



School readiness of low-income children at risk for school failure

CHERYL WRIGHT, MARISSA DIENER and SUSAN C. KAY

The goal of this research project was to gain information about the readiness skills of kindergarten children in 11 inner city schools with the highest poverty rates in the Salt Lake City School District. Kindergarten teachers and principals in these schools were interviewed regarding their perceptions of the readiness skills needed for these children to be successful in their schools. A summary of the readiness skills of the kindergarten children was derived from a state mandated Pre-Kindergarten Assessment. Most principals stressed children's social and emotional development as a priority in school readiness. The majority of teachers emphasized literacy as a prerequisite for school success. Yet, the Pre-Kindergarten Assessment revealed that one fourth of the children could not identify the front of a book and two thirds of the children did not know where to start or which direction to go when reading. Half of the parents of these children reported that they rarely read to their children and that they had only visited a library once or not at all. The gap between the readiness skills educators think these children need and the skills children enter school with presents a serious problem for educators and policy makers. Multiple intervention strategies are recommended including providing education and home activities to enhance children's readiness skills, coordinating access to early childhood programs, and educating parents on available community resources.

Introduction

Imagine that you are a kindergarten teacher in a school in an impoverished neighborhood. At the beginning of the school year you administer an assessment to determine the basic skills of your incoming class. As you show these young children a book you ask, "Show me where you would start to read." Almost two thirds of these young children do not know.

Some might suggest that these children lack intelligence and that is why they will have difficulty in school. However, these children not only live in economic poverty but also live in environments deprived in ways beyond the lack of economic resources. These children do not have the early experiences that we

take for granted as prerequisites for formal school. They grow up in families who don't understand the importance of talking and reading to pre-school children. Their parents think that learning starts when they enter school. Because they lack these critical early childhood experiences, the chances of them being successful in school are remote. The cycle of poverty continues.

The cost of school failure impacts the individual, family and society. Communities and families want their children to be successful in school so that they will grow up to be self-sufficient and socially integrated adults. Yet, an individual's academic success can be stymied by their lack of readiness to start school (Bronfenbrenner, 1974; Guinagh and Gordon, 1976). Readiness requires far more than just academic skill preparation. Early childhood educators generally agree that children's readiness for school includes: physical well being, approach to learning (curiosity), social and emotional development, use of language, cognition and general knowledge (Cody, 1993; Kagan, 1992). Past research suggests that a combination of the behavioral and ecological approaches may increase school success if we can change what parents do and their concepts of their roles as parents (Bronfenbrenner, 1979; Graue, 1992a, 1992b, 1993). That is, if we change the family's concept of school readiness, we can influence their children's chances of school success.

Interventions designed to improve children's school adjustment and to prevent later academic problems are most effective when they occur at school entry or during the preschool years (Reynolds, 1992). Strategies that emphasize parent-child interactions can promote children's readiness to start school (Reynolds, 1992). For example, home visiting programs during the preschool years are generally based on the premise that parents are the first teachers of their children. Home visiting programs also aim to improve a family's access to resources, meet basic needs and strengthen family well being. By working intensively with families, these programs can help to prepare children for successful engagement with the school environment.

The goal of this research is to provide information on the readiness skills of kindergarten children in schools with the highest rates of families living in poverty in the Salt Lake City School District. In addition, this study adds to the literature on the types of skills teachers and principals think are most important for school success when working with at-risk populations. This study describes children's readiness skills from multiple perspectives. The first goal was to describe teachers' and principals' perceptions of the readiness skills that children need for success in their programs. Second, teachers' and principals' perspectives on the areas of deficit and strength for children in this at-risk population were examined. Third, a summary of the readiness skills of the kindergarten population in inner city schools was derived from the Pre-Kindergarten Assessment. And fourth, as included in the discussion section, the teachers' and principals' readiness skill expectations were compared to the skills evaluated in the Pre-Kindergarten Assessment.

Method

This study targeted schools ($N = 11$) in three zip code areas. The three targeted neighborhoods were characterized by many common factors: high rates of unemployment, as well as a general lack of affordable housing; increasing numbers of teenage mothers and few health care providers; and large pockets of minority populations. The schools in these neighborhoods have high numbers of children receiving free and reduced lunches, low SAT scores, and high rates of mobility among their students.

Quantitative and qualitative data collection methods were used to gather data on the children, their abilities, and their needs. A quantitative approach was used to analyze readiness skill levels of kindergarten children. These skill levels were based on developmental skills compiled from the Pre-Kindergarten Assessment given to all children in Utah prior to entering kindergarten. The Utah State Office of Education provided assessment results, grouped by school.

A qualitative approach was used to gather information from educators about their expectations of the readiness skills necessary for school success. Personal interviews which lasted approximately 15–30 minutes were conducted with kindergarten teachers and principals at the 11 low-income Salt Lake City schools.

Participants

The 11 principals and all kindergarten teachers (30 teachers in total) at the targeted schools were invited to participate in the interviews. Eight principals (four male, four females) and 22 teachers (all female) with representation from all eleven schools agreed to participate in the study. The participation rate was 73% for principals and teachers. All entering kindergarten children were required to take the Pre-Kindergarten Assessment mandated by the Utah State Legislature. Scores from 885 kindergarten children who attended the 11 targeted low-income schools were included in this study.

Background

The teachers reported working with at-risk populations for an average of 10 years (range was 1 to 32 years). On average, the principals reported working with at-risk populations for 15 years (range of 3 to 28 years). Approximately 100 kindergarten children were enrolled at each of the schools in which principals and teachers were interviewed (range of 80 to 120 children). Class size averaged 24 children, with a range of 16 to 50. The largest class consisted of two combined half-day classes merged in order to offer a full day program. Three of the half-day classes were taught in Spanish. The principals indicated that on average, 52% of the children would qualify for bilingual education, with a range of 23% to 75%.

Measures

Teacher and principal interviews. Interview questions were developed from areas that research indicates are critical to the transition to school. Open-ended questions sought information on which skills educators felt were most important to school success. The open-ended questions also focused on neighborhood children's areas of strengths and deficits upon entering kindergarten. The questions were designed to allow teachers and principals the opportunity to express their ideas about readiness skills that surpass the academic skills emphasized in the Pre-Kindergarten Assessment. Interviews were tape recorded and transcribed.

Pre-Kindergarten Assessment. This assessment focuses on children's literacy and numerical skills. The Pre-Kindergarten Assessment was given by the teacher during the first 2 weeks of school. The assessment was given to each child on an individual basis, with a parent present. It consisted of 38 questions from six concept areas. The six concept areas included: concepts of print (6 questions), visual and sound awareness (13 questions), comprehension (5 questions), literacy background (5 questions), numeracy (7 questions) and social adaptation (2 questions).

Data analysis

A grounded theory approach was used for the analysis of the interviews (Taylor and Bogdan, 1998). Using a constant-comparison method, the data were simultaneously coded and analyzed to develop concepts. The data were coded through several steps. First, the data was "unitized" (Lincoln and Guba, 1985). Each unit was identified as the smallest bit of information that could stand by itself. A unit could have been individual words, sentences or paragraphs. Second, classification schemes/coding categories for each question were developed based on the units. The first unit was set into a category. Next, each subsequent unit was compared to previous units for similarities. Units that were similar were placed into established categories. Units that were dissimilar were placed into a new category. The units were coded into classification schemes by two researchers independently. A comparison of the classification schemes of the two codes was conducted for internal consistency. The categories were reviewed by two researchers and a supervisor to evaluate if categories were too large, if they were subcategories of other categories, or if categories were missing based on the established categories. Only minor discrepancies were found, and they were resolved through discussion. Third, the classification schemes were used to identify themes and develop concepts. Relationships between themes were used to develop higher order categories for each category. These higher order categories were the general statements of teachers and principals' expectations for kindergartners' school readiness skills which were grounded in the data (Taylor and Bogdan, 1998).

Descriptive data analysis was used to describe the results from the Pre-Kindergarten Assessment for the targeted schools. This analysis included percentages, ranges and means to describe the readiness skills of the children who attended the target schools.

Results

Results are organized into five major categories: (1) teacher and principal perspectives of the readiness skills necessary for school success; (2) teacher and principal perceptions of children's areas of deficit in readiness skills; (3) teacher and principal reports of children's areas of strength in readiness skills; (4) readiness skills of the kindergarten population; and (5) teachers' and principals' readiness skill expectations compared to skills assessed by the Pre-Kindergarten Assessment.¹

Readiness skills necessary for school success

Teacher responses. Teacher responses were categorized into nine major categories of skills they felt were important for school success. These categories included areas such as developing children's social, emotional and physical skills, as well as their independence, literacy and academic skills (see Table 1). Most teachers mentioned the importance of literacy experiences for school readiness. These experiences included engaging in language activities, being read to every day and listening to stories and records. Some teachers noted that children should have their own books, but many others stressed that parents can use libraries to expose their children to books, records, tapes and videos. Others indicated that children need to have books read to them instead of just having story videos. One teacher responded, "During a home visit, when I asked if they had read any fairytale books with their child, the parents were happy to show me their extensive video collection. They did not have any children's books in their home." Teachers also suggested that children require all sorts of experiences with books, like being introduced to the basic orientations of the front and back of a book. Teachers also commented that children should have some knowledge of print concepts; for example, children should be aware that print carries a message.

The majority of teachers emphasized academic skills as being important for school success. Teachers varied in which skills they expected children to have. Some teachers (13%) expected children to have interest in and familiarity with the alphabet. Others (13%) wanted children to know the alphabet and how to write the letters. Some (7%) thought children should have basic math skills such as the ability to recognize the numbers 1–10 and to count from 1 to 10. However, most teachers did not emphasize being able to write numbers.

Many teachers (41%) also stressed language skills as important for school success. Some teachers emphasized that children need someone with whom they could talk. Teachers observed many children who had not yet developed verbal

Table 1. Kindergarten readiness skills necessary for school success as reported in principal and teacher interviews

<i>Skill</i>	<i>Principal responses (%)</i>	<i>Teacher responses (%)</i>
Academic skills	25	50
Attention skills	—	32
Children's independence	—	14
Family issues/parenting	63	—
Health issues	38	—
Language	38	41
Life experiences	25	—
Literacy	38	64
Motor skills	25	14
Name	—	18
Self-esteem	25	23
Social skills	63	32

skills because they had not been talked to by their families. Teachers wanted children to be able to verbalize their needs such as needing to go to the bathroom. Teachers also wanted children to experience the fun of language, develop knowledge of songs and rhymes, begin recognizing the sounds letters make, and develop vocabulary skills.

Approximately one third of teachers noted that for children to be prepared for school it is essential that they develop attention and listening skills. Teachers explained that children should be able to sit still for a length of time, to listen and to be able to follow rules and directions. Thirty-two percent of teachers also emphasized that social skills are important for school success. Children need to develop skills to get along with others and to solve problems. One teacher stressed, "They should learn how to keep their hands to themselves and not be aggressive."

Some teachers stressed that children should have a healthy self-esteem and self-concept. One commented, "Children need to experience simple joy, a sense of inner peace, and a sense of being okay." Eighteen percent of teachers wanted children to know their full name. A teacher provided the following insight, "I had a student who did not know his own name because he had always been called a nickname or not addressed by his name at all."

Teachers emphasized that children should be independent and have self-help skills. "They should know how to take care of themselves in a restroom and wash their hands," a teacher commented and added, "Children from other countries may be used to different toileting facilities and need additional help." Many teachers emphasized that parents need to help children be independent. It is necessary for children to have opportunities to think on their own and make their own choices.

Some teachers responded that motor skills influence a child's school success. These teachers wanted children to develop fine motor skills such as how to cut and use scissors, as well as how to open and use glue, how to hold a pencil and crayons and how to understand writing concepts. Teachers felt that it is necessary for children to be familiar with these types of materials so that they do not struggle with them at school. Teachers also stressed that children should develop large motor skills, such as jumping, skipping and hopping.

Principal responses. Whereas the teachers focused on children's literacy and academic skills, the principals emphasized the children's social skills and family issues. The principals described 9 major categories related to areas such as the children's social, emotional and physical development, characteristics of their home environments, and specific types of readiness skills.

Children's social development was stressed by most of the principals. For example, one principal commented, "Most of the children in this population are not being taught social skills prior to entering school. They need to develop social awareness and cooperative skills. They should have the ability to get along with others and to understand acceptable behavior." Most of the principals' responses also focused on family issues. Some principals suggested that children's attitudes towards school (such as enthusiasm or apathy) were derived from their parents' attitudes. They noted that parents need to provide a nurturing environment. A principal commented, "I see a lot of loving parents, yet a lot of these parents have learning problems and home stress." Principals would like parents to develop the skills to create a positive home environment.

Language skills were also emphasized as important for school success. A principal responded, "The children in this population have language deficits due to having English as a second language (ESL). Many families do not speak English in their home environments, or if they do speak English, they do not use full and complete sentences." On the other hand, principals noted the positive effect of multiple languages. They described children as having 'power' and respect in their community if they have abilities in two languages.

Over one third of the principals indicated that it is essential for children to develop literacy skills. Principals stressed that children should be exposed to books and other printed material and to have books read to them (especially by their parents). "Children have to be familiar with books for background knowledge to be successful in school," commented one principal.

Thirty-eight percent of principals responded that children needed to live in a home environment where children's health issues are addressed. Principals recommended that parents should be educated about general nutrition and hygiene along with well-child check-ups and dental exams. And one quarter of the principals stressed the importance of nurturing the child's self-esteem. "Children must develop a sense of self-worth and risk-taking," emphasized one principal. Another principal responded, "Children should be secure in themselves to try new things." Principals also thought children should develop both fine and large motor skills. Children need to experience cutting and coloring. One of the

Table 2. Children's areas of deficit in kindergarten readiness skills as reported in principal and teacher interviews

<i>Skill</i>	<i>Principal responses (%)</i>	<i>Teacher responses (%)</i>
Alphabet	—	41
Basic academic skills	38	50
Cultural issues	25	—
Educational expectations of family	—	27
Family issues/parenting	50	—
Health issues	25	—
Language	75	23
Life experiences	38	18
Literacy	50	50
Name	—	32
Routine schedules	25	—
Social skills	63	41
Writing	—	23

principals noted, "Children should be involved in developmentally appropriate physical activities such as jumping, playing with a ball and other game skills such as soccer or football."

Many principals (25%) also wanted children to have life experiences to relate school to their world. They need to go to the grocery store, museums, and the zoo so they can relate the concrete to the abstract. One in four principals also stressed the need for skills in a variety of academic areas. Academic skills that the principals mentioned were in the areas of letter and number recognition and math. Some principals noted that children should develop skills related to academic success such as the ability to follow simple directions and to listen. Finally, "Children crave routines," noted one principal. He added, "They should be given some structure, so that when they attend school they can understand and follow the daily routines."

Children's areas of deficit in readiness skills

Teacher responses. Teacher responses were categorized into nine major categories of deficit in readiness skills (see Table 2). The most frequently mentioned area of deficit was literacy. Fifty percent of the teachers believed the children lacked literacy skills and were not exposed to books or reading. For example, the teachers noted that the children did not know how to hold a book, or where the front or back of a book is located. The teachers stressed that children need more exposure to reading by having their parents and other people spend time reading with them.

Half of the teachers responded that children are lacking basic academic skills. Most of the teachers responded that children do not recognize letters of the

alphabet. Teachers wanted children to have some familiarity with the alphabet, and a general knowledge of letter and sound concepts. One fourth of the teachers noted that children have no exposure to writing. As one teacher said, "They have no idea how to write." Thirty-two percent of teachers stressed that children need to know their name and be familiar with the letters of which it is composed. Many struggle to write their names. One teacher explained, "Children in my class struggle to write even the first letter of their name."

Almost one quarter of the teachers indicated the children lacked language skills. A teacher explained, "The children lack the ability to express their needs and desires verbally." Several teachers suggested that the children do not know how to get attention appropriately; they pull on teachers' clothing for interactions and use other physical ways to get attention. Teachers commented that the children do not speak in complete sentences; they use single words for interactions. They recommended that parents need to spend time with their children and to speak with them instead of at them. Some teachers noted that children might have more deficits if they speak another language. "Many come from families which are non-English speaking," said one teacher. "Kids need the basics in their first language before they can grasp the second language," stressed another. A third commented, "Many children cannot speak English when they come to school. Teachers are having to do a lot of translating."

The lack of social skills was emphasized by many of the teachers. While many children are not used to functioning in a classroom, one teacher noted that if children could learn self-control in any environment it would carry them through school and life. "The children have no sense of routine, they do not know what comes next," commented one teacher. The children need to have experience with routines, learning that one activity can follow another. They need to follow directions after they are asked one time. Teachers also emphasized that children lack verbal social skills, such as how to show respect by saying please and thank you, or how to talk kindly to someone else. "Children need to learn how to interact, how to get along with other children and that everything is not 'mine'," noted another teacher. "Children do not know how to play or how to follow rules in a game," commented one teacher. Another teacher responded, "Children do not have a sense of taking turns." Several teachers commented that they saw a lot of aggression. "There is a lot of hitting and angry, violent stuff," said one teacher.

Twenty-seven percent of the teachers noted that parents lack a sense of educational expectations for themselves and their children. Several teachers emphasized that parental attitudes toward kindergarten need to be changed. "Many parents think it is day care. We need to emphasize that it is real school," stressed one teacher. Another teacher commented, "Encourage parents to send children to school every day." "Children are starting school at lower developmental levels," commented another teacher. "The families do not emphasize educational activities and lack the materials to do them," said one teacher. Teachers emphasized that parents are not aware of the things children need to know to prepare them for school.

Teachers perceived that children exhibited a lack of exposure to the world. They need to have life experiences, such as visiting a museum. Teachers stressed that children need to spend time with someone other than a television. "Parents need to work with kids, not just let them sit in front of the TV," said one teacher.

Principal responses. Principals were also asked the following question: "What are the deficit areas of development for children coming into your school?" Principals provided responses that were categorized into nine major categories. Seventy-five percent of principals emphasized language skill deficits. Principals reported that children are lacking in the areas of language development and vocabulary. Similar to some teachers' responses, a principal commented, "This lack of oral language development is due to parents not using full and complete sentences when they talk with their children." Another principal responded, "Many parents just do not talk with their children at all." Fifty percent of the principals emphasized that children are not having literacy experiences. Twenty-five percent of the principals noted that many children have not had anyone read to them. "Their homes lack print items such as books, newspapers and magazines," one principal responded.

Principals also explained that these language deficits might be related to ESL issues. One principal responded, "The children need to hear language, especially English." Another noted, "In our school we have 17 languages and 26 countries of origin. Parents may not know how to nurture their children's language development." One principal noted that parents who are struggling with English as a second language may find that it is difficult and time-consuming to speak to their children in a different language. They also stressed that parents may feel embarrassed if their children see that their parents lack language knowledge. Principals recommended parents talk with their children, even if it is just describing the activities they are performing such as sorting the dark clothing from the light clothing.

Thirty-eight percent of principals noted that children lack basic academic skills. One principal stated, "I have seen a decline in kindergarten screening scores." "The children do not have an awareness of the alphabet, colors, shapes or numbers," another said.

Almost two-thirds of principals commented that children lack social skills. "Children are not taught social skills," stated one principal. Principals wanted children to be taught conflict resolution skills and to learn how to get along with other children. Some principals responded that parents have limited social skills and do not know how to interact with their children. "Parents lack the skills to nurture their children in loving and appropriate ways," commented one principal.

Half of the principals indicated that family issues contributed to the lack of readiness skills. The principals described parents as having low education levels and a lack of dedication to education. Several principals explained that many parents do not have the emotional and financial resources because of their youth and single parent status. One principal explained, "These families walk through the barriers of their neighborhoods. There is a crime element here. The children

are exposed to gang activities with older siblings. There are transients and prostitutes.” Several principals emphasized the high poverty rate and large numbers of children who qualify for free and reduced lunch programs. Another emphasized, “The parents are trying. There are a lot of young families, some are first generation Americans.”

Twenty-five percent of the principals addressed children’s health issues. “They are undernourished or malnourished,” commented one principal. Others noted that they are not receiving proper nutrition, hygiene and not developing good eating habits. Principals also emphasized that children are not being provided a routine schedule. One principal commented, “Their parents are not helping to get children up and going to school each morning.” Principals suggested that children’s limited exposure to life experiences decreased the opportunities for them to develop readiness skills. “Children have limited experiences of being exposed to mainstream America.” For example, the principal said, “Children don’t know how our plumbing facilities work.” Several principals emphasized that children need opportunities such as going to the library, the zoo, museums or basketball games in order to become more socially integrated.

One quarter of principals addressed cultural issues as influencing children’s readiness skills. One principal explained, “With the different cultures, we don’t want to lose the beauty of the differences in the melting pot.” However, another principal explained that children and families need to learn how to adapt to certain values to survive in “American culture.” Sometimes the mainstream value system may conflict with another culture. For example, physical discipline practices may be considered appropriate in one culture but “frowned upon” in our culture. In addition, “Children are being disciplined inappropriately,” another principal responded. “Children are treated harshly verbally and physically,” commented the principal.

Children’s areas of strength in readiness skills

Teacher responses. Teacher responses were categorized into five major categories of strength in development for children in these neighborhoods (see Table 3). Fifty percent of teachers focused on the strength of families in the neighborhood, describing strong family ties with a large network of extended family. One teacher commented, “This neighborhood has a strong value for families.”

Parents were described as involved and caring with respect to their children. “They really do want to help. They could be very active but they do not understand the school system,” responded a teacher. “Parents are very concerned and if teachers ask parents to work on an area with their kids, the parents will do it,” said another teacher. “The parents are the most important educators. They do the majority of teaching,” stressed one teacher. “Parents are a very important part of children’s learning,” another teacher commented.

Over a fourth of teachers emphasized the children’s independence. “The children are street smart and worldly. These kids are taking care of themselves,

Table 3. Children's areas of strength in kindergarten readiness skills as reported in principal and teacher interviews

<i>Skill</i>	<i>Principal responses (%)</i>	<i>Teacher responses (%)</i>
Children's independence	—	27
Communication with families	38	—
Desire to learn	25	—
Diversity	50	18
Resources	25	—
Self-esteem	—	18
Social skills	—	27
Strong families	50	50

they are old before their time,” commented a teacher. “These children are resilient. Their survival skills are strong. They stay at home by themselves. They have an ‘I can do it’ mentality,” noted one teacher. Another teacher said, “They are survivors. They pick up on what is important.” “These children are very strong. They have had to deal with many life stresses. They are used to being at home by themselves and they get their own meals,” added a teacher. Similarly, another teacher said, “They know more than they should at their age about sex, drugs and violence. They have too much adult knowledge.”

Some of the teachers emphasized the strength in the children's self-esteem. “They want to better themselves and they appreciate anything that you do for them,” commented a teacher. Some teachers emphasized that the children want to learn. “They are excited to learn and to be at school,” responded a teacher.

About a quarter of teachers emphasized the children's social skills. “The children want to make friends and be a friend. Most of the time they are nice to each other,” described one teacher. “The children are very social and they use their social skills to protect each other.” She added, “If one child does not know how to do something, another child will show the child how to do it.”

Eighteen percent of the teachers addressed the issue of diversity in a positive way. “The children have a sense of identity” noted one teacher. The diversity allows children to relate to each other as they struggle to live in the mainstream American culture. “The children are more accepting,” said a teacher. In addition, the teachers stressed the strong sense of community. Cultural ties were emphasized as strengths by the teachers. “There is a strong community grouping with the families,” added another.

Principal responses. The majority of the principals also emphasized the strong families in the neighborhood as an area of strength. “The parents love their children,” noted one principal. “There are strong families which are very rich in their heritage,” responded a principal. Half of the principals stressed the diversity

of the families as a great strength for the children. A principal explained, “The parents want their children to accept the diversity and to learn to understand each other.” Another principal said, “Each of the families has their own richness of culture.” Many principals also commented on the importance of communication with families. One explained, “Parents are interested in talking with the schools. However, it’s important for families to be able to express themselves in two languages.” “Sometimes parents have difficulties communicating. They do not have the skills to express it due to lack of education and oral language abilities,” commented another.

A quarter of the principals noted that the available resources could be a strong source of the children’s strength in readiness skills. The communities and schools offer programs to encourage school attendance and provide educational opportunities for parents and children of all ages. These programs provide places for children and families to be safe and interact with each other. One principal responded, “We provide the children with computer classes and after school programs.” These principals emphasized that the schools and community centers offer opportunities for parents to learn about and get involved with programs. Some principals noted that schools offer parents ESL classes and parenting classes in Spanish and English. Another principal said, “The schools are havens, safe places not only for the children but for their parents as well.”

Many of the principals stressed the children’s desire to learn as a strength in this neighborhood. “The children are open, warm and accepting of others. The children are energetic and enthusiastic to be at school in a positive context,” commented one principal. “The children have a desire to learn, a desire to be at school,” noted another principal. The principal added, “The children are not afraid to be at school. They love praise and love to be caught being right.”

Readiness skills of the kindergarten population

A summary of the readiness skills of the kindergarten population in the schools in this study was derived from the Pre-Kindergarten Assessment. Because this research will hopefully be used to develop strategies for early intervention, the results will focus on areas of deficit (i.e., what children did not know). These results are summarized below:

Literacy:

- 24% of children could not identify the front of a book.
- 68% of children did not know where to start or which direction to go when reading.
- 40% of children had difficulty telling the beginning and ending of a story the teacher read to them.
- 58% of children had difficulty identifying which words began with the same sound or which words rhymed.
- 26% of children could not name the animals in the story or tell why the character was sad.

- 48% of children had been read to rarely or not at all and had visited the library only one time or not at all.

Basic Academic Skills:

- 29% of children did not know their full name and could not write their first name.
- 37% could not recognize any letters of the alphabet.
- 18% of children could not identify which objects were the same or different.
- 18% of children did not know six or more colors.
- 27% of children could not identify three shapes nor tell which shape was biggest or smallest.
- 24% of children could not identify two or more numbers.
- 69% of children could not identify 10 numbers.
- 22% of children could not count past five.

Social Adaptation:

- 22% of children could not express themselves in understandable words or sentences.

The children's concepts of print were assessed by questioning their knowledge of their names, and books and print in the environment. Roughly one in four children (24%) was not able to identify the front of a book. In addition, 68% of children did not know where to start reading in a book or which direction to go when reading. Overall, 35% of the children were not able to comprehend information presented in story form. Forty percent of the children had difficulty telling the beginning and end of the story after the teacher read it with them. One in four children (26%) was not able to name the characters in the story. In addition, a quarter of the children could not identify basic story elements, such as explaining why the character in the story was sad. Thirty-six percent did not recognize the pattern to the story or how the characters responded.

The children's previous experiences with literature, such as knowledge of favorite books and their parents' description of time spent reading together or visiting the library, could not be confirmed for 69% of the children. Only 31% of the children were able to name one or more favorite books without help. The parents of 48% of the children responded that the children were either rarely read to or not read to at all. In addition, according to their parents, about half of the children had visited the library once or not at all. Together, these results emphasize the need for increasing children's exposure to books and stories.

Almost a third of children did not know their full name and could not write their first name. Overall, 43% of children did not know any print concepts. However, 90% of children were familiar with environmental print (for example, they could identify a stop sign).

Visual discrimination included children's abilities to identify letters, colors, shapes and numbers. Thirty-seven percent of the children did not recognize any letters of the alphabet, whereas 9% of the children could identify all of the letters of the alphabet. Eighteen percent of the children could not identify two or more

objects as the same or different, and 18% of the children did not know six colors. Overall, one third of the children could barely recognize colors, shapes or any sounds of the letters.

Another dimension of the assessment was phonemic awareness that included recognizing sounds and words that sound alike. Over fifty percent of the children did not know which words rhymed. In addition, they did not know which words began with the same sound.

Numerical abilities included counting as well as identifying basic geometric shapes and numbers. Overall, 40% of the children were not able to count or identify shapes or numbers. Twenty-seven percent of the children were not able to identify three shapes, nor could they tell which shape was biggest or smallest. Approximately one in four children could not identify two numbers. Sixty-nine percent of the children were not able to identify ten numbers. Twenty-two percent could not count past the number five. Almost one third of the children could not count to eight. A third of the children were not able to understand simple subtraction. They were not aware that if they had eight crayons and two went away, they then would have six crayons.

The final area of the assessment was social adaptation. These questions were not asked directly of the children but were based on the teachers' observations of the children's social abilities during the assessment. Twenty-two percent of the children did not attempt to answer the majority of items on the assessment. This means that they were not able or willing to express themselves verbally in understandable words, phrases and sentences.

Discussion

Overall, many of the children in this study did not understand print concepts, such as where to start reading in a book or which direction to go when reading. It is alarming to find that approximately one in four children was not able to identify the front of a book. In addition, the majority of parents responded that they rarely read to their children and that they had visited the library only once or not at all. These results clearly illustrate the children's lack of experience with reading and print concepts.

The majority of teachers and many principals noted literacy as a prerequisite for school success. Most teachers emphasized that children needed literacy experiences, such as being read to every day. There is agreement between teachers' and principals' assessments and the results from the Pre-Kindergarten Assessment on the importance of providing these children with early literacy experiences. These children are entering school with few experiences with books, and this puts them at great risk for school failure (Whitehurst *et al.*, 1994). It is essential for children to have numerous early intervention experiences with literacy and print concepts.

In a previous readiness study, parents rated children's literacy skills as very important, but not essential, for being ready to start school (US Department of Education, 1993). Only 4% of teachers in that study rated literacy skills as

important to school readiness (US Department of Education, 1997). It may be the deviation that we observed from past findings with the regard to the importance of literacy skills is due to the specific population in this study. The deficits in literacy skills may be more pronounced in at-risk populations as compared to the general population. Teachers of middle-class children may have been thinking of the ability to read as a literacy skill.

The principals and teachers provided very similar responses regarding children's use of language, including children's abilities to verbally communicate their needs. Principals reported that children are lacking in the areas of language development and vocabulary skills. Teachers and principals emphasized that parents must talk to and with their children. Several teachers noted that unless these children develop their language skills they would not succeed in developing literacy and academic skills in the mainstream English-speaking culture. Families, schools and communities do not want children to lose their primary culture, but greater emphasis must be placed on the necessity of both languages for success in school. The Pre-Kindergarten Assessment results support teachers' and principals' concerns that the children lack language abilities. The majority of children had difficulty identifying which words rhyme or concepts such as same or different. One fourth of the children were unable to express themselves verbally in understandable words, phrases and sentences. The previous literature on language is consistent with these findings. Kindergarten teachers have rated the ability of a child to verbally communicate his or her needs as very important for school readiness (US Department of Education, 1997).

Most of the teachers and one fourth of the principals emphasized basic skill knowledge as important for school success. For example, they want children to be familiar with the concepts of the alphabet and numbers. The Pre-Kindergarten assessment confirmed that these children lacked basic academic knowledge. One third of the children did not recognize any letters of the alphabet and one fourth of the children could not count past the number five. One fourth of the children could not identify two or more numbers.

The majority of readiness tests have focused on children's cognitive abilities (Graue, 1993). This emphasis on cognitive skills would appear to support the teachers' and principals' perceptions and the assessment results. However, in previous readiness studies, academic skills were not as strongly emphasized by kindergarten teachers (US Department of Education, 1997). The specific population being studied needs to be considered when contemplating these discrepancies.

Principals mentioned the children's social and emotional development as a top priority in school readiness. Principals wanted children to be taught conflict resolution skills and to learn how to get along with other children. Teachers also stressed the lack of social skills and noted that children do not know verbal social skills, such as how to show respect or how to talk kindly to someone. The Pre-Kindergarten Assessment addressed the children's social development (the child's willingness to respond as well as their abilities to express themselves verbally) and one fourth of the children did not meet these criteria.

Several researchers have presented children's social and emotional development as the base for future school achievements (Katz and Chard, 1993; Schweinhart *et al.*, 1993). Behaviors such as sociability, emotionality, distractibility, and adaptability have been found to be important for kindergarten success (Schoen and Nagle, 1994). Children with social interaction problems such as physical and verbal aggressiveness and disruptiveness have been found to be at-risk for lower academic success (Cooper and Farran, 1988). Children who have social difficulties in early years are likely to have problems later in school (Cooper and Farran, 1988; Ladd, 1990; Parker and Asher, 1987).

Implications for intervention

On the basis of this research, a variety of early childhood interventions may augment the promotion of school readiness for participating children. Teachers and principals in this study focused on the need for family literacy and helping families emphasize reading in the home. Given that these parents themselves might have poor reading skills they need to be connected to adult literacy programs. Adult literacy classes could be offered during the day and into the evening and should include childcare. ESL classes provide parents with opportunities to increase their own language skills and to teach their children while practicing what they have learned. Additionally, parents need to know where the library is located and how to get a library card. Other parent education programs can provide information on the importance of literacy and can help parents learn to choose age appropriate books that they can read with their children.

For this at-risk population, principals and teachers emphasized language skills as necessary for school success. Parents need to understand the importance of talking to their child, even before the child talks. Parents can expand their children's language skills by explaining what they are doing, and by providing basic information (such as names and colors) about objects they encounter. The literature supports the effectiveness of intervention programs which utilize parent education and home activities to promote children's basic skills (Becher, 1984; Olmsted and Rubin, 1982; Reynolds, 1992; Whitehurst *et al.*, 1994).

Another intervention approach is to coordinate access to developmentally appropriate early childhood programs. Children's preschool attendance has been found to influence children's school success and future economic status by enhancing their readiness skills (Gullo and Burton, 1992; Reynolds, 1992, 1995; Schweinhart *et al.*, 1993). Professionals can refer parents to quality programs while also educating them on what to look for when choosing childcare and preschool programs.

Parent education and support programs can also strengthen parents' knowledge of child development and growth and their perceptions of themselves as educators of their children (Luster and Rhoades, 1989; Pfanenstiel, Lambson and Yarnell, 1991; Radin, 1972). Teachers and principals emphasized that it was important to impart to families the value of education.

Teachers and principals stressed that families should be educated about community resources. These resources provide families with opportunities to increase their overall family well being (education, health care and even income levels) and to enhance the children's school success (awareness of preschool programs, parenting classes). Interventions should include educating families on community resources available to promote family well being and school readiness, coordinating access to developmentally appropriate preschool programs, and parent education and home activities to enhance children's school readiness skills.

The strengths of these families are also important to consider in planning interventions. Principals and teachers emphasized the strong families in the neighborhoods as an area of strength. These children have large, extended networks of families. The resource of extended families should be included in developing intervention strategies. Principals also stressed the diversity of families as a great strength for the children. The majority of principals described families who are supportive and who want their children to learn to understand each other despite cultural differences. Building on these community strengths is critical to any intervention plans.

In summary, this study adds to the literature on the types of skills teachers and principals think are most important for school success when working with at-risk populations. The lack of literacy and academic skills for this population was documented by the Pre-Kindergarten Assessment. Research has shown that children's readiness for school influences their future achievement in educational performance, social responsibility and economic status (Alexander and Entwisle, 1988; Belsky and MacKinnon, 1994; Schweinhart *et al.*, 1993). The cost of school failure impacts the individual, family and society. Communities and families want their children to be successful in their schools and future lives. Early intervention programs can significantly influence parents' abilities to be advocates for their children, to become involved in their children's school and community lives, and to support their children's future success (Alexander and Entwisle, 1988; Brooks-Gunn, 1995; Schweinhart *et al.*, 1993).

Acknowledgements

This project was funded by the United Way of the Great Salt Lake Area.

Note

1. Teachers and principals could provide multiple responses to the open-ended questions. Percentages reported for these areas represent the percent of the total participants giving a categorical response to a particular question. Due to the possibility of multiple responses per question, the percentages for each question do not add up to 100%.

References

- Alexander, K. L. and D. R. Entwisle. 1988. Achievement in the first 2 years of school: patterns and processes. *Monographs of the Society for Research in Child Development* 53 (2: Serial no. 218).

- Becher, R. M. 1984. *Parent involvement: A review of research and principles of successful practice*. Washington, DC: National Institute of Education (ERIC Document Reproduction Service No. ED 247 032).
- Belsky, J. and C. MacKinnon. 1994. Transition to school: developmental trajectories and school experiences. *Early Education and Development* 5 (2), pp. 106–119.
- Bronfenbrenner, U. 1974. *A report on longitudinal evaluations of preschool programs, vol. II: Is early intervention effective?* Washington, DC: US Department of Health, Education, and Welfare, Office of Child Development. (ERIC Document Reproduction Service No. ED 093501).
- Bronfenbrenner, U. 1979. *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Brooks-Gunn, J. 1995. Children in families in communities: Risk and intervention in the Bronfenbrenner tradition. In *Examining lives in context*, ed. by P. Moen, G. H. Elder, Jr., and K. Luscher, pp. 467–525. Washington, DC: American Psychological Association.
- Cody, W. S. 1993. Thoughts on goal one. *Dimensions of Early Childhood* 31 (3), pp. 6–7.
- Cooper, D. H. and D. C. Farran. 1988. Behavioral risk factors in kindergarten. *Early Childhood Research Quarterly* 3, pp. 1–19.
- Graue, M. E. 1992a. Readiness, instruction, and learning to be a kindergartner. *Early Education and Development* 3 (2), pp. 92–114.
- Graue, M. E. 1992b. Social interpretations of readiness for kindergarten. *Early Childhood Research Quarterly* 7, pp. 225–243.
- Graue, M. E. 1993. *Ready for what? Constructing meanings readiness for kindergarten*. Albany: State University of New York.
- Guinagh, B. and I. Gordon. 1976. *School performance as a function of early stimulation*. Gainesville: Florida University at Gainesville, Institute for Development of Human Resources. (ERIC Document Reproduction Service No. ED 135 469).
- Gullo, D. F. and C. B. Burton. 1992. Age of entry, preschool experience, and sex as antecedents of academic readiness in kindergarten. *Early Childhood Research Quarterly* 7, pp. 175–186.
- Kagan, J. 1992. Young children and education: First ... at last. *Principal* 71 (4), pp. 6–8.
- Katz, L. G. and S. C. Chard. 1993. The project approach. In *Approaches to early childhood education*. 2nd ed., ed. by J. L. Roonanine and J. E. Johnson, pp. 209–222. New York: Macmillan.
- Ladd, G. 1990. Having friends, keeping friends, making friends, and being liked by peers in the classroom. *Child Development* 61, pp. 1081–1100.
- Lincoln, Y. S. and E. G. Guba. 1985. *Naturalistic inquiry*. Beverly Hills, CA: Sage.
- Luster, T. and K. Rhoades. 1989. The relation between child-rearing beliefs and the home environment in a sample of adolescent mothers. *Family Relations* 38, pp. 317–322.
- Olmsted, P. P. and R. I. Rubin. 1982. Linking parent behaviors to child achievement: Four evaluation studies from the parent education follow through program. *Studies in Educational Evaluation* 8, pp. 317–325. (ERIC Document Reproduction Service No. ED 284 839).
- Parker, J. G. and S. R. Asher. 1987. Peer relations and later personal adjustment: Are low accepted children at risk? *Psychological Bulletin* 102, pp. 357–389.
- Pfannenstiel, J., T. Lambson, and V. Yarnell. 1991. *Second wave study of the parents as teachers program*. St. Louis, MO: Parents as Teachers National Center.
- Radin, N. 1972. Three degrees of maternal involvement in a preschool program: Impact on mothers and children. *Child Development*, pp. 1355–1364.
- Reynolds, A. J. 1992. Mediated effects of preschool intervention. *Early Education and Development* 3 (2), pp. 139–164.
- Reynolds, A. J. 1995. One year of preschool intervention or two: Does it matter? *Early Childhood Research Quarterly* 10, pp. 1–31.
- Schoen, M. J. and R. J. Nagle. 1994. Prediction of school readiness from kindergarten temperament scores. *Journal of School Psychology* 32 (2), pp. 135–147.
- Schweinhart, L. J., H. V. Barnes, and D. P. Weikart. 1993. Significant benefits: The High/Scope Perry Preschool study through age 27. *Monographs of the High/Scope Educational Research Foundation* (10). Ypsilanti, MI: High/Scope Press.
- Taylor, S. T. and R. Bogdan. 1998. *Introduction to qualitative research methods: A guidebook and resource*. 3rd ed. New York: John Wiley.
- US Department of Education. 1993. *National household education survey (NHES) (parents)*. Washington, DC: National Center for Education Statistics.
- US Department of Education. 1997. *FRSS kindergarten teacher survey of student readiness*. Washington, DC: National Center for Educational Statistics.
- Whitehurst, G. J., J. N. Epstein, A. L. Payne, D. A. Crone, and J. E. Fischel. 1994. Outcomes of an emergent literacy intervention in Head Start. *Journal of Educational Psychology* 86 (4), pp. 542–555.