher levels of education achieve better school readiness outcomes for their children.

Path V1-V8: Gender is a direct, significant, and meaningful predictor of kindergarten readiness. Similar to past research findings, males score significantly lower than do females when they enter kindergarten, with a path coefficient of -.13. (Males scored at the 36th NCE on average compared with the female average of 42.) The gender effect is less than half this magnitude for WSS language and literacy and mathematics readiness. This indicates that much of the gender differences at school entry may be related to other characteristics of males. One could surmise that male children might be less likely to persist in or be attentive to the type of tasks required of standardized achievement tests. Gender also indirectly affects reading achievement through somewhat less frequent home literacy activity and somewhat lower parental achievement expectations for males (path V2-V8).

Path V2-V4 and Path V3-V4: FACE program participation indirectly affects school readiness through its effect on the frequency of home literacy activity (.17 path coefficient), including increased access to children's books in the home and increased frequency of reading to the child. FACE participation also has a significant and a meaningfully large relationship (.36 path coefficient) to the length of preschool attendance. The size of coefficients is stable across all measures of school readiness and by gender.

Path V4-V6 and Path V4-V7: FACE program participation indirectly affects school readiness by encouraging increased participation and providing increased services to families with characteristics often associated with lowered student achievement, including families where the tribal language is used in the home and where mothers had low educational levels.

Other Desired Outcomes for FACE Participants

While school readiness is an important outcome for pre-kindergarten programs and services, the FACE program demonstrates effects on other important outcomes.

FACE is very successful in convincing parents of the importance of preschool attendance in preparing their child for kindergarten. Parents of 87 percent of entering kindergartners reported that the child had attended preschool. Significantly more former FACE children (99 percent) than non-FACE children (79 percent) attended preschool ($p < .0001$). Significantly more FACE children (62 percent) than non-FACE children (48 percent) attended two or more years of preschool.

FACE is successful in the early identification of special needs of young children and in providing intensive services to those children and their families. Approximately 25 percent of kindergartners who participated in FACE were identified for early childhood special education services prior to kindergarten entry compared with 13 percent of children who had not participated in FACE. FACE children identified with special needs participated in all FACE components at nearly twice the rate of FACE children without special needs. Approximately half of special needs children participated in all FACE components and an additional 16 percent participated in the center-based FACE preschool component. FACE children with identified special needs also were provided with and participated in significantly more home visits.

FACE participation reduces the need for school-age special education for children who were identified for early childhood special education prior to kindergarten. Early childhood special education children who did *not* participate in FACE are three times as likely to acquire individual education plans at school entry than are children who participated in the FACE program (50 percent compared with 13 percent). Children who were in early childhood special education scored similarly to children who had not participated in Early Childhood Special Education on the standardized reading achievement test and on teacher assessments of reading and mathematics readiness.

Rural AI children have limited literacy resources in their homes. The homes of AI children contain significantly fewer children's books than is found nationally and internationally (Mullis, Martin, Gonzalez, & Kennedy, 2003). While only one-fourth of entering kindergartners nationwide have 26 or fewer children's books in their homes (U.S. Census Bureau, 2004-05), approximately 60 percent of entering AI kindergartners have 26 or fewer books in their homes.

FACE increases literacy resources in the home. The homes of families who participated in FACE contain significantly more children's books than do the homes of families who did not participate. Almost one-half of FACE children have more than 30 children's books in their homes, compared with only one-third of non-FACE children who have as many. Conversely, approximately 30 percent of non-FACE children and 18 percent of FACE children have 6 to 10 or fewer books in their homes.

FACE increases the use of the tribal language. FACE parents tell stories to their children in their tribal language significantly more frequently than do non-FACE parents. Almost half of FACE parents and 42 percent of non-FACE parents tell stories to their child in their tribal language daily or almost daily.

The FACE program helps break the cycle of intergenerational low literacy. FACE mothers with low educational levels overcome the detrimental effects of their low educational level on their child's school readiness by their participation in the FACE program; their children enter kindergarten on a level playing field on measures of school readiness.

The FACE program narrows the gap on national benchmarks assessing school readiness, particularly where the gap is largest. Seventy-six percent of children who participated in the FACE program, compared with 69 percent of children who did not, recognize some numbers to 10. Fifty percent of children who participated in the FACE program, compared with 43 percent of children who did not, recognize and name letters of the alphabet. This finding for children who did not participate in FACE is consistent with other national data that indicate that 40 percent of American Indian/Alaska Native (AI/AN) children are skilled at letter recognition. National percentages are 94 percent for number recognition and 66 percent for letter recognition (Denton & Reaney, 2002).

Most FACE children enter school capable of expressing themselves with clear language. Approximately 80 percent of FACE children and 74 percent of AI children who did not participate in FACE enter kindergarten capable of clear expression in the English language. In homes where English only is spoken, FACE impacts are even greater, as might be expected. FACE children in homes where English is the primary language are similar to their national peers; approximately 90 percent enter kindergarten with the ability to express themselves clearly. A lower 75 percent of children who did not participate in FACE and live in households where English only is spoken enter school with the ability to express themselves clearly through competent use of the English language.

An achievement gap exists for AI children. AI children perform below the national average of the 50th percentile in reading and mathematics on the SESAT

when they enter kindergarten. On average, entering AI kindergartners score near the 40th NCE on total reading, which equates to the 32nd national percentile. Entering AI kindergartners score somewhat lower in mathematics with an average at the 34th NCE, which equates to the 23rd percentile. The recently conducted Early Childhood Longitudinal Study found that at kindergarten entry, AI children scored 32 percentile points lower than white children, 14 points lower than black children, and 10 points lower than Hispanic children (Denton & Reaney, 2002).

Discussion

In his review of the research literature, Demmert concludes that research on "the effects of early environment and educational programs on the intellectual development of Native children are scarce. In contrast, the body of research on these topics for non-Native groups is growing in significance and volume" (Demmert, 2001, p. 6). The results of this study indicate that a pre-birth to kindergarten culturally-relevant program provides a structure of supports at home and in center-based settings that predict school readiness for AI children in mostly rural reservation settings. This study also reaffirms recent findings that sequentially receiving a home-visiting program followed by a preschool program is of considerable value in altering the trajectory of lower achievement (Administration for Children & Families, 2006; Pfannenstiel, Seitz, & Zigler, 2002) and is especially effective for special needs AI preschoolers.

The central role that parents play in the cognitive development of their children is supported by the finding that the frequency of home literacy activity in English, together with the age of the child, are the largest predictors of school readiness. The importance of parental reading to children, well established in past research (Bus, van IJzendoorn, & Pellegrini, 1995), is equally, if not more important, for AI children on reservations. The study finding that parents and children have limited access to literacy resources in the home is a grave concern. The gender gap at school entry within this AI population (the size of the gap differs by method of assessment and is larger for standardized tests than for teacher observational ratings) might largely be eliminated with an increased frequency of home literacy activities for males.

Findings indicate that a focus on preserving and promoting Indigenous language and culture, an important feature of the FACE program, may initially demonstrate somewhat diminished English reading performance at school entry as measured by both standardized tests and observational assessments. A future longitudinal study is needed to add to other findings that have demonstrated that children can acquire their Indigenous language without cost to their English language development (Demmert, 2001; Holm & Holm, 1995; Romero-Little & McCarty, 2006).

Despite these promising program effects for increasing school readiness, considerably more impact is needed to narrow the achievement gap for AI children to provide them a level playing field at school entry. Teachers in this study rated 28 percent of entering kindergartners as having below average

preparation for kindergarten; these children scored at the 26th NCE (the 13th national percentile). Among the 58 percent of children rated with average preparation for kindergarten, the average SESAT reading NCE score was 43 and the average SESAT math NCE score was 38, scores which are below the national average of 50 — and which indicate that teacher expectations of what constitutes school readiness may vary. Other work has similarly concluded that AI/AN children are not as prepared to begin school as compared to children of other racial or ethnic groups (Flanagan & Park, 2005; Strang, von Glatz, & Hammer, 2002) and that indicators of school readiness for rural AI children are less than half the level of non-rural AI children (National Center for Rural Early Childhood Learning Initiatives, 2005). Thompson, Pope, and Holland (2006) conclude that, "early childhood education programs and activities are not that effective in preparing rural AI/AN young children for school" (p. 108).

Recommendations

Study authors met with BIE staff to discuss findings and implications of findings for improving the FACE program. Study recommendations are as follows.

(1) *Increase efforts to enable each mother to obtain a high school diploma or GED at every FACE site.* Thirty-one percent of AI/AN children born in 2001, compared to 22 percent of children born nationwide, live with mothers who have less than a high school education (Grace, Shores, Zaslow, Brown, Aufseeser, & Bell, 2006.) Although the FACE program does an exemplary job of enrolling families and children at risk for educational failure, a process for identifying and more actively seeking out the participation of every mother with less than a high school education would benefit both the school readiness of children and the longer-term achievement of students.

(2) *Expand the FACE program.* For the AI communities reached by the FACE program, only one-third of children entering school have participated in the program. While the FACE program has expanded to 44 sites in the almost 20 years since it was first funded, it has not reached the more than 160 reservation communities for which it was originally intended. To reach most of the children who enter BIE-funded schools, the FACE program would have to double its resources. In order to provide similar opportunities for school readiness to all AI children, a minimum of eight to 10 new sites per year require funding. In the long run, this expansion would elevate the education status of AI youth and narrow the achievement gap.

(3) *Provide support for AI children to be read to more frequently.* While many parents read to their children daily, at least one-third of FACE parents and 44 percent of parents who did not participate in FACE read to their kindergarten child only weekly or less frequently.

(4) *Increase access to literacy resources in the home beyond the FACE program's provision of one book a month.* The homes of AI children contained too few children's books, and need to acquire more literacy resources.

(5) *Conduct further studies.* AI children are attending preschool at rates comparable to national rates, but too many are leaving them without the basic letter and number recognition expectations for school readiness;

one-third were rated by their teachers as having below average preparation. Obtaining better measures of attendance could reveal the extent to which AI children receive early childhood services comparable to their non-Native peers. The extent to which previously identified factors — large geographic distances, severe weather conditions, and challenging road conditions — limit access to early childhood services (Thompson & Hare, 2006) require quantitative description. Engaging Head Start, the primary source for preschool education, in further studies is needed to better understand why a sizable percentage of children enter kindergarten without these basic readiness skills. A comprehensive study that examines the impact of the type, quality and intensity of preschool participation of AI children, participation in FACE, and participation in early childhood special education on school readiness (controlling for characteristics of risk) is needed.

Judy Pfannenstiel is a Senior Research Associate with Research and Training Associates. She has conducted numerous studies of family literacy programs and school readiness.

Debbie Lente-Jojola has worked with the Bureau of Indian Education for more than 25 years. She is a Supervisory Education Specialist and has directed the FACE program for the past 10 years.

Note

[1]This modification was informed by a prior use of the WSS to measure school readiness and the lack of variation obtained. Relatively few students were rated *not yet* and few were rated *proficient*.

References

Administration for Children and Families (2006). *Preliminary findings from the Early Head Start pre-kindergarten follow-up*. Washington, DC: U.S. Department of Health and Human Services.

Bentler, P., & Bonnett, D. (1980). Significance tests and goodness-of-fit in the analysis of covariance structures. *Psychological Bulletin, 88*, 588-606.

Bus, A., van IJzendoorn, M., & Pellegrini, A. (1995). Joint book reading makes for success in learning to read: A meta-analysis on the intergenerational transmission of literacy. *Review of Educational Research, 65*, 1-21.

Demmert, W. (2001). *Improving academic performance among Native American students: A review of the research literature*. Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools.

Demmert, W., & Grissmer, D. (2005). *Improving the education of Native American children*. Washington, DC: National Institutes of Health.

Denton, K., & Reaney, L. (2002). *The kindergarten year: Findings from the Early Childhood Longitudinal Study, kindergarten class of 1998-99. NCES 2001-2002*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Flanagan, K., & Park, J. (2005). *American Indian and Alaska Native children: Findings from the base year of the Early Childhood Longitudinal Study, birth cohort (ECLS-B) (NCES 2005-116)*. Washington. DC: U.S. Department of Education, National Center for Education Statistics.

Gilliard, J. L., & Moore, R. A. (2007). An investigation of how culture shapes curriculum in early care and education programs on a Native American Indian reservation: "The drum is considered the heartbeat of the community." *Early Childhood Education Journal, 34*(4), 251-258.

Grace, C., Shores, E., Zaslow, M., Brown, B., Aufseeser, D., & Bell, L. (2006). *Rural disparities in baseline data of the early childhood longitudinal study: A chartbook,* Rural Early Childhood Report, No. 3. Mississippi State: National Center for Rural Early Childhood Learning Initiative, Mississippi State University Early Childhood Institute.

Holm, A., & Holm, W. (1995). Navajo language education: Retrospect and prospects. *Bilingual Research Journal, 19*(1), 141-167.

Johnson, B. (2001). Toward a new classification of nonexperimental quantitative research. *Educational Researcher, 30*(2), 3-13.

Mullis, I., Martin, M., Gonzales, E., & Kennedy, A. (2003). *PIRLS 2001 international report: IEA's study of reading literacy achievement in primary schools.* Chestnut Hill, MA: Boston College.

National Center for Rural Early Childhood Learning Initiatives (2005). *American Indian and Alaska Native young children: Findings from the ECLS-K and ECLS-B baseline data.* Rural Early Childhood Brief No. 4. Mississippi State: Mississippi State University Early Childhood Institute.

Pfannenstiel, J., Seitz, V., & Zigler, E. (2002). Promoting school readiness: The role of the Parents as Teachers program. *NHSA Dialog, 6,* 71-86.

Romero-Little, M. E. (2010). How should young Indigenous children be prepared for learning? A vision of early childhood education for Indigenous children. *Journal of American Indian Education, 49*(1 & 2). 7-27.

Romero-Little, M., & McCarty, T. (2006). *Language planning challenges and prospects in Native American communities and schools.* Tempe: Educational Policy Studies Laboratory, Language Policy Research Unit. Retrieved June 10, 2011 from http://www.edpolicylab.org/

Strang, W., von Glatz, A., & Hammer, P. (2002). Setting the agenda: American Indian and Alaska Native education research priorities. *ERIC Digest* EDO-RC-02-14. Retrieved June 12, 2011 from http://www.ericdigests.org/2003-4/native-education.html/

Thompson, N., & Hare, R. (2006). Child care pilot study in one state. Unpublished manuscript.

Thompson, N., Pope, M., & Holland, J. (2006). American Indian and Alaska Native school readiness. *The Rural Early Childhood Forum on American Indian and Alaska Native Early Learning* (pp. 100-113). Little Rock, AR: National Center for Rural Early Childhood Learning Initiatives and Mississippi State University Early Childhood Institute.

U.S. Bureau of Indian Affairs (1976). *Young Native Americans and their families: Educational needs assessment and recommendations.* Washington, DC: ERIC Document Reproduction Service No. ED127021.

U.S. Census Bureau (2004-05). *Statistical abstract of the United States 2004-2005* (124th edition). The national data book, Table No. 223, p. 147. Children's school readiness skills: 1993 and 2001. Washington, DC: U.S. Census Bureau.

U.S. Department of Education, National Center for Education Statistics (2000). *America's kindergartners.* Washington, DC: Author.

Yarnell, V., Pfannenstiel, J., Lambson, T., & Treffeisen, S. (2002). *Evaluation of the BIA Family and Child Education Program.* Overland Park, KS: Research and Training Associates, Inc.