APPLICATION CHECKLIST
Research, Scholarship, and Creativity Grant

Deadline February 11th

Please print and complete this checklist and attach it as the cover page of your grant application.

Faculty information

Name: Michele Hollingsworth Koomen

Education Department

Email: mkoomen@gac.edu Rank: Associate Professor

Checklist

Yes: Description of previous projects (and outcomes) funded by RSC grants

Yes Complete project description, including separate statements of:

1. **Purpose.** What are the intellectual, conceptual, or artistic issues? How does your work fit into other endeavors being done in this field?

2. **Feasibility.** What qualifications do you bring to this project? What have you done/will you do to prepare for this project? What is the time period, i.e. summer, summer and academic year, academic year only? Is the work's scope commensurate with the time period of the project?

3. **Project Design.** This should include a specific description of the project design and activities, including location, staff, schedules or itineraries, and desired outcomes.

☐ **RSC Budget Proposal Form attached as last page of application**

☐ **Nine (9) copies of completed application and budget (including this checklist) to be submitted to the John S. Kendall Center for Engaged Learning (SSC 119)**

Research, Scholarship, and Creativity Grant: BUDGET INFORMATION

If successful, my proposal can be used as an example to assist future faculty applications. This decision will not in any way influence the evaluation of my application. Yes / No (please circle one)

Directions:
1. Enter your **Name**
2. Enter the **Stipend Costs**
3. Enter the Project Costs (both individual costs and **Total Project Cost**)
4. Enter **Total Amount Requested** (Total Project Cost + Stipend)

NAME: Michele Hollingsworth Koomen

STIPEND (Please check one box to indicate your distribution preference)
*Note: The RSC grant will fund up to 1,500 towards **Project Costs**. If your project costs will exceed this amount, you may opt to apply a portion (or all) of your stipend to cover these additional costs. If this option is your preference, please select "Partial Amount".*

☐ **Full Amount** ($700- assistant professor; $600-associate professor; $500-full professor)

☐ **Partial Amount** (apply a portion of the full amount to project costs)

Partial Amount: Please indicate the amount that you would like to apply towards project costs $ 600.00 (or all of it).

PROJECT COSTS: List each item individually with its cost. Attach additional sheets if necessary.	Project Costs Amount
I. Equipment (e.g. transcription machine, camera, digital recorder—but not computer hardware)	*I. Equipment*
1.	1.
2.	2.
3.	3.
II. Materials (e.g. books, printing, software, lab supplies)	*II. Materials*
1.	1.
2.	2.
3.	3.
III. Personnel (e.g. typist, transcriptionist, student assistant)	*III. Personnel*
1.	1.
2.	2.
3.	3.
IV. Travel (cannot include conference travel, see http://gustavus.edu/finance/travel.php for allowable expenses)	*IV. Travel*
1. Airfare to Namibia: $2600	1.2600
2. Airfare to El Paso: $375.00	2. 375.00
3. Car rental EL Paso: $420.00	3. $20.00

TOTAL PROJECT COSTS **$ 3395.00**

TOTAL AMOUNT REQUESTED (Total Project Costs + Stipend) **$ 2100.00**
(Note: The RSC grant will fund up to an amount equal to your Full Stipend + 1,500 for Project Costs)

Research, Scholarship and Creativity Grant Application

Michele Hollingsworth Koomen, Ph.D

February 2011

Previous Projects with Research, Scholarship, and Creativity Grants

Two RSC grants wee funded to Michele Koomen in 2004 and the other in 2007. The 2004 to supported her dissertation study research at the University of Minnesota. In 2007, she presented one of several papers that derived from that study at the Association of Science Teacher Education in Florida. In 2006, she received approval for an RSC grant in 2006 that was respectfully turned down. Shortly after the RSC application was due in 2006, she began conversations as she entered a tenure track position at Gustavus with Dean Maguire regarding start up funds from the Dean's office that funded the research and equipment needs for her scholarly work in 2006-2007. What follow is the abstract for the paper that resulted from the 2004 RSC grant:

Abstract

This paper reports on a phenomenological study of nine regular and special education students as they studied insect biology and ecology in their inclusive seventh grade life science class. Three fundamental data collection methods of interpretive research (student observations, interviews and artifact analysis) framed the data collection of this study. Hermeneutic phenomenological analysis and a seven-step framework, beginning with establishment of the unit of analysis and ending in theory generation, were used to systematically analyze the data resulting in the emergence of four main themes. The essence of the lived experience of the study participants reveal a variety of ways working with others in groups supported their learning. A second finding of this study, *It's kind of hard in learning science,* exposes some of the anxiety and the challenges that are part of the experiences of both regular and special education students in learning science. A third finding reveals that for the students in this study *the practice of inquiry learning in science is fragile.* Despite daily opportunities in inquiry activities, many students are fixated in finding the "right" answers and just getting their "work done." The practice of

inquiry is also fragile because of the perceptions of how we go about doing and learning science. The perception of practicing science for the special education students was moderated and limited by their viewpoint that science is coupled with language arts. The last major theme describes the manner in which both student groups navigate through science learning using various strategies that contribute to their learning or engaging in behaviors that seem to conceal their learning differences. The results of this research have implication for inclusive classroom teachers, special educators, teacher educators and administrators. Listening to their voices serves to "prime" us to consider and value their perspectives as we make decisions that affect their learning and their lives.

The 2004 the RSC grant provided funds to purchase qualitative data analysis software (NVIVO), a digital tape recorder and accessories for student interviews, digital tapes for digital video taping teachers and students in classrooms and funds for this faculty member to complete a broad research literature review.

In 2007 Koomen received an additional RSC grant, which funded a research study that focused on the experiences of learning of 10 immigrant children in El Paso, Texas in the summer of 2007. The funds were used for travel (airline, car rental and lodging) to El Paso, Texas as well as for purchase of equipment (video tapes, digital voice recorder and science supplies) necessary for the collection of the data on site in El Paso. Koomen reported the results of this research at the American Educational Research Association's national conference in New York City in March of 2008. Koomen intends to follow up with this study when she is on leave in 2010-2011 with additional data collection from the student participants. What follows is the abstract of that paper.

Abstract

This paper describes a qualitative study involving eleven Latino youth who are acquiring English as a second language. Two fundamental data collection methods of qualitative research (observations and interviews) framed the data collection of this study. The primary method of investigating and analyzing the experiences of the student participants

was grounded theory (Glaser & Strauss, 1967). Four main findings resulted from the data analysis: the first two speak to *constructs for learning* in the classrooms that serve to either (a) mitigate or regulate independent learning of the students or (b) invoke fear or anxious responses from the students. The third finding represents a coupling of a growing *self-determination* that hinges on a protected place to rest, to settle and to flourish. The fourth and final findings represent a synthesis of recommendations that are suggested by the youth voices and might serve to improve schooling for second language learners.

Project Description

Purpose

The purpose of this application for an RSC grant are two fold. I seek funds to provide support for my professional development with teachers in Namibia and secondly, I request funds to support phase two of the research in El Paso, Texas with immigrant students. If I am awarded the full amount, $2100, I propose to use $1400 to defray costs for my work in Namibia and $700 for my work in EL Paso. In the following section, I will outline how my proposed work fits into initiatives in the field. First, let me help you to understand why I seek funds for Namibia, to offset the cost of travel, including air fare and housing, and materials to provide professional development and research for teachers in a school in Windhoek, Namibia during my sabbatical in the summer and fall of 2011.

In January of 2009, as part of our Jterm course (*South Africa and Namibia: Building Global Citizenry)* I met with Principal Awaseb and the coordinator of science and math instruction (Mrs. Rudolfine Kamahene) at the Steenkamp School in Katutura, Namibia. As a result of our meeting, I was invited to return during my sabbatical to explore and begin to develop research based opportunities for professional development in math, science and other subject areas with the teachers at the school. There are many parallel issues in education, especially science and math education between the United States, including Minnesota, and Namibia. For one, both our governments have made science and mathematics education a high national priority. Namibia has a high percentage

of students that do not complete secondary school, yet, what a lot of people do not know is the United Sates, with 33% of its students dropping out, also is challenged by inadequate education of its people. In Minnesota teachers and schools are increasingly challenged by the sheer diversity of languages and cultures in the schools, making second language instruction and support critical. Namibian students attend schools where English (although a second language for most) is the language of academics. My growing awareness of these many parallel challenges and the fact that science and math are a high priority are what compelled me to accept the invitation of Principal Asawab and led me to apply for this RSC grant. I am not naïve enough to believe that I will come close to significantly changing the nature of science and math education in either of our countries in the relatively short duration of a sabbatical. But, I am hopeful and optimistic, that funds from the RSC will offer the teachers at Steenkamp and myself opportunities to share and learn together and in so doing, strengthen science and mathematics education for our children and youth, the ultimate guardians of our democracies. I intend to use the model for In-service Education and Training (O'Sullivan, 2000) or INSET as I work with the teachers and the principal at the Steenkamp School. This model begins with a needs assessment, which I hope to conduct in the summer of 2011. I am committed to building professional development with that school that is long term and sustainable, including hopefully, additional January term courses from GAC to Namibia and opportunities for our GAC students to learn.

The purpose of the second project is to return to the research site in El Paso and to complete phase two of the a study that focuses on the experiences of learning of immigrant children in El Paso the subject of the second abstract above. I hope to reconnect with each of the 10 youth with whom I worked to learn more about the process for them, as second language learners, as they continued their schooling in the EL Paso Public School System. Funds granted by

this part of the proposal will be used primarily for travel expenses including airline, car rental and accommodations.

Immigrant children, like students with disabilities (IDEA, 1997), receive services in our schools that aim to integrate them into the general American society (Kelly, 1981). Much of the research in English Language Learners (ELL) focuses on either pull-out sheltered English programs where ELL students are taught the content of their courses in simplified English by an English as a Second Language teacher (ESL) or educational programs that support native language development through content-based instruction in the child's native language (Collier & Thomas, 2004; Oller & Eilers, 2002; Rolstad, Mahoney, & Glass, 2005). These studies are intended to depict instructional interventions, strategies, and adaptations that support language acquisition for ELL students. The focus of these studies is on "what works" for learners with limited English proficiency mainstreamed into regular education classrooms. Their work is based on sound research and years of practical expertise; however, the effectiveness of their methods is viewed through a scholarly lens (Keefe, Moore & Duff, 2006). Indeed, a good deal of educational research is informed by the relationship among the factors of teaching, curriculum, and student performance, but uniformed by the observations that students would provide if we only listen" (Reeves, 2005, p. 72). The true expert on learning is the learner, in this case the immigrant child. Missing from the research literature are studies in which immigrant English language learners tell us in their own words what practices really work best for them in the inclusive classroom. The purpose of this study is to add an essential and missing perspective to our understanding of the teaching and learning of English Language Learners (ELL) by listening to the voices of a group of second language learners, across several years of their schooling.

Feasibility

What qualifications do you bring to this project?

Michele Koomen is an Associate Professor in the Department of Education at Gustavus Adolphus College. She teaches science and mathematics methods courses for elementary preservice teachers and the science content course for elementary education majors at Gustavus Adolphus College. Science content topics such as matter, dinosaurs, insect ecology, plants, space, or global climate change are used to guide students to learn about teaching science with inquiry based methods, understand how we embed necessary standards for science (*Minnesota Academic Standards*, the *Board of Teaching Standards of Effective Practice* or the vision of the *National Science Standards*) and assess student learning and support the learning of *all* students. In the Mathematics Methods course, various math strands (number sense and operations, for example) are used to build together an understanding of research based mathematics teaching and learning methods and like in the science methods course, to think together the standards important to math and math teaching, (*Minnesota Academic Standards in Math*, the *Board of Teaching Standards of Effective Practice* or the vision of *the National Council of Teachers of Mathematics Standards)*, and how we assess and think about student understanding, and how we support learning for *all* students. Student evaluations of teaching (SETS) state, "she's always well prepared for class; enthusiastic, full of energy and passionate; and very knowledgeable about the content of science and math beyond our courses." In addition to teaching the methods of effective math and science instruction, Koomen goes a step farther by asking her students to study their own teaching using the basics of qualitative research with a form of phenomenological inquiry that is designed to "awaken teachers to see beyond their habituated perceptions, and in so doing become more mindful of individual children, classroom dynamics and their teaching practices" (Kesson, K., Traugh, C. & Perez, F. 2006) and thus work toward improving their own practice. This paragraph provides evidence that Koomen is well prepared to teach science and mathematics methods and content to teachers

at the Steenkamp school in Namibia and at the same time facilitate the teachers' own growth as a teacher learner.

In addition to her teaching duties at Gustavus, for the past 6 years Koomen has been a lead instructor of a series of professional development courses taught each summer at the University of Minnesota, part of a partnership involving the Improving Teacher Quality (ITQ) programs through the Minnesota Office of Higher Education, Gustavus and the University of Minnesota, pacifically the College of Fisheries, Wildlife and Conservation Biology with Karen Oberhauser and Robert Blair. Koomen has served as not only a lead instructor for courses titled *Insect Ecology and Citizen Science Research for Teachers* but has been the lead evaluator for the same series of courses. Her role as evaluator led her to be selected as an external evaluator for all ten funded science projects (2011-2012) funded through the Minnesota State Office for Higher Education at the request of Nancy Walters. This noteworthy role suggests that Koomen is highly regarded in science/mathematics education and professional development in the state of Minnesota and speaks to her qualification to develop professional development opportunities with the teachers in Namibia in mathematics and science and her capacity to evaluate the progress of said professional development.

Koomen is also highly qualified to return to the research site to work with immigrant students in EL Paso, Texas. She spent two weeks with the subject population in 2007 that led to the paper she presented at AERA in 2008. Koomen's research interests are rooted in developing inclusive classrooms that are equitable and just, including support of students with exceptionalities and cultural and language differences for the past 6 years. In her work at the University of Minnesota she provides the leadership by developing special sessions for Ecology Institute teachers regarding supporting ELL and special education students in subject areas like science.

What have you done/will you do to prepare for this project?

Namibia: I have been in communication with Principal Pauline Asawab for the past two years. She has spearheaded local arrangements for me including housing. Mrs. Asawab gave me the Namibian *National Mathematics and Science Standards* for grades 1-11. I have studied these documents and compared them to similar US reform documents, mainly the *National Council of teachers of Math Standards* (2000) and the *National Research Council Science Standards* (1996). I am working on a literature review pertinent to designing professional development in developing countries like Namibia. I plan to use the INSET model (In-service Education and Training) model described in O'Sullivan (2000) specifically for teachers in Namibia.

El Paso: I continue to communicate with the pastor of Cristo Rey Church, in Eel Paso, Texas. Pastor Rose Mary Sánchez-Guzmán, graciously supported my research in 2007 by assisting me in identifying student participants, providing me with housing and most important of all offering translation services. Pastor Rose Mary Sánchez-Guzmán has agreed to assist my research again. Pastor Rose Mary's church includes an after-school and summer program that provides day care and support services for the Latino immigrants of her parish. I will, once again, offer my services to the youth who are enrolled in that summer program by coordinating field studies of the regional natural history of the area. I continue to read the literature in second language and cultures and immigrant schooling.

What is the time period, i.e. summer, summer and academic year, academic year only?

Namibia: Depending on a number of factors, this work will begin in summer of 2011 and continue into the fall of 2011. I anticipate two separate trips to Namibia: The first to conduct a needs assessment and the second to begin the actual professional development. Both trips will be about two weeks in duration.

El Paso: I would like to travel to EL Paso in the summer of 2011. In 2007 I spent two weeks in August before the start of the school year in Texas. I anticipate spending two weeks in Texas again.

Is the work's scope commensurate with the time period of the project?

Yes. I believe it is. Two weeks of intensive data collection and meeting with teachers at the Steenkamp School should be enough. I spent two weeks in El Paso the first time and believe the same amount of time will be sufficient.

Project Design

Namibia: The academic year in Namibia cuts across a calendar year from roughly January through November. By the time I have made all the travel arrangements, I anticipate it will be the second half of the school year in Namibia (roughly June) when I arrive at the school site. The first phase of my work, and the main subject of this RSC proposal, in Namibia will be a needs assessment. As noted above, my work in Namibia will be informed by the research literature, specially the INSET model (figure 1) articulated by O'Sullivan (2000).

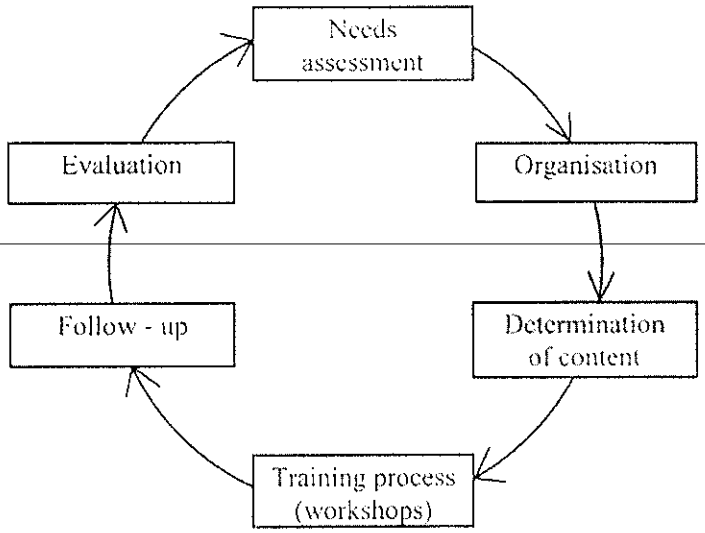

FIG. 1. INSET strategies model for the INSET programme.

A dominant view in the professional development literature, specifically in Namibia, is that INSET (In-service Education and Training) should be based on assessment of needs' (Eraut, 1995, p. 622). Assessing needs is an effective practice that leads to INSET. Ultimately I envision a multi-year project of professional development and research with the teachers in the Steenkamp School in Namibia, thus assessing needs will lead to planning an INSET program that is realistic, feasible and within teachers' capacity to implement.

I will develop needs assessment of the teachers by conducting focus group meetings with the teachers and the lead science and math teacher, observations of the teacher's practice, conversations with the teachers and collecting of teacher and student artifacts. As I hope to document the process of initiating professional development in Namibia as research and move this toward publication, I will seek IRB approval to include all the data collected from the teachers. I will use qualitative research methods to try to understand the process of developing the needs assessment and planning the professional development. I have received consent from Principal Asawab for the dual purpose, research and professional development of my work in Namibia. The main outcome of the needs assessable is to develop a professional development program that is

sustainable, realistic, and within the teacher's capacity to implement (as described above).

El Paso, Texas: As I did in the first study, I will use qualitative and phenomenological research methods in a systematic attempt to uncover and describe the structures, the internal meaning structures, of lived experiences of the immigrant students over time. The purpose of phenomenological research is not to establish causality or to find correlations among variables, as is the case in positivistic research. Rather the purpose of phenomenology is to describe the essence of the experiences of the participants. Three fundamental data collection methods of qualitative research (student observations, interviews and artifact analysis) will frame the data collection of this study. The primary source of data will be the transcribed text from the interviews of the student participants.

Recruitment of the immigrant children participants will follow criteria approved by the Institutional Review Board (IRB) at Gustavus Adolphus College. It is hoped that all ten former participants will be invited to be part of this research study. The interviews will take place in early July 2011 for two weeks. Each child will be interviewed 2-3 times. The interviews will be semi-structured lasting between 45-60 minutes each. The phenomenological interview begins with a more social conversation aimed at building a relaxed atmosphere and trust between the researcher and the study participant. Each interview will be audio and video taped with transcription by the researcher or an assistant, with additional notes taken by the researcher as necessary during the interview. A translator will be present, as needed.

Data analysis in qualitative research is complex. NVIVO, a qualitative software program (funded through Koomen's 2004 RSC grant) will facilitate the organization of the transcribed interview data into codes, attributes, and relationships. Coding may involve perspectives held by people, activity codes, strategy codes, methods codes, and process codes (Cohen, Manion & Morrison, 2000). The data will be triangulated "...until the categories and relationships,

among the categories are saturated and the characteristics of the teachers are understood" (Simmons et al., p. 935). It is expected that theory generation of the emerging conceptions of the immigrant students will emerge from the data analysis. Analytic deduction with inclusion of discrepant and negative cases will be critical to theory generation. In addition, constant comparison will allow multiple opportunities to compare data "...across a range of situations, times, groups, of people, and through a range of methods" (Cohen, Manion, & Morrison, p. 151).

Participants (Staff)

Michele Koomen will be the principal investigator of both of these projects.

Schedules for Research: Namibia and El Paso, 2011	
Windhoek, Namibia	Travel to Namibia: June 2011 for two weeks. Observations of teachers, focus group interviews, individual interviews and collection of student and teacher work. August-October 2011: analysis of data with development of implementation plan for the PD November 2011: second trip to Namibia to begin PD Paper presentation at AERA: 2012
El Paso, Texas	Data Collection through interviews, observations, and field notes: El Paso, Texas (July 4-18,) Transcription of interview audio recordings (July and August) Analysis and interpretation of data (September-October 2011) Paper presentation at AERA 2012

Predicted Outcomes for the Research

Namibia: As indicated above the predicted outcomes from my work in Namibia is a design for a multi-year professional development for the teachers in

math and in science. I anticipate that the results of the work that I do will be presented at a national conference such as AERA in 2012.

EL Paso: The results of this project will be disseminated to several audiences, both in oral and written formats. Koomen plans to present the results at national meetings held by professional organizations, such as the American Education Research Association (AERA), Bilingual & Migrant Education conference (organized by the MN Dept. of Ed), Minnesota Teachers of (TESOL) English as a Second or Other Language Conference, or National Association for Bi-Lingual Education.