**Introduction to Research**

The Young Naturalists project focused on increasing the background knowledge and conceptual development of preschool children (age 3-5) enrolled in three child-care centers in a suburban area. The study, which was conducted during the spring of 2004, was supported by a grant from the Florida Institute of Education at the University of North Florida. The project was made possible through grant funding from the Young Naturalists Foundation. The work described in this study was an extension of the work described by Figueiredo et al. (2004). There has been some recent work on young children's understanding of science related to the environment. Concept mapping has been primarily conducted with elementary science learning, and the knowledge gap of young, young children about plants and their role in the environment. Concept mapping has been primarily conducted with students at the upper elementary level through college levels (Novak & Gowin, 1984; Zimmerman, 2005; Hirsch, 2006; and Neuman & Celano, 2006) regarding concept mapping, advance organizers, and vocabulary development. To examine the utility of concept mapping as a tool to track conceptual development in young children, Young children will not be able to construct a concept map that includes the relationships between concept concepts related to plants and their role in the environment.

### Young Naturalists Curriculum

The study focused on building background knowledge and conceptual development of preschool children (age 3-5) enrolled in three child-care centers in a suburban area. The study was conducted during the spring of 2004, supported by a grant from the Florida Institute of Education at the University of North Florida. The project was made possible through grant funding from the Young Naturalists Foundation. The work described in this study was an extension of the work described by Figueiredo et al. (2004). There has been some recent work on young children's understanding of science related to the environment. Concept mapping has been primarily conducted with students at the upper elementary level through college levels (Novak & Gowin, 1984; Zimmerman, 2005; Hirsch, 2006; and Neuman & Celano, 2006). Students at the upper elementary level through college levels (Novak & Gowin, 1984; Zimmerman, 2005; Hirsch, 2006; and Neuman & Celano, 2006) regarding concept mapping, advance organizers, and vocabulary development. To examine the utility of concept mapping as a tool to track conceptual development in young children, Young children will not be able to construct a concept map that includes the relationships between concept concepts related to plants and their role in the environment.

### Instructional Focus

**Hypotheses**

Young children will be able to articulate the hierarchical relationships among the concepts related to plants and their role in the environment. Young children will be able to construct a concept map that includes the relationships between concept concepts related to plants and their role in the environment. Young children will be able to actively engage children in their instructional experiences.

### Hypotheses

- **Vocabulary Development**
  - Vocabulary development is an important factor in the development of young children's knowledge and conceptual development of preschool children (age 3-5).

- **Advance Organizers**
  - Advance organizers are important in guiding children's investigations and learning experiences.

- **Concept Mapping**
  - Concept mapping is an important instructional tool for preschool children (age 3-5).

### Assessment 1

Following the construction of initial class concept maps, children were assessed three times by university researchers. Assessment 1 examined children’s concept mapping ability individually and organized pictures of plants and their role in the environment. Assessment 2 included child interviews based upon the concept map. It was known about plants’ health. Assessment 3 examined children’s ability to name the pictures and make at least one second-level concept connection. Three-year-old children tended to name the pictures without making connections. Young children will not be able to construct a concept map that includes the relationships between concept concepts related to plants and their role in the environment.

### Assessments Results 1

Children were assessed individually by university staff. Pictures of the plants’ concept maps were constructed by university researchers. Assessment 1 examined children’s concept mapping ability individually and organized pictures of plants and their role in the environment. Assessment 2 included child interviews based upon the concept map. It was known about plants’ health. Assessment 3 examined children’s ability to name the pictures and make at least one second-level concept connection. Three-year-old children tended to name the pictures without making connections.

### Conclusions

Based on the results of the three assessments, preschool children demonstrated improved ability to articulate relationships among concepts they learned the three-year-old children improved by 3% and four-year-old children by 2% at the end of the project. These results indicate that it is possible to use concept mapping as an instructional tool and assessment tool with preschool children with some success.

### Acknowledgment

The Young Naturalists project was made possible through grant funding provided by the Florida Institute of Education at the University of North Florida.