PROMOTING SCHOOL READINESS IN LOCAL COMMUNITIES WITH A STRATEGIC SAMPLE OF SCHOOL DISTRICTS

Minnesota School Readiness Year Three Study:

Developmental Assessment at Kindergarten Entrance

Fall 2004

Minnesota Department of Education

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Background

Minnesota School Readiness Studies: Developmental Assessment at Kindergarten Entrance

A large and growing body of research supports the critical relationship between early childhood experiences, school success, and positive life-long outcomes (Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002; Reynolds, Temple, Robertson, & Mann, 2001; Schweinhart, Montie, Xiang, Barnett, Belfield, & Nores, 2005). In recognition of this, in 2002 the former Minnesota Department of Children, Families and Learning (CFL) included within their goal of "High Achievement for All Students" the indicator: Increase the percentage of young children who are ready for school.

Assessing the readiness of children as they enter school is currently an important issue in many states "in large part because of increased accountability pressures in both the public schools and early care and education settings" (Maxwell & Clifford, 2004, p. 42). With no systematic process in place to assess increases in school readiness in Minnesota, the department began what is now a series of three yearly studies focused on obtaining a picture of the school readiness of a sample of Minnesota kindergartners as they enter school in the fall.

The first year study done by CFL, *Minnesota School Readiness Initiative: Developmental Assessment at Kindergarten Entrance Fall 2002 Pilot Study* (2003), had as its objectives to pilot a system for assessing the school readiness of a sample of Minnesota kindergarten children and to obtain a picture of the readiness of a random sample of Minnesota kindergarteners entering Minnesota elementary schools in the fall of 2002 through this piloted system. In 2003, the Minnesota Department of Education (MDE), in partnership with the Minnesota Department of Human Services (DHS), continued to emphasize accountability as part of the theme of academic excellence with the *Minnesota School Readiness Year Two Study: Developmental Assessment at Kindergarten Entrance Fall 2003* (2004). The purposes of the Year Two study were to provide a second year of a statewide profile of children's school readiness with a larger random sample of kindergarten children and to pilot a parent survey requesting early childhood care and education and family background information based on recommendations in the first year study.

The emphasis in the Year Three Study shifted to strategically select school districts across the state and assess all kindergarten children on their school readiness from the chosen districts and then engage the communities in these selected districts in planning to increase the percentage of children in their districts ready for school success. This report summarizes Year One and Year Two

study findings and describes findings from Year Three of the assessment of school readiness with a strategic sample of children entering kindergarten in fall 2004.

It is the intent of the Minnesota School Readiness Studies to use results to inform school administrators and teachers; parents; early childhood education and care teachers, providers, and administrators; policymakers; and the public about progress towards the goals of ensuring that children are ready for school and schools are ready for children. It is expected that the results will promote children's learning and development over time by improving early childhood programs and services, better preparing schools to meet the needs of children as they enter school, and easing the transition for children and families from home to school. The information gathered to complete the studies' developmental checklists is a valuable resource to teachers in modifying curriculum, working with individual children in their classrooms, preparing for parent conferences, and identifying children eligible for Title I and other services.

Definition of School Readiness

For all three school readiness studies, school readiness has been defined as the skills, knowledge, behaviors, and accomplishments that children know and can do as they enter kindergarten in the following areas of child development:

- Physical well being and motor development
- Social and emotional development
- Approaches to learning
- Language development
- Cognition and general knowledge
- Creativity and the arts

This definition is consistent with school readiness definitions used by other states and the *Early Childhood Indicators of Progress: Minnesota's Early Learning Standards* (2005). It also reflects the National Education Goals Panel (NEGP) definition that identifies three important components of school readiness: (1) readiness in the child, (2) schools' readiness for children, and (3) family and community supports and services that contribute to children's readiness (Child Trends, 2001; National Education Goals Panel, 1998). In the first pilot year of the school readiness assessment in Minnesota, child readiness was the component of focus. This focus continued in Year Two. With the addition of a parent survey, family and community supports and services contributing to children's readiness began to be examined. These two components of the study

continued in Year Three along with emphasis on use of the information by local school districts and communities as a means of enhancing school readiness in their areas of the state.

Summary of Results of 2002 Year One Pilot Study and 2003 Year Two Study of Developmental Assessment at Kindergarten Entrance

Results of the Year One and Year Two kindergarten entrance developmental assessment are presented along the five domains assessed – personal and social development, language and literacy, mathematical thinking, the arts, and physical development – and the five levels of readiness – proficient, in process, and not yet. ***Because children develop and grow along a continuum with great variability, the goal of these studies was to assess children's proficiency within and across these developmental domains and not establish whether or not children are ready for school with the use of a "ready" or "not ready" score.*** Young children develop rapidly and at varying rates across the domains, and an early, definitive determination of readiness can have unintended negative consequences. Consequently, the three readiness levels are used – not yet, in process, and proficient – for each domain to provide an overview of children's readiness that does not label or stigmatize young children and recognizes variation across many indicators of development within and across domains.

Summary of Year One Study Results

Table 1 provides an average score summary of how the 1,852 kindergarten children in the Year One sample were rated by their kindergarten teachers across the five domains according to the three readiness levels along with the aggregation of teacher ratings by indicator ranked according to domain scores and indicators within each domain in relation to "proficiency" rates from highest to lowest. The readiness levels used for rating are: (1) "proficient" – children consistently show the skills, knowledge, behaviors, or accomplishments represented by an indicator; (2) "in process" – children sometimes show the skills, knowledge, behaviors, or accomplishments but do so inconsistently; and (3) "not yet" – children cannot perform the skill, area of knowledge, or specific set of behaviors or accomplishments. For a picture of the number of children who can perform a particular skill, area of knowledge, or specific set of behaviors or accomplishments consistently or inconsistently versus the number of children who have not yet acquired a skill, area of knowledge, or specific set of behaviors or accomplishments, readers might choose to combine "proficient" and "in process" ratings and compare against those rated "not yet."

Using five domains in the Work Sampling System® of child assessment that correspond to the domains in the definition of school readiness above, Table 1 shows that the sample of 1,852 kindergarten children in the Year One study was most proficient, on average, in the area of physical development (N = 1,143, 62%), followed by personal and social development (N = 899, 49%) and the arts (N = 885, 48%) and least proficient, on average, in the areas of language and literacy (N = 819, 44%) and mathematical thinking (N = 785, 42%). The most children were "in process" or inconsistent, on average, in exhibiting the skills, knowledge, behaviors, or accomplishments in mathematical thinking (N=816, 44%), followed by the arts (N=779, 42%), personal and social development (N=708, 38%), language and literacy (N=704, 38%), and physical development (N=629, 34%). Ten percent or more of the sample children, on average, were not yet exhibiting the skills, knowledge, behaviors, or accomplishments in four of the five areas of learning. Language and literacy (N=289, 18%) was the area in which the most children, on average, were rated "not yet", followed by mathematical thinking (N=247, 13%), personal and social development (N=238, 13%), the arts (N=181, 10%), and physical development (N=77, 4%).

Table 1 shows that children in the sample were generally more proficient on the simpler, less challenging indicators. As skills, knowledge, behaviors, or accomplishments became more complex and demanding, ratings declined. For example, in the domain of language and literacy, the highest proficiency levels were shown in the child's ability to speak clearly enough to understand without contextual clues (56%) and in showing appreciation for books and reading (55%). Proficiency was lower for tasks demanding more complex acts from the children – representing ideas and stories through pictures, dictation, and play and using expanded vocabulary and language for a variety of purposes (42% each) and showing beginning understanding of concepts about print (41%). Children in the sample were least proficient on the indicators of using letter-like shapes, symbols, and letters to convey meaning (37%) and demonstrating phonological awareness (the ability to hear and discriminate the sounds of language) (29%).

Table 1. Readiness Levels by Domain Indicators Ranked by Proficiency Rating – Year One	Readiness Levels, N=1,851					
	Not Yet		*In Process*		*Proficient*	
Physical Development	Percent	N	Percent	N	Percent	N
Physical Development Domain Average Score Summary	**4%**	**77**	**34%**	**629**	**62%**	**1,143**
Performs some self-care tasks independently.	2%	40	27%	492	71%	1,317
Coordinates movements to perform simple tasks.	4%	79	35%	650	61%	1,119
Uses eye-hand coordination to perform tasks.	6%	111	40%	745	54%	993
Personal and Social Development						
Personal and Social Development Domain Average Score Summary	**13%**	**238**	**38%**	**708**	**49%**	**899**
Interacts easily with familiar adults.	12%	216	33%	611	55%	1,015
Shows eagerness and curiosity as a learner.	10%	190	35%	648	55%	1,010
Interacts easily with one or more children.	11%	202	37%	680	52%	967
Shows some self-direction.	10%	194	39%	715	51%	938
Follows simple classroom rules and routines.	11%	208	38%	713	51%	927
Manages transitions.	12%	217	39%	719	49%	905
Attends to tasks and seeks adult help when encountering a problem.	15%	284	40%	748	44%	814
Seeks adult help when needed to resolve conflicts.	16%	300	42%	776	42%	770
Approaches tasks with flexibility and inventiveness.	18%	332	41%	760	41%	750
The Arts						
The Arts Domain Average Score Summary	**10%**	**181**	**42%**	**779**	**48%**	**885**
Participates in group music experiences.	8%	144	41%	768	51%	938
Participates in creative movement, dance, and drama.	10%	184	42%	782	48%	884
Uses a variety of materials for tactile experiences and exploration.	10%	192	42%	779	47%	877
Responds to artistic creations or events.	11%	205	43%	788	45%	841
Language and Literacy						
Language and Literacy Domain Average Score Summary	**18%**	**289**	**38%**	**704**	**44%**	**819**
Speaks clearly enough to be understood without contextual clues.	13%	234	31%	577	56%	1,039
Shows appreciation for books and reading.	7%	139	38%	697	55%	1,013
Comprehends and responds to stories read aloud.	13%	237	39%	713	48%	897
Gains meaning by listening.	11%	201	40%	732	48%	849
Follows two- or three-step directions.	14%	268	40%	732	46%	849
Represents ideas and stories through pictures, dictation, and play.	17%	311	41%	753	42%	786
Uses expanded vocabulary and language for a variety of purposes.	21%	384	37%	680	42%	783
Shows beginning understanding of concepts about print.	17%	312	42%	778	41%	760
Uses letter-like shapes, symbols, and letters to convey meaning.	28%	528	35%	640	37%	681
Demonstrates phonological awareness.	31%	576	40%	740	29%	530
Mathematical Thinking						
Mathematical Thinking Domain Average Score Summary	**13%**	**247**	**44%**	**816**	**42%**	**785**
Shows understanding of and uses several positional words.	12%	230	42%	770	46%	844
Begins to recognize and describe the attributes of shapes.	11%	197	44%	820	45%	832
Shows beginning understanding of number and quantity.	13%	240	44%	820	43%	790
Begins to use simple strategies to solve mathematical problems.	17%	320	46%	855	36%	672

Summary of Year Two Study Results

Table 2 provides an average score summary of how the 3,002 kindergarten children in the Year Two sample were rated by their kindergarten teachers across the five domains according to the three readiness levels along with the aggregation of teacher ratings by indicator ranked according to domain scores and indicators within each domain in relation to "proficiency" rates from highest to lowest. Table 2 shows that the kindergarten children in the Year Two sample were most proficient, on average, in the area of physical development (N = 1,702, 57%), followed by personal and social development (N = 1,407, 47%) and the arts (N = 1,391, 47%), and they were least proficient, on average, in the areas of language and literacy (N = 1,283, 43%) and mathematical thinking (N = 1,186, 40%). The most children were "in process" or inconsistent in exhibiting the skills, knowledge, behaviors, or accomplishments, on average, in mathematical thinking (N = 1,489, 50%), followed by the arts (N = 1,413, 48%), language and literacy (N = 1,363, 46%), personal and social development (N = 1,317, 44%), and physical development (N = 1,207, 41%). More than ten percent of the sample children, on average, were not yet exhibiting the skills, knowledge, behaviors, or accomplishments in language and literacy (N = 345, 12%) and mathematical thinking (N = 318, 11%). These were followed by personal and social development (N = 266, 9%), the arts (N = 170, 6%), and physical development (N = 76, 2%).

Table 2. Readiness Levels by Domain Indicators Ranked by Proficiency Rating – Year Two	Readiness Levels, N=3,002					
	Not Yet		*In Process*		*Proficient*	
Physical Development	Percent	N	Percent	N	Percent	N
Physical Development Domain Average Score Summary	**2%**	**76**	**41%**	**1,207**	**57%**	**1,702**
Performs some self-care tasks independently.	2%	55	36%	1,077	62%	1,841
Coordinates movements to perform simple tasks.	2%	70	42%	1,243	56%	1,677
Uses eye-hand coordination to perform tasks.	3%	103	44%	1,301	53%	1,589
Personal and Social Development						
Personal and Social Development Domain Average Score Summary	**9%**	**266**	**44%**	**1,317**	**47%**	**1,407**
Interacts easily with one or more children.	7%	208	39%	1,161	54%	1,625
Interacts easily with familiar adults.	7%	204	39%	1,179	54%	1,612
Shows eagerness and curiosity as a learner.	6%	170	41%	1,239	53%	1,587
Shows empathy and caring for others.	8%	252	44%	1,315	48%	1,445
Follows simple classroom rules and routines.	8%	231	44%	1,315	48%	1,427
Manages transitions.	9%	277	44%	1,319	47%	1,393
Shows some self-direction.	9%	260	46%	1,364	46%	1,370
Attends to tasks and seeks help when encountering a problem.	11%	341	47%	1,397	42%	1,258
Seeks adult help when needed to resolve conflicts.	10%	299	48%	1,412	42%	1,253
Approaches tasks with flexibility and inventiveness.	14%	420	49%	1,471	37%	1,096
The Arts						
The Arts Domain Average Score Summary	**6%**	**170**	**48%**	**1,413**	**47%**	**1,391**
Participates in group music experiences.	4%	111	45%	1,336	52%	1,546
Participates in creative movement, dance, and drama.	6%	188	46%	1,390	47%	1,416
Uses a variety of art materials for tactile experience and exploration.	6%	171	49%	1,456	46%	1,361
Responds to artistic creations or events.	7%	208	50%	1,468	43%	1,239
Language and Literacy						
Language and Literacy Domain Average Score Summary	**12%**	**345**	**46%**	**1,363**	**43%**	**1,283**
Speaks clearly enough to be understood without contextual clues.	8%	250	33%	986	59%	1,758
Shows appreciation for books and reading.	5%	149	40%	1,180	56%	1,661
Gains meaning by listening.	7%	198	45%	1,351	48%	1,442
Comprehends and responds to stories read aloud.	7%	200	45%	1,344	48%	1,442
Follows two- or three-step directions.	13%	382	43%	1,290	44%	1,319
Uses expanded vocabulary and language for a variety of purposes.	14%	404	44%	1,308	43%	1,279
Represents ideas and stories through pictures, dictation, and play.	12%	356	50%	1,483	39%	1,157
Shows beginning understanding of concepts about print.	11%	323	51%	1,509	39%	1,154
Beings to develop knowledge about letters.	13%	378	49%	1,474	38%	1,140
Demonstrates phonological awareness.	20%	600	51%	1,509	30%	881
Uses letter-like shapes, symbols, and letters to convey meaning.	19%	554	52%	1,561	29%	877
Mathematical Thinking						
Mathematical Thinking Domain Average Score Summary	**11%**	**318**	**50%**	**1,489**	**40%**	**1,186**
Begins to recognize and describe the attributes of shapes.	8%	232	49%	1,456	44%	1,305
Shows understanding of and uses of several positional words.	10%	283	47%	1,402	44%	1,303
Shows beginning understanding of number and quantity.	11%	320	50%	1,500	39%	1,175
Begins to use simple strategies to solve mathematical problems.	15%	437	53%	1,596	32%	959

Table 2 shows that in Year Two, as in Year One, across the five domains, children in the sample were generally more proficient on the simpler, less challenging indicators. As skills, knowledge, behaviors, or accomplishments become more complex and demanding, ratings decline.

For example:

- As in Year One, in the domain of language and literacy, the highest proficiency levels were shown in the child's ability to speak clearly enough to be understood without contextual clues (59%) and in showing appreciation for books and reading (56%). Tasks demanding more complex acts from the children were indicators where proficiency was lower – representing ideas and stories through pictures, dictation, and play and showing beginning understanding of concepts about print (39% each) and beginning to develop knowledge about letters (38%). Children in the sample were least proficient in showing phonological awareness (30%) and use of letter-like shapes, symbols, and letters to convey meaning (29%).
- Children in the sample were also less proficient at indicators in the domain of mathematical thinking – the task of showing beginning understanding of number and quantity (39% proficient) and beginning to use simple strategies to solve mathematical problems (32% proficient).
- In the personal and social domain, the indicators where most proficiency was demonstrated were those related to interaction with adults and peers – interacting easily with other children and with familiar adults (54% each) and one reflecting a basic approach to learning – "shows eagerness and curiosity as a learner" (53%). The sample of kindergarten children was less proficient at other, somewhat more complex approaches to learning including approaching tasks with flexibility and inventiveness (37%) and seeking help when needed to resolve conflicts and attending to tasks and seeking help when encountering a problem (42% each).

Comparison of Developmental Assessment at Kindergarten Entrance Year One Pilot Study Results to Year Two Results

The order of average "proficient" ratings by domain was the same in 2003 as it was in 2002, and the percentages for each were similar, with a five percent decrease in average proficiency in 2003 in physical development as the largest change and all others with only a one or two percent decrease (physical development – 62% in 2002, 57% in 2003; personal and social development – 49% in 2002, 47% in 2003; the arts – 48% in 2002, 47% in 2003; language and literacy – 44% in 2002, 43% in 2003; mathematical thinking – 42% in 2002, 40% in 2003) (See Table 3). The average "in process" ratings

increased in each domain by six to eight percent per domain (physical development – 34%, 41%; personal and social development – 38%, 44%; the arts – 42%, 48%; language and literacy – 38%, 46%; mathematical thinking – 44%, 50%). There was a decrease in the percent of average "not yet" ratings in each of the five domains ranging from two to six percent (physical development – 4%, 2%; personal and social development – 13%, 9%; the arts – 10%, 6%; language and literacy – 18%, 12%; mathematical thinking – 13%, 11%). ***Average "in process" ratings increased as average "proficient" and "not yet" ratings each decreased slightly***.

Domain	**Table 3. Comparison of Year One and Year Two Developmental Assessment Results (Year One N=1,852, Year Two N = 3,002)**											
	Not Yet				***In Process***				***Proficient***			
	2002		2003		2002		2003		2002		2003	
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
Physical Development	77	4%	76	2%	629	34%	1,207	41%	1,143	62%	1,702	57%
Personal and Social Development	238	13%	266	9%	708	38%	1,317	44%	899	49%	1,407	47%
The Arts	181	10%	170	6%	779	42%	1,413	48%	885	48%	1,391	47%
Language and Literacy	289	18%	345	12%	704	38%	1,363	46%	819	44%	1,283	43%
Mathematical Thinking	247	13%	318	11%	816	44%	1,489	50%	785	42%	1,186	40%

Table 4. Comparison of Year One and Year Two Proficient Readiness Level by Domain Indicators Ranked by Proficiency Rating

	2003 Proficient Readiness Level		*N=3,002* Ranking	*N=1,851* Ranking
Physical Development	Percent	N	2003	2002
Performs some self-care tasks independently.	62%	1,841	1	1
Coordinates movements to perform simple tasks.	56%	1,677	2	2
Uses eye-hand coordination to perform tasks.	53%	1,589	3	3
Physical Development Domain Average Score Summary	***57%***	***1,702***		
Personal and Social Development				
Interacts easily with one or more children.	54%	1,625	1	3
Interacts easily with familiar adults.	54%	1,612	2	1
Shows eagerness and curiosity as a learner.	53%	1,587	3	2
Shows empathy and caring for others.	48%	1,445	4	NI
Follows simple classroom rules and routines	48%	1,427	5	*5*
Manages transitions.	47%	1,393	6	6
Shows some self-direction.	46%	1,370	7	4
Attends to tasks and seeks help when encountering a problem.	42%	1,258	8	7
Seeks adult help when needed to resolve conflicts.	42%	1,253	9	8
Approaches tasks with flexibility and inventiveness.	37%	1,096	10	9
Personal and Social Development Domain Average Score Summary	***47%***	***1,407***		
The Arts				
Participates in group music experiences.	52%	1,546	1	1
Participates in creative movement, dance, and drama.	47%	1,416	2	2
Uses a variety of art materials for tactile experience and exploration.	46%	1,361	3	3
Responds to artistic creations or events.	43%	1,239	4	4
The Arts Domain Average Score Summary	***47%***	***1,391***		
Language and Literacy				
Speaks clearly enough to be understood without contextual clues.	59%	1,758	1	1
Shows appreciation for books and reading.	56%	1,661	2	2
Gains meaning by listening.	48%	1,442	3	4
Comprehends and responds to stories read aloud.	48%	1,442	4	3
Follows two- or three-step directions.	44%	1,319	5	5
Uses expanded vocabulary and language for a variety of purposes.	43%	1,279	6	7
Represents ideas and stories through pictures, dictation, and play.	39%	1,157	7	6
Shows beginning understanding of concepts about print.	39%	1,154	8	8
Begins to develop knowledge about letters.	38%	1,140	9	*NI*
Demonstrates phonological awareness.	30%	881	10	10
Uses letter-like shapes, symbols, and letters to convey meaning.	29%	877	11	9
Language and Literacy Domain Average Score Summary	***43%***	***1,283***		
Mathematical Thinking				
Begins to recognize and describe the attributes of shapes.	44%	1,305	1	2
Shows understanding of and uses of several positional words.	44%	1,303	2	1
Shows beginning understanding of number and quantity.	39%	1,175	3	3
Begins to recognize simple strategies to solve mathematical problems.	32%	959	4	4
Mathematical Thinking Domain Average Score Summary	***40%***	***1,186***		

NI = new indicator added in 2003

Table 4 compares the Year One and Year Two proficient readiness level by domain indicator ranked within each domain by proficiency rating. ***The ranking numbers illustrate the consistency with which teachers rated kindergartners as proficient by indicator in each domain between Year One and Year Two***. With a Year Two sample of different elementary schools, different kindergarten teachers, and different children, the results are similar. For example, the order of most to least proficiency by indicator is the same in physical development and the arts and varies by only the reversal of the top two indicators in mathematical thinking. In the other domains of personal and social development and language and literacy, the top and bottom group of indicator rankings follow a very similar pattern. ***Overall, the results from the two years were consistent with one another.***

Year Three Study Implementation

The purposes of Year Three of the study were: (1) to strategically select school districts across the state and assess all kindergarten children on their school readiness from the chosen districts and (2) to engage communities in planning to increase the percentage of children ready for school success.

Continued Use of Work Sampling System® of Child Assessment and Developmental Checklist

The Minnesota School Readiness Year Three Study again involved use of a customized Minnesota Work Sampling System® (WSS) Kindergarten Entry Developmental Checklist with a sample of Minnesota kindergartners in a strategically selected sample of elementary schools in the fall of 2004. The Work Sampling System, a standards-based observational assessment system designed to provide information about individual student's achievement and progress over time (Dichtelmiller, Jablon, Dorfman, Marsden, & Meisels, 2001), was used again for Year Three of the assessment for the following reasons:

(1) MDE has provided training in and encouraged use of the WSS in Minnesota public school School Readiness programs and other early childhood programs since 1994.

(2) The WSS is an approved assessment for all Title I children in kindergarten, and, consequently, most Minnesota kindergarten teachers are already trained in use of it.

(3) The WSS meets all of the criteria of authentic assessment:

- Fair to all children regardless of culture, language background, developmental level, family background, learning style, etc.;
- Uses familiar tasks and everyday classroom activities;
- Conducted in familiar settings with familiar people;

- Based on multiple sources of information; and
- Continuous and ongoing to show progress and growth over time (Dichtelmiller & Jablon, 1993; Hill, 1992; Scott-Little & Niemeyer, 2001).

The customized Minnesota WSS developmental checklist includes ten indicators in the personal and social development domain (approaches to learning is included in this domain), eleven indicators in language and literacy, four in mathematical thinking, four in the arts, and three in physical development (see Appendix A). ***These indicators were selected because they represent what children should know and be able to do at the end of the year before they enter kindergarten based on widely held developmental expectations for four-year-olds.***

Kindergarten teachers observed and documented students' responses to everyday classroom activities that are already part of the ongoing curriculum and instruction process to rate children's performance. Each domain and developmental indicator within the WSS developmental checklist includes expected behaviors for children at that age or grade level. For each indicator, teachers use guidelines to rate the child's performance as:

Not Yet – indicating that the child cannot perform the indicator, i.e., that the performance indicator represents a skill, an area of knowledge, or a specific set of behaviors or accomplishments that the child has not acquired.

In Process – implying that the skills, knowledge, behaviors, or accomplishments represented by this indicator are intermittent or emergent, and are not demonstrated reliably or consistently.

Proficient – meaning that the child can reliably demonstrate the skills, knowledge, behaviors, or accomplishments represented by this performance indicator.

Teachers use the *Work Sampling System Development Guidelines* books for the age group with whom they work to rate children based on their observations and documentation and the correspondence between these observations and documentations and the rationales and examples for each indicator as described in the *Guidelines*. The *WSS Developmental Guidelines* are designed to enhance the process of observation and to ensure the reliability and consistency of teachers' observations (Dichtelmiller, Jablon, Marsden, & Meisels, 2001).

The developmental checklist included a place for teachers to indicate each child's gender, date of birth, if the student had an Individual Education Plan (IEP) or Individual Interagency Intervention Plan (IIIP), and a section for teachers or other school staff to insert the Minnesota Automated Reporting Student System (MARSS) Code for the child. This code is assigned to each student once they enter the K-12 system sometime during the kindergarten year unless the child has previously been

identified as qualifying for special education, which leads to code assignment at time of identification. Each checklist also had a space for inserting a two-digit building code that was completed by study staff prior to mailing the checklists to the schools.

Parent Survey

Added to the study in Year Two and continued in Year Three was a parent survey printed on the reverse side of the developmental checklist to be completed by parents just before or during the six week period that children were observed and assessed by their kindergarten teachers (see Appendix A). Many elementary schools hold orientations or open houses for kindergarten parents within a few days of the beginning of kindergarten, and some kindergarten teachers do home visits with each student. It was expected that these were logical times for the teachers to ask the parents to complete and return the surveys.

In Year Two the parent survey included questions regarding early childhood care and education experience and family information. The early childhood care and education experience questions were intended to obtain information about the care and education experiences of each child in the study in the year prior to kindergarten. This section was eliminated from the parent survey in Year Three because it was learned in Year Two that, as assumed going into the study, many parents have a different perception than professionals in the field regarding the type of care and/or education in which their child participates. Follow-up telephone interviews with a small sample of Year Two parents right after study data were collected confirmed that there are some likely inaccuracies in the early childhood care and education experiences recorded by parents on a survey. It was determined that, at a minimum, telephone interviews need to be done with parents to secure accurate information regarding prior early childhood care and education experiences. Resources did not allow for such parent telephone interviews with all of the parents of the children in the Year Three sample.

The family information questions were continued in Year Three and focused on demographic data on the child and the child's family that have been shown to be associated with school readiness in other research, i.e., level of parent education, household income, race/ethnicity, and language spoken most often at home.

Study Design and Sample Selection

Upon completion of the Year Two study, careful consideration was given by MDE study staff to a number of strategies for conducting the Year Three School Readiness study based on potential purposes and resources available. It was decided that, because results from Year One and Year Two

were similar and no new significant, intentional initiative focused on the school readiness of Minnesota four-year-olds was being implemented, the purposes of the study would shift to working with a strategic versus random sample of school districts to assess all kindergartners in all of their elementary school buildings and encourage the use of study results in guiding community school readiness efforts.

Minnesota has Minnesota Initiative Foundations (MIFs) created by The McKnight Foundation in six rural regions of the state focused on making these six regions outside the metropolitan area stronger and more prosperous. In 2001, the six MIFs began to collaborate on a joint public policy initiative focused on early childhood. Recognizing that strengthening early care and education for young children and their families is the most important investment communities can make for the future, the Minnesota Early Childhood Initiative was developed. Over the course of three years, the MIFs are establishing 36 Early Childhood Coalitions in greater Minnesota (six in each of the six MIFs regions) and developing a Statewide Early Childhood Coalition Network to link all the Early Childhood Coalitions. This network serves as a vehicle to advance public policy, exchange ideas, share promising practices, and create a statewide groundswell of support for young children. Each of these communities has a coordinator and has established an Early Childhood Coalition that has set goals and identified projects focused on early childhood issues.

In recognition of these statewide geographically representative groups with an emphasis on promoting school readiness, MDE study staff requested that the Early Childhood Initiative Leadership Team representing the six Minnesota Initiative Foundations suggest school districts in their regions already involved in local school readiness efforts to be a part of the Year Three strategic sample. Consistent with the Year Three study goal to engage communities in planning to increase the percentage of children ready for school success, it was expected that the communities recommended, based on their already active involvement in local Early Childhood Coalitions, would be most interested in using study results to plan and implement activities focused on improving the school readiness of children in the school districts in their communities.

Based on the suggestions from the Early Childhood Initiative Leadership Team, 17 geographically distributed Minnesota school districts in six rural regions of the state were selected to be in the study sample. They included Brandon, Butterfield, Cambridge-Isanti, Cloquet, Hermantown, Hill City, Madelia, Marshall, Minnewaska, Murray County Central, Northfield, Park Rapids, Perham, Princeton, Proctor, St. James, and Thief River Falls. In order to also have representation from the metropolitan area of Minnesota in the study sample, one of the two urban school districts, St. Paul, and two suburban school districts, Columbia Heights and Richfield, were added to the study's strategic sample to total 20 school districts in the Year Three study. Because of the size of the St. Paul

kindergarten population, a random sample of 17 elementary school buildings within the district was selected to be in the sample that comprised about 25 percent of the St. Paul kindergarten population and was representative of the demographics of the district and all kindergarten children in the district.

In the spring of 2004, an invitation was sent to the superintendents of these 20 school districts inviting their participation in the study. Once superintendents agreed to their districts' participation in the study, the principals of the 49 elementary schools represented by the 20 school districts were sent study information.

Study Preparation and Data Collection and Dissemination

In August, MDE study staff and Work Sampling System child assessment trainers conducted eight three-hour workshops throughout the state for the elementary school principals and kindergarten teachers from the 49 elementary schools represented. They distributed study materials, reviewed study data collection details, reviewed Work Sampling System assessment procedures, and discussed cultural and linguistic issues in assessment. Kindergarten teachers were paid a $200 honorarium for attending the workshop. Teachers also received a stipend or release time for conducting the assessment with their kindergarten children during the first six weeks of school in the fall. Study materials distributed at the workshops included copies of the Minnesota Work Sampling System (WSS) ® Kindergarten Entry Developmental Checklist for each child in each kindergarten classroom, kindergarten teacher instructions and a timeline for the process, a *Work Sampling System Preschool-4 Guidelines 4th Edition* booklet for each teacher, and a chart listing the 32 preschool-4 school readiness indicators being assessed alongside a list of the corresponding 32 kindergarten indicators with the rationale and examples for each from the *Work Sampling System Preschool-4* and *Kindergarten Guidelines 4th Edition* booklets. ***It should be emphasized that the kindergarten teachers rated the children entering kindergarten on the WSS Preschool-4 Developmental Guidelines because these are what children should be expected to know and do when they turn five years old at the end of their fourth year of life at approximately the time they enter kindergarten.***

All kindergarten teachers in the selected school districts were asked to observe all children in their classrooms between the first week of school and October 15, 2004, in order to minimize the impact of kindergarten instruction on observational results. Teachers with half day and all-day-every-other-day kindergarten classes were given until November 1, 2004 to complete their observations, documentation, and ratings. Teachers documented what they observed, rated each child's performance on each indicator using the *Work Sampling System Preschool-4 Guidelines 4th Edition* booklet, and recorded their ratings on a Minnesota Work Sampling System (WSS) ® Kindergarten Entry

Developmental Checklist for each child. Kindergarten teachers also asked one parent/guardian of each student in their classroom to complete the parent survey side of the checklist during orientations, open houses, home visits, or other contacts teachers had with family members. Resources did not allow for translation of the parent survey into multiple languages, so teachers were asked to use the method that worked best for them to have parents who were English-Language Learners respond to the survey.

Teachers used the "For teacher use only" box at the bottom of the developmental checklist to enter a child code meaningful to them in order to be sure that the parent survey responses for each child corresponded (1) to their developmental assessment ratings for that same child and (2) to the MARSS Code for the child entered on the checklist side of the form.

Completed checklists and parent surveys were returned to MDE where they were reviewed and forwarded to NCS Pearson for scanning, scoring, and data summary. Study staff did additional analysis of assessment data in relationship to items on the parent survey, noting whether the person who completed the survey was the child's mother, father, or another person; the highest level of education completed by the parent completing the form; the household's yearly income before taxes; the race/ethnicity of the child; and the language spoken most often at home.

The final study strategic sample included 3,423 kindergartners in 49 elementary schools and involved 125 kindergarten teachers. More than 81 percent of the parents of the kindergartners in the sample responded to the parent survey. Elementary school building and school district summary data were sent to participating school superintendents and elementary school principals in February. In March and April seven regional Community Workshops for further distribution, discussion, and planning for use of school district study results were conducted in partnership with the Minnesota Early Childhood Initiative Leadership Team in the same six regions of the state used for selection of the study sample. Similar Community Workshops were conducted in Columbia Heights, Richfield, and St. Paul School Districts.

Year Three Study Results: Developmental Assessment at Kindergarten Entrance Fall 2004

Summary of Results Across Districts

Study results were compiled and summarized on the 20 school districts in the study. Districts in the study with two or more elementary school buildings also received individual elementary school building results.

As with the aggregated results in Years One and Two, physical development was the developmental domain where most of the school districts (18/20) reported highest average "proficiency" ratings. In the arts, eleven of the school districts showed it to be the developmental domain with the first or second highest average "proficiency" rating. However, seven districts reported it as the domain with the least or next to least highest average "proficiency" rating. Average "proficiency" ratings in the personal and social development domain were most frequently in the middle of the ratings of proficiency across the five domains. ***The domains of mathematical thinking (13/20 districts reported as least or next to least proficient) and language and literacy (15/20 districts reported as least or next to least proficient) were consistently the domains with the lowest levels of average "proficiency" ratings across the five domains.***

When examining the "not yet" readiness level average ratings across the domains, the results were consistently the reverse of the average "proficiency" ratings, with the domain of physical development consistently having the least of the average "not yet" ratings among the school districts in the study (19/20), the arts with the next least average "not yet" ratings, followed by personal and social development, mathematical thinking, and language and literacy. However, in all domains there were exceptions, and in some school districts the highest average "not yet" rating was in either the arts or personal and social development.

When examining the percent of the average "proficiency" ratings across the school districts, nine of the districts reported average "proficiency" ratings above 50 percent in all five domains, one district showed ratings above 50 percent in four of the five domains, three districts reported three domains where average "proficiency" ratings were over 50 percent, three were under 50 percent average "proficiency" ratings in four of the five domains, and four districts reported average "proficiency" ratings below 50 percent in all five domains.

The percent of average "not yet" ratings across the domains are what would be expected given the average "proficiency" ratings just described. Eight districts had less than ten percent average "not yet" ratings in all five domains, two districts had only one domain with a ten percent or higher average "not yet" rating, six districts had two or three domains with ten percent or more average "not yet" ratings, and four districts had average "not yet" ratings of ten percent or higher in four or all five domains.

Consistency was high among the individual indicator ratings for each district. Those that had the highest "proficiency" and "not yet" ratings were consistent across the districts.

In all 20 districts, the average age at kindergarten entrance varied from 5.0-5.4 years of age as of September 1, 2004. The number and percentage of boys and girls in kindergarten in the school districts was balanced for the most part, with 15 districts having more boys than girls and five having more girls than boys. Twelve of the school districts reported that ten percent or more of their kindergartners had an IEP or IIIP, and eight indicated that less than ten percent of their kindergartners had an IEP or IIIP.

The response to the parent surveys varied from 100 percent in six districts and 80-98 percent in 10 districts to as low as 30 percent in one district. Over 81 percent of the parents of sample children (N = 2,784) responded to the parent survey. Parent responses to the five questions on the parent survey are reported in aggregate in the next section.

In the nine school districts with more than one elementary school, for the most part, the individual building results were consistent with school district results. However, in most cases, where demographics varied by elementary school building within districts, the results for kindergartners in school buildings with parents with less education and income showed lower average "proficiency" ratings and higher average "not yet" ratings than kindergartners in school buildings where parents reported higher income and education levels.

Year Three Strategic Sample Aggregated Data

Study results were aggregated statewide in Year One and Year Two because a random sample of elementary school buildings was systematically selected that matched state K-12 demographics. This allowed generalizing the results to the entire Minnesota kindergarten population. As previously indicated, ***the Year Three sample was a strategically selected sample of school districts not representative of Minnesota elementary school buildings and school districts. Aggregation of the results for generalizability was not the intent of the Year Three study. Aggregated data is reported only to provide a picture of the overall results of this particular strategically selected sample of Minnesota's 57,822 kindergartners in public schools during the 2004-2005 school year*** (total does not include kindergartners in charter and private schools). ***Results should not be generalized to the entire population of Minnesota kindergartners as in the past two years.***

Table 5 provides an average score summary of how the 3,423 kindergarten children in the Year Three strategic sample were rated by their kindergarten teachers across the five domains according to the three readiness levels. Table 6 provides the same five domain totals along with the aggregation of

teacher ratings by indicator ranked according to indicators within each domain in relation to "proficiency" rates from highest to lowest.

Table 5 shows that in this sample over half of the school district kindergartners were proficient, on average, in three of the five domains, with most proficiency in physical development (67%) followed by the arts (53%) and personal and social development (51%). Less than half of the kindergartners in this sample were proficient, on average, in language and literacy (47%) and mathematical thinking (46%). In all five domains, the kindergartners in this sample showed higher proficiency results, on average, than the statewide averages from the Year Two study, ranging from four to ten percent higher across the five domains. The average "in process" ratings for this sample of kindergartners ranged from 30-42 percent across the five domains, which is five to eleven percent less than the average "in process" ratings across the domains in the statewide Year Two study.

The average "not yet" ratings for this sample were similar to the average "not yet" ratings in the Year Two study sample, with physical development two percent higher; the arts, language and literacy, and mathematical thinking one percent higher; and personal and social development the same.

Table 5: Readiness Levels by Domain – Year Three Strategic Sample
(Average Number and Percent) *N=3,423**

Domain	Year 3	Year 2 Statewide SRS	Year 3	Year 2 Statewide SRS	Year 3	Year 2 Statewide SRS
	Not Yet		*In Process*		*Proficient*	
Physical Development	*N=120* **4%**	*N=76* **2%**	*N=1,022* **30%**	*N=1,207* **41%**	*N=2,271* **67%**	*N=1,702* **57%**
The Arts	*N=249* **7%**	*N=170* **6%**	*N=1,368* **40%**	*N=1,413* **48%**	*N=1,796* **53%**	*N=1,391* **47%**
Personal and Social Development	*N=323* **9%**	*N=266* **9%**	*N=1,331* **39%**	***N=1,317*** **44%**	*N=1,756* **51%**	*N=1,407* **47%**
Language and Literacy	*N=458* **13%**	*N=345* **12%**	*N=1,352* **40%**	*N=1,363* **46%**	*N=1,599* **47%**	*N=1,283* **43%**
Mathematical Thinking	*N=418* **12%**	*N=318* **11%**	*N=1,436* **42%**	*N=1,489* **50%**	*N=1,562* **46%**	*N=1,186* **40%**

*Year Three study results are based on a strategic sample of Minnesota kindergartners.

When examining the individual indicators in Table 6, four indicators in language and literacy stood out as having higher "not yet" ratings than the others in this domain in this sample overall – "demonstrates phonological awareness" (25%), "uses letter-like shapes, symbols, and letters to convey

meaning" (20%), and "begins to develop knowledge about letters" and "uses expanded vocabulary and language for a variety of purposes" (16% each). One indicator in mathematical thinking had higher "not yet" ratings than the others – "begins to recognize simple strategies to solve mathematical problems" (16%), and one indicator in personal and social development had higher "not yet" ratings than the others – "approaches tasks with flexibility and inventiveness" (15%).

Table 6: Readiness Levels by Domain Indicator Ranked by Proficiency Rating - Year Three Strategic Sample	Readiness Levels, N=3,423					
	Not Yet		*In Process*		*Proficient*	
Physical Development	Percent	N	Percent	N	Percent	N
Physical Development Domain Average Score Summary	**4%**	**120**	**30%**	**1,022**	**67%**	**2,271**
Performs some self-care tasks independently.	3%	87	24%	801	74%	2,517
Coordinates movements to perform simple tasks.	3%	99	31%	1,045	67%	2,272
Uses eye-hand coordination to perform tasks.	5%	173	36%	1,219	59%	2,024
Personal and Social Development						
Personal and Social Development Domain Average Score Summary	**9%**	**323**	**39%**	**1,331**	**51%**	**1,756**
Interacts easily with familiar adults.	7%	229	36%	1,222	58%	1,966
Shows eagerness and curiosity as a learner.	7%	245	36%	1,224	57%	1,946
Interacts easily with one or more children.	7%	250	37%	1,266	56%	1,902
Follows simple classroom rules and routines.	7%	255	39%	1,326	54%	1,831
Manages transitions.	9%	323	37%	1,274	53%	1,808
Shows empathy and caring for others.	9%	299	39%	1,316	53%	1,790
Shows some self-direction.	9%	323	39%	1,318	52%	1,773
Attends to tasks and seeks help when encountering a problem.	12%	421	41%	1,395	47%	1,599
Seeks adult help when needed to resolve conflicts.	11%	367	45%	1,518	44%	1,511
Approaches tasks with flexibility and inventiveness.	15%	518	43%	1,455	42%	1,430
The Arts						
The Arts Domain Average Score Summary	**7%**	**249**	**40%**	**1,368**	**53%**	**1,796**
Participates in group music experiences.	6%	205	37%	1,279	57%	1,932
Uses a variety of art materials for tactile experience and exploration.	7%	235	39%	1,330	54%	1,847
Participates in creative movement, dance, and drama.	8%	268	40%	1,353	53%	1,796
Responds to artistic creations or events.	8%	289	44%	1,508	47%	1,607
Language and Literacy						
Language and Literacy Domain Average Score Summary	**13%**	**458**	**40%**	**1,352**	**47%**	**1,599**
Speaks clearly enough to be understood without contextual clues.	9%	320	31%	1,042	60%	2,054
Shows appreciation for books and reading.	5%	170	37%	1,275	58%	1,960
Comprehends and responds to stories read aloud.	8%	263	40%	1,379	52%	1,763
Gains meaning by listening.	9%	297	41%	1,398	50%	1,719
Follows two- or three-step directions.	14%	464	38%	1,291	49%	1,654
Uses expanded vocabulary and language for a variety of purposes.	16%	557	37%	1,265	47%	1,590
Represents ideas and stories through pictures, dictation, and play.	12%	395	43%	1,469	45%	1,534
Begins to develop knowledge about letters.	16%	535	41%	1,399	43%	1,478
Shows beginning understanding of concepts about print.	15%	497	44%	1,493	42%	1,423
Uses letter-like shapes, symbols, and letters to convey meaning.	20%	698	42%	1,449	37%	1,268
Demonstrates phonological awareness.	25%	841	42%	1,416	34%	1,148
Mathematical Thinking						
Mathematical Thinking Domain Average Score Summary	**12%**	**418**	**42%**	**1,436**	**46%**	**1,562**
Shows understanding of and uses several positional words.	11%	385	40%	1,353	49%	1,674
Begins to recognize and describe the attributes of shapes.	10%	332	41%	1,405	49%	1,681
Shows beginning understanding of number and quantity.	12%	423	42%	1,429	46%	1,566
Begins to recognize simple strategies to solve mathematical problems.	16%	533	46%	1,556	39%	1,325

Table 7: Child and Family Data – Year Three Strategic Sample (N=3,423)

Age of Child on 9-1-04 (average 5.2 years)	*N*	*Percent*
4	22	.7%
5	2,678	81.4%
6	590	17.9%
Total	**3,290**	**100%**
Gender		
Male	1,707	51.5%
Female	1,608	48.5%
Total	**3,315**	**100%**
IEP or IIIP		
Yes	279	8.8%
No	2,886	91.2%
Total	**3,165**	**100%**
Relationship of Respondent to Kindergartner		
Mother	2,135	79.3%
Father	472	17.5%
Other	85	3.2%
Total	**2,692**	**100%**
Parent Education Level		
Less than high school	182	6.8%
High school diploma/GED	647	24.3%
Trade school or some college beyond high school	844	31.7%
Associate degree	291	10.9%
Bachelor's degree	443	16.7%
Graduate or professional school degree	253	9.5%
Total	**2,660**	**100%**
Household Total Yearly Income Before Taxes		
$0 - $35,000	905	35.2%
$35,001 - $55,000	686	26.7%
$55,001 - $75,000	527	20.5%
$75,001 or more	454	17.7%
Total	**2,572**	**100%**
Race/Ethnicity of Child (Duplicated)		
Black/African/African American	292	8.5%
American Indian/Alaskan Native	66	1.9%
Asian/Native Hawaiian or Pacific Islander	214	6.3%
Hispanic or Latino	292	8.5%
White/Caucasian	2,066	60.4%
Other	33	1.0%
Total	**2,963**	**86.6%***
Race/Ethnicity (White and Children of Color**)		
White	1,920	69.0%
*Children of Color***	864	31.0%
Total	**2,784**	**100%**
Language spoken most often at home		
English	2,404	86.4%
Spanish	188	6.8%
Hmong	100	3.6%
Somali	30	1.1%
Vietnamese	12	.4%
Russian	2	.1%
Other	46	1.7%
Total	**2,782**	**100%**

* In districts where not all parents responded to the question on race/ethnicity, the total percent may be less than 100.
** May represent more than one race/ethnicity.

Table 7 provides a summary of the data from the three questions the kindergarten teachers answered on the developmental checklist regarding child gender, date of birth, and children having an IEP or IIIP and the five questions on the parent survey. This table shows that the average age of kindergartners in this sample was 5.2 years on September 1, 2004. Almost 18 percent of these children were six years old on this date. The gender of the sample was fairly balanced with 51.5 percent boys and 48.5 percent girls. In this sample about nine percent of the kindergartners had an IEP or IIIP.

Of the 81 percent of the parents in this sample of kindergartners responding to the parent survey, more than 30 percent (31.1%) reported having a high school diploma/GED or less; more than 42 percent (42.6%) reported having trade school or some college beyond high school or an Associate degree; and more than 26 percent (26.2%) reported having Bachelor's, graduate, or professional school degrees. More than one-third (35.2%) of the parents reported having household incomes in the lowest category of $35,000 or less; about 27 percent (26.7%) reported income at the next level of $35,001-$55,000; more than 20 percent (20.5%) reported household income of $55,001-$75,000; and almost 18 percent (17.7%) reported incomes of $75,001 or more. About 62 percent were in the lowest two income categories, and 38 percent were in the two higher income categories. Thirty-one percent of this sample of kindergartners were children of color, with 69 percent white/Caucasian; about nine percent each black/African/African American and Hispanic or Latino; more than six percent Asian/Native Hawaiian or Pacific Islander; two percent American Indian/Alaskan Native, and one percent other. About 86 percent of the parents reported English as the language spoken most often at home followed by Spanish at about seven percent, Hmong about four percent, and other languages totaling a little over three percent.

Chart 1. Domain Averages for Children Rated "Not Yet" by Gender

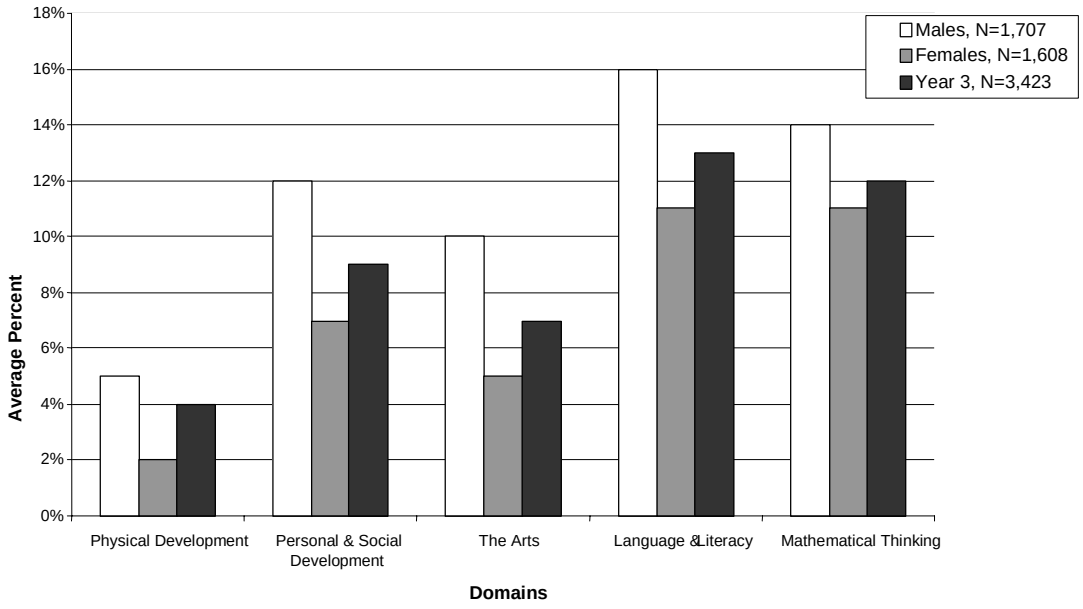

Table 8: Domain Averages for Children Rated "Not Yet" by Gender

	Total N	Physical Development		Personal & Social Development		The Arts		Language & Literacy		Mathematical Thinking	
	for sub-group	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Males	1,707	81	5%	200	12%	170	10%	271	16%	235	14%
Females	1,608	36	2%	114	7%	75	5%	179	11%	174	11%
Children with no gender information	*108*										
Year 3	**3,423**	**120**	**4%**	**323**	**9%**	**249**	**7%**	**458**	**13%**	**418**	**12%**

As indicated in Table 7, of the teachers who marked the gender of each student on the developmental checklist, teachers reported that 1,707 of the sample children were male and 1,608 were female. The developmental assessment data results in the "not yet" category of readiness in the five developmental domains are reported in relation to gender in Chart 1 and Table 8. ***In all five domains the males showed a higher average percent in the "not yet" category of readiness than the females, ranging from a 3-5 percent difference depending upon the domain.*** This finding is consistent with the findings in the Year Two study and the research on gender and school achievement. Girls are usually ahead of boys on important school readiness variables (Coley, 2002; Wertheimer & Croan, 2003; Zill & West, 2000).

Charts 2, 3, 4 and 5 and Tables 9, 10, 11, and 12 give the developmental data results in the "not yet" category of readiness levels in the five developmental domains studied in relation to parent education level, household income, race/ethnicity, and language spoken most often at home.

Chart 2. Domain Averages for Children Rated "Not Yet" by Parent Education Level

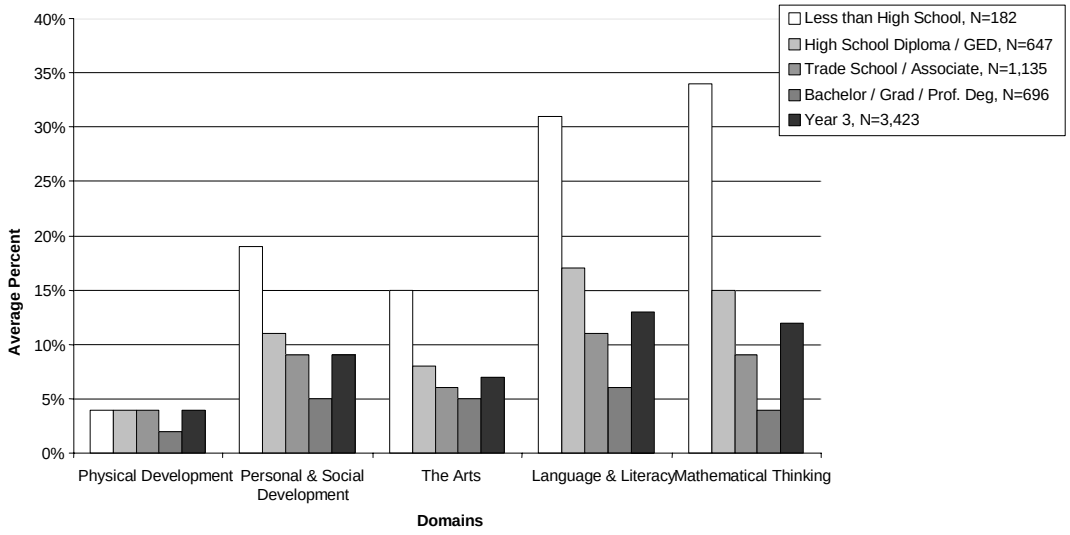

Table 9: Domain Averages for Children Rated "Not Yet" by Parent Education Level

	Total N	Physical Development		Personal & Social Development		The Arts		Language & Literacy		Mathematical Thinking	
	for sub-group	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Less than HS	182	8	4%	34	19%	27	15%	56	31%	61	34%
High School/GED	647	25	4%	73	11%	51	8%	107	17%	99	15%
Trade School/Associate Degree	1,135	44	4%	101	9%	63	6%	129	11%	104	9%
Bachelor/Graduate/ Professional Degree	696	16	2%	35	5%	32	5%	40	6%	27	4%
Children with no parent education information	*763*										
Year 3 Strategic Sample	**3,423**	**120**	**4%**	**323**	**9%**	**249**	**7%**	**458**	**13%**	**418**	**12%**

Chart 2 and Table 9 show that in all five domains the students in this sample of parents with the least amount of education (less than high school) were two to eight times as likely to have a "not yet" rating, on average, than the students of parents with the most education (Bachelor's, graduate, or professional school degree).

Chart 3. Domain Averages for Children Rated "Not Yet" by Household Income

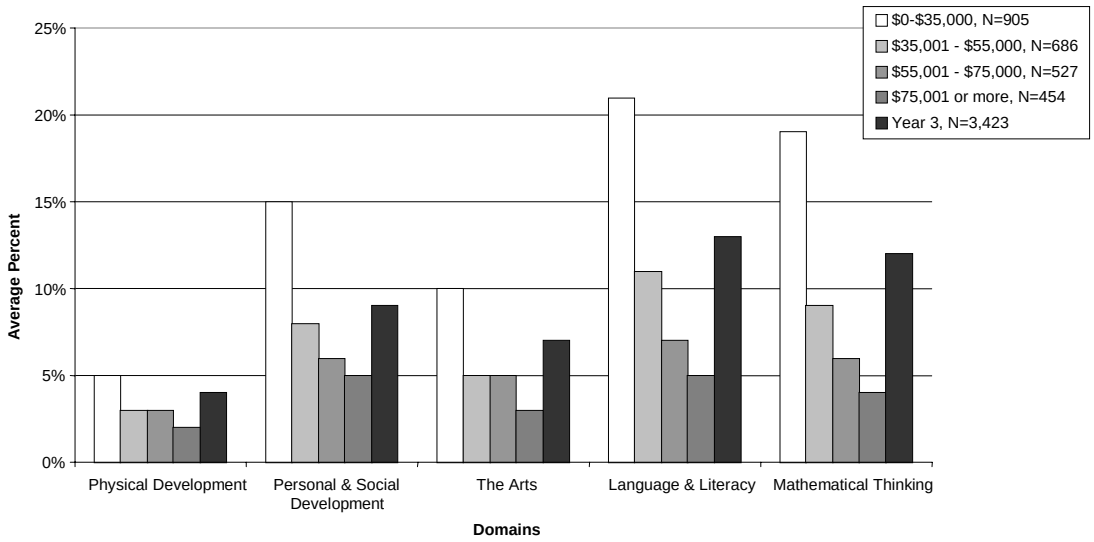

Table 10: Domain Averages for Children Rated "Not Yet" by Household Income

	Total N	Physical Development		Personal & Social Development		The Arts		Language & Literacy		Mathematical Thinking	
	for sub-group	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
$0 - $35,000	905	45	5%	132	15%	92	10%	187	21%	175	19%
$35,001 - $55,000	686	22	3%	52	8%	35	5%	77	11%	62	9%
$55,001 - $75,000	527	15	3%	32	6%	26	5%	36	7%	31	6%
$75,001 or more	454	11	2%	21	5%	15	3%	24	5%	18	4%
Children with no parent education information	*851*										
Year 3 Strategic Sample	**3,423**	**120**	**4%**	**323**	**9%**	**249**	**7%**	**458**	**13%**	**418**	**12%**

Chart 3 and Table 10 show the same pattern regarding household income; in the five domains the average percentage of kindergartners "not yet" showing the skills, areas of knowledge, or specific sets of behaviors or accomplishments was two – four times higher, on average, in the lowest income category ($0 - $35,000) as compared to the highest income category ($75,001 or more).

Chart 4. Domain Averages for Children Rated "Not Yet" by Race / Ethnicity

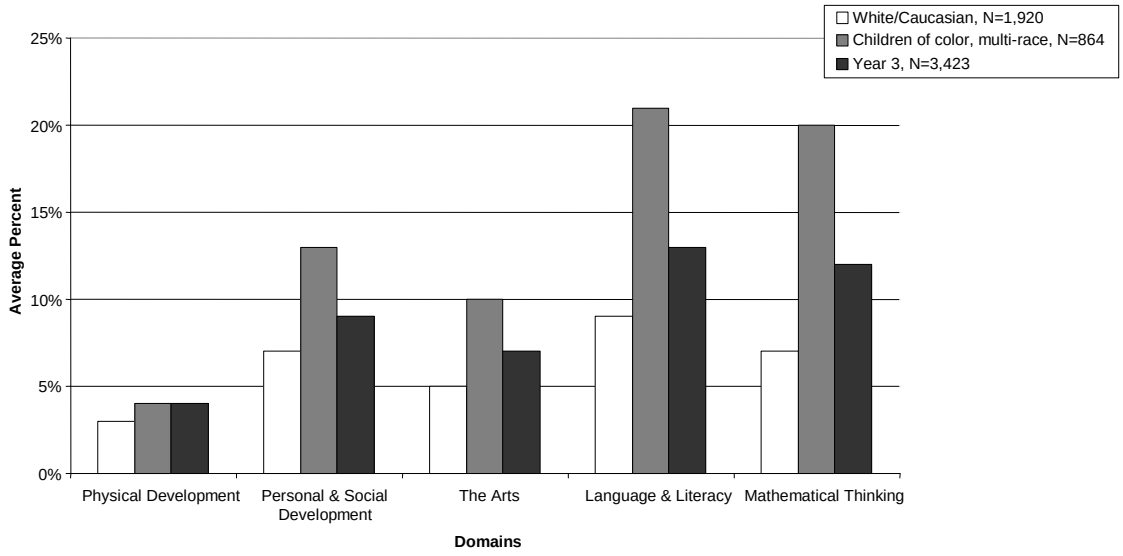

Table 11: Domain Averages for Children Rated "Not Yet" by Race/Ethnicity

	Total N	Physical Development		Personal & Social Development		The Arts		Language & Literacy		Mathematical Thinking	
	for sub-group	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
White / Caucasian	1,920	61	3%	141	7%	97	5%	175	9%	141	7%
Children of color, multi-race	864	34	4%	112	13%	87	10%	181	21%	171	20%
Children with no parent education information	*639*										
Year 3 Strategic Sample	**3,423**	**120**	**4%**	**323**	**9%**	**249**	**7%**	**458**	**13%**	**418**	**12%**

Chart 4 and Table 11 show differences in average "not yet" ratings in regard to race/ethnicity between children of color and White/Caucasian kindergartners. ***Average "not yet" ratings were higher in all five domains for children of color, especially in the domains of mathematical thinking, language and literacy, and the arts where the average "not yet" ratings were twice as high for children of color as they were for white/Caucasian children.***

Chart 5. Domain Averages for Children Rated "Not Yet" by Home Language

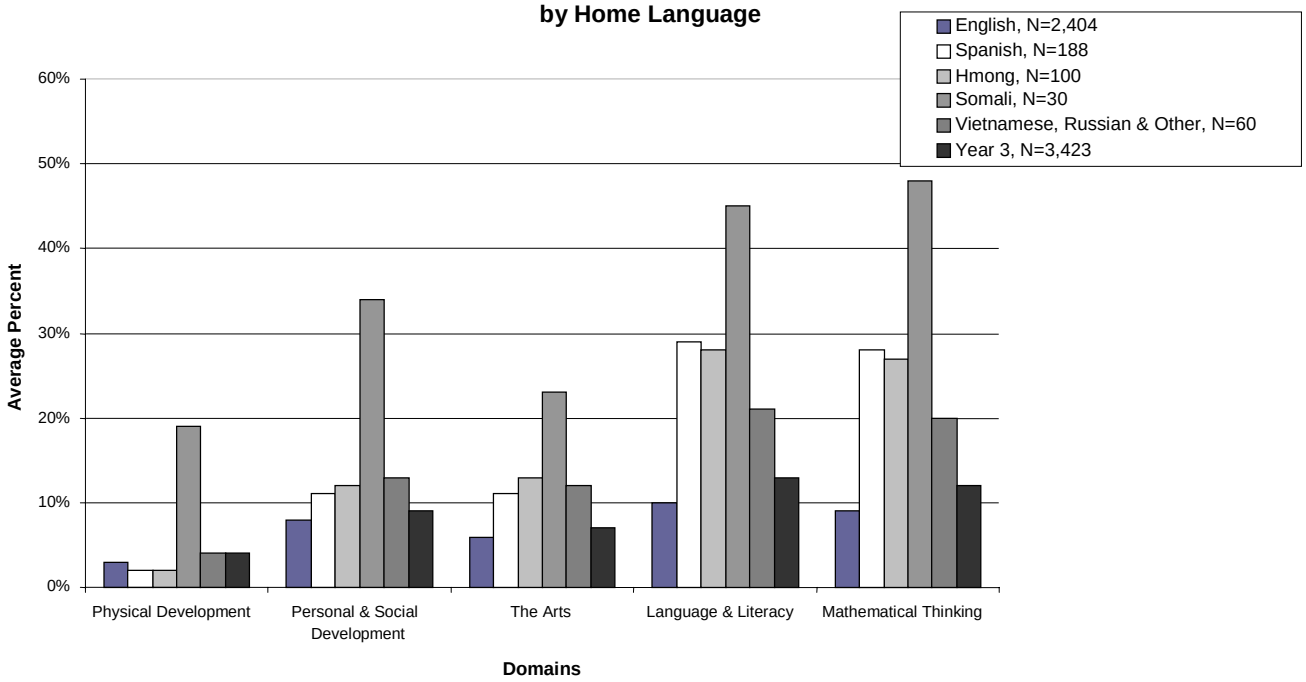

Table 12: Domain Averages for Children Rated "Not Yet" by Home Language

	Total N	Physical Development		Personal & Social Development		The Arts		Language & Literacy		Mathematical Thinking	
	for sub-group	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
English	2,404	81	3%	201	8%	136	6%	248	10%	206	9%
Spanish	188	4	2%	21	11%	21	11%	54	29%	52	28%
Hmong	100	2	2%	12	12%	13	13%	28	28%	27	27%
Somali	30	6	19%	10	34%	7	23%	14	45%	14	48%
Vietnamese, Russian & Other	60	2	4%	8	13%	7	12%	13	21%	12	20%
Children with no home language information	*641*										
Year 3	**3,423**	**120**	**4%**	**323**	**9%**	**249**	**7%**	**458**	**13%**	**418**	**12%**

Chart 5 and Table 12 show differences in average "not yet" ratings in regard to language spoken most often at home for English; Spanish; Hmong, Somali; and Vietnamese, Russian, and other languages. ***In all domains the percent of children rated as not yet showing the skills, knowledge, behaviors, or accomplishments, on average, was high for children in families where Somali was the language spoken most often at home, ranging from 19-48 percent across the five domains. For the other languages there was little difference in the domain of physical development and small differences in the domains of personal and social development and the arts, ranging from 1-6 percent higher or lower than the total sample average. In language and literacy and mathematical thinking the average percent of "not yet" ratings were high for children in***

families where Spanish; Hmong; and Vietnamese, Russian, and other languages were the languages spoken most often at home, ranging form 21-29 percent in language and literacy and 20-28 percent in mathematical thinking.

Use of Year Three Study Results: Promoting School Readiness in Local Communities With A Strategic Sample of School Districts

Regional Community Workshops

Minnesota Department of Education staff worked with the Minnesota Early Childhood Initiative (MECI) coalition leaders to convene and host Community Workshops in March and April 2005 for the school districts in their regions involved in the study, other community partners already involved in their work, and potential new partners interested in community school readiness issues. A MDE early childhood education specialist was present at each of the seven sessions held to report study results and facilitate discussion of strategies that can be implemented in communities to promote early childhood development and school readiness. The goal of the Community Workshops was to use study results to consider strategies for improving the school readiness of children as they enter kindergarten through:

- Involving parents in their children's learning and education,
- Enhancing early childhood education and care in the community,
- Promoting meaningful transition to kindergarten activities for children and their parents, and
- Improving schools' ability to address the needs of children and parents as they enter kindergarten.

MDE staff provided an overview of the results of the Year Three Minnesota School Readiness Study and related materials for workshop participants. Materials included local school district results from the region of each session, a study summary, the Minnesota Work Sampling System (WSS)® Kindergarten Entry Developmental Checklist and Parent Survey, *Early Childhood Indicators of Progress: Minnesota's Early Learning Standards* (ECIP), the alignment of the Minnesota K-12 Kindergarten Academic Standards with the ECIP, and the document, *Using Minnesota School Readiness Study Information in Your School District and Community*. MECI coalition leaders in each region gave a brief review of the current status of their coalition activities to promote early childhood development and school readiness in their regions. Participants used the MDE information and resources and information about activities already occurring in their communities to brainstorm and select the three top strategic priorities for promoting school readiness in their school district and community. Participants attending the workshops included school district superintendents, elementary school principals, curriculum and instruction directors, and kindergarten teachers; staff from school-based early

childhood programs and services including Early Childhood Family Education (ECFE), Early Childhood Special Education, Early Childhood Screening, and School Readiness; Head Start, community preschool, child care center, and Child Care Resource and Referral staff; public library staff; and other community members serving on the local Early Childhood Initiative Coalitions. At most of the seven Community Workshops people were brought together to discuss study results and to plan action related to the results who had not previously discussed these issues together. Interest and commitment was high to use the ideas generated at the workshops to improve the school readiness of young children in their communities.

Results of Regional Community Workshops

As representatives of each school district and community attending the Community Workshops reviewed their district results before beginning to identify strategies for addressing them, they raised a number of questions including:

- Should we be offering kindergarten readiness classes for five-year-olds? Is it good to have six-year-olds in kindergarten?
- Should we be doing more to promote personal and social skills in kindergarten readiness?
- What do we already know about closing the achievement gap that can impact child outcomes? Is not knowing the community and children well and connecting them *all* to early childhood programs a key factor?
- Are we expecting of kindergartners what we used to expect of first-graders, and are parents aware of what is expected in kindergarten?
- Is integration of children with special needs into the typical classroom most advantageous to all children?
- Would earlier screening make a difference in earlier intervention for children with disabilities and higher proficiency at kindergarten entrance?

Examples of strategies identified by community participants for enhancing and improving early childhood development and school readiness of children in their school district and community included:

- ***Find and contact the family of every four-year-old in the school district not now involved in some type of early education program and get them involved.*** Offer incentives such as coupons for classes. Help parents understand the importance of early childhood education experiences to their children's learning. Include identification of barriers to involvement such as transportation needs, high mobility rates, work schedules of parents, families not speaking English, etc. and find ways to

address these barriers. Learn more about where children are at in the year or two before kindergarten.

- ***Focus outreach efforts on difficult to reach families including linguistically and culturally diverse families.***
    - Engage community leaders from cultural communities to work with Early Childhood Coalition members in reaching families with young children.
    - Provide translated materials and interpreters.
    - Recruit and train more diverse early childhood teachers and caregivers.
    - Develop a "mobility specialist" to keep in touch with families in transition.
- ***Promote Early Childhood Screening (ECS) as soon as children are eligible through many means*** including ECFE; child care centers and providers and Child Care Resource and Referral; health sources such as clinics, doctors, and dentists; radio stations; news articles; and Web sites. Provide information to parents at ECS about the school district, kindergarten, and kindergarten expectations. Offer appealing and informative materials to parents at the end of ECS, including parent-child activity books with instructions for parents, a learning activity calendar, a CD with educational information and songs, etc. and go over the materials with the parents. Increase efforts to ensure that special needs identified at ECS are addressed and follow-up services are made available as needed.
- ***Provide information for and to parents through multiple means and settings***.
    - Make learning materials and educational information available to parents at the time of Early Childhood Screening and in other settings where young children and parents go. Provide the information for parents in languages other than English.
    - Create lending libraries with materials for parents in non-traditional settings where parents are (other than education and health) with books and other materials for children and parents to use together.
    - Create a video/CD on child development (including early brain development) and parenting to use with mothers and fathers of newborns in hospitals throughout the state. Emphasize other contacts with parents of infants and begin contacts with parents prenatally.
    - Provide parenting classes for high school students.
    - Offer regular, welcoming events for children and parents that involve harder-to-reach parents and parents of the youngest children.

    - Create an early childhood tutor position for one-on-one contact with children and their parents through home visits or at early childhood and child care centers to observe and assess where children are at and provide and model simple activities for play and learning.
    - Develop a parent mentoring program that includes capitalizing on the experience of grandparents.
- ***Offer a wide variety of transition to kindergarten activities*** including orientations for children and their parents, kindergarten information nights for parents, and summer activities for parents and children to promote their school readiness. Do more to promote parental readiness for school, especially with fathers.
- ***Promote more communication among all early childhood programs and between early childhood program staff and K-12 staff***, especially kindergarten teachers and elementary school principals. Include sharing information about curriculum and what is expected of children during the preschool years and kindergarten and how they align, using the MDE alignment document. Consider having preschool teachers shadow kindergarten teachers and vice versa.
- ***Promote more intentionality of curriculum in early childhood programs based on the ECIP***.
- ***Create a version of the Early Childhood Indicators of Progress, early learning guidelines, for parents and family, friend, and neighbor child care providers***.
- ***Collaborate more with child care providers***, especially family child care providers and family friend, and neighbor providers. Offer training in various aspects of early childhood development and school readiness.
- ***Coordinate community efforts to reduce the amount of time young children watch television*** and encourage parents to not place televisions in the bedrooms of young children in recognition of the impact of television viewing on children's learning.
- ***Promote early childhood program and parent-child learning activities in specific areas of development***. For example, kindergarten teachers in one region requested that more social and emotional skills be intentionally emphasized in pre-kindergarten programs since children come to kindergarten with more academic and fewer behavioral skills expected in kindergarten. In another region, plans were made for providing better information to parents about ideas for promoting developmentally appropriate mathematics learning activities for young children. Language and literacy activities were an area of development intended to be promoted in other regions.
- ***Promote all-day kindergarten***.

The school district personnel, community coalition members, and others represented at the workshops planned to act upon the strategies selected. Similar plans were made for dissemination of study results and creating or building upon community school readiness efforts with Columbia Heights, Richfield, and St. Paul School Districts.

Use of MARSS Numbers

MARSS numbers were recorded by teachers or other school district personnel on the developmental checklists for almost all of the kindergartners in the study (98.5%, N=3,372). The MARSS numbers on the checklists provide an opportunity for school districts to follow the progress of their kindergarten students over time in relation to their performance on this particular assessment. The MDE will also consider use of these numbers in future studies if resources allow for following all or some of the students in the Year Three study.

Principal and Teacher Survey Results

As in Years One and Two, the success of the study depended upon the willingness of school principals and kindergarten teachers to participate. The process of implementing the study continued to be an area of focus. As part of this, participating school principals and kindergarten teachers were again given surveys to complete regarding their decision to participate, barriers to participation, and the associated workload and benefits. The following information is based upon the responses of 23 principals (47%) and 54 kindergarten teachers (43%).

Principal Perspectives

As was the case in Year One and Two, many principals indicated there were no significant barriers or concerns regarding participation in the study. The barrier principals reported most often was that of concern for kindergarten teacher workloads, but they indicated that this issue was offset by the fact that kindergarten teachers were paid a $200 honorarium for attending the summer study workshop and received a stipend or release time for conducting the assessment with their kindergarten children. They also mentioned the benefit of the August workshops. Although many of the principals wanted to see their school district report before being certain as to how they would use their kindergarten students' results, many indicated plans to use them for curriculum and instruction development and change and communication with parents. Many also mentioned they intended to use results to change and enhance early childhood/preschool programs in their communities. When asked what they would tell other elementary school principals considering participation, most were positive and encouraged continuing the current level of communication and efficiency.

Teacher Perspectives

A majority of the kindergarten teachers found benefit to participating in the study. Over 46 percent of the teachers indicated the developmental checklist helped them identify children's needs earlier in the year than they would have normally, 43 percent indicated the checklist information helped them target instruction to their class, and 35 percent said it provided helpful supplemental information for fall parent-teacher conferences. Only 22 percent of the teachers responding indicated that the information gathered was not helpful to them. A majority of the kindergarten teachers completing the survey indicated that the workload associated with the study was balanced by the benefits of participation. Most of the teachers did not encounter difficulty having parents complete the parent survey. When teachers indicated difficulty having parents respond to the parent survey, not having them available in the parents' native language and parent discomfort with the income question were cited most frequently. Over 62 percent of the teachers expressed interest in use of a Web-based checklist and system in future years if the study continues and they are involved.

Teachers listed a variety of ideas for improving the process including having the developmental checklists available even earlier in August to increase parent response and separating the developmental checklist from the parent survey to ensure confidentiality. Some expressed concern that the checklist questions were too open-ended and vague and wanted more examples for checklist items. They also reported that English language learners were difficult to assess. Some teachers indicated that study communication had been very good, the process went well, and the study was very helpful.

Limitations

Many of the limitations of the *Minnesota School Readiness Year Three Study: Developmental Assessment at Kindergarten Entrance Fall 2004 – PROMOTING SCHOOL READINESS IN LOCAL COMMUNITIES WITH A STRATEGIC SAMPLE OF SCHOOL DISTRICTS* are reflections of the resources available, including having limited staff to accomplish study tasks. Two staff members at the Department of Human Services important to the work of the Year One and Two studies were no longer available to work with the study team for any significant time and were not replaced.

Once rural Minnesota school districts were selected based on recommendations from the MECI leaders and metropolitan districts were selected, superintendents of the 20 school districts selected were contacted about participation. Once they agreed to participate, contact with principals began with the assumption that they were participating. This alleviated a number of the issues in sample selection logistics that were time consuming during the first two years of the study. Having the sample in place by early in the summer of 2004, it was possible to plan half-day regional workshops with the principals and kindergarten teachers in the study. This was the first time in three years that face-to-face communication with MDE staff took place and study logistics

and assessment questions could be addressed directly. The ability to pay honorariums to the kindergarten teachers for attending the summer study workshop and a stipend or release time for conducting the assessment with their kindergarten children resulted in a decrease of issues with MDE staff communication with school district personnel and the extra work for kindergarten teachers.

The workshops provided teachers with refresher information about the use of the Work Sampling System of child assessment and cultural and linguistic issues in assessment. Although this training was available, questions remain about the degree of teacher training and experience in use of this or any instruction-embedded assessment necessary to the teacher's accurate and reliable assessment of the children in their classroom. Also, where "in process" or "not yet" ratings were high, two questions need answering. First, were enough classroom opportunities made available to the kindergarten students to show what they know and could do regarding the 32 selected developmental indicators? Second, were the number of days and weeks allotted the kindergarten teachers to collect the data sufficient? In addition, what difference did it make to the assessment and child performance that children were in a full-day everyday, half-day everyday, or full-day every-other-day kindergarten class? These are questions that need to be addressed as studies such as this continue.

The parent survey was used for a second year with fewer questions for parents than in Year Two. Teachers did not indicate significant challenges in having parents fill it out, and in many school districts, most of the parents did so. Over 81 percent of the parents overall completed the parent survey. The parent survey continued to be available only in English. However, kindergarten teachers at most schools involved in the study with parents for whom English was not their first language made translators available to the parents, which resulted in the high rate of completion of the surveys.

The parent survey contained family information questions including those related to parent education level, yearly household income before taxes, and race or ethnic group of kindergartners. Some parents were reluctant to complete the question related to family income. Only three school districts were given data relating the developmental assessment results to the different categories within these variables because the numbers in many of the categories were too small for meaningful analysis.

MARSS numbers were recorded by teachers or other school district personnel on the developmental checklists for almost all of the kindergartners in the study (98.5%, N=3,372). Only 62 percent of the developmental checklists had the MARSS code entered on them in Year Two of the study. Meeting with and discussing directly with principals and teachers the need for someone in their district to provide these codes significantly increased the number completed.

Conclusions

The Minnesota School Readiness Year Three Study of children's developmental assessment at kindergarten entrance in the fall of 2004 gives a picture of the development of the kindergartners in a strategic sample of Minnesota school districts during the first weeks of school. The data for each district yield information on 32 indicators in five domains of development – personal and social, language and literacy, mathematical thinking, the arts, and physical development – that can be compared to the baseline data on the same 32 indicators obtained in the Year Two study. The Year Three data also provide information reported by parents on parents' highest level of school completed, household total yearly income before taxes, race/ethnicity of the kindergartner, and language spoken most at home. These results will be useful to public school administrators and teachers and early childhood care and education teachers, providers, and administrators as well as parents, policymakers, and community members in local communities as they work to improve children's school readiness and school success.

About Child Assessment Results

1. **As in the fall of 2002 and 2003, children in this sample in the fall of 2004 again entered kindergarten with a range of skills, knowledge, behaviors, and accomplishments**. Study results reflect the great variability in young children's knowledge and skills as is evident in observing any group of young children and borne out by research. It is not appropriate to expect that all children will come to school with the same level of skills and knowledge in all areas of development. This variability is more evident as each set of data from each school district and elementary school building is examined carefully. Results ranged from one district having all kindergartners in their district demonstrate 78 percent or higher average proficiency in all five domains to one school having average "proficiency" ratings ranging from two to 24 percent across the five domains, with less than a fourth of all kindergartners in the district demonstrating proficiency in any of the domains. As reported previously, when examining the percent of the average "proficiency" ratings across the school districts, nine of the districts reported average "proficiency" ratings above 50 percent in all five domains, one district showed ratings above 50 percent in four of the five domains, three districts reported three domains where average "proficiency" ratings were over 50 percent, three were under 50 percent proficiency in four of the five domains, and four districts reported average "proficiency" ratings below 50 percent in all five domains.

   In all of the developmental domains assessed in the study, a certain percentage of children entering kindergarten in most schools did not yet show the indicators of focus. Eight

districts had less than ten percent average “not yet” ratings in all five domains, two districts had only one domain with a ten percent or higher average “not yet” rating, six districts had two or three domains with ten percent or more average “not yet” ratings, and four districts had average “not yet” ratings of ten percent or higher in four or all five domains. Based on findings from similar studies in other states and national studies, children not yet showing the expected knowledge, skills, behaviors, and accomplishments are more likely than children who can perform the indicators to live in poverty or experience other risk factors making them vulnerable for school failure. Early childhood teachers, providers, and administrators; schools; policymakers; and community members have a particular responsibility to focus special attention and resources on these children if they are to catch up to their peers and achieve in school.

In some districts and schools where a higher percentage of children enter school not yet showing the expected knowledge, skills, behaviors, and accomplishments, careful review of the results is needed, and extensive and intensive school readiness preparation activities may be warranted for children. Also, more information and education should be made available to parents and early childhood education and care teachers and providers. In school districts where many or most children show proficiency on the assessed knowledge, skills, behaviors, and accomplishments and fewer of the children are inconsistent in or not yet demonstrating these skills and abilities, careful examination is needed of teaching practices used in early childhood education and care prior to kindergarten. Study results may be particularly useful in planning staff development activities in these and other districts, programs, and communities.

2. **In this sample, parent education level, family income, race/ethnicity, and language spoken most often at home appear to be related to readiness level**. In all five developmental domains assessed – language and literacy, mathematical thinking, personal and social development, the arts, and physical development – the percentage of kindergartners “not yet” showing the skills, areas of knowledge, or specific sets of behaviors or accomplishments is highest for the children of parents with the least education and in the lower income levels. Children of color showed higher average “not yet” ratings in the five domains than white/Caucasian children, but the differences were not as great as they were in regard to parent education level and household income. Children who most often spoke a language other than English at home showed high average “not yet” ratings in language and literacy (ranging from 21-45%) and mathematical thinking (ranging from 20-48%), but did not show average “not yet” ratings much different than the sample average in the other three domains. The exception is for those for whom the Somali

language was the language spoken most often at home where average "not yet" ratings were high in all domains (ranging from 19-48%). The results on Somali children need to be viewed with caution because of the small number of Somali children assessed. The results on parent education level, family income, race/ethnicity, and language spoken most often at home are consistent with research showing the impact of poverty, parent educational level, race/ethnicity, and language spoken most often at home on children's school readiness and school success (Child Trends Data Bank, 2005; Coley, 2002; Denton & Germino-Hausken, 2000; Gershoff, 2003; Hart & Risley, 1995; Lara-Cinisomo, Pebley, Vaiana, Maggio, Berends, & Lucas, 2004; Lee & Burkam, 2002; National Governors Association, 2005; National Research Council & Institute of Medicine, 2000; Wertheimer & Croan, 2003; Zill & West, 2000).

3. **Female kindergartners in this study showed fewer average "not yet" readiness ratings in all domains than males.** In all five domains the males showed a higher average percent in the "not yet" category of readiness than the females, ranging from a three-five percent difference depending upon the domain. This finding is consistent with the research on gender and school achievement (Coley, 2002; Wertheimer & Croan, 2003; Zill & West, 2000).

About the Study Process

Using performance-based assessment such as the Work Sampling System is appropriate when working with elementary school principals and kindergarten teachers to assess children's readiness as they enter kindergarten. Many kindergarten teachers are familiar with the Work Sampling system of child assessment because they have used it to assess children in Title I in Minnesota. Teacher training for this assessment is essential, and most kindergarten teachers have participated in the needed training and have experience using Work Sampling. Therefore, teachers were able to use the same observation and documentation skills used for Title I assessment to rate the school readiness of children over a six to eight week period upon entering kindergarten. These teacher ratings can in turn be aggregated and analyzed to provide a meaningful developmental picture of the school readiness of a sample of Minnesota kindergarten children. Based on three years of experience implementing the study, the process can continue to be improved, particularly in ongoing training in use of the Work Sampling System with accompanying studies of reliability.

Recommendations

The developmental assessment findings from the *Minnesota School Readiness Year Three Study: Developmental Assessment at Kindergarten Entrance Fall 2004 –PROMOTING SCHOOL READINESS IN LOCAL COMMUNITIES WITH A STRATEGIC SAMPLE OF SCHOOL DISTRICTS* adds to the pool of information we have for better understanding and responding to the school readiness needs of Minnesota children both before they begin school and once they enter kindergarten. The individual school district reports and plans for their use in local communities provides information that can be used to enhance and create activities that promote school readiness and increase the proficiency of young children as they enter kindergarten. The information obtained on a strategic sample of children entering kindergarten provides further evidence of what needs to be done to ensure that each Minnesota child enters school ready for success and is greeted by an environment that has the capacity to address the diverse needs of every child. The following are recommendations for action with regard to study findings.

About Child Assessment Results

1. **Continue to support parents in their role as children's first teachers**. Parents are children's first and most important teachers and are critical to their children's success in school. Because of this they should have access to the information and support they need regarding parenting. Providing information to parents about developmentally appropriate ways in which they can extend their children's learning through everyday activities and routines is one way this can be done. Providing parent education choices to parents to inform and enhance their parenting skills is another important way information and support regarding parenting can be provided to parents. This is particularly important for parents with lower family incomes and those with lower education levels as well as those from diverse communities representing immigrants and English language learners.

2. **Continue to increase schools' ability to respond to the varying needs of children as they enter kindergarten**. The results of all three Minnesota School Readiness Studies confirm that children come to kindergarten with variability in their skills, knowledge, behaviors, and accomplishments. Some of this may be due to the lack of opportunities some children are given to express their capabilities. Although much can be done during the child's early years to enhance these skills, knowledge, behaviors, and accomplishments, variability is normal for children entering kindergarten. Schools need to be prepared to address this variability. School district and community leaders including superintendents, principals, kindergarten teachers, the business and faith

communities, local policymakers, early childhood education teachers and caregivers, and parents can use results from the three years of study as they work together to identify best practices for supporting children's and their parents' transition into and success in the K-12 school system.

3. **Focus on improving children's early language and literacy and mathematical skills but not to the neglect of their personal and social skills and development in all areas**. The developmental data from all three years of the study show that these samples of Minnesota kindergartners are less proficient in the domains of language and literacy and mathematical thinking when they enter kindergarten than they are in the other three domains studied – physical development, the arts, and personal and social development. Early language and literacy and math experiences that are age and developmentally appropriate should be included within the everyday activities of all children by parents, teachers, and caregivers. In doing so, care should be taken to avoid pushing academic activities for school-age children down to lower age levels inappropriately. In addition, personal and social development and all other areas of development should not be neglected because of their recognized importance to school readiness and school success.

   Teachers and providers can examine indicators within the developmental domains where children are more and less proficient and target teaching strategies accordingly. For example, in language and literacy, the indicators in which kindergartners were consistently shown to enter school with the lowest level of proficiency were in demonstrating phonological awareness; using letter-like shapes, symbols, and letters to convey meaning; using expanded vocabulary and language for a variety of purposes; and beginning to develop knowledge about letters. In mathematical thinking, beginning to use simple strategies to solve mathematical problems was consistently at low proficiency compared to other indicators. The level of proficiency by indicator varied from district to district and school to school.

4. **Target more comprehensive, intensive education and services to those children (and their families) most likely to not yet show the skills, knowledge, behaviors, and accomplishments expected of children as they enter kindergarten**. Programs that are more comprehensive and offer intensive education provide needed opportunities to children who are considered at-risk or with special needs who are likely to struggle when they begin kindergarten and fall further behind as they continue in school. Based on study findings, paying particular attention to children in lower income categories and whose parents have the least amount of education is especially important.

5. **Enhance school and community supports for improving the school readiness and success of children in specific communities**. One of the objectives of the Year Three study was to engage communities in planning to increase the percentage of children ready for school success. The regional Community Workshops for dissemination and discussion of study results were intended to promote creation of or building upon local school readiness efforts. Communities can encourage using the results of the three years of the Minnesota School Readiness studies to take local action to: (1) further involve parents in their children's learning and education, (2) enhance local early childhood education and care programs and services, (3) promote meaningful transition to kindergarten activities for children and parents, and (4) improve schools' ability to address the needs of children and parents as they enter kindergarten.

6. **Continue to work toward improving the quality of early childhood education and care programs in Minnesota**. Research tells us that children's development and learning is positively affected if early childhood education and care programs are of high quality. Quality early childhood education and care programming is of particular importance in helping to reduce the number of children who have inconsistently or not yet acquired the skills, knowledge, behaviors, and accomplishments expected as they enter kindergarten. The high number of Minnesota young children cared for on a regular basis by someone other than a parent or attending an early childhood program outside the home (Legislative Commission on the Economic Status of Women, 2004) heightens the importance of this recommendation.

The 30 (in 2002) and 32 (in 2003 and 2004) indicators assessed in the Minnesota School Readiness Studies for the past three years are aligned with the newly updated *Early Childhood Indicators of Progress: Minnesota's Early Learning Standards* (ECIP) (2005). These indicators are intended for use by all who work with young children ages three to five and their families to help guide curriculum, instruction, and assessment decisions with children this age. The results of this study can play a role in improving quality in early childhood education and care. District by district and community by community, the proficiency results reflected on the 32 individual indicators can be used by teachers and providers to inform daily instruction to address areas where children are showing the least proficiency. The 32 indicators in the developmental checklist used in the Minnesota School Readiness Studies are only a sample of indicators to observe across the full range of development reflected in the indicators contained in the ECIP. Teachers and caregivers can expand beyond the 32 indicators assessed in the studies and use all the indicators in the ECIP to guide their curriculum, instruction, and assessment planning and implementation.

7. **Consider implications for adult education and family literacy programs and programs geared toward increasing job skills and consequent family income level**. Study results over the past three years have consistently shown that levels of readiness appear to be related to a parent's education level and household income. These findings point to the value of adult education and family literacy programs that have as their focus increasing the literacy of parents as well as children, thereby improving the ability of parents to secure better employment at the same time as they work to support their children's development in language and literacy and other areas of development. Other types of efforts focused on increasing job skills and consequent family income seem of equal importance to long-term changes in the literacy and school readiness and success of young children.

Future Directions

1. **Consider alternatives for continuing the Minnesota School Readiness Studies: Developmental Assessment at Kindergarten Entrance.** In addition to interest in expanding the study to more school districts and kindergartners, there is interest in continuing to assess all or a sample of the children assessed in the Year Three study in first grade and beyond, possibly through third grade, in order to observe child progress and determine the link between indicators of school readiness at kindergarten entrance and performance on third grade Minnesota Comprehensive Assessment tests.

2. **Provide ongoing training to kindergarten teachers in use of the Work Sampling System of child assessment.** In order for teachers to do performance assessment accurately, in-depth initial training in the process is required before beginning use of the assessment. As new kindergarten teachers enter districts involved in the study, they need to receive this training. Also, ongoing training of teachers and monitoring of the quality of the data collected are essential to accurate measurement. In addition, reliability studies need to be done regarding the accuracy of the data collected to assure that results are consistently accurate and reliable.

3. **Study the relationship of early childhood education and care experiences to school readiness**. Questions continue to be raised about the relationship of early childhood education and care experiences to school readiness, especially in a state where approximately 77 percent of mothers of preschoolers work outside the home (Legislative Commission on the Economic Status of Women, 2004). As indicated previously, Year Two study results supported the assumption that there are likely inaccuracies in the early childhood education and care experiences recorded by parents on a

survey. At a minimum, telephone interviews are recommended to be done with parents to secure accurate information regarding prior early childhood education and care experiences. Questions about family mobility, the number of changes children have in early childhood education settings/caregivers in the year prior to kindergarten entrance, and the number of transitions children make during a day from one setting to another should be included as part of telephone interviews with parents.

References

Campbell, F. A., Ramey, C. T., Pungello, E., Sparling, J., & Miller-Johnson, S. (2002). Early childhood education: Young adult outcomes from the Abecedarian project. *Applied Developmental Science, 6*(1), 42-57.

Child Trends. (October 2001). *Child trends research brief – school readiness: Helping communities get children ready for school and schools ready for children*. Washington, DC: Child Trends.

Child Trends. *Child trends databank indicator: Early school readiness*. Retrieved April 20, 2005 from URL: http://www.childtrendsdatabank.org/indicators/7EarlySchoolReadiness.cfm. Original data from the National Household Education Survey.

Coley, R. J. (2002). *An uneven start: Indicators of inequality in school readiness.* Princeton, NJ: Educational Testing Service.

Denton, K., & Germino-Hausken, E. (2000). *America's kindergartners*. Washington, DC: U. S. Department of Education, National Center for Education Statistics.

Dichtelmiller, M. L., & Jablon, J. R. (1993). *The work sampling system professional development guide*. Ann Arbor, MI: Rebus.

Dichtelmiller, M. L., Jablon, J. R., Dorfman, A. B., Marsden, D. B., & Meisels, S. J. (2001). *Work sampling in the classroom: A teacher's manual*. Ann Arbor, MI: Rebus.

Dichtelmiller, M. L., Jablon, J. R., Marsden, D. B., & Meisels, S. J. (2001). *Preschool-4 developmental guidelines (4th Ed.).* New York: Rebus.

Gershoff, E. (November 2003). *Living at the edge research brief no.4: Low income and the development of America's kindergartners*. New York: National Center for Children in Poverty.

Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children*. Baltimore, MD: Brookes Publishing.

Hills, T. (1992). Reaching potentials through appropriate assessment. In S. Bredekamp & T. Rosegrant (Eds.). *Reaching potentials: Appropriate curriculum and assessment for young children, Vol. 1* (pp. 43 – 63). Washington, DC: National Association for the Education of Young Children.

Lara-Cinisomo, S., Pebley, A. R., Vaiana, M. E., Maggio, E., Berends, M., & Lucas, S. R. (2004). *A matter of class: Educational achievement reflects family background more than ethnicity or immigration*. Santa Monica, CA: Rand Corporation.

Lee, V. E., & Burkam, D. T. (2002). *Inequality at the starting gate: Social background differences in achievement as children begin school*. Washington, DC: Economics Policy Institute.

Legislative Commission on the Economic Status of Women. (January 2004). *Fact sheet: Mothers in the labor force, Minnesota and U.S*. 2000. St. Paul, MN: Legislative Commission on the Economic Status of Women.

Maxwell, K. L., & Clifford, R. M. (2004). Research in review: School readiness assessment. *Young Children, 59*(1), 42-46.

Minnesota Department of Education. (2003). *Minnesota school readiness initiative: Developmental assessment at kindergarten entrance fall 2002 pilot study*. Roseville: Minnesota Department of Education.

Minnesota Department of Education. (2004). *Minnesota school readiness year two study: Developmental assessment at kindergarten entrance fall 2003*. Roseville: Minnesota Department of Education.

Minnesota Department of Education and Minnesota Department of Human Services. (2005). *Early childhood indicators of progress: Minnesota's early learning standards*. Roseville: Minnesota Department of Education.

National Education Goals Panel (February 1998). *Ready schools*. Washington, DC: National Education Goals Panel.

National Governors Association (2005). *Building the foundation for bright futures: Final report of the NGA task force on school readiness.* Washington, DC: National Governors Association.

National Research Council & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Washington, DC: National Academy Press.

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 the American Medical Association, 285*(18), 2339-2346.

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.* Ypsilanti, MI: High/Scope Press.

Scott-Little, C., & Niemeyer, J. (2001). *Assessing kindergarten children: What school systems need to know*. Greensboro, NC: SERVE.

Wertheimer, R., & Croan, T. (December 2003). *Attending kindergarten and already behind: A statistical portrait of vulnerable young children.* Washington, DC: Child Trends.

Zill, N., & West, J. (2000). *Entering kindergarten: A portrait of American children when they begin school*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Parent Survey
Minnesota School Readiness Initiative

Dear Kindergarten Parent,

Please help us learn about your kindergarten child and your family as part of a school readiness study. Neither you nor your child will be identified in the published study report.

If you choose to answer the questions, summary information only, not individual family information, will be used by the Minnesota Department of Education for this study.

Thank you for your help!

USE A NO. 2 PENCIL ONLY 

Family Information

1 Please indicate whether you are:

○ **Mother** ○ **Father** ○ **Other**

2 Your highest level of school completed? Mark only one.

- ○ Less than high school
- ○ High school diploma/GED
- ○ Trade school or some college beyond high school
- ○ Associate degree
- ○ Bachelor's degree
- ○ Graduate or professional school degree

3 Your household's total yearly income before taxes? Mark only one.

- ○ $0 - $35,000
- ○ $35,001 to $55,000
- ○ $55,001 to $75,000
- ○ $75,001 or more

4 Race/ethnicity of your kindergarten child? Mark all that apply.

- ○ Black/African/African American
- ○ American Indian/Alaskan Native
- ○ Asian/Native Hawaiian or other Pacific Islander
- ○ Hispanic or Latino
- ○ White/Caucasian
- ○ Other

5 What language does your family speak most at home? Mark only one.

- ○ English
- ○ Spanish
- ○ Hmong
- ○ Somali
- ○ Vietnamese
- ○ Russian
- ○ Other

PEARSON Early Learning

Stop here. Thank you. Teacher completes other side.

FOR TEACHER COMPLETION ONLY

The Minnesota Work Sampling System®
Kindergarten Entry
Developmental Checklist

INSTRUCTIONS

CORRECT: ●
INCORRECT: ✓ ✗ ◒ ⊙

USE A NO. 2 PENCIL ONLY

Choose One ○ FEMALE ○ MALE

Does this student have an IEP or IIIP? ○ yes ○ no

BLDG CODE	MARSS CODE	DATE OF BIRTH Month	DATE OF BIRTH Year
			19
0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0	0 0
1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1	1 1
2 2	2 2 2 2 2 2 2 2 2 2 2 2 2 2	2 2	2 2
3 3	3 3 3 3 3 3 3 3 3 3 3 3 3 3	3 3	3 3
4 4	4 4 4 4 4 4 4 4 4 4 4 4 4 4	4 4	4 4
5 5	5 5 5 5 5 5 5 5 5 5 5 5 5 5	5 5	5 5
6 6	6 6 6 6 6 6 6 6 6 6 6 6 6 6	6 6	6 6
7 7	7 7 7 7 7 7 7 7 7 7 7 7 7 7	7 7	7 7
8 8	8 8 8 8 8 8 8 8 8 8 8 8 8 8	8 8	8 8
9 9	9 9 9 9 9 9 9 9 9 9 9 9 9 9	9 9	9 9

LEGEND

- (N) **Not Yet**—child cannot demonstrate indicator
- (I) **In Process**—child demonstrates indicator intermittently
- (P) **Proficient**—child can reliably demonstrate indicator

The Work Sampling System ***Preschool–4 Developmental Guidelines*** (4th edition) contains full descriptions of each performance indicator. (Number in parentheses indicates the page in the Guidelines where the indicator is described.)

I Personal and Social Development

A Self concept — Fall

1 Shows some self-direction. (p. 1) (N) (I) (P)

B Self control — Fall

1 Follows simple classroom rules and routines. (p. 1) (N) (I) (P)
2 Manages transitions. (p. 2) (N) (I) (P)

C Approaches to learning — Fall

1 Shows eagerness and curiosity as a learner. (p. 2) (N) (I) (P)
2 Attends to tasks and seeks help when encountering a problem. (p. 2) (N) (I) (P)
3 Approaches tasks with flexibility and inventiveness. (p. 3) (N) (I) (P)

D Interaction with others — Fall

1 Interacts easily with one or more children. (p. 3) (N) (I) (P)
2 Interacts easily with familiar adults. (p. 3) (N) (I) (P)
3 Shows empathy and caring for others. (p. 4) (N) (I) (P)

E Social problem-solving — Fall

1 Seeks adult help when needed to resolve conflicts. (p. 4) (N) (I) (P)

II Language and Literacy

A Listening — Fall

1 Gains meaning by listening. (p. 5) (N) (I) (P)
2 Follows two- or three-step directions. (p. 5) (N) (I) (P)
3 Demonstrates phonological awareness. (p. 5) (N) (I) (P)

B Speaking — Fall

1 Speaks clearly enough to be understood without contextual clues. (p. 6) (N) (I) (P)
2 Uses expanded vocabulary and language for a variety of purposes. (p. 6) (N) (I) (P)

C Reading — Fall

1 Shows appreciation for books and reading. (p. 6) (N) (I) (P)
2 Shows beginning understanding of concepts about print. (p. 7) (N) (I) (P)
3 Begins to develop knowledge about letters. (p. 7) (N) (I) (P)
4 Comprehends and responds to stories read aloud. (p. 7) (N) (I) (P)

D Writing — Fall

1 Represents ideas and stories through pictures, dictation, and play. (p. 8) (N) (I) (P)
2 Uses letter-like shapes, symbols, and letters to convey meaning. (p. 8) (N) (I) (P)

III Mathematical Thinking

A Mathematical processes — Fall

1 Begins to use simple strategies to solve mathematical problems. (p. 11) (N) (I) (P)

B Number and operations — Fall

1 Shows beginning understanding of number and quantity. (p. 11) (N) (I) (P)

C Geometry and spatial relations — Fall

1 Begins to recognize and describe the attributes of shapes. (p. 12) (N) (I) (P)
2 Shows understanding of and uses several positional words. (p. 12) (N) (I) (P)

IV The Arts

A Expression and representation — Fall

1 Participates in group music experiences. (p. 21) (N) (I) (P)
2 Participates in creative movement, dance, and drama. (p. 21) (N) (I) (P)
3 Uses a variety of art materials for tactile experience and exploration. (p. 21) (N) (I) (P)

B Understanding and appreciation — Fall

1 Responds to artistic creations or events. (p. 22) (N) (I) (P)

V Physical Development and Health

A Gross motor development — Fall

1 Coordinates movements to perform simple tasks. (p. 23) (N) (I) (P)

B Fine motor development — Fall

1 Uses eye-hand coordination to perform tasks. (p. 24) (N) (I) (P)

C Personal health and safety — Fall

1 Performs some self-care tasks independently. (p. 24) (N) (I) (P)

For teacher use only

K
Minnesota Edition