

Using a University Class to Develop and Test an 8th Grade Climate Science Curriculum

Thomas Dormody, PhD

Peter Skelton, PhD

Hannah Parker

Tessa Lee

Cassie Jaquez

Dallas Dooley

Sheldon Church



Educational Partnership

- AXED 484: Methods of Teaching Earth and Physical Sciences in Agriculture
- The Memorial Middle School Agricultural Extension and Education Center
- Integrating Extension activities with academics



5-Year AES/Hatch Project

- Summary
- Climate science curricula for physical science
- Adapt for 4H project and after school and summer enrichment programs



Pre-service Teacher Education

- Developing and testing lessons at MMSAEEC agriscience field days
- Fall 2015 pilot lesson
 - Interest approach (Two Truths and a Lie)
 - Greenhouse effect drama
 - Mini-greenhouse experiment
 - Constructing mini-greenhouses
 - Experimental hypotheses



Student-Produced Video of Their Lesson

- Lesson Video



Results

- Feedback from University students
 - Opportunities to plan and pilot their lessons met or exceeded expectations
 - Liked the experiences and learning how to teach by actually teaching versus listening in a lecture-based course
 - Learned the value of planning, how to adapt a lesson to changing conditions, how to keep students engaged and make the material relevant to them, and how to be outgoing and enthusiastic teachers

Results

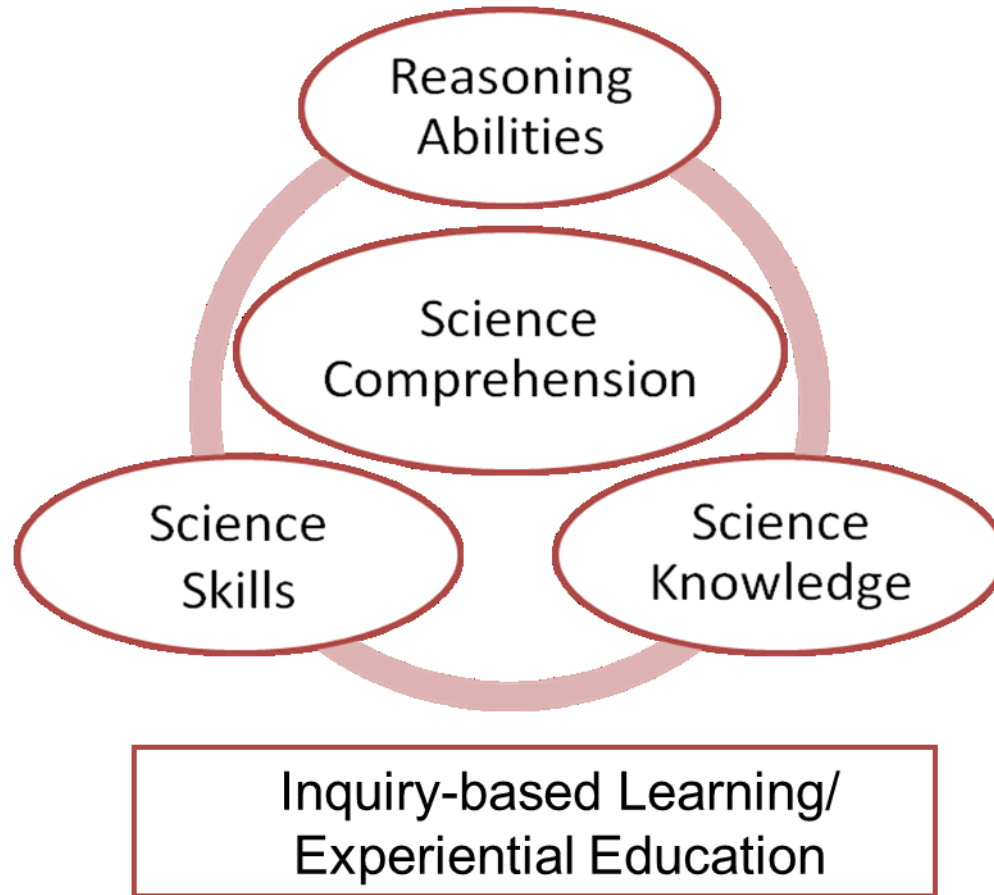
- Memorial Middle School student post-test data
 - 94% of students rated the lab as good or excellent
 - 77% of students preferred learning by doing
 - 64 students took a seven-question quiz averaged 54.4% correct answers



Conclusions

- University student ratings
- Results suggest the need for modifications
 - More robust in-class delivery of content related to the lesson objectives prior to agriscience field day activities
 - Interest approach activity tied to objectives
 - Reflective discussions after each learning activity

Conceptual Model



Skelton, P., B. SeEVERS, T. Dormody, and F. Hodnett. 2012. A conceptual process model for improving youth science comprehension. *Journal of Extension*, 50(3), Article 3IAW1.

Future Directions

- Writing lessons and developing evaluation strategies using the full science comprehension model
- With repeated agriscience learning opportunities a three dimensional spiral of expanding science comprehension created over time, shaped much like a tornado

Thank You!



New Mexico State University
All About Discovery!
nmsu.edu

Contact Information

Tom Dormody, PhD
(575) 646-4511
tdormody@nmsu.edu



Peter Skelton, PhD
(505) 670-4459
skelton@nmsu.edu
<http://mmsaeec.nmsu.edu>



New Mexico State University
All About Discovery!
nmsu.edu