

Best Practice and Evidence-Based Research in Indigenous Early Childhood Intervention Programs

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Best practice and evidence-based practice have become familiar terms in ECCD both in North America and around the world. However, when one looks beneath the surface to determine how these concepts are determined or constructed, questions arise about the degree to which Indigenous Peoples are represented in these determinations and in subsequent findings. The authors explore these terms from an Indigenous perspective and discuss implications for service providers.

Over the last few years, the terms *best practice* and *evidence-based practice*¹ have become increasingly popular in the early childhood intervention (ECI) research literature. At the same time a clear and consistently used definition of what best practice or evidence-based practice mean to Indigenous populations in the United States and elsewhere remains inconsistent (Cannella, 1997; Dahlberg, Moss, & Pence, 1999). Most ECI research has primarily considered only the childrearing values, attitudes, practices, and norms of the dominant white, Anglo-Saxon, middle-class culture to be best practice (García Coll & Meyer, 1993). Using the dominant world behaviors as the normative standard has been a disservice both to scientific inquiry and to the interests of populations of color in several ways (García Coll & Meyer, 1993).

Generally, most ECI theoretical approaches suggest that the more proximal a person is to an intervention program, the more powerful is the effect (Bronfenbrenner, 1985). It is our observation that such statements hamper our ability to understand how ECI programs affect Indigenous populations, because time is often not viewed as linear, that is, time is not considered proximal or distal as defined in the dominant world ECI literature. Why is the concept of time important? One reason is key: The dominant world ECI research literature uses a universal principle of time: past, present, and future. Many Indigenous communities do not regard these concepts in this way. This has resulted in minority groups being compared with dominant world groups on the concepts of time, with the

minority populations repeatedly presumed to be aberrant in their world view. Through the process of comparing and contrasting diverse populations with Anglo experiences, minority populations' early childhood traditions have generally been considered as less than best practice (García Coll & Magnuson, 2000). This article addresses the effect of the terms *best practice* and *evidence-based practice* related to ECI and Indigenous populations.

This article has five sections. In the first we discuss the concepts of *best practice* and *evidence-based practice* in early childhood programs in the context of both the formal early childhood research and Indigenous communities. For this article formal early childhood research is defined as university-led evaluation studies that assess the extent of implementation and effect of a specific program or project. Our emphasis is on Indigenous children of preschool age. The reasons for excluding Indigenous children in early childhood interventions and research are discussed in the second section. In the third section we review advances in knowledge about the effectiveness of formal research-based early childhood programs (other than Head Start and Follow Through programs) that are considered to be best practice and evidence-based and discuss their implications for practice with Indigenous children. In this section we highlight the gap that exists in research in terms of Indigenous children and formal ECI research and discuss the importance of postmodern constructs of research. In the fourth section we discuss the need to reexamine the applicability of the major theoretical models that are commonly used in the implementation of early childhood programs. The final section provides direction for future ECI research with Indigenous communities. Given that the early childhood programs reviewed do not have an informal child care component (e.g., extended family members acting as child care providers), we cannot review such arrangements although they are common in Indigenous communities.

Defining Early Childhood Research

Early childhood intervention is a general descriptor for a wide variety of programs. Most often it is defined as multidisciplinary services provided to developmentally vulnerable or disabled children from birth to age 5 and their families (Kamerman, 2001). Early childhood intervention is based on the assumption that early educational and social enrichment can compensate for disadvantages brought about by poverty and its associated problems (Ramey & Ramey, 1992; Reynolds, 2000; Zigler & Berman, 1983). It is assumed that with increased availability of early child, family, and health services, the gap in performance between poor children and their more economically advantaged peers may be narrowed significantly, enabling them to start school more ready to learn.

The postulation that socioenvironmental risks could be compensated for was a primary rationale for many programs in the US's War on Pover-

ty, including early childhood programs (Reynolds, 2000). Although child poverty in the US has decreased slightly in the last few years (22% in 2005 vs. 24% in 1990), for Indigenous children the figure remains significantly higher: over 32% (US Census Bureau, 2006). Children who are poor during the early school years are more likely to have problems completing school and to score lower on measures of health, cognitive development, school achievement, and emotional well-being than children in higher-income families (Duncan & Brooks-Gunn, 1997). More specifically, Indigenous youth in the US enter kindergarten with significantly lower reading, mathematics, and general knowledge achievement scores than other students and are at greater risk of school dropout (Burns & Patton, 2000; Demmert, 2004).

From the beginning, early childhood interventions emphasized comprehensive services-center-based early education, multifaceted family participation (i.e., training, education oversight), and physical health and nutrition services (Niles, 2004; Niles, Reynolds, & Nagasawa, 2006; Reynolds, 2000, 2002). This *whole child* philosophy remains today (Reynolds, 2000; Zigler, 1994). There is now consensus among early childhood educators and analysts that the primary goal of early childhood intervention is social competence (Comer, 1993; Dryfoos, 1990; McLoyd, 1998; Reynolds, 2000; Weissberg & Greenberg, 1998; Wilson, 1987). This can be defined generally as everyday effectiveness in meeting family, school, and individual responsibilities (Niles; Niles et al.; Reynolds, 2000, 2002; Zigler). Zigler, one of the developers of Head Start and a leading developmental researcher, has identified four components of social competence: (a) physical health and nutrition; (b) cognitive ability (e.g., as measured by IQ tests); (c) school performance and achievement; and (d) social psychological development (e.g., motivation, self-esteem, attitudes; Reynolds). We could also add family outcomes (e.g., parent-child relations, parent involvement) although these are usually viewed as secondary to children's outcomes (Reynolds; Zigler).

Outcomes should also include how culture affects, or does not, the development of young children in Indigenous communities. Culture influences every aspect of human development and is reflected in childrearing beliefs and practices designed to promote healthy adjustment (Guralnick, 1998; Shonkoff & Meisels, 2000). The influence of culture on the rearing of Indigenous children should be a fundamental basis for any early childhood intervention in Indigenous communities. Culture in these unique communities encompasses historical and iconographic values, aspirations, expectations, and practices. Understanding this realm of influence is central to efforts to understand the nature of the Indigenous peoples' lifespan experience, what shapes it, and how young [Indigenous] children and the culture in which ECI programs are embedded jointly

influence each other over the course of development (Guralnick; Shonkoff & Meisels; Smith, 1999).

*What is Best Practice and Evidence-Based Practice
in Early Childhood Research?*

From the perspective of policymakers, researchers, and most practitioners, the terms *best practice* and *evidence-based practice* are typically derived from formal research studies that demonstrate empirical results (Barnett, 1998; Currie, 2001; Evans, McDonald, & Nyce, 1999; Haig-Brown, 1995). This is especially true of ECI programs that target disadvantaged children (Reynolds, 2000). Consistent with this, many Indigenous communities are interested in implementing what the dominant world early childhood research literature has deemed to be a best practice or evidence-based early childhood intervention (Demmert, 1995, 2004). It is not surprising that this is the case. Numerous studies have provided compelling evidence that relatively good programs have meaningful short- and longer-term positive effects on cognitive ability, school achievement, and social adjustment (Barnett; Currie; Karoly et al., 1998; Niles, 2004; Niles et al., 2006; Reynolds, 2000, 2002; Reynolds, Temple, Robertson, & Mann, 2001; van IJzendoorn, 1998).

The positive effects of early childhood intervention on improved developmental outcomes in adolescence and beyond also are well documented (Ou & Reynolds, 2006; Ramey & Ramey, 1998; Reynolds, 2000; Reynolds et al., 2001; Reynolds & Temple, 2005; Schweinhart et al., 2005; Schweinhart & Weikart, 1993). Participants in the High/Scope Perry Preschool Program were found to have higher rates of high school graduation (67% vs. 49% at age 19; 71% vs. 54% at age 27; Schweinhart & Weikart). Participation in the Abecedarian Preschool Project was found to be associated with a higher rate of attending four-year college (36% vs. 14%) and more years of education at age 21 (Ramey & Ramey). Similar results were found in the best-documented large-scale public early childhood program, the Chicago Child-Parent Center (CPC) Preschool Program. Participants in the CPC preschool program demonstrate higher rates of school completion than those in the comparison group (49.7% vs. 38.5% at age 20; 65.8% vs. 54.2% at age 22) and more years of education (Reynolds & Temple). These three programs, because of their extensive research findings and longitudinal designs, are often considered best practice and evidence-based. As much as these studies demonstrate that a variety of programs can be and are effective even in the longer term, they also provide a significant limitation as to their use in Indigenous communities because no Indigenous children were included in the original program sample (Ramey & Ramey, 1992; Reynolds; Schweinhart et al.; Schweinhart & Weikart). As a result, these programs provide little support that they should be considered either best practice or evidence-based models for Indigenous communities.

Although the above three internationally known ECI programs are used to illustrate the limitations in longitudinal early childhood research on Indigenous children, we could have used the hundreds of other early childhood programs that have shown positive empirical results (e.g., Houston Parent-Child Development Center, Syracuse Family Development Research Program, Infant Health and Development Project, and the Elmira Prenatal/Early Infancy Project). Consistent with the three above-mentioned programs, nor were Indigenous children part of the original samples of these four programs. Despite this, researchers and policy-makers have targeted Indigenous children as a population that could benefit from such programs (Fayden, 1997).

In contrast to the empirically based best practice and the research evidence noted by the early childhood programs referenced above, in many Indigenous communities best practice is more complex than reading and math levels. The social roles in Indigenous communities are multifaceted. Personal strength is derived from knowing one's culture, the basis for identity. Identity is strongly associated with family roles, relationships, and responsibilities (Paranjpe, 1998; Smith, 1999). In many Indigenous communities best practice involves gaining an understanding of identity-formation and the transmission of cultural history. This is more than history: it is the transmission of knowledge from one generation to another through, for example, storytelling, performing arts, visual arts, and daily activities of life. The concept underlying the words *for the next seven generations* is relatively common among Indigenous communities (Paranjpe; Smith). It often refers to the idea that individual decisions can affect the survival of the tribe for the next seven generations, thereby implying an eternal responsibility.

Indeed, working with Indigenous communities requires knowledge of what it means to be part of an Indigenous population (Cannella, 1997; Dahlberg et al., 1999; Greenwood & Fraser, 2006). Best practices in Indigenous communities also require incorporating the Native language, ceremonies, stories, dances, and art into their early childhood program curriculum (Cannella; Dahlberg et al.; Greenwood & Fraser; Smith, 1999). For reasons outlined below, these cultural components are almost nonexistent in the formal evidence-based early childhood research literature.

Overview of the Broader Early Childhood Research

Hundreds of demonstration studies and large-scale early childhood programs now exist in the US, and as indicated above, many provide strong evidence that relatively good programs have meaningful short- and longer-term effects on cognitive ability, school achievement, and social adjustment (Barnett, 1998; Currie, 2001; Karoly et al., 1998; Niles, 2004; Niles et al., 2006; Reynolds, 2000, 2002; van IJzendoorn, 1998). To give a general overview of this sizeable research literature, we conducted a review of the best-known early childhood programs cited in the literature,

with a special focus on evidence relating to Indigenous children and longitudinal outcomes (see Table 1). The programs are ordered chronologically to provide a sense of how the field of early childhood research has evolved. There are two reasons for examining these programs. First, they have made substantial contributions to the understanding of the effects of early intervention on long- and short-term outcomes and are often cited as being best practice. Second, they represent a range of quality programs with differing program designs (i.e., model vs. large-scale), which provides sufficient variation in reported outcomes (Karoly et al., 1998; Karoly, Kilburn, Bigelow, Caulkins, & Cannon, 2001; Reynolds, 2000; Yoshikawa, 1995; Zigler, 1994).

This review led to three immediate conclusions. First, Indigenous children are absent from formal early childhood research studies and programs. As documented in Table 2, Indigenous children are systematically excluded in even the best-known early childhood programs in the US. Second, no longitudinal research in the literature relates to the success of Indigenous children. This is a critical point as many in the early childhood field remain committed to implementing early childhood programs with Indigenous communities based on these formal research studies and programs, even with limited or no evidence that Indigenous children would experience similar results (Cannella, 1997; Dahlberg et al., 1999; Smith, 1999). Third, contemporary research on ECI programs continues to be primarily based on fixed and measurable outcomes (Dahlberg et al.; Greenwood & Fraser, 2006; Smith). This view of the social world is based on the conventional opinion found in contemporary early childhood research that hypothesizes that all human beings develop through the same measurable process and that research is value-free. The influence of this ethos in early childhood intervention is evident today in the enduring definitions of *good evidence*, *best practices*, and theories of child development that ignore the heterogeneity of cultural heritage.

Reasons for Excluding Indigenous Children in Early Childhood Interventions and Research

Although there is substantial support for longer-term positive effects of early intervention on children's development, especially for school and social competence, no longitudinal studies have examined the success of Indigenous children. There are six key reasons for this gap in the research literature. First, because of the success of early intervention programs, many remain committed to implementing early childhood programs in Indigenous communities; however, they have not developed a mutual and long-term relationship with Indigenous communities (Kirkness, 1986; Kirkness & Barnhardt, 1991; Leavitt, 1995; Lockhart, 1982; Mackay & Myles, 1995). As a result, such programs have not been culturally tailored and can be met with skepticism in Indigenous communities because of the colonization efforts that continue (Mackay & Myles, 1995). Second, formal

Table 1
Most Frequently Cited ECI Programs

Program	Type	Age at Last Follow-Up	Number of Citations
High/Scope Perry Preschool Program	Model	40	21
Carolina Abecedarian Project	Model	21	18
Houston Parent-Child Development Center	Model	11	14
Yale Child Welfare Research Program	Model	14	10
Chicago Child-Parent Centers	Large Scale	24	17
Milwaukee Project	Model	14	8
Syracuse Family Development Program	Model	15	8
Early Training Project	Model	20	6
Consortium for Longitudinal Studies	Model	27	6
Philadelphia Project	Model	18	6
Infant and Health Development Program	Model	8	6
Educational Testing Service Head Start Study	Large Scale	8	5
New Haven Follow-Through Study	Large Scale	9	5
Elmira Prenatal/Early Infancy Project	Model	17	7
Harlem Training Project	Model	12	4
University of Rochester Nurse Home Visiting Program	Model	4	4
Gordon Parent Education Program	Model	10	3
New York State Experimental Pre-Kindergarten	Large Scale	8	3
PSID Head Start Longitudinal Study	Large Scale	25	3

research on ECI programs has often ignored the culturally conditioned values and practices of those who are the intended targets of such programs (Dahlberg et al., 1999). Many Indigenous communities have expressed concern about the lack of use of their traditional values in both the process and the outcomes of research. In their seminal book *Beyond Quality in Early Childhood Education and Care: Postmodern Perspectives*, Dahlberg et al. describe these concerns as: (a) mainstream, Euro-Western instructional methods [that] often do not fit the learning styles, interests, or needs of Indigenous children; and (b) the predominantly Euro-Western definition of what is established as a best practice or an evidence-based program perpetuates the colonial, assimilationist effects of education on Indigenous children (Kirkness; Kirkness & Barnhardt). These concerns are supported by many Indigenous educators (Archibald, 1995; Armstrong, Kennedy, & Oberle, 1990; Barber, 1986; Battiste, 1997; Dahlberg et al., 1999; Kirkness, 1986; Kirkness & Barnhardt, 1991; Leavitt, 1995; Lockhart, 1982; Mackay & Myles, 1995). We acknowledge that not all Indigenous peoples experience the same level of colonization, and as a result universal experiences related to best practices or evidence-based practices as defined in the dominant ECI research cannot (and should not) be generalized to all Indigenous

Table 2
Indigenous Children in Most Frequently Cited Early Childhood Intervention Programs

<i>Program</i>	<i>Type</i>	<i>AI in Sample</i>	<i>Longitudinal Follow-Up</i>
High/Scope Perry Preschool Program	Model	No	Yes
Carolina Abecedarian Project	Model	No	Yes
Houston Parent-Child Development Center	Model	No	Yes
Yale Child Welfare Research Program	Model	No	Yes
Chicago Child-Parent Centers	Large Scale	No	Yes
Milwaukee Project	Model	No	Yes
Syracuse Family Development Program	Model	No	Yes
Early Training Project	Model	No	Yes
Consortium for Longitudinal Studies	Model	No	Yes
Philadelphia Project	Model	No	Yes
Infant and Health Development Program	Model	No	Yes
Educational Testing Service Head Start Study	Large Scale	No	Yes
New Haven Follow-Through Study	Large Scale	No	Yes
Elmira Prenatal/Early Infancy Project	Model	No	Yes
Harlem Training Project	Model	No	Yes
University of Rochester Nurse Home Visiting Program	Model	No	Yes
Gordon Parent Education Program	Model	No	Yes
New York State Experimental Pre-Kindergarten	Large Scale	No	Yes
PSID Head Start Longitudinal Study	Large Scale	No	Yes

peoples. In fact some best practices are helpful when taken in the context of the Indigenous community values. The concept of developmentally appropriate activities and high levels of parent involvement are two examples. However, despite this acknowledgement, the values and world views of the dominant research remains a powerful deterrent for any meaningful participation in the research process (Smith, 1999).

Third, Indigenous children bring aspects of their unique culture and background into early childhood programs (Archibald, 1995; Armstrong et al., 1990; Barber, 1986; Battiste, 1997; Demmert, 1994, 1995, 2004). Indigenous children also vary by ancestral affiliations and across the cultural norms that affect the environments in which they live. Thus research must take into account the unique cultural characteristics of children and families and the goals and values of the local communities. This is not easily done in mainstream research. In its current state, the research on services for Indigenous children relies heavily on qualitative methods, including personal histories and ethnographic techniques.

Fourth, because of the heterogeneity of diverse Indigenous communities, each with its own distinct history, language, culture, and social

organization, qualitative approaches can and do provide a wealth of detail. However, they also suffer from small sample sizes and often take considerably more time and effort than many who conduct formal research care to expend (Archibald, 1995; Armstrong et al., 1990; Demmert, 1995, 2004).

Fifth, many large-scale research and evaluation activities of early childhood programs exclude tribal programs from the population eligible for inclusion in research (Dahlberg et al., 1999). This is done in part because of methodological issues raised by the unique circumstances of tribal programs and in part because legislative mandates have specifically excluded tribal programs from specific research and evaluation activities (e.g., 643A(g)(4) of the Early Childhood Programs Authorization Act legislated in the US; Archibald, 1995; Armstrong et al., 1990; Barber, 1986; Battiste, 1997; Kirkness, 1986; Kirkness & Barnhardt, 1991; Leavitt, 1995; Lockhart, 1982; Mackay & Myles, 1995).

Finally, issues in gaining tribal acceptance and permission to conduct research have combined with limited financial support to produce the current situation of inadequate research-based early childhood information about Indigenous children (Dahlberg et al., 1999; Demmert, 2004; McCarty, Wallace, Lynch, & Benally, 1991). Moreover, studies that are considered more general for the Indigenous population tend to draw on urban populations and do not generally segment findings according to tribal affiliation (Cannella, 1997; Dahlberg et al.).

Theoretical Models of Research in Early Childhood Intervention

The conceptual models most commonly used in ECI programs are ecological systems theory and risk and resilience theory. These are discussed below, and a new theory—cultural compatibility theory—is introduced as a theoretical model for the implementation of early childhood programs with Indigenous communities.

Ecological Systems Theory

Ecological systems theory (Bronfenbrenner, 1985; Reynolds, 2000) specifies that outcomes of development are substantially affected by the social contexts, both proximal and distal, in which children are embedded. An ecological perspective emphasizes the importance of extrafamilial contexts as they influence family and individual functioning. As mentioned above, most evidence-based research has been on white, middle-class, two-parent families, a trend that has sharply restricted an understanding of how relationships vary across Indigenous populations and how Indigenous communities located in rural areas interact (Shonkoff & Meisels, 2000). A more ecologically valid approach in collaborating with Indigenous communities would be to place greater emphasis on the diversity of tribes and those unique tribal elements (e.g., language and ceremonies) that can shape programs in these communities.

Risk and Resilience Theory

The concepts of risk and resilience are the cornerstones of risk and resilience theory, and many comprehensive reviews have identified risk and protective factors for ethnic minority populations (Hawkins, Catalano, & Miller, 1992; Oetting, Edwards, Kelly, & Beauvais, 1997; Steinberg, 1991). However, five critical differences between the Eurocentric early childhood literature and how the terms *risk* and *resilience* apply to Indigenous communities are worth noting.

First, *risk* in Indigenous communities is not well defined. Typically, risk factors are environmental stressors or conditions that increase the likelihood that a child will experience poor overall adjustment or negative outcomes in particular areas such as physical health, mental health, academic achievement, or social adjustment (Hawkins et al., 1992; Oetting et al., 1997; Steinberg, 1991). Commonly identified risk factors include traumatic life events (such as the death of a parent), socioeconomic disadvantages, family conflict, chronic exposure to violence, and serious individual and community problems such as substance abuse, criminality, or mental illness (Kaplan, 1999). Growing up in poverty is a particular concern because it encompasses a host of specific risks to children such as limited access to health care, economic stresses on the family, increased exposure to environmental hazards, and limited opportunities for employment (Kaplan). Whether these can be applied to Indigenous populations needs further exploration.

A second limitation of this theoretical approach as applied to Indigenous communities is that the study of risk and resilience tends to take a broader view, focusing on larger issues of adjustment and adaptation rather than on specific developmental milestones in isolation from other aspects of development (Kaplan, 1999).

Third, most ECI models are intuitive, use a logical framework, and incorporate a similar language for conceptualizing and addressing child developmental problems. As a result, perhaps the most important limitation of the risk and resilience approach in ECI programs is that although a fairly substantial research-based literature has emerged in the past 20 years that has identified numerous risk and protective factors related to common developmental problems, there is little information about how such risk and protective factors affect Indigenous populations (Hawkins et al., 1992).

A fourth limitation of this approach is that it tends to be deficit-oriented, emphasizing problems (Benson, 1997; Pittman & Cahill, 1991) and leading people to focus on what is wrong with youth rather than on what is right. From an Indigenous perspective, this can be problematic because of the potential to stigmatize these populations, continue colonizing efforts, undermine their motivation, or discourage them from becoming

ing involved in developing ECI programs relevant to their unique community.

Finally, there is little recognition in the ECI literature that a hypothesized risk or protective mechanism may not apply equally to all persons within unique (e.g., Indigenous) populations. As O'Connor and Rutter (1996) suggest, a risk mechanism may or not may apply to a subgroup of at-risk populations, and a protective factor may be more effective for some individuals (e.g., tribal members vs. non-tribal members) than for others. If we accept Rutter's (1987) supposition that protective processes are linked to risk processes, then the dominant world literature must be more thoughtful about the protective processes that occur naturally in Indigenous communities. Thus the need to redefine what these concepts mean in Indigenous communities becomes all the more significant because both theories largely ignore cultural aspects that are unique to Indigenous communities.

Indigenous cultures prescribe how and when babies are fed, as well as where and with whom they sleep (Guralnick, 1998; National Research Council and Institute of Medicine, 2000; Shonkoff & Meisels, 2000). Culture affects the customary response to an infant's crying and a toddler's temper tantrums. It sets the rules for discipline and expectations for developmental attainments. It influences how illness is treated and disability is perceived. It approves certain arrangements for child care and disapproves others. In short, [the Indigenous community's] culture "provides a virtual how-to manual for rearing children and establishes role expectations for mothers, fathers, grandparents, older siblings, extended family members, and friends" (National Research Council and Institute of Medicine, p. 25). Given this complexity, the relative disregard for cultural influences in traditional theoretical approaches in ECI programs for Indigenous communities is astonishing.

Cultural Compatibility Theory

Contrary to the universal assumptions of the ecological systems theory and risk and resilience theory that place the social world in a predictable, foreseeable, and ordered manner, cultural compatibility theory is a new nonlinear theoretical approach that can be applied with Indigenous communities. This theory requires giving the Indigenous community a clear and meaningful voice on how ECI programs may or may not fit with their distinctive culture. The central principle of cultural compatibility theory is congruence (Demmert, 2004). The more closely human interactions in the school and classroom are aligned with those of the community, the more likely it is that the goals of the school will be attained. Congruence can be fostered more easily in Indigenous communities because unlike non-Indigenous schools, many Indigenous communities have great latitude over the design and implementation of programs and services. This allows for culture and customs to be reinforced as is uniquely appropriate for the

community. The reason that it is imperative to redefine *best practice* and what constitutes *evidence* in Indigenous communities is not only ethical, but also so that the continuity in school and home learning environments—the essence of congruence—may be encouraged (Demmert).

*New Directions in Early Childhood Intervention Research
with Indigenous Communities*

Researchers can take a number of new directions to reconceptualize the terms *best practice* and *evidence-based practice* as they relate to Indigenous ECI programs (Archibald, 1995; Armstrong et al., 1990; Barber, 1986; Battiste, 1997; Dahlberg et al., 1999; Kirkness, 1986; Kirkness & Barnhardt, 1991; Leavitt, 1995; Lockhart, 1982; Mackay & Myles, 1995). First, researchers must consider the uniqueness of individual tribal communities and that Indigenous tribes have the inherent authority to govern themselves through tribal sovereignty (Archibald; Armstrong et al.; Barber; Battiste; Demmert, 2004). Contemporary research literature with Indigenous populations clearly demonstrates that each community has its own history, culture, traditions, and norms. Given this diversity, the idea of conducting research aggregated across tribes to something that could be considered the “Indigenous” experience would be misleading.

Recognition of tribal sovereignty is essential. For example, in the US Indigenous programs operate through a government-to-government relationship with the federal government (Archibald, 1995; Armstrong et al., 1990; Barber, 1986; Battiste, 1997; Demmert, 2004). Although this relationship is not always contentious, it remains a fact that researchers must respect and attend to. This is a key point because it is unlikely that any research would even be considered by Indigenous communities without the advice and consent of community members.

Furthermore, relationships with Indigenous governments will also affect research. Because most Indigenous governments are elected, changes among office holders can shape the planning and implementation of Indigenous early childhood programs (Archibald, 1995; Armstrong et al., 1990; Barber, 1986; Battiste, 1997; Demmert, 2004). Changes among office holders may also affect education personnel because some positions are appointed by councils or elected leaders. In summary, any research agenda developed for Indigenous early childhood programs must recognize tribal sovereignty and respect the uniqueness of individual tribal communities. This recognition is often nonexistent in the formal early childhood research literature.

A second point focuses on the need for cultural appropriateness, both in conducting research and in serving Indigenous children. Cultural issues must be addressed in developing research questions, methodologies, sampling procedures, and data collection (Archibald, 1995; Armstrong et al., 1990; Barber, 1986; Battiste, 1997; Demmert, 2004). Differences among Indigenous groups must be acknowledged and respected in developing

the methodology and conducting the research. Most important, tribal communities must have a significant voice in designing and conducting the research. The need to ensure cultural appropriateness is required in designing and executing research studies in Indigenous settings. The incorporation of Native languages into children's learning experiences is a central principle of this cultural appropriateness. This is not easily accomplished, as many Indigenous teachers have lost their own Native language skills (Armstrong et al.). In many Indigenous communities the Native language has not been incorporated into the early childhood curricula. Instead the dominant world view of *best practices* takes the place of the languages that are unique to these cultures.

Third, researchers should establish and follow appropriate dissemination procedures. Dissemination of research findings to Indigenous communities should be planned with community representatives (Archibald, 1995; Armstrong et al., 1990; Barber, 1986; Battiste, 1997; Demmert, 2004; Smith, 1999). Due to the colonization efforts that have existed and that they continue to endure, Indigenous communities may be apprehensive about what results are circulated outside the community. Inclusion of tribal members in what will be disseminated, as well as the methods of dissemination, needs to be a part of any research plan. As discussed in detail by Dahlberg et al. (1999), most research on early childhood programs can be found in professional academic journals. However, many additional authors also note that this dissemination method may not be respected or even accessible to Indigenous communities (Kirkness, 1986; Kirkness & Barnhardt, 1991; Leavitt, 1995; Lockhart, 1982; Mackay & Myles, 1995; Smith, 1999). For future research involving Indigenous children, researchers should consider alternative ways of sharing findings such as through community meetings, videos, and other settings. These methods would allow the tribal community to have immediate access to findings and to use relevant information to help their children as they deem appropriate.

The final point concerns the need to develop a forum for discussion and sharing information to facilitate the development of research that is consistent with tribal norms, values, and preferences (Archibald, 1995; Armstrong et al., 1990; Barber, 1986; Battiste, 1997; Demmert, 2001; Smith, 1999). For example, researchers may encounter significant resistance to experimental designs (or even quasi-experimental designs involving comparison groups) in that these methods may be rightfully construed as another "experiment" on Indigenous individuals for the benefit of the dominant world, not to mention the moral and ethical issues of such research methodologies (Dahlberg et al., 1999; Kirkness, 1986; Kirkness & Barnhardt, 1991; Leavitt, 1995; Lockhart, 1982; Mackay & Myles, 1995; Smith). Communities may also be resistant to new interventions if they are not developed with the full participation of Indigenous individuals and if

there has not been a participatory process in making decisions about their suitability (Dahlberg et al., 1999; Demmert, 1994, 1995, 2004). Certainly many Indigenous communities strongly support research that will benefit their children. However, any research that appears to be an experiment is inappropriate and ultimately unethical (Demmert, 1994, 1995, 2001, 2004). Given this, a nonintrusive research design (such as studies that use existing data) that is inclusive of community may be a better alternative.

Summary

Policymakers and the public have a strong interest in ensuring that early childhood interventions are devised in a *results-based accountability* paradigm that mandates that intervention programs be not only successful but cost-effective (Niles et al., 2006). This frequently means that programs demonstrating a strong record of empirical research evidence are considered both *best practice* and *evidence based*. It is our opinion that such program models, most with no Indigenous children in their study sample, are inappropriate to be considered as either in Indigenous communities.

We reviewed the best-known early childhood programs and studies that are considered best practice and evidence based in the US and discussed their implications for practice with Indigenous children. Our findings suggest that the most serious issue facing practitioners, researchers, and policymakers who are interested in early childhood intervention with Indigenous communities is that the terms *best practice* and *evidence-based practice*—and how these apply if at all to Indigenous communities—are misrepresented in the formal research literature (Dahlberg et al., 1999; Greenwood & Fraser, 2006). The terms are often presented as being universally applicable, but this is not the case for all children, particularly Indigenous children; the reasons for this are discussed above. This challenge endures despite decades of calls from Indigenous communities wishing to take part in culturally appropriate research activities. We also found that understanding differences across and within Indigenous populations has remained largely outside the body of knowledge derived from systematic, large-scale research on early childhood development.

By questioning the suitability of the terms *best practice* and *evidence-based practice* in Indigenous communities, a more complete discussion of what these concepts represent to Indigenous communities can be created (Dahlberg et al., 1999; Greenwood & Fraser, 2006). This begins with acceptance on the part of the policymakers, researchers, and practitioners that best practices in Indigenous communities should not be based solely on programs that demonstrate empirical results. Such programs may or may not be considered a best practice by the Indigenous communities. Inclusiveness, mutual respect, and careful attention to the unique contributions of Indigenous communities remain the foundation for meaningful collaboration between researchers and Indigenous populations (Dahlberg et al.; Evans et al., 1999; Greenwood & Fraser, 2006; Haig-Brown, 1995).

Note

¹Terms such as *promoting development*, *school readiness*, *cost-effectiveness*, and most common of all *best practice* and *evidence-based practice* are commonly used in early childhood research literature (Barnett, 1995, 1998; Currie, 2001; Dahlberg, Moss, & Pence, 1999; Karoly et al., 1998; Niles, 2004; Niles, Reynolds, & Nagasawa, 2006; Reynolds, 2000, 2002; van IJzendoorn, 1998; Zigler & Styfco, 1993).

References

- Archibald, J. (1995). Locally developed Native studies curriculum: An historical and philosophical rationale. In M. Battiste & J. Barman (Eds.), *First Nations education in Canada: The circle unfolds* (pp. 288-312). Vancouver, BC: UBC Press.
- Armstrong, R., Kennedy, J., & Oberle, P.R. (1990). *University education and economic well-being: Indian achievement and prospectus*. Ottawa: Indian and Northern Affairs Canada.
- Barber, C. (1986). *Persistence in Canadian Native teacher education programs and inner-city high schools*. Unpublished master's thesis, University of Regina.
- Barnett, S. (1995). Long-term effects of early childhood programs on cognitive and school outcomes. *The Future of Children*, 5(3), 25-50.
- Barnett, W.S. (1998). Long-term effects on cognitive development and school success. In W.S. Barnett & S.S. Boocock (Eds.), *Early care and education for children in poverty: Promises, programs, and long-term results* (pp. 11-44). Albany, NY: SUNY Press.
- Battiste, M. (1997). Mi'kmaq socialization patterns. In L. Choyce & R. Joe (Eds.), *Anthology of Mi'kmaq writers* (pp. 145-161). East Lawrencetown, NS: Pottersfield Press.
- Benson, P. (1997). *All kids are our kids*. San Francisco, CA: Jossey-Bass.
- Bronfenbrenner, U. (1985). Summary. In M.B. Spencer, G.K. Brookins, & W.R. Allen (Eds.), *Beginnings: The social and affective development of Black children* (pp. 67-73). Hillsdale, NJ: Erlbaum.
- Burns, J.M., & Patton, G.C. (2000). Preventive interventions for youth suicide: A risk factor-based approach. *Australian and New Zealand Journal of Psychiatry*, 34(3), 388-407.
- Cannella, G. (1997). *Deconstructing early childhood education: Social justice and revolution*. New York: Peter Lang.
- Comer, J.P. (1993). *School power*. New York: Free Press.
- Currie, J. (2001). Early childhood education programs. *Journal of Economic Perspectives*, 15(2) 213-238.
- Dahlberg, G., Moss, P., & Pence, A. (1999). *Beyond quality and care in early childhood education: Postmodern perspectives*. London: Falmer Press.
- Demmert, W.G. (1994). *Blueprints for Indian education: Languages and cultures*. (Report No. ED372899). Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools. (ERIC Document Reproduction Service No. ED372899)
- Demmert, W.G. (1995). Indian nations at risk: An educational strategy for action. In L.I. Rendon & R.O. Hope, Eds.), *Educating a new majority* (pp. 231-262). San Francisco, CA: Jossey-Bass.
- Demmert, W.G. (2001). *Improving academic performance among Native American students: A review of the research literature* (Report No. ED463917). Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools. (ERIC Document Reproduction Service No. ED463917)
- Demmert, W.G. (2004, August). *Improving academic performance among Native American children*. Paper presented at the Council of Chiefs State School Officers Second Annual American Indian Alaskan Native and Hawaiian Student Education Conference, Blaine, WA.
- Dryfoos, J.G. (1990). *Adolescents at risk: Prevalence and prevention*. New York: Oxford University Press.

- Duncan, G.J., & Brooks-Gunn, J. (1997). Income effects across the life span: Integration and interpretation. In G.J. Duncan & J. Brooks-Gunn (Eds.), *Consequences of growing up poor* (pp. 596-610). New York: Russell Sage Foundation Press.
- Evans, M., McDonald, J., & Nyce, D. (1999). Acting across boundaries in Aboriginal curriculum development: Examples from northern British Columbia. *Journal of Native Education*, 23(2), 190-205.
- Fayden, T. (1997). What is the effect of shared reading on rural Native American and Hispanic kindergarten children? *Reading Improvement*, 34(1), 22-30.
- García-Coll, C.T., & Magnuson, K. (2000). Cultural differences as sources of developmental vulnerabilities and resources: A view from developmental research. In S.J. Meisels & J.P. Shonkoff (Eds.), *Handbook of early childhood intervention* (pp. 94-111). Cambridge, UK: Cambridge University Press.
- García-Coll, C.T., & Meyer, E.C. (1993). The sociocultural context of infant development. In C. Zeanah (Ed.), *Handbook of infant mental health*. New York: Guilford.
- Greenwood, M., & Fraser, T. (2006). Ways of knowing and being-Indigenous early childhood care and education. *Research Connections Canada*, 13. Ottawa: Canadian Child Care Federation.
- Guralnick, M.J. (1998). The effectiveness of early intervention for vulnerable children: A developmental perspective. *American Journal on Mental Retardation*, 102, 319-345.
- Haig-Brown, C. (1995). *Taking control: Power and contradiction in First Nations adult education*. Vancouver, BC: UBC Press.
- Hawkins, J.D., Catalano, R.F., & Miller, J.Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. *Psychological Bulletin*, 112(1), 64-105.
- Kamerman, S.B. (2001). An overview of ECEC developments in OECD countries. In S.B. Kamerman (Ed.), *Early childhood education and care: International aspects of social policy*. New York: Columbia University Institute for Child and Family Policy.
- Kaplan, H.B. (1999). Toward an understanding of resilience: A critical review of definitions and models. In M.D. Glantz & J.L. Johnson (Eds.), *Resilience and development: Positive life adaptations* (pp. 17-84). New York: Kluwer Academic/Plenum.
- Karoly, L.A., Greenwood, P.W., Everingham, S.S., Hoube, J., Kilburn, M.R., Rydell, C.P., Sanders, M., & Chiesa, J. (1998). *Investing in our children: What we know and don't know about the costs and benefits of early childhood interventions*. Santa Monica, CA: Rand.
- Karoly, L.A., Kilburn, R., Bigelow, J.H., Caulkins, J.P., & Cannon, J.S. (2001). *Assessing costs and benefits of early childhood intervention programs: Overview and applications to the Starting Early, Starting Smart Program*. Seattle, WA: Casey Family Programs.
- Kirkness, V.J. (1986). Native Indian teachers: A key to progress. *Canadian Journal of Indian Education*, 13, 47-53.
- Kirkness, V.J., & Barnhardt, R. (1991). First Nations and higher education: The four Rs—Respect, relevance, reciprocity, responsibility. *Journal of American Indian Education*, 30(3) 1-15.
- Leavitt, R. (1995). *Maliseet and Micmac: First Nations of the maritimes*. Fredericton, NB: New Ireland Press.
- Lockhart, J. (1982). Views of the corporate self and history in some valley of Mexico towns, Late seventeenth and eighteenth centuries. In G.A. Collier (Ed.), *The Inca and Aztec states* (pp. 367-393). New York: Academic Press.
- Mackay, R., & Myles, L. (1995). A major challenge for the education system: Aboriginal retention and dropout. In M. Battiste & J. Barman (Eds.), *First Nations education in Canada: The circle unfolds*. Vancouver, BC: University of British Columbia Press.
- McCarty, T.L., Wallace, S., Lynch, R.H., & Benally, A. (1991). Classroom inquiry and Navajo learning styles: A call for reassessment. *Anthropology and Education Quarterly*, 22(1), 42-59.
- McLoyd, V.C. (1998). Children in poverty: Development, public policy, and practice. In W. Damon (Series Ed.), I.E. Sigel, & K.A. Renniger (Vol. Eds.), *Handbook of child psychology. Volume 4: Child psychology in practice* (5th ed., pp. 135-208). New York: Wiley.

- National Research Council and Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early child development*. Committee on Integrating the Science of Early Childhood Development. J.P. Shonkoff & D.A. Phillips (Eds.). Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.
- Niles, M.D. (2004). *Participation in early childhood intervention: Does it influence children's social and emotional development?* Unpublished doctoral dissertation. University of Wisconsin, Madison.
- Niles, M.D., Reynolds, A.J., & Nagasawa, M. (2006). Does early childhood intervention affect the social and emotional development of participants? *Early Childhood Research and Practice, 8*(1), 34-53.
- O'Connor, T.G., & Rutter, M. (1996). Risk mechanisms in development: Some conceptual and methodological considerations. *Developmental Psychology, 32*, 787-795.
- Oetting, E.R., Edwards, R.W., Kelly, K., & Beauvais, F. (1997). Risk and protective factors for drug use among rural American youth. In E.B. Robertson, Z. Sloboda, G.M. Boyd, L. Beatty, & N.J. Kozel (Eds.), *Rural substance abuse: State of knowledge and issues* (pp. 90-130). NIDA Research Monograph No. 168. Rockville, MD: National Institute on Drug Abuse.
- Ou, S., & Reynolds, A.J. (2006). Early childhood intervention and educational attainment: Age 22 findings from the Chicago longitudinal study. *Journal of Education for Students Placed at Risk, 11*(2), 175-198.
- Paranjpe, A.C. (1998). *Self and identity in modern psychology and Indian thought*. New York: Plenum.
- Pittman, K.J., & Cahill, M. (1991, September). *A new vision: Promoting youth development*. Paper presented to the House Select Committee on Children, Youth, and Families.
- Ramey, C.T., & Ramey, S.L. (1992). Effective early intervention. *Mental Retardation, 30*(6), 337-345.
- Ramey, C.T., & Ramey, S.L. (1998). Prevention of intellectual disabilities: Early interventions to improve cognitive development. *Preventive Medicine, 27*(2), 224-232.
- Reynolds, A.J. (2000). *Success in early intervention: The Chicago Child-Parent Centers*. Lincoln, NE: University of Nebraska Press.
- Reynolds, A.J. (2002). Early childhood interventions: Knowledge, practice, and policy. *Focus, 22*(1), 112-117.
- Reynolds, A.J., & Temple, J.A. (2005). Priorities for a new century of early childhood programs. *Infants and Young Children, 18*(2), 104-118.
- Reynolds, A.J., Temple, J.A., Robertson, D.L., & Mann, E.A. (2001). Long-term effects of an early childhood intervention on educational achievement and juvenile arrest—A 15-year follow-up of low-income children in public schools. *Journal of American Medical Association, 285*(18), 2339-2346.
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry, 57*(3), 316-331.
- Schweinhart, L.J., Montie, J., Xiang, Z., Barnett, W.S., Belfield, C.R., & Nores, M. (2005). *Lifetime effects: The High/Scope Perry Preschool study through age 40*. Monographs of the High/Scope Educational Research Foundation, 14. Ypsilanti, MI: High/Scope Press.
- Schweinhart, L.J., & Weikart, D.P. (1993). *Lasting differences: The High/Scope Preschool Curriculum Comparison Study through age 23*. Monographs of the High/Scope Educational Research Foundation, 10. Ypsilanti, MI: High/Scope Press.
- Shonkoff, J.P., & Meisels, S. M. (Eds.). (2000). *Handbook of early childhood intervention* (2nd ed.). Cambridge: Cambridge University Press.
- Smith, L.T. (1999). *Decolonizing methodologies: Research and Indigenous peoples*. New York: St. Martin's Press.
- Steinberg, L. (1991). Adolescent transitions and alcohol and other drug use prevention. In E.N. Goplerud (Ed.), *Preventing adolescent drug use: From theory to practice* (pp. 13-51). OSAP Prevention Monograph No. 8. Rockville, MD: U.S. Public Health Service.

- United States Census Bureau. (2006). *American community survey*. Retrieved May 20, 2006, from: <http://www.census.gov/acs/www/>
- van IJzendoorn, M.H. (1998). Meta-analysis in early childhood education: Progress and problems. In B. Spodek, O.N. Saracho, & A.D. Pellegrini (Eds.), *Issues in early education research* (pp. 156-176). New York: Teachers College Press.
- Weissberg, R., & Greenberg, M.T. (1998). Community and school prevention. In W. Damon (Series Ed.) & I.E. Sigel & K.A. Renniger (Volume Eds.), *Handbook of child psychology. Volume 4: Child psychology in practice* (5th ed., pp. 877-954). New York: Wiley.
- Wilson, W.J. (1987). *The truly disadvantaged: The inner city, the underclass, and public policy*. Chicago, IL: University of Chicago Press.
- Yoshikawa, H. (1995). Long-term effects of early childhood programs on social outcomes and delinquency. *The Future of Children*, 5(3), 51-75.
- Zigler, E. (1994). Reshaping early childhood intervention to be a more effective weapon against poverty. *American Journal of Community Psychology*, 22(1), 37-47.
- Zigler, E., & Berman, W. (1983). Discerning the future of early childhood intervention. *American Psychologist*, 38, 894-906.
- Zigler, E., & Styfco, S. (1993). *Using research and theory to justify and inform Head Start expansion*. Social Policy Report, 7(2). Ann Arbor, MI: Society for Research in Child Development (SRCD).