Gearing Up for Kindergarten – Key Findings from a Control Group Study

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An Introduction to Gearing Up for Kindergarten

During the 2008-09 school year, the NDSU Extension Service took steps to conduct a careful evaluation of the Gearing Up for Kindergarten educational program. This process involved conducting a comparison study of the program’s participants with others who did not participate.

For young children and their families, the transition to school is a major developmental step. In national research on school readiness in the U.S., teachers estimate that 32% of children have some problems entering school, while an additional 16% have difficult entries. Quality early childhood programs are valuable in assisting children and their families to develop skills for school success.

The NDSU Extension Service at North Dakota State University developed the Gearing Up for Kindergarten educational program to assist young children and parents in the year prior to a child entering kindergarten. It is a prevention-focused parent and family education program designed to facilitate child development, school readiness and healthy parenting.

School Readiness

- Transition to school is a key developmental step for young children.
- Teachers estimate 32% of kids have some problems entering school, while another 16% have difficult entries.
- Quality early childhood programs are vital to student success and positive school entry.
- In ND, nearly 47,000 children ages 0-5 are preparing for school entry and need appropriate knowledge and skills.

What is Gearing Up for Kindergarten?

- Gearing Up for Kindergarten is a prevention-focused parent and family education program designed to facilitate child development, healthy parenting and school readiness for families in North Dakota.
- Parents and children typically attend two 8-week series of sessions, in the year prior to a child entering kindergarten.
Program Objectives

- School Readiness for Children Entering Kindergarten
- Parent Education
- Early Awareness and Intervention
- Parent Involvement with Children’s Learning and School
- Building Home-School-Community Partnerships

The key building blocks and objectives of the program are:

- School Readiness for Children Entering Kindergarten
- Parent Education
- Early Awareness and Intervention
- Parent Involvement with Children’s Learning & School
- Building Home-School-Community Partnerships

In 2008-2009 the program operated at 18 sites across North Dakota with 290 families enrolled. **84% of participants indicated involvement in 6 or more sessions of the program during the fall 2008 year** (or first half of the program); **86% of participants in spring 2008 indicated involvement in 6 or more sessions of the program.** This is a very high rate of participation in a program involving parents and children.

To assess the effectiveness of Gearing Up for Kindergarten, a set of 102 families that participated in the entire program (“treatment” sample) was compared to a “control” sample of 102 families who did NOT participate in the program. Areas evaluated were:

- Children – 6 areas of school readiness and child development
- Parents – 5 areas of parenting
- Children & parents – School knowledge and familiarity
Participan families in *Gearing Up for Kindergarten* completed pre-program surveys in fall 2008 (time 1). Following participation in the 2-session program over 6 months, they then completed post-program surveys in spring 2009 (time 2). For families in the control group, they also completed the same set of surveys between fall 2008 and spring 2009 but did not engage in the program.

Key findings from the *Gearing Up for Kindergarten* Control Group Study are broken down into 5 areas:

- Part 1 – General responses of program participants
- Part 2 – Impacts on children – school readiness findings
- Part 3 – Impacts on parents – parental behavior findings
- Part 4 – Impacts on Children & Parents – School Knowledge & Familiarity findings
- Part 5 – Selected comparisons on key indicators of school readiness

### Part 1 – General Impacts of Gearing Up for Kindergarten Program

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<tr>
<th>Impact</th>
<th>Time 1 (%)</th>
<th>Time 2 (%)</th>
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<tbody>
<tr>
<td>Increase your knowledge about child development</td>
<td>51</td>
<td>55</td>
</tr>
<tr>
<td>Increase your knowledge of healthy parenting</td>
<td>62</td>
<td>60</td>
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<tr>
<td>Increase your confidence in being a good parent</td>
<td>70</td>
<td>70</td>
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<tr>
<td>Increase your skills as a parent</td>
<td>52</td>
<td>57</td>
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<tr>
<td>Change your behavior as a parent</td>
<td>40</td>
<td>44</td>
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<tr>
<td>Influence your relationship with your child</td>
<td>62</td>
<td>52</td>
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Among participants, over 50 percent agreed the program *increased their knowledge of child development, their knowledge of healthy parenting, and their confidence in being a good parent a lot or very much*. Additionally, 87% felt it *changed their parent behavior at least somewhat*, and 94% indicated it influenced their relationship with their child positively.
In spring 2009, participants rated parents with children of a similar age (3.82), preschool/Head Start/child care (3.84), and their child’s other parent (3.56) as the most useful sources of information for them on parenting and preparing their child for school. However, the Gearing Up for Kindergarten class and materials were rated higher than all other sources with a mean score of 4.12, indicating participants felt the class was more useful than any other source.

Part 2 – Impacts on Children – School Readiness Findings

The 6 domains of school readiness assessed were:

- (1) Learning Approach and Effort
- (2) Physical Skills and Abilities
- (3) Social Skills and Development
- (4) Academic Skills and Development
- (5) Emotional Skills and Development
- (6) Health, Fitness and Practical Skills

Pre-kindergarten children in both the Gearing Up for Kindergarten and control groups were assessed on pre- and post-measures 6-7 months apart between fall 2008 and spring 2009. As children in this age group are naturally developing, the key question is whether the program accelerates the rate of increase for one group versus the other. Also, skills targeted by the program are more likely to show evidence of impact than those that are not targeted.
(1) Learning Approach and Effort

On all measures, the control group began higher than the Gearing Up for Kindergarten group. This is likely due to the fact that the control group was a more educated, affluent group of parents. However, we are most interested in comparing the rates of change between the groups.

When the two groups of pre-kindergarten children were compared regarding average gains in Learning Approach & Effort over a 6-month period, children in the Gearing Up for Kindergarten group had an increase significantly higher (about 1.3 times higher) than the children in the control group. This pattern of higher increases in the GUK group was common across all measures.

(2) Physical Skills and Abilities

On physical skills and abilities, little change was expected as the program did not specifically target this area. Also, both groups were already rated very highly in this category by parents (over 4.5 on a 5-point scale). However, the control group saw less overall change in this area than the GUK group.
When the two groups of pre-kindergarten children were compared regarding average gains in Physical Skills and Abilities over a 6-month period, children in the Gearing Up for Kindergarten group had an increase nearly 2 times higher than the children in the control group.

(3) Social Skills and Development

Social skills and development is an area of emphasis specifically targeted by the Gearing Up for Kindergarten program. Children have small group interaction, play with peers, and learn social expectations. Parents are also guided on children’s social development. There was minor change in the control group but significant gain in the GUK group.

When the two groups of pre-kindergarten children were compared regarding average gains in Social Skills/Development over a 6-month period, children in the Gearing Up for Kindergarten group had an increase 3 times higher than the children in the control group. Of particular interest is the capacity of the program to assist in closing the “readiness gap” between the two groups of children.
(4) Academic Skills and Development

Academic skills and development is another area of emphasis specifically targeted by the program. Children do learning activities and receive basic instruction in math, science, literacy, and other areas. Parents are also guided on teaching children in these areas. There was minor gain in the control group but significant gain in the GUK group.

When the two groups of pre-kindergarten children were compared regarding average gains in Pre-Academic Skills/Development over a 6-month period, children in the Gearing Up for Kindergarten group had an increase 3 times higher than the children in the control group. This difference provides solid evidence of the impact the program is having on children and their pre-academic skills.

(5) Emotional Skills and Development

Emotional skills and development is a secondary area of emphasis targeted by the program. Children receive support and parents receive instruction on managing feelings, expressing themselves to others, and being empathetic. Again, there was minor gain in the control group but significant gain in the GUK group.
When the two groups of pre-kindergarten children were compared regarding average gains in Emotional Skills/Development over a 6-month period, *children in the Gearing Up for Kindergarten group had an increase 2 times higher than the children in the control group*. Children in the GUK group made a significant and positive gain in their emotional skills and development.

(6) Health, Fitness and Practical Skills

Areas of practical emphasis such as self-care skills, practical knowledge (family information, etc.), and basic fitness comprise this category. It is not specifically targeted by the program. However, parents and children do receive some support and instruction on such topics. There were positive gains in both groups for this domain of school readiness.

When the two groups of pre-kindergarten children were compared regarding average gains in Health, Fitness and Practical Skills over a 6-month period, *children in the Gearing Up for Kindergarten group had an increase about 1.3 times higher than the children in the control group*. Since such skills are very important to school entry, it is encouraging to see such gains in both groups.
In summary, adult participants in the Control Group routinely rated their children higher across all areas to begin, but child participants in Gearing Up for Kindergarten had higher gains in each category of school readiness as rated by parents over a 6-month period of time. Further detailed analysis will be necessary to clarify program effectiveness and impacts.

### Part 3 – Impacts on Parents – Parental Behavior Findings

The 5 aspects of parental behavior assessed were:

- (1) Parent-Child Developmental Interaction
- (2) Parent Social Guidance
- (3) Parent Reading Guidance
- (4) Parent Emotional Guidance
- (5) Parent Practical Guidance

Adult participants in both the Gearing Up for Kindergarten and control groups were assessed on pre- and post-measures 6-7 months apart between fall 2008 and spring 2009. Again, the fundamental question is whether the program affects the rate of change for one group versus the other. Parents routinely rate themselves highly on measures of parenting behavior and this was also true in this study.
Parent-child developmental interactions, which assist in enhancing children’s overall development, were a primary area of behavior targeted by the program. Parents are encouraged to interact with their children in learning activities, given support, and taught positive interaction styles. In this area, there was a minor gain among control group parents and a more significant gain in the GUK group.

When the two groups of parents were compared regarding average gains in parent-child developmental interactions over a 6-month period, parents who participated in the Gearing Up for Kindergarten group had an increase 2 times higher than the parents in the control group. This difference furnishes evidence of the meaningful impact that program participation seems to deliver for parents who are involved. While both groups of parents slightly improved their developmental interactions with pre-kindergarten children, the GUK group had a significantly higher increase than did those who did not participate in the program.
(2) Parent Social Guidance

Parental guidance of social skills and development is important for young children. Assisting parents to guide their children in this area is one aspect of parenting which the GUK program addresses. There were minor gains among both parent groups in the study in this category.

When the two parent groups were compared regarding average gains in parent social guidance over a 6-month period, there were no meaningful group differences between them. The gain scores for both groups were almost identical. Since such guidance is important to young children, it is encouraging to see some modest gains in both groups.

(3) Parent Reading Guidance

Reading guidance is among the most important aspects of assisting young children in their pre-academic skills development. Both parent groups were assessed in this area, with no meaningful change (a slight drop) occurring for control group parents while GUK parents showed modest improvement in this category. On this measure, GUK parents actually ended higher than control group parents.
When the two parent groups were compared regarding average gains in parent reading guidance with young children over a 6-month period, **parents who participated in the Gearing Up for Kindergarten group had a positive increase much higher than the parents in the control group, who showed no change.** This difference provides supportive evidence of a meaningful impact through GUK participation on reading with children.

### (4) Parent Emotional Guidance

Parental guidance related to emotional skills and development is another vital aspect of assisting young children to prepare for school success. Both parent groups were assessed in this area, again with no change occurring at all for control group parents while GUK parents showed modest improvement in this category. On this measure, GUK parents ended at a similar level to the control group parents.

The two parent groups were compared regarding average gains in parent emotional guidance with young children over a 6-month period. **Parents who participated in the Gearing Up for Kindergarten group had a positive increase higher than the parents in the control group, who showed no change.** This difference provides more supportive evidence of a meaningful impact on parental behavior through GUK participation.
(5) Parent Practical Guidance

Parental practical guidance refers to assisting young children with conventional knowledge and self-care skills. Children need knowledge of their family name and contact information, how to put their coat or shoes on, and other practical skills. No change occurred at all for control group parents while GUK parents showed positive improvement in this category. The two parent groups were compared regarding average gains in parent practical guidance with young children over a 6-month period. Parents who participated in the Gearing Up for Kindergarten group had a positive increase much higher than the parents in the control group, who showed no change. This difference indicates a positive benefit of GUK participation on parental practical guidance for young children.

Part 4 – Impacts on Parents & Children — School Knowledge and Familiarity Findings

Key aspects of adjustment for entry into school assessed were:

- (1) Children – School Knowledge and Familiarity
- (2) Parents – School Knowledge and Familiarity

Adult participants in both the Gearing Up for Kindergarten and control groups were assessed.
School knowledge and familiarity was an area of focus mentioned frequently by program participants. Due to this interest, pre-kindergarten child school knowledge and familiarity was measured in the control study. This refers to familiarity with school routines, expectations, and environment, as well as comfort with peers and other adults. There were fairly similar changes for children in both groups studied.

When the two groups of pre-kindergarten children were compared regarding average gains in School Knowledge and Familiarity over a 6-month period, *children in the Gearing Up for Kindergarten group had an increase about 1.3 times higher than the children in the control group*. So, both groups had positive increases, with the somewhat higher increase occurring with children in GUK.

As with children, parents in both groups were also assessed regarding school knowledge and familiarity. Both groups started fairly high on this measure, and there were positive changes in school knowledge and familiarity for both sets of parents in the study. There was no difference in their scores at the second point in time.
When the control group of parents was compared with the GUK group of parents regarding average gains in School Knowledge and Familiarity over a 6-month period, parents in the Gearing Up for Kindergarten group had an increase 2 times higher than the children in the control group. So, both groups had positive increases, but again there was a somewhat higher increase occurring with parents involved in GUK.

To further assess changes in specific dimensions of school knowledge and familiarity, selected items were compared. One item was comfort level of pre-kindergarten children with the school setting. Both groups of children measured had positive changes on this item, suggesting an increased level of comfort with the school environment as they get closer to entering kindergarten.

Specifically, when children in the control group were compared with the GUK group of children regarding increases in comfort level with the school setting over a 6-month period, children in the Gearing Up for Kindergarten group had an increase 1.5 times higher than the children in the control group. So, both groups had positive increases, but again there was a somewhat higher increase occurring with children attending GUK.
Another item compared between the two groups of children was comfort level with peer interactions. Again, both groups of children measured had positive changes on this item, suggesting increased comfort with peer interactions as they get closer to entering kindergarten. This is important since social readiness is a very important part of a child’s overall school readiness in entering kindergarten.

Children in the control group were compared with the GUK children regarding gains in comfort level with peer interactions. After a period of 6 months, *children in the Gearing Up for Kindergarten group had an increase roughly 2 times higher than the children in the control group.* So, both groups had positive increases, but the increase was higher for children attending GUK.

A third item of importance for the school transition that we measured was a child’s comfort level in separating from the parent. Difficulty in this area can cause significant anxiety for both pre-kindergarten children and their parents. The two groups of children both had gains in this area during the 6-month period evaluated.
When the two groups of pre-kindergarten children were compared regarding average gains in comfort level separating from a parent, children in the Gearing Up for Kindergarten group had an increase 2.5 times higher than the children in the control group. Children in the both groups thus made a significant and positive gain in their comfort level separating from parents, while the gain was more pronounced among the GUK participants.

Finally, to gain further insight into child social readiness, parental understanding of children’s peer interactions in a group setting was measured. Since parents must make the decision about entry into kindergarten, understanding of this aspect of a child’s social readiness is valuable. Parents in both groups measured had positive gains in their understanding of this item over 6 months.

As the two groups of parents were compared, the results showed that adults in the Gearing Up for Kindergarten group had an increase 2.5 times higher than the parents in the control group. While both groups increased, the gain for parents in the GUK group was substantially higher than for those in the control group who experienced no intervention. Increased parental understanding of how children interact with peers is a useful indicator of how parents are impacted by participation in GUK.
Part 5 – Selected Comparisons on Key Indicators of School Readiness - Findings

- Pre-Kindergarten Children in both groups were compared on 52 key indicators of school readiness.
- 10 Key Indicators were selected to highlight important contrasts between the Control Group participant children and the Gearing Up for Kindergarten participant children.

Slide 51

(1) Child – Familiarity with Numbers

Among the most important pre-academic skills is familiarity with numbers. Mathematical knowledge is important for young children to begin gaining as they enter kindergarten. Both groups of children were assessed on this item. It should be noted that the Control Group started significantly higher than the GUK group to begin with, but that this gap closed to almost nothing by the end of the program.
When the two groups of pre-kindergarten children were compared regarding average gains in Child – Familiarity with Numbers over a 6-month period, *children in the Gearing Up for Kindergarten group had an increase 4 times higher than the children in the control group*. This large difference provides solid evidence of the impact the program is having on participating pre-kindergarten children in their math-related knowledge.

(2) Child – Usage of Counting and Numbers

Another important math-related skill is usage of counting and numbers by young children. This item refers not just to child knowledge but behavior. Both groups of children were assessed on this item.

The comparison of average gains on the item Child – Usage of Counting and Numbers showed a similar pattern. In this comparison, *children in the Gearing Up for Kindergarten group had an increase more than 2 times higher than the children in the control group*. The participation of children in the program seems to boost their gain in the area of math knowledge and skills in a substantive manner, with measurable differences in the average gain between the groups of children.
(3) Child – Familiarity with Alphabet

Familiarity with the alphabet is another core aspect of knowledge that is an essential pre-academic skill for children entering kindergarten. This knowledge lays the foundation for further language development, reading and learning in many areas. Both the Control Group children and the GUK group children showed changes over time, as would be expected with children of this age. Comparing the groups of pre-kindergarten children over 6 months on average gains in Child – Familiarity with Alphabet, *children in the Gearing Up for Kindergarten group had an increase 2.5 times higher than the children in the control group*. This finding illustrates a positive gain with the GUK group of children showing much greater increases than the control group of children.

(4) Child Social – Sharing with Other Children

Social knowledge and skills are another important aspect of readiness for children entering kindergarten. One indicator used to measure this area of development was sharing with other children. Children in both groups showed changes in their ability to share with other children over the course of 6 months.
In comparing the two groups of children on average gains in sharing with others, *children in the Gearing Up for Kindergarten group had an increase 3 times higher than the children in the control group.* The evidence indicates that pre-kindergarten children in GUK make positive and significant gains in this aspect of their social ability as a result of the program.

(5) Child Social – Taking Turns with Other Children

In addition to sharing with others, taking turns with others is another indicator of social knowledge and skills in pre-kindergarten children. As with other indicators, some change was expected and the program findings showed growth in this area for both groups of children being studied.

A comparison of each group of pre-kindergarten children on average gains in taking turns with others showed that *children in the Gearing Up for Kindergarten group had an increase 3 times higher than the children in the control group.* This finding demonstrated positive support that children in the GUK program are making significant gains that are much higher than those changes shown in the control group, on a key indicator of school readiness in social ability.
(6) Child Social – Following Directions

For children in the kindergarten classroom, understanding and following directions in a group setting is a very important skill to develop. Children are in a new environment and they need this ability to adapt comfortably and meet the expectations of the learning environment. Both groups of children were assessed on this indicator of school readiness. When the two groups of pre-kindergarten children were compared regarding average gains in ability to follow directions over a 6-month period, children in the Gearing Up for Kindergarten group had an increase 2 times higher than the children in the control group. This finding indicates further positive gains in a key area of social readiness for children in the GUK program.

(7) Child Social – Problem Solving with Peers/Friends

A further key indicator of social readiness for pre-kindergarten children is the ability to work on problem solving in situations with peers or friends. As with other key indicators, children in both the Control Group and the GUK group were assessed on this item. Gains occurred in both groups but there was a substantive difference in the average gains made among children.
When the two groups of pre-kindergarten children were compared regarding average gains in social problem solving with peers over a 6-month period, *children in the Gearing Up for Kindergarten group had an increase 4 times higher than the children in the control group*. The children in the GUK program showed a much higher rate of gain than children who did not participate in the program.

(8) Child Practical – Familiarity with Family Information

An indicator of a child’s practical knowledge that is of consequence at kindergarten age is familiarity with family information (address, family name, etc.). Both groups of children were measured on this item and there were positive gains in each group over a 6-month period.

Comparison of the two groups of children over a 6-month period showed that *children in the Gearing Up for Kindergarten group had an increase 2 times higher than the children in the control group regarding familiarity with family information*. Again, the children participating in the GUK program showed a substantial increase much higher than the rate of gain for children who did not participate in the program.
A final key indicator of a child’s readiness that was selected for comparison was creative expression using the arts (drawing, painting, etc.). Working with materials, putting concepts together, and expressing ideas through creative arts is a unique and important element of intelligence and ability in pre-kindergarten children. Again, both groups were measured on this indicator item.

Children in the control group were compared with the GUK children regarding gains in creative expression through the arts. After a period of 6 months, children in the Gearing Up for Kindergarten group had an increase much higher than the children in the control group. On this indicator, the children in the control group showed no meaningful change while the children in the GUK group evidenced a significant and positive increase.

Once children enter kindergarten, an important part of their learning experience is working and learning in a small group context. A child’s ability to feel comfortable and participate in a small group setting is another indicator of school readiness. Both groups of children in the study were assessed on this particular indicator.
In comparing the two groups of children on average gains in small group participation, *children in the Gearing Up for Kindergarten group had an increase 4 times higher than the children in the control group*. The evidence indicates that pre-kindergarten children in GUK make positive and significant gains in their orientation to small group participation and learning as a result of the program.

**Summary of Study Findings**

The findings of the Gearing Up for Kindergarten Control Group study suggest that there are important differences for participating children and families. For both parents and children, gains range from modest growth to significant improvement on a wide variety of indicators studied. The average gains for parents and children, particularly for children, range from 2 to 5 times higher across most indicators than the gains for those in the Control group.

A thematic summary of the key aspects of growth facilitated by participation in Gearing Up for Kindergarten, for children, suggests that five primary areas of growth are:

1. Social skills and positive interactions with others;
2. Ability to function more independently and learn actively in

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**School Readiness - Significant Findings**

Growth in five primary areas for children in GUK:

1. Social skills and positive interaction with others;
2. Ability to function more independently and learn actively in a guided environment;
3. Development of specific pre-academic skills or knowledge that apply to a school setting (using a pencil, knowing the alphabet, etc.);
4. Ability to express themselves through art and hands-on creative activities;
5. Ability to manage emotions and adapt in a new environment.
(3) Development of specific pre-academic skills or knowledge that apply to a school setting (using a pencil, knowing the alphabet, etc.)

(4) Ability to express themselves through art and hands-on creative activities; and

(5) Ability to manage emotions and adapt in a new environment.

It should be noted that this is not a complete and exhaustive summary of all study findings. Instead, it is a focused summary of key findings that indicate the primary outcomes from a control group study of the Gearing Up for Kindergarten program.

Benefits to Children of the GUK Program

Program participants also provided qualitative feedback on various aspects of the program. This feedback was qualitatively analyzed for key themes. Key themes identified as benefits for children included:

- Increased social confidence and positive peer interactions
- Improved pre-academic skills in reading, math and other subjects
- Greater awareness and comfort with school routines and expectations

Qualitative Feedback Themes - Child Benefits

- Increased Social Confidence and Positive Peer Interactions - “I have seen more confidence in him in the learning environment and also in being left with others.”
- Improved Pre-Academic Skills in Reading, Math and Other Subjects - “She was exposed to a classroom, a teacher, and other children. She learned socialization and improved some of her academic skills. She loves to write numbers now and doesn’t get frustrated.”
- Greater Awareness and Comfort with School Routines and Expectations - “My child is excited about kindergarten. We believe he has a better understanding of what to expect when he starts school.”
Benefits to Parents of the GUK Program

The qualitative feedback related to benefits for parents identified the following key themes:

- More time and active involvement with children
- Improved parenting efforts in specific areas (TV usage, sleep, discipline, etc.)
- Increased awareness of child’s specific needs

Feedback on Program Quality

The qualitative feedback related to program quality identified the following key themes as positive aspects of the Gearing Up for Kindergarten program:

- Time spent together in learning activities with the child
- Preparation of parent and child for the kindergarten experience
- Parenting discussion and support
- Overall quality of the program experience
Program Information

The Gearing Up for Kindergarten program may be utilized in a variety of settings to assist pre-kindergarten children and their families in preparing to enter school and achieve success. The curriculum materials include:

- Overview and program implementation guide
- Parent education curriculum
- Preschool activities curriculum

Information about the program can be obtained through contacting the NDSU Extension Service (see contact information at left).

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