
Gearing Up for Kindergarten
Project Report for United Way of Cass-Clay
Gearing Up for Kindergarten Expanded Research Project
Project Report #1

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Executive Summary

The United Way of Cass-Clay provided funding for an expanded research project on the *Gearing Up for Kindergarten* program to NDSU Extension Service and a research team at North Dakota State University in 2014. The scope of work for the project outlined a series of research projects associated with the program. This document provides an executive summary of the research findings associated with Research Project #1 in the scope of work.

Research Project #1

Extend assessment of a sample of students participating in the *Gearing Up for Kindergarten* program in the 2012-13 year (prior to beginning kindergarten) to a third wave of data collection during the initial year of kindergarten. If possible, compare these students to other incoming kindergarten students.

Background

The academic and social expectations for children entering kindergarten today are more intensive than in previous generations. In order to aid their children in gaining knowledge and self-confidence, parents need to be made aware of and given supportive tools to prepare their children for kindergarten. Parents are a child's first and best teachers, and many parents need and want support in their role of preparing their children for success in school. *Gearing Up for Kindergarten* provides support by improving access to information, providing early learning activities and parent education classes, and partnering with organizations that work with young children and their families to ensure school readiness.

In 2012-2013 the program operated at multiple program sites in Cass County, North Dakota. In Cass County there were 13 local sites with 176 families participating in the program study. This report provides a summary of findings gathered through assessment of participating students in Cass County during the 2012-13 program year and into the initial year of kindergarten (3rd wave of data). A random sample of students participating in the program was generated and included 40 students for a third round of data collection following their entry into kindergarten in 2013. In addition, a comparison sample of 35 students who did not participate in the program was included from the community.

Basic Characteristics of Study Participants

A total sample of 75 participants (40 in the program; 35 not in the program) completed the pre-program survey. Sixty-eight of them completed the post-program evaluation survey in spring 2013. Finally, 58 participants completed the 3rd program survey following the beginning of kindergarten in 2013, with an attrition rate of 25% for the program group and 20% for the

comparison group. Demographic characteristics of participants are reported here. Selected demographic characteristics of families participating in the program are compared between the groups.

Table 1: Comparison of Gearing Up for Kindergarten Participants

| Category | GUK Group | Comparison Group | Significant Difference? |
|---------------------------------------|-------------|------------------|-------------------------|
| Age of parent | 32.15 years | 32.60 years | No difference |
| Average number of children per family | 2.60 | 2.63 | No difference |
| Education level of parent | 3.90 | 4.29 | No difference |
| Eligible for free/reduced lunch | 32.5% | 25.7% | Small difference |

The important thing to note here is that there were not substantial differences between the two groups with regard to basic characteristics, although children in the comparison group had parents with a slightly higher education level and financial status than children in the Gearing Up for Kindergarten group.

Key Selected Findings from Study Participants – School Readiness

In order to further understand how children in the year prior to kindergarten and then during kindergarten progress with regard to ability level on key items of school readiness, parents assessed the child’s ability level on selected indicators at three different time periods. The first two time periods were before participation in the program and after participation in the program, although the comparison group did not participate in the program. The last time period was several months into the kindergarten school year.

One of the identified goals for the Gearing Up for Kindergarten program is that participating children will show significant progress in being prepared to be successful in cognitive, social, emotional, and practical domains as they enter kindergarten. To get a sense of where parents perceived their children to be in regard to school readiness, a brief assessment tool called the Practical Parent Assessment for School Readiness (PPASR) was completed. This short survey asks parents to rate their children on a 5-point scale in five key areas of development related to school readiness (a total of 17 items). Parents are asked to rate how their child typically thinks and behaves for each item.

In addition, a section of evaluation was used in the process which examined both parent and child feelings and experiences related to school knowledge and familiarity. Parents were asked to assess their child’s familiarity with school, peers, and routines, as well as their feelings and comfort level in varying aspects of the school-related experience. Similarly, parents rated themselves also on familiarity with school, teachers, and routines, as well as comfort level and familiarity with school personnel and routines. These questions were asked either on a “yes/no” basis or a response scale of 1 to 4, with 1 = not at all to 4 = to a great extent.

The tables below provide further information on the average mean scores recorded for children at each time period and the score differences over time.

Table 2: Learning and Exploration – School Readiness Scores

| Question My child typically: | Group Type | Time 1 Score (Start) | Time 2 Score (End) | Time 3 Score (K-Grade) | Score Change Over Time |
|--|-------------------|-----------------------------|---------------------------|-------------------------------|-------------------------------|
| 1. Explores the environment and participates in new opportunities. | GUK Group | 4.08 | 3.97 | 4.33 | +.25 |
| | Comparison | 4.20 | 4.36 | 4.36 | +0.16 |
| 2. Enjoys participating in small groups to play games or do learning activities. | GUK Group | 4.10 | 4.31 | 4.37 | +.27 |
| | Comparison | 4.31 | 4.61 | 4.54 | +0.23 |
| 3. Draws and uses art to express ideas or feelings. | GUK Group | 3.68 | 4.17 | 4.27 | +.59 |
| | Comparison | 3.77 | 4.21 | 3.96 | +0.19 |
| 4. Likes to work at solving problems. | GUK Group | 3.50 | 3.69 | 4.07 | +.57 |
| | Comparison | 3.86 | 4.24 | 4.18 | +0.32 |

Table 3: Friends and Social Interaction – School Readiness Scores

| Question My child typically: | Group Type | Time 1 Score (Start) | Time 2 Score (End) | Time 3 Score (K-Grade) | Score Change Over Time |
|--|-------------------|-----------------------------|---------------------------|-------------------------------|-------------------------------|
| 5. Works or plays cooperatively with friends. | GUK Group | 4.0 | 4.20 | 4.43 | +.43 |
| | Comparison | 4.26 | 4.48 | 4.21 | -0.05 |
| 6. Takes turns with others. | GUK Group | 3.83 | 4.09 | 4.37 | +.54 |
| | Comparison | 4.14 | 4.33 | 4.07 | -0.07 |
| 7. Remembers and follows simple directions in playing games. | GUK Group | 4.05 | 4.26 | 4.67 | +.62 |
| | Comparison | 4.20 | 4.42 | 4.29 | +0.09 |
| 8. Gets along without quarreling or fighting. | GUK Group | 3.53 | 3.94 | 4.07 | +.54 |
| | Comparison | 3.86 | 3.91 | 3.96 | +0.10 |
| 9. Tries to solve problems with friends. | GUK Group | 3.40 | 3.71 | 4.03 | +.63 |
| | Comparison | 3.60 | 4.09 | 3.96 | +0.36 |

Table 4: Basic Academic Skills – School Readiness Scores

| Question My child typically: | Group Type | Time 1 Score (Start of Program) | Time 2 Score (End of Program) | Time 3 Score (K-Grade) | Score Change Over Time |
|--|-------------------|--|--------------------------------------|-------------------------------|-------------------------------|
| 10. Is familiar with (or able to recognize) letters of the alphabet. | GUK Group | 3.68 | 4.37 | 4.80 | +1.12 |
| | Comparison | 4.31 | 4.70 | 4.86 | +0.55 |
| 11. Is familiar with (or able to recognize) numbers between 1 and 10 (or higher). | GUK Group | 3.68 | 4.57 | 4.93 | +1.25 |
| | Comparison | 4.31 | 4.85 | 4.93 | +0.62 |
| 12. Is able to do counting, understanding of basic numbers (adding items together, etc.) | GUK Group | 3.58 | 4.14 | 4.77 | +1.19 |
| | Comparison | 4.34 | 4.64 | 4.89 | +0.55 |
| 13. Is creative in asking questions or trying to solve problems. | GUK Group | 3.98 | 4.29 | 4.43 | +0.45 |
| | Comparison | 4.34 | 4.64 | 4.54 | +0.20 |

Table 5: Emotional Development and Competence – School Readiness Scores

| Question My child typically: | Group Type | Time 1 Score (Start of Program) | Time 2 Score (End of Program) | Time 3 Score (K-Grade) | Score Change Over Time |
|--|-------------------|--|--------------------------------------|-------------------------------|-------------------------------|
| 14. Can talk about how others might feel. | GUK Group | 3.70 | 4.17 | 4.23 | +0.53 |
| | Comparison | 4.03 | 4.27 | 4.04 | +0.01 |
| 15. Manages feelings, such as anger or frustration, without hurting or being mean to others. | GUK Group | 3.50 | 3.83 | 4.17 | +0.67 |
| | Comparison | 3.97 | 3.70 | 3.64 | -0.33 |
| 16. Can adapt to new situations within a reasonable period and feel comfortable. | GUK Group | 3.85 | 4.23 | 4.40 | +0.55 |
| | Comparison | 4.17 | 4.27 | 4.21 | +0.04 |
| 17. Regularly shares how he/she is feeling with me or other adults. | GUK Group | 4.03 | 4.11 | 4.33 | +0.30 |
| | Comparison | 4.17 | 4.24 | 4.11 | -0.06 |

For nearly all outcomes measured as school readiness indicators, there is likely to be natural growth over time since children are learning and maturing. The outcomes for participants in this study were examined at three time points over the course of a year. Our primary research question is whether participation in the *Gearing Up for Kindergarten* program influences rates of growth for children compared to children who do not receive the program. A summary of key findings from the study is included here.

- **Learning and exploration of children** – On four items related to learning and exploration, children in the control group scored at a slightly higher level at pre-test than did children in the program. This might be expected, as parents who selected their children into the control group are likely motivated toward school readiness, while parents with children in the Gearing Up for Kindergarten group may identify a need for their child to have such a program.
 - At the final time of measurement, the two groups were equivalent on two items (exploration; problem solving), while the control group was higher on one item (group participation) and the GUK group was higher on one item (self-expression).
 - To measure program impact, we compared the improvement in the GUK group from beginning to end with improvement in the comparison group. Statistical tests indicated that the GUK group improved to a greater degree than the comparison group on three of four indicators of school readiness. The rate of improvement on those items was two to three times higher for children in the Gearing Up for Kindergarten program than children who did not participate.
 - Children in the GUK group showed steady improvement on all four items related to learning and exploration from the pre-test through to the first year of kindergarten. However, children in the control group made gains between the first and second time periods, but showed no change on one item and a decline on three items between the second time period and following their entry into kindergarten. This pattern suggests that children who participate in the program may benefit from an increased ability to maintain growth or gains in key areas of school readiness as they transition into kindergarten, while children who do not participate may struggle more with the transition to kindergarten.

- **Friends and social interaction of children** – On five items related to social development and interaction, children in the control group scored at a somewhat higher level at pre-test than did children in the program. Again, this is not necessarily a surprise. We examined what kind of influence participation in the program seemed to have on children’s social development and skills as they prepared for and entered kindergarten.
 - Although children in the comparison group scored significantly higher on social skills at the pre-test, by the final point of assessment following kindergarten entry the children in the GUK group scored significantly higher than the comparison group on all five indicators of social development.
 - To assess program influence, we compared the improvement in the GUK group from the start of the study to its end in the kindergarten year with improvement in the comparison group. Statistical findings indicated clearly that children in the GUK group improved to a substantially greater degree than the comparison

group on all indicators of social skills and development. The rate of improvement on social skills for children in the GUK group was significantly greater than it was for children in the comparison group who did not participate in the program.

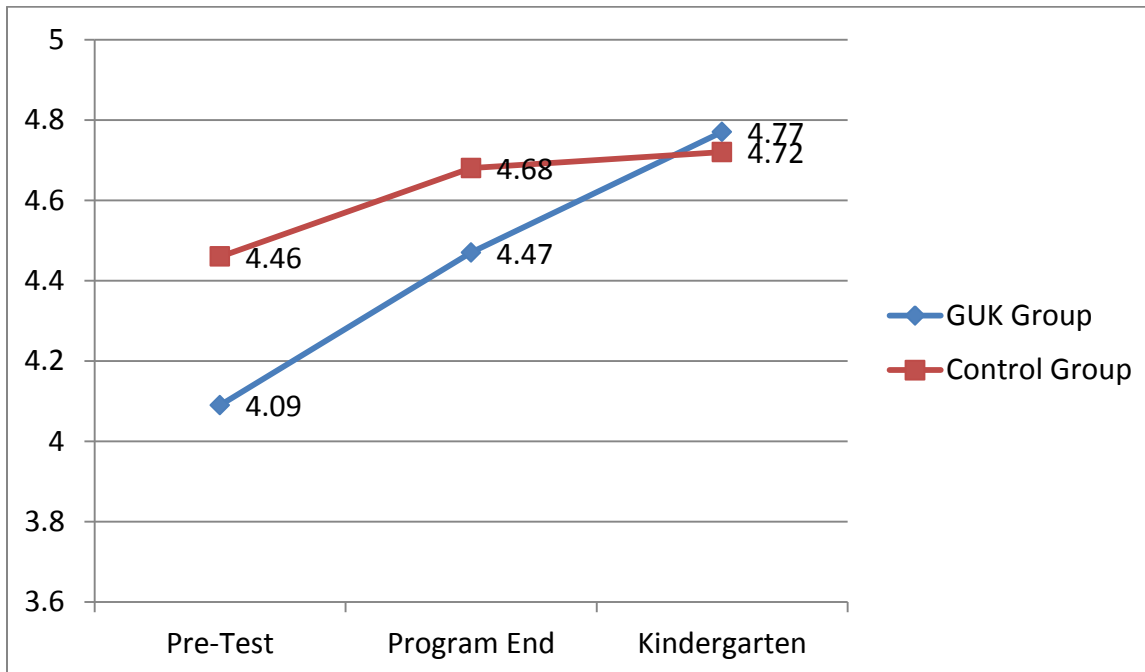
- Children in the GUK group showed steady improvement on all five items related to social skills from the pre-test through to the first year of kindergarten. However, children in the control group made gains between the first and second time periods, but showed minor change on one item and a decline on four items between the second time period and following their entry into kindergarten. Again, this pattern indicates that it is possible children who participate in the program may develop an increased ability to maintain growth in key social skills related to school readiness as they go through the first part of kindergarten, while children who do not participate may struggle more with the transition to kindergarten.
- **Basic academic skills of children** – On four items related to basic academic skills in pre-kindergarten children, children in the control group scored at a significantly higher level at pre-test than did children in the program. While this was not unexpected, it provides an illustration of the “readiness gap” that seems to exist for some children prior to their kindergarten experience. We assessed what type of influence involvement in the Gearing Up for Kindergarten program seemed to have on children’s basic academic skills as compared to children without the program.
 - While children in the comparison group scored significantly higher on basic academic skills at the pre-test, by the final point of assessment following kindergarten entry the children in the GUK group scored at the same level as the comparison group on all four indicators of basic academic skills.
 - To further understand program effects, we compared the improvement in the GUK group on basic academic skills from the beginning to end of the project with improvement in the comparison group. Statistical results demonstrated that children in the GUK group improved on basic academic skills at twice the rate of children in the comparison group during the time periods measured. Thus, the rate of improvement on basic academic skills for children in the GUK group was higher than for the comparison group and it was large enough to completely close the “readiness gap” that seemed to exist with regard to this area of school readiness.
- **Emotional development and competence of children** – On four items related to emotional development and competence, children in the control group scored at a somewhat higher level at pre-test than did children in the program. As with the findings related to social development, this was not unexpected. We examined what kind of influence participation in the program seemed to have on children’s emotional development and competence as they prepared for and entered kindergarten.
 - Although children in the comparison group scored significantly higher on emotional competence at the pre-test, by the final point of assessment following kindergarten entry the children in the GUK group scored significantly higher

than the comparison group on all four indicators of emotional development and competence.

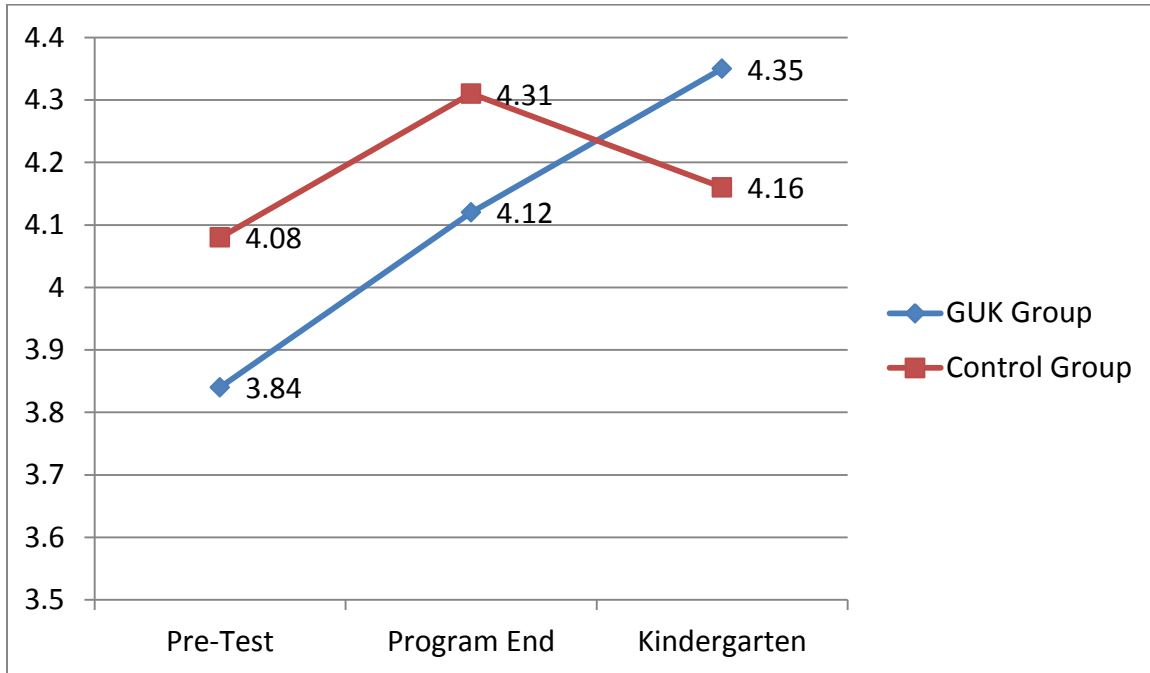
- To examine effects of the program, we compared the gains in the GUK group from the start of the study to its end in the kindergarten year with improvement in the comparison group. Statistical tests indicated clearly that children in the GUK group improved to a substantially greater degree than the comparison group on all indicators of emotional development and competence. The rate of improvement on emotional competence for children in the GUK group was significantly greater than it was for children in the comparison group who did not participate in the program.
- Children in the GUK group showed steady improvement on all four items related to emotional competence from the pre-test through to the first year of kindergarten. However, children in the control group made small or no change between the first and second time periods, but showed no further growth on two items and declines on two more items between the second time period measured and following their entry into kindergarten. Again, this pattern indicates that it is possible children who participate in the program may develop an increased ability to maintain growth in key skills related to school readiness as they go through the first part of kindergarten, while children who do not participate may struggle more with the transition to kindergarten.

To highlight the patterns observed with regard to the participation of children in Gearing Up for Kindergarten versus a comparison group of children, three tables are included below.

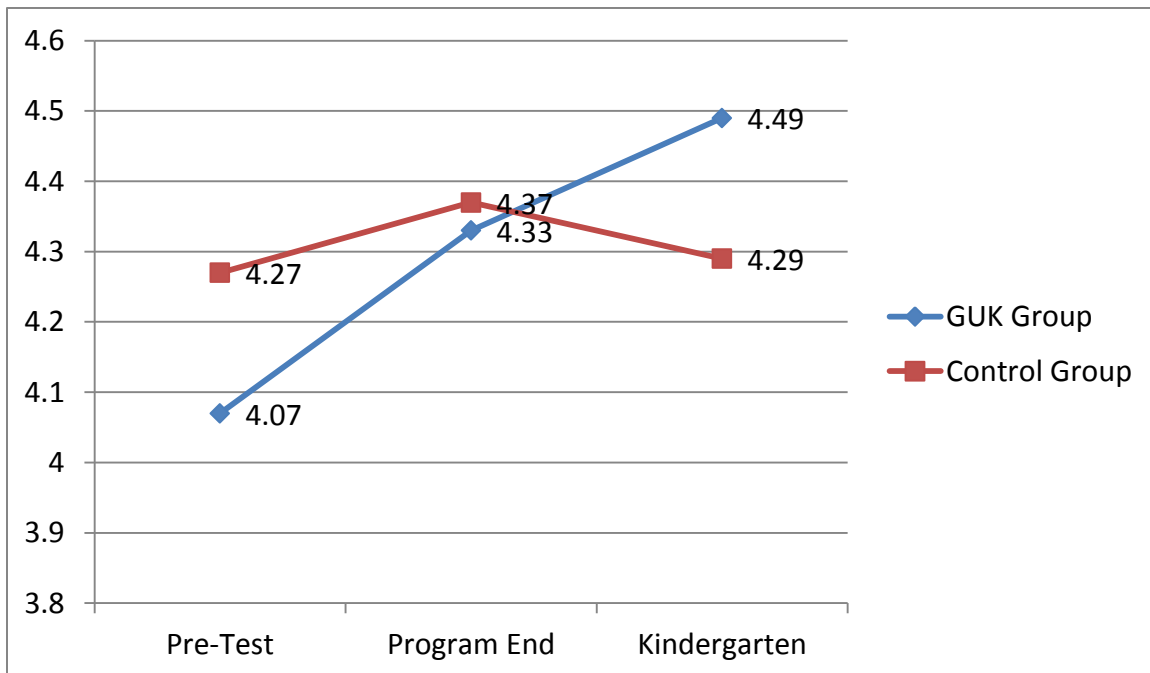
Basic Academic Skills



Social Development and Skills



Emotional Development and Competence



Key Selected Findings from Study Participants – School Familiarity

To further investigate how children in the year prior to kindergarten and then during kindergarten progress with regard to school comfort and familiarity, parents assessed the child’s experience on selected indicators at three different time periods. The first two time periods were before participation in the program and after participation in the program, although the comparison group did not participate in the program. The last time period was several months into the kindergarten school year.

Parents were asked to assess their child’s familiarity with school, peers, and routines, as well as their feelings and comfort level in varying aspects of the school-related experience. Similarly, parents rated themselves also on familiarity with school, teachers, and routines, as well as comfort level and familiarity with school personnel and routines. These questions were asked either on a “yes/no” basis or a response scale of 1 to 4, with 1 = not at all to 4 = to a great extent.

The table below provides further information on the average mean scores recorded for children at each time period and the score differences over time.

Table 6: School Comfort and Familiarity – Participant Scores

| Question | Group Type | Time 1 Score (Start) | Time 2 Score (End) | Time 3 Score (K-Grade) | Score Change Over Time |
|---|-------------------|-----------------------------|---------------------------|-------------------------------|-------------------------------|
| My child: 1. Is excited about beginning kindergarten. | GUK Group | 3.40 | 3.71 | 3.80 | +.40 |
| | Comparison | 3.37 | 3.44 | 3.82 | +.45 |
| 2. Is familiar with the routines and expectations that exist in kindergarten (raising hands, etc.). | GUK Group | 2.65 | 3.06 | 3.87 | +1.22 |
| | Comparison | 2.83 | 2.91 | 3.71 | +.88 |
| 3. Is comfortable with the environment of the school setting. | GUK Group | 3.18 | 3.60 | 3.93 | +.75 |
| | Comparison | 3.23 | 3.44 | 3.82 | +.59 |
| 4. Talks positively about going to kindergarten. | GUK Group | 3.36 | 3.80 | 3.87 | +.51 |
| | Comparison | 3.26 | 3.50 | 3.75 | +.49 |

As with other measured for children, there is likely to be natural growth over time since children are preparing to enter kindergarten. The outcomes for participants in this study were examined at three time points over the course of a year. A summary of key findings from this portion of the study is included here.

- **School comfort and familiarity of children** – On four items related to school comfort and familiarity of pre-kindergarten children, children in the control group and the GUK group scored at similar levels on the pre-test, although control group children scored higher on familiarity with kindergarten expectations. The findings from the study showed:
 - At the final time of measurement, the two groups were equivalent on one item (excitement level for kindergarten), while the GUK group was higher on three items than the control group.
 - To measure program impact, we compared the improvement in the GUK group from beginning to end with improvement in the comparison group. Statistical tests indicated that the GUK group improved to a greater degree than the comparison group on two of four indicators of school readiness, while the rate of growth was similar on two other items. The rate of improvement on those items occurred sooner for children in the Gearing Up for Kindergarten program than children who did not participate and also endured.
 - Children in the GUK group showed steady improvement on all four items related to learning and exploration from the pre-test through to the first year of kindergarten. In particular, there were substantial gains made between the beginning and end of the program (first and second points of assessment). Children in the control group made more limited gains between the first and second time periods, and a greater rate of improvement between the second period of assessment and the final point following kindergarten entry. Thus, while the gains are similar for both groups on two items and higher for the GUK group on two items, the time period in which gains occurred is somewhat different. It might be suggested that illustration of gains during the program period is a more optimal pathway to school readiness than occurrence of gains following entry into kindergarten.

Conclusion

These findings regarding changes in children’s social, emotional, academic and other abilities related to school readiness show that many changes are occurring for children enrolled in the Gearing Up for Kindergarten program. When compared to children who do not participate in the program, both groups make positive gains but the overall pattern improvement tends to be more substantial for children in Gearing Up for Kindergarten. These findings indicate that the program likely has a number of positive impacts on children and their school readiness.¹

¹ **Note:** This research was supported with funding from a research grant by the United Way of Cass-Clay, Project #FAR0021758, to the NDSU Extension Service and North Dakota State University. We would like to acknowledge and express appreciation for this funding support.