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Minn-LInK/CEED Data Partnership Feasibility Study MELF Evaluation Report

Submitted to the Minnesota Early Learning Foundation (MELF) by the CEED Evaluation Team in Collaboration with Minn-LInK Staff

Project Overview

The Minnesota Early Learning Foundation (MELF) set out in 2007 to increase the evidence base on which early care and education practices effectively promote the school readiness of children from families who are low income or otherwise at-risk. At the end of 2011, MELF will have collected data from 1100 children connected to MELF-sponsored programs, as well as from their parents, teachers, and community partners, among others. These data comprise the most contemporary early childhood database documenting the early care and education experiences of low-income children in Minnesota. To ensure that this repository of data continues to be of use in future years, the Center for Early Education and Development (CEED) has partnered with the Center for Advanced Studies in child protective services (CASCW) at the University of Minnesota to combine the MELF Early Childhood Dataset with data provided by CASCW from the Minnesota Departments of Education (MDE) and Human Services (DHS) to supplement the data collected during the MELF evaluations with additional demographic, educational, and child protective services data collected during the preschool and school years. The intent is to track the progress of these children at successive points in their education careers in Minnesota.

CASCW is able to merge data from state agencies through a project called Minn-LInK. Minn-LInK was developed in response to the knowledge that the most vulnerable children and families are likely served in multiple systems, yet there was no method in place to form broader pictures of multi-system involvement. The Minn-LInK project uses state administrative data from multiple agencies, including the Minnesota Departments of Human Services, Education, and Public Health, to answer questions about the impacts of policies, programs, and practice on the well-being of children in Minnesota. Minn-LInK is intended to produce reports that have implications for practice, policy, or both, and build upon the work of other state agencies and university researchers. Findings of Minn-LInK studies are disseminated to relevant stakeholders and used to create training for child protective services professionals.

Purpose

The overall purpose of this study is to track the progress of children in MELF funded programs as they age to see if their participation in quality early care and education programming affects their success in school during the elementary, and potentially, the middle and high school years.



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Our plan is to track children at least through third grade when their first round of state achievement test results will be available. This data will be available for all children in MELF funded programs in the spring of 2016. By linking this data from the MDE to our MELF Early Childhood Dataset we can describe the educational achievement of children in MELF funded programs and explore how their achievement may vary by the quality of their early care and education experiences. We will also use additional data from MDE and the DHS to provide contextual information about the children involved in MELF-funded programs and their families. This is data we were unable to collect during the evaluations that will help explain the extent of their educational success during the school years (e.g., involvement with child protective services, free and reduced lunch status in elementary school, and attendance and mobility in the elementary school years). The DHS data will be used in an additional analysis focused specifically on one of the potentially most at-risk subgroups in our sample, children with involvement in child protective services, and how they fared compared to their counterparts in MELF funded programs without such involvement.

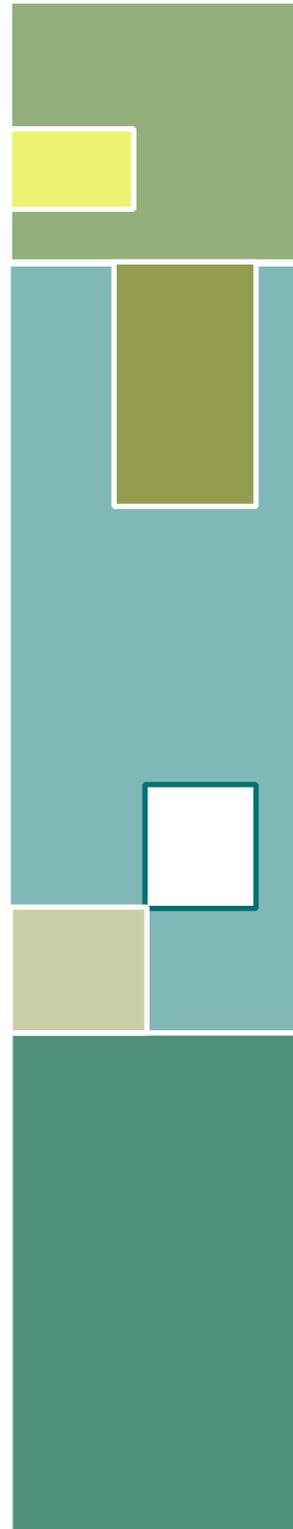
This report is a preparatory assessment of the feasibility of the future research described above, an initial analysis of the child protection involvement of the children in MELF funded programs, and a description of the educational experiences of a subset of children who entered Kindergarten in 2009 (hereafter referred to as the Kindergarten follow-up).

This report is divided into several sections. The first section describes the processes used to determine the feasibility of future research, in which we describe the methods used to collect the initial data and the process involved in matching the children to the education and child protective services datasets from MDE and DHS. The second section describes the child protection involvement in the years prior to Kindergarten entry for the full sample of 1100 children. The third section includes a description of the education experiences for the sub-sample of children who entered Kindergarten in 2009 and who have available education data. In the fourth section we describe the creation of a risk index, tested with the Kindergarten Follow-up subsample of children that would be used to identify those children most at risk. Finally, the last section details the next steps in tracking these children as they age.

FEASIBILITY OF TRACKING CHILDREN IN MELF FUNDED PROGRAMS INTO THE K-12 SYSTEM

Sample Description

MELF Early Childhood Dataset. The MELF early childhood database consists of data from 1100 preschool-aged children from the years 2008 through 2011. Data were





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first collected in spring '08 and then every fall and spring through fall '11. Children participated in one of the early care and education programs or evaluations funded by MELF: the Parent Aware Quality Rating Systems Pilot Evaluation (Parent Aware), the Bloomington Kindergarten Prep half-day pre-K program (KP), or the St. Paul Scholarship Program (Scholarship). The early childhood database contains one year of fall and spring data for most children during their final year of preschool prior to Kindergarten entry, although data from children from the Scholarship evaluation were collected on a fall/fall schedule. Child assessments were completed on several facets of the children's achievement including math reasoning, literacy, word recognition, as well as their social emotional behaviors, and were completed both by trained assessors and the child's teacher. Each early care and education (ECE) programs were observed for quality using the Early Childhood Environmental Rating Scales-Revised (ECERS-R; Harms, Clifford, Cryer, 2005) and for some, depending upon the evaluation plan, the Classroom Assessment Scoring System (CLASS Pre-K; Pianta, La Paro, Hamre 2008). Finally, parent interviews developed by the MELF Research Consortium were conducted by telephone each year, with 66% of the 1100 children's parents responding. Parents were asked a variety of questions on topics such as their child care arrangements, beliefs about the importance of the different aspects of child care, and demographics.

Kindergarten Follow-up sample. Approximately 242 of the 1100 children in the full MELF sample were to enter Kindergarten in fall of '09, the Kindergarten follow-up sample. The parents of these children were contacted for their permission to collect additional data in the spring of their Kindergarten year (2010). Of the 242, 116 children and parents were found and consented to the Kindergarten Follow-Up Study. Data measuring children's academic achievement and social-emotional behavior, similar to the battery collected during the preschool period, were collected. The K-3 version of the CLASS measure (CLASS K-3; Pianta, La Paro, Hamre, 2008) was used to assess the quality of their classrooms.

Minnesota Department of Education State Education Database. Data from the Minnesota Department of Education from the school year 2009-10 were available for as many as 242 children entering Kindergarten that year. Education data contained information on student's attendance ratios for the school year, special education status, primary disability (if any), district types and numbers, and disruptions in school placement.

Minnesota Department of Human Services State Child Welfare Database. Child protective services data from the Minnesota Department of Human Services was available from 2000-10. The child protective services data included information on any accepted child maltreatment reports of neglect and/or abuse, determinations of child maltreatment and out of home placements from the time of birth to their



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current age. This dataset also included information on the family’s conditions at the time of the accepted child maltreatment report and whether the family received a Family Assessment response or a Family Investigative response. These data were available for up to the total of 1100 children in the full dataset.

Matching Process

Registry Plus Link Plus (2010), a probabilistic record matching software used by the Center for Disease Control (CDC) was used for linking the data across systems. The software utilizes a combination of first name, last name and birth dates for linking and matching records. Two separate matching attempts were undertaken to link the MDE and DHS datasets from Minn-LInK with the MELF Early Childhood dataset and Kindergarten Follow-up sample from CEED.

1) All 1100 children in the full MELF dataset were compared to the available data from the Minnesota Department of Human Services. Of the 1100 children in the full dataset, 101 (9%) were found in the human services dataset due to involvement with child protective services. (See Table 1.)

2) The 242 children in the Kindergarten Follow-up sample were also matched to data from the Minnesota Department of Education. Of the 242 children in the Kindergarten sample, 196 (81%) were found in the education dataset. (See Table 1.) The rest of the children in the full dataset had not reached Kindergarten so at this point, no attempt was made to match them with the education data; however, this is a goal for future analyses. Some of the potential reasons that children could not be matched to the education dataset include, moving out of state, enrollment in a private school, or a name change.

Table 1. Number and percentage match rate for Kindergarten follow-up and Full Sample, by program subgroup

	Number (%) in Sample	Number (%) Matched to MDE	Match Rate	Expected Future Match Rate
Bloomington K Follow-up Only	101 (42%)	68 (35%)	67 %	---
Parent Aware K Follow-up Only	141 (58%)	128 (65%)	91%	---
Full K-Follow-up	242 (100%)	196 (100%)	81%	---
Parent Aware	701 (64%)	---	---	638 (91%)
Scholarship	258 (24%)	---	---	209 (81%)
Bloomington	141 (12%)	---	---	94 (67%)
Full Sample	1100 (100%)	---	---	941 (86%)



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Children from the Bloomington evaluation were only in the 2008-09 preschool cohort, representing a small percentage of the full 1100. Children from the Parent Aware evaluation represent a majority of both the Kindergarten and full datasets. No children from the Scholarship evaluation entered Kindergarten in fall of 2009 and so they are represented in the full sample only.

Based on the match rates for the different sub-groups in the Kindergarten sample, a match rate of approximately 86% is expected for the full sample when they are eventually matched to the education data. This estimate was achieved by taking the match rates from the Parent Aware and Bloomington sub-samples in the Kindergarten Follow-up and extending those rates to future cohorts. Children from Bloomington proved harder to match than children from Parent Aware in the Kindergarten sub-sample so we expect that when later cohorts of only Scholarship and Parent Aware children are matched they will achieve rates similar to those of the PA Kindergarten sub-sample thus raising the rate for the entire sample.

The high match rate that was achieved for the Kindergarten sample and the expected even higher rate for the full dataset demonstrate the feasibility of tracking this group of children as they age. Although we expect the match rate to improve with additional cohorts, the one achieved with the Kindergarten Follow-up sample was still very high and if a similar rate was achieved with the full sample we would consider it a success. Attrition will continue over the years, but we expect a high percentage of children will remain in the sample when the last cohort finishes third grade.

CHILD PROTECTION INVOLVEMENT DESCRIPTION AND ANALYSIS

Description

The DHS child protective services dataset includes data collected from birth, allowing us to match it to the full set of children in MELF funded programs. Of the 1100 that had MELF assessment data, 101 (9%) were found as alleged child maltreatment victims between birth and their current age as of September 2009. The following analyses will focus on these 101 children. There was no relation between gender of the child and involvement with child protective services. Of the 101 children involved with child protective services, 52 were females and 49 were males.

Table 2 represents the number of accepted reports of child maltreatment for children with child protective services involvement. The 101 children in the full sample who were also involved with child protective services had 127 unique accepted reports of alleged child maltreatment. The number of accepted reports for the children in the

Kindergarten cohort varied between one and four. More than half (80%) of the children had one report.

Table 2. Total accepted reports of child maltreatment

Number of Reports	Number of Victims (%)
1	81 (80.2%)
2	16 (15.8%)
3	2 (2%)
4	2 (2%)
<i>Total</i>	101 (100%)

Of the types of alleged child maltreatment, 76% were neglect, 19% were physical abuse, 3% were sexual abuse, and a negligible amount was for medical neglect. Accepted reports and alleged child maltreatment can either receive a Family Assessment response or a Family Investigation response from the local child protective services agency. Reports made to local child protective service agencies are first screened to determine whether the report meets the criteria to be assigned for a child protection response. Once a report is accepted, it is assigned to one of two response types – Family Investigation or Family Assessment. Reports of child maltreatment that allege substantial child endangerment must receive an investigation. Depending on the circumstances of a report, the local child protection agency may also decide to assign a report not involving substantial child endangerment for an investigation. Reports that do not allege substantial child endangerment may receive a Family Assessment. This is the preferred response to reports not alleging substantial child endangerment (Minnesota Department of Human Services, 2008). In Minnesota, approximately 68% of accepted reports receive Family Assessment response. Of the 127 unique reports in this sample only 47% received a Family Assessment response while the remaining 53% received a Family Investigation response.

Table 3 displays family conditions at the time of the child maltreatment report. As can be seen below, parenting issues were the most common family condition that was experienced by families in the sample and in Minnesota. However, it appears as though more families in the sample had challenges with substance use/abuse and economic conditions than the overall population of families in Minnesota that were involved with child protective services.

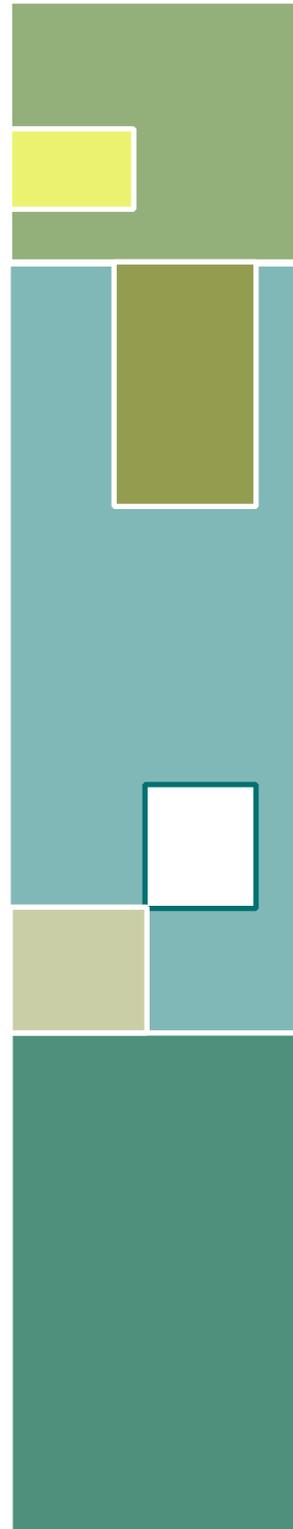


Table 3. Family condition by report

Family Condition	Number of Instances (%)	Percent of Reports, State
None	31 (24.4%)	22.3%
Domestic violence	26(20.5%)	16.2%
Inadequate housing	15 (11.8%)	6.6%
Financial problems	20 (15.8%)	12.5%
Public assistance	28 (22.1%)	18.8%
Alcohol use	18 (14.2%)	10.2%
Drug abuse	22 (17.3%)	12.5%
Mental health	18 (14.2%)	32.5%
Parenting issues	55 (43.3%)	47.9%

* Total is more than the total number of children in child protective services and the total number of reports because many children had more than one family condition at the time of reporting.

Of the 101 children involved with child protective services, 16 were placed out-of-home. Of those 16 children, 94% had one out-of-home placement although the maximum was two.

Analysis

We compared the children with child protective services involvement with a group of children of the same racial/ethnic make-up from the MELF sample without involvement. Race/ethnicity data was missing for 34 of the 101 children with involvement leaving 67 children in each group. We pulled this subsample based on race/ethnicity to be able to examine the differential effects that child protective services involvement might have among children with the same racial/ethnic backgrounds and similar levels of risk. Scores from several measures administered at the beginning of preschool were compared for the two groups, the Woodcock-Johnson III applied problems test of mathematical achievement (WJIII; Woodcock, McGrew, Schrank, & Mather, 2007); the Peabody Picture Vocabulary Test IV (PPVT; Dunn, Dunn, 2005); and the three subscales (anger/aggression, anxiety/withdrawal, social competence) from the Social Competence and Behavior Evaluation-30 (SCBE-30; LaFreniere, Dumas). Additionally we compared the observation scores for their classrooms from the ECERS-R, an observational tool assessing classroom quality conducted throughout their preschool year.

Children with child protective services involvement scored lower on the PPVT and WJIII than children without involvement but not significantly so (see Table 4). Children with involvement attended early care programs of slightly, but not significantly, less quality. However, children with child protective services

involvement were rated as having significantly higher anger/aggression and anxiety/withdrawal in preschool than children without involvement, as measured by these two subscales of the SCBE-30. They also were rated significantly less socially competent, as measured by the third SCBE-30 subscale, than their uninvolved peers.

Table 4. Number, mean, and SD for children with and without child involvement

	With child protective services involvement	Without child protective services involvement	Significance
ECERS			
Number	46	47	
Mean	3.76	3.89	.281
SD	0.69	0.65	
SCBE-30 Anger/aggression			
Number	46	63	
Mean	19.15	14.4	.000
SD	7.53	4.39	
SCBE-30 Anxiety/withdrawal			
Number	45	63	
Mean	19.24	14.54	.001
SD	7.63	4.95	
SCBE-30 Social competence			
Number	42	67	
Mean	37.4	47.04	.000
SD	7.63	4.95	
WJ III			
Number	54	58	
Mean	99	102.9	.159
SD	9.84	18.23	
PPVT IV			
Number	60	66	
Mean	92.72	96.33	.242
SD	16.21	18.33	

Each of the SCBE-30 subscales consists of ten questions, rated on a scale of 1 to 6, where 1 is “Never” and 6 is “Always”. The lowest number of total points possible for each subscale is 10 and the highest is 60. Both children with (mean: 19.15) and



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without (mean: 14.4) child protective services involvement scored on the low end of the scale of anger/aggression although children with involvement are scoring about half a scale point higher for the individual items on average. The average anxiety/withdrawal pattern is very similar to anger/aggression for involved (mean: 19.24) versus uninvolved (mean: 14.24) children. The biggest significant difference was between their average levels of social competence. Uninvolved children (mean: 47.04) scored a full point higher on average on each of the individual scale items as compared to their involved peers (mean: 37.4). Children with involvement were still faring adequately with their scores most often falling in the “Sometimes” and occasionally “Often” range of the scale for items related to social competence.

The significant differences presented here indicate that the need for child protective services involvement may be a unique factor in determining the social functioning of children in MELF funded programs. Data yet to come from the MDE, including information on children’s English language learner status, whether they qualify for free or reduced lunch, and their third grade achievement test results will provide additional specificity when comparing the outcomes of involved children to uninvolved children with an otherwise similar risk profile.

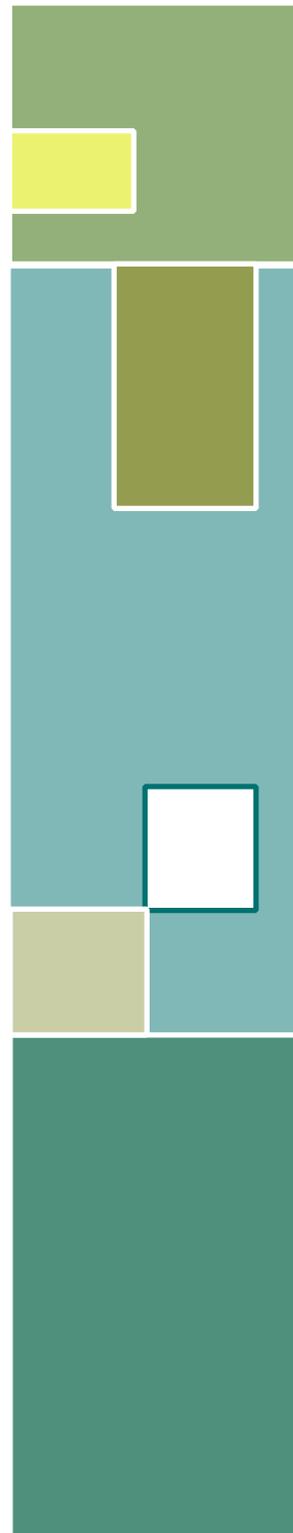
KINDERGARTEN EDUCATION DESCRIPTION

The outcomes of the children who entered Kindergarten in 2009 were detailed in a recent report released by the MELF in May 2011 (MELF Kindergarten Follow-up, 2011). Here we will focus solely on describing the educational situation of those same children using the MDE data. The education data presented here is from the 2009-10 school year. Of the 242 children from the full MELF dataset entering Kindergarten that year, 196 (81%) had data in the education dataset. Less than half of them were male (45%). Most of the children were White (35%), Hispanic (32%), or Black (23%).

Table 5. Racial make-up of K follow-up children who were matched to MDE data

Race	Number (%)
American Indian or Alaskan Native	6 (3%)
Asian or Pacific Islander	14 (7%)
Hispanic	62 (32%)
Black, not of Hispanic origin	45 (23%)
White, not of Hispanic origin	69 (35%)
<i>Total</i>	196 (100%)

English was the most common language spoken in the home (60%) although a sizeable number of children lived in Spanish-speaking homes (27%). Of the 196





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children, 63 (32%) participated in Limited English Proficiency (LEP) programs. Cross tabulations between race/ethnicity and LEP participation suggested that children who participated in LEP were more likely to be Spanish, Hmong or Somali as compared to other racial/ethnic groups.

Around two-thirds of children were living in poverty as determined by their free or reduced lunch status.

More than half of the children (55%) were eligible for free lunch and a smaller percent (10%) were eligible for reduced lunch. Chi square tests suggested significant relationship between White and non-White children and free/reduced meal eligibility ($\chi^2 = 59.872$, $df = 2$ $p < .05$). White children were less likely to be eligible for free or reduced meal (z score = 5, $p < .05$) as compared to non-White children.

Mobility was determined by calculating the total number of district moves for each student and by looking at the school disruptions (reasons for time spent out of school). Of the 196 children in Kindergarten cohort, 85% did not move from one district to another during the school year, 14% of the children moved once and only 1% of the children moved twice during the school year. (See Table 6). Further, of the 196 Kindergarten students, 13 students (7%) experienced disruptions in their education. Of those 13 students who experienced a disruption, 10 (77%) students moved outside of the district, two (15%) students moved outside of the state or country, and one (8%) student was transferred to an approved non-public school.

Table 6. Mobility and school disruptions

Mobility	Disruptions		Total
	No	Yes	
No move	160 (87.4%)	6 (46.2%)	166 (84.7%)
At least one move	23 (12.6%)	7 (53.8%)	30 (15.3%)
Total	183 (100%)	13 (100%)	196 (100%)

Around 9% of children were diagnosed with at least one disability as indicated by having an Individualized Education Program (IEP). The most common disability diagnoses for children were speech/language impairments (6%) and developmental delay (1%). Of the 17 children with a noted disability, 14 were receiving special education services. For the remaining three children, their IEP ended or they met its requirements sometime during the school year.

RISK INDEX

When children arrive at Kindergarten not ready to take full advantage of the learning opportunities, it is often due to the co-occurrence of multiple risk factors, both within



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the child and their family as well as the neighborhood and communities in which they live. Furthermore, the impact of these multiple risks is cumulative, with the likelihood of poor outcomes increasing with each additional risk factor (e.g. Sameroff, Seifer, Barocas, Zax, & Greenspan, 1987). Therefore, in order to best understand the role of quality in ECE settings and children’s Kindergarten readiness and achievement, a familial and environmental risk index was created. The variables in the index are known risk factors for a variety of poor developmental outcomes and we hypothesized that with the addition of each additional risk, developmental outcomes (as measured by the PPVT at the end of Kindergarten) would get increasingly poor.

The risk index was created using variables taken from an interview with the parents of children in MELF funded programs and the MDE dataset. (See Table 7.) This risk index gauges risk using data from primarily the preschool years with the exception of free/reduced lunch (FRL) and English language learner (ELL) status which are from the Kindergarten year. Since the data from MDE are more complete than from the parent interview, a decision was made to use data from MDE when available, as was the case for the FRL and ELL variables. We hypothesize that the two variables from MDE are unlikely to change much over the course of a year and are likely suitable indicators of a child’s economic and language situation in preschool as well Kindergarten.

Table 7. Variables, source, and points for K Follow-up risk index

Variable	Source	Points
Maternal depression	Parent interview	1
Maternal education	Parent interview	2
Low birth weight	Parent interview	1
Job status	Parent interview	1
Health insurance status	Parent interview	1
Free/reduced lunch	MDE	2
English language learner	MDE	1
Marital status	Parent interview	1
<i>Total</i>		10

Of the 196 matched children in the Kindergarten sample, 138 (70%) had a parent who completed an interview. Of the 106 children who were matched and also assessed in the Kindergarten follow-up, 81 (76%) had a corresponding parent interview. Although children could receive a risk score of up to ten points, no child scored more than eight. For the group of 81 children with full data the average risk was 2.86.

Table 8. Number and percentage of children at each risk level

	Kindergarten Follow-up children w/ Parent Int. (n=81)
0 points	19 (23.5%)
1 point	8 (9.9%)
2 points	11 (13.6%)
3 points	8 (9.9%)
4 points	13 (16.0%)
5 points	11 (13.6%)
6 points	7 (8.6%)
7 points	3 (3.7%)
8 points	1 (1.2%)
Total	81 (100%)

Examining the variables included in our risk index, we attempted to highlight if one or two were dominant in determining whether or not a child could be considered high-risk or if the addition of each risk was, in fact, cumulative. Two of these, English language learner and free/reduced lunch, stood out as highly, and significantly, correlated (ELL: $r=.698$, FRL: $r=.847$) with risk as well as with low PPVT standard scores in Kindergarten.

Table 9. Correlations between risk, free/reduced lunch, English language learner (ELL).

	F/R Lunch	ELL	Kindergarten PPVT SS
Risk	.847**	.698**	-.587**
F/R Lunch	---	.588**	-.585**
ELL	---	---	-.540

** $p < 0.01$

As a result of this high correlation between these two factors and the overall risk index, it does not appear that risk is cumulative in this sub-sample of the Kindergarten Follow-Up. Instead, using this data, we can conclude that ELL and free/reduced lunch status confer such high levels of risk for poor outcomes in Kindergarten that the other risk factors don't appear to add any additional risk for poor outcomes. However, once education data from MDE is available for the full sample, we will re-evaluate the use of a risk index to determine the most effective ways to include risk in future analyses.



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NEXT STEPS

The matching process and analysis of the education and child protective services data have provided us with several important lessons for future rounds of analyses.

- 1. We can expect a high match rate when the full dataset is matched with the education data in 2016.** The matching process for the Kindergarten follow-up sample was very successful especially considering the inclusion of the highly mobile Bloomington families. As the percentage of Parent Aware families increases in the full sample, we expect a match rate approaching the one for Parent Aware families in the K sub-sample. A match rate in the mid-80's or slightly less will leave more than 900 children for analysis purposes.
- 2. The education data from Kindergarten provides unique, important information about the family situation of our children.** The education data fills in the gaps in areas where the MELF data are incomplete, like poverty status and home language, and provides additional unique information that we did not collect. With these data we have a much fuller picture of the how our individual children and their families are faring.
- 3. The child protective services data are substantial enough for future analyses examining how preschool quality affects outcomes for children with the greatest family instability.** The 101 children from the full dataset who are involved with child protective services are a large enough group that we can examine their outcomes alone or in comparison to both other at-risk children and with low-risk children among our full sample. The analysis presented here indicates that children with child protective services involvement are rated as having more anger/aggression and anxiety/withdrawal, and less social competence, than similar MELF peers without involvement. When the education data are eventually available for this group we will have additional data such as English language learner and free/reduced lunch status that can be used to match these children with equally at-risk children without child protective services involvement to gauge the unique impact of such involvement.
- 4. When the full dataset is merged with the education dataset in 2016 it will be a fresh opportunity to reconsider past analyses like those related to preschool quality.** One lesson learned from this and previous analyses of the Kindergarten follow-up data is that there were too few very high quality classrooms to be able to separate out, and look closely at, those children receiving truly high quality preschool instruction (as measured by CLASS scores). The small sample size of classrooms observed for the K follow-up kids



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made it impossible to create a distinction between high and low quality in a meaningful way. With the much larger full dataset, the expectation is that enough high quality classrooms will be in the sample to complete an analysis examining all of the dimensions of low-risk/at-risk and low-quality/high quality.

Going forward there is additional work that needs to be done to prepare for final analyses with the education data for the full dataset. This work includes creating two different comparison groups, a propensity matched sample and a sibling sample.

- 1. A propensity matched comparison group using the administrative data from Minn-LInK will be created to compare children in MELF funded programs to children in the Twin Cities with similar family conditions and unknown preschool participation.** For examining the effects of early intervention on child well-being, optimal matching by using a propensity score method will be conducted to produce a comparison group that is comparable to children in MELF funded programs at the school level. This matching procedure removes the pre-existing biases for each data set in the non-experimental design. For developing matched samples for the early intervention group, seven covariates are identified for the analysis. They are District ID, School ID, race/ethnicity, gender, LEP, special education, and Free/Reduced Lunch.
- 2. A comparison group of older siblings from the Scholarship evaluation will be created to compare children who received scholarship with other children with the same family conditions who did not.** For the around 260 children in the Scholarship evaluation additional information is available about their siblings. Minn-LInK will be able to find and match many these siblings based on their names and birth dates. Guided by the premise that the Scholarship acts as an intervention that older siblings did not receive, we surmise that the children in MELF funded programs will see improved outcomes as compared to their next oldest sibling who did not receive the benefit of a scholarship.
- 3. When the last preschool cohort completes third grade their education data will be available for analysis the following year.** In 2016, education data for the final cohort of children will be available through third grade. This data will be similar to the variables used in the K follow-up analysis but will also include achievement scores from the Minnesota Comprehensive Assessments (MCAs) for reading and math. The MCAs scores are an important piece of data that allow us to track the educational progress of children in MELF funded programs and potentially draw conclusions about the role that preschool played when compared to other groups of children, like their peers or siblings.



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