

Comparison of Seventh Grade Science Proficiency on Kansas State Science Assessment

Synopsis of Study Review by Brenda LeTendre, Ed.D.

Data Provided by: Kansas Board of Education

Location: Augusta Middle School, Augusta, KS

Date: Spring 2001

Number of Participants (N) = 177

Study Overview

During the 1995-96 school year, Augusta (Kansas) Middle School implemented Synergistic Systems science modules. All Augusta seventh graders experienced science within a Synergistic Systems lab. The lab included 23 Modules where students spent eight days completing each Module. A ninth day in each rotation served as a Discovery Day. After the Spring 2001 Kansas State Science Assessment, mean percentages of correct scores for Augusta Middle School students (n = 177) were compared to all Kansas seventh graders on 23 science indicators. Proficiency levels (unsatisfactory to advanced) for Augusta students were also compared to those of all Kansas seventh graders on the science assessment.

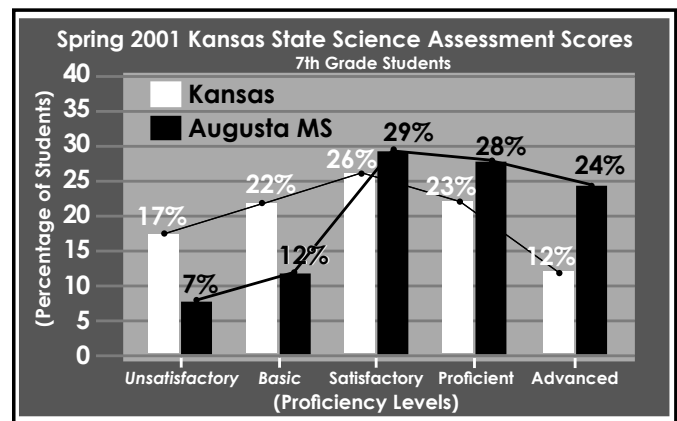
Significant Findings

Augusta Middle School students outperformed their counterparts across the state of Kansas. While 61 percent of all Kansas seventh graders scored Satisfactory or better on the Spring 2001 Kansas State Science Assessment, 81 percent of the Augusta students scored Satisfactory or better. Student performance showed Augusta students outperforming their counterparts across Kansas on 20 of the 23 assessed indicators. On 11 indicators, the Augusta mean percentage of correct scores exceeded the state's mean by more than 10 percentage points.

Strengths Identified by This Study

All Augusta seventh graders received their science instruction in the Synergistic Systems lab. They outperformed students across the state. Specifically, Augusta students did particularly well on the following indicators, scoring 10 or more percentage points higher than the state mean:

- Design and conduct a scientific investigation.
- Use appropriate tools, mathematics, technology, and techniques to gather, analyze, and interpret data.
- Think critically to identify the relationship between evidence and logical conclusions.
- Observe and communicate how light interacts with matter: transmitted, reflected, refracted, and absorbed.
- Understand that heat energy can be transferred from hot to cold by radiation, convection, and conduction.
- Measure and graph the effects of temperature on matter.
- Describe motion of an object.
- Measure motion and represent data in a graph.
- Identify properties of the solid earth, the oceans and fresh water, and the atmosphere.
- Predict patterns from data collected.
- Demonstrate object/space/time relationships that explain phenomena such as the day, the month, the year, and the seasons.



Percentage of Kansas and Augusta Middle School students scoring at the various proficiency levels on the Spring 2001 Kansas State Science Assessment