

Bibliography Michele Hollingsworth Koomen

Publications

Exploring Math Series (2001). Author of high interest series of math books that explores various mathematical topics with simple text, photographs, and illustrations. Each book provides a hands-on activity that supports the math content area. Mankato, Minnesota: Capstone Press. Titles of the series are:

- *Patterns: What Comes Next?*
- *Size: Many Ways to Measure*
- *Sets: Sorting Into Groups*
- *Numbers: Counting it Up*
- *Shapes: Discovering Flats and Solids*
- *Fractions: Making Fair Shares.*

Conference Proceedings (Refereed)

1. Koomen, M. J. (2009). April 2009. Understanding the process of applying inquiry teaching methods in elementary classrooms. *National Association for the Research on Science Teaching, Garden Grove, CA, April.*

This paper reports on an interpretive study of four elementary teachers who completed a two week long professional development course aimed at improving teacher understanding of insect ecology and developing inquiry learning opportunities in their classrooms. Two fundamental data collection methods of qualitative research (teacher observations and interviews) framed the data collection of this study. The primary method of investigating and analyzing the experiences of the teacher participants was grounded theory. Findings from the data analysis suggest that implementing inquiry in the first year after completion of the professional development was more teacher directed than student directed. The teacher in effect asks the questions, decides on the methods for experimentation and inquiry and makes the decision regarding the correctness or appropriateness of the answers. This paper extends our knowledge of inquiry-based teaching by placing the findings within a model of inquiry that is a spectrum rather than a linear model.

2. Koomen, M. J. (2009). The Practice of Inquiry Within a Small Group of Hmong Youth . *National Association for the Research on Science Teaching, Garden Grove, CA, April.*

This paper/poster reports on an interpretive study of three Hmong youth in a seventh grade urban middle school science classroom. Critical theory, science for all, the notion of funds of knowledge and lived experiences collectively informed the research data collection with analysis using grounded theory frameworks. Analyzing the collective narratives illuminate a practice of science that is different for each of the three Hmong youth: A practice of science that is tied with the language of science (William) and

teeters tentatively on the expertise and interactions that he has within his small group; a practice of science that is dutiful and pragmatic (Mai) although absent in passion or curiosity, and a practice of science that closely matches a vision of science by the national reform documents (David). Implications of this study to the greater research community are included.

3. Koomen, M. J. (2008). *Science for all and inclusion: Learning from Dion. National Association for Research in Science Teaching, Baltimore, MD, April.*

This paper reports on a case study of one special education student as he studied insect biology and ecology in an inclusive seventh grade life science class. Three fundamental data collection methods of qualitative research (student observations, interviews and artifact analysis) framed the data collection of this study. The primary method of investigating and analyzing the experiences of the student participant was grounded theory. Findings from the data analysis include: classroom constructs that position Dion to learn and challenges of learning in an inclusive science classroom. Implications and insights for science educators and researchers as to the meaning of *science for all* are discussed in the final sections of the paper.

4. Koomen, M. J. (2008). *Listening to the Voices of Linguistically and Culturally Diverse Students as They Navigate Through Schooling. American Educational Research Association, New York, March.*

The purpose of this research is to describe the experiences in schooling of ten native Spanish speaking Latino students, several of whom are recent immigrants to the United States. This study sheds some light on the experience in education of linguistically diverse students that will serve to inform and perhaps better direct learning for the students who are enrolled in our classrooms. This proposal will inform the field of teacher education and research, second language and culture practice and research, and general education practitioners and researchers who promote inclusion of all learners. Many teacher candidates leave their programs feeling ill-prepared to teach students with linguistic or cultural differences in the regular general education classrooms (Norman, Caseau & Stefanich, 1998) despite efforts of teacher preparation programs to embrace inclusion of all students.

5. Koomen, M. J. (2007). *The Essence of the Experience of Special Education and Regular Education Seventh Grade Students as They Learn Insect Biology and Ecology, Association of Science Teacher Educators, Clearwater, Florida, January*

The potential impact and value of this study is that science teaching in inclusive classrooms may be better directed for students with disabilities who are included in our classrooms. The research literature is informative to practitioners regarding

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strategies that support learning of special education students. Listening to the voice of special and regular education students allows practitioners to understand not only what works instructionally, but, how special education students and their regular education peers interpret and develop meaning with and as they are learning. Phenomenological studies, such as this one, allow the perspectives and voices of the study participants to illuminate for us their learning experiences; this illumination contributes directly to our reflection as practitioners, increasing our awareness of what inclusion really means for those who are the experts.

6. Koomen, M. J. & Hartshorn, L. (2006). Longitudinal Study of Beginning Teachers: Emerging Themes. *Association of Science Teacher Educators*, Portland, Oregon, January

In this paper, we report on the research findings of a longitudinal study of beginning science and mathematics teachers in Minnesota during the first three years of their teaching during the years 1999-2004. Sixty-four new teachers participated in this study involving eleven institutions of teacher education in Minnesota. The study focused on five aspects of new teachers: knowing mathematics and science; knowing pedagogy; knowing students as learners; establishing a learning environment and developing as a teacher. Data was collected using quantitative methods (survey instruments) and qualitative methods (interviews, observations and artifact analysis). Analysis of the data revealed several prominent themes: new teachers need a strong content background to teach math and science; new teachers perceive that there are constraints in the learning environment; new teachers perceive that there are few mentoring opportunities available to them and new teachers perceive that there are limited professional development opportunities available to them. The findings of the study are of interest to faculty of pre-service and in-service teacher education programs providing them with a glimpse of the current conditions beginning teachers encounter and their responses to those conditions.

7. Koomen, M. J. & Swanson, A. (2006). Student Teaching at Wolf Ridge ELC: a Collaborative Effort of Gustavus Adolphus College Department of Education and Wolf Ridge Environmental Learning Center. *North American Association of Environmental Education*, Minneapolis, MN, October.

This presentation focused on an innovative partnership between Gustavus Adolphus College and Wolf Ridge Environmental Learning Center, bringing together student teachers (preservice teachers in their "fifth" year who are seeking teaching licensure) as part of a program that provides naturalist training with student teaching.

8. Koomen, M. J. (2005). Meeting the Needs of the Diverse Life Science Student in Middle Schools. *MN Science Teachers Association*, October.

This session focused on application of research strategies that support learning for all in classrooms like science. Meeting the needs of today's diverse student classrooms continue to challenge veteran and new teachers alike.

9. Koomen, M. J. (2004). Helping Children to Master Basic Facts. *National Council of Teachers of Mathematics National meeting*, Philadelphia, PA, April.
10. Koomen, M. J. (2002). Helping Children to Master Basic Facts. *National Council of Teachers of Mathematics National Convention*, Las Vegas, Nevada, April.

These two presentations focused on three main number relationships that can be used to support learning of basic facts.

- a. For subtraction facts, the concepts, "think addition" is the most important idea.
- b. There are patterns and relationships in basic facts. You can figure out new or unknown facts from the ones that you already know.
- c. All the facts can be learned with the help of efficient strategies.

Hands-on activities for each number relationship were practiced by the teachers.

11. Koomen, M. J. (2003). How Do You Develop Guided Inquiry in the Elementary Classroom? *Regional Meeting of National Science Teachers Association*, Minneapolis, Minnesota, October.
12. Koomen, M. J. (2002). How Do You Develop Inquiry in the Elementary Classroom? *National Science Teachers Association National Convention*, San Diego, California, April.
13. Koomen, M. J. (2001). What is Guided Inquiry? *Minnesota Science Teachers Association*, Minneapolis, Minnesota, October.

At the Minnesota Science Teachers meeting (2001), the regional meeting of Science Teachers in Minneapolis (2003) and the national meeting of Science Teachers in San Diego, California (2002), teacher participants left the workshops with specific ideas about how to plan and teach simple chemistry concepts using inquiry methods in their classroom.

14. Koomen, M. J. (2002). Science Content Course Study Results, *SCI/MATH MN Transforming Teacher Education*, Brainerd, Minnesota, April.

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In June of 2001, Gustavus hosted a meeting with several other MN teacher preparation programs. At the heart of our work together were discussions about meeting the new licensure requirements that specified that all future elementary teachers must complete courses in life, physical, Earth and environmental science using the MN Board of Teaching (BOT) criteria. I presented our Gustavus model for meeting the Minnesota science licensure requirements with the induction of EDU 246 and 247: Science for Elementary Educators 1 & 2 in 2000-2001.

15. Koomen, M. J. (2001). *Geometry and Spatial Sense in the K-5 classroom. National Council of Teachers of Mathematics National Convention, Orlando, Florida, April.*

This hands-on workshop provided teachers with many activities to develop informal geometry relationships with their upper (grades 4-6) elementary students.

16. Koomen, M. J. (2000). *Measurement in the K-2 Classroom. National Council of Teachers of Mathematics National Convention, Chicago, Illinois, April.*

This hands-on workshop provided teachers with many activities to develop concepts of measurement with their primary (Grades K-3) elementary students.