Portland State UNIVERSITY
GRADUATE SCHOOL OF EDUCATION
Curriculum and Instruction
Culturally Responsive Elementary Mathematics Education
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Culturally Responsive Elementary Mathematics Education
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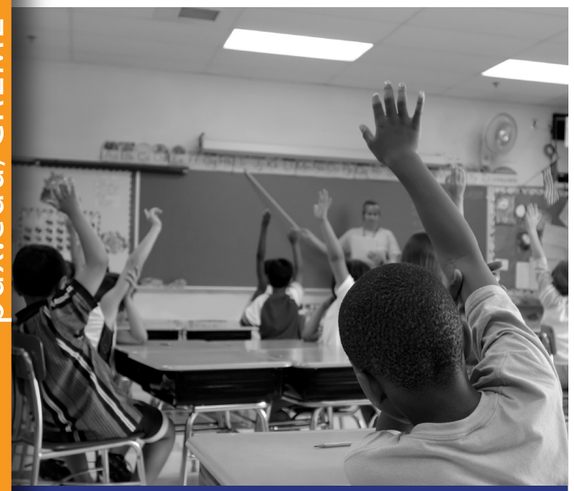
CULTURALLY RESPONSIVE ELEMENTARY MATHEMATICS EDUCATION

Graduate School of Education

CR+E=M^e

Connecting school mathematics with the lived experience of children and their communities



Portland State UNIVERSITY

Project Advisors

Professor Marta Civil
Mathematics Education and Roy F. Graesser Endowed Chair
Department of Mathematics
University of Arizona

"We should examine how our values and beliefs about mathematics support or interfere with the development of learning experiences that are culturally responsive to the students we have."

Professor Geneva Gay
Professor of Education
University of Washington, Seattle

"Information about cultural diversity should be woven into learning how to do addition, subtraction, division, multiplication, and fractions."

Professor Danny B. Martin
Department of Mathematics and
College of Education
University of Illinois at Chicago

"I argue for linking mathematics literacy to the notion of liberating African American children from various forms of oppressions."

Visit pdx.edu/creme for more information.

For more information, contact swapna@pdx.edu.

Oregon Department of Education

Office of Education Equity

CREME is funded by ODE as part of the initiative to develop a culturally responsive teacher work force in Oregon, with specific reference to elementary mathematics.

"As the State of Oregon becomes increasingly diverse, it is our responsibility as citizens to contribute and participate in creating a learning environment that is culturally appropriate for all students."

Multicultural Education In Oregon: 2003 Program Guidelines for Multicultural Education.

"We believe that communities, parents, teachers, and community-based organizations have unique and important solutions to improving outcomes for our students and educational systems."

"We believe the rich history and culture of learners is a source of pride and an asset to embrace and celebrate."

From the Equity Lens adopted by the Oregon Educational Investment Board.

Contact Us

For information about the project, contact
Swapna Mukhopadhyay
503-725-8495
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CULTURALLY RESPONSIVE ELEMENTARY MATHEMATICS EDUCATION

The goal of the project is to demonstrate culturally responsive pedagogy and practices in elementary mathematics and evaluate their roles in improving mathematics education.

To achieve such an environment we will be:

- including examples of mathematics from many cultures, including those of the students
- infusing mathematics into existing or newly-established school-community activities, such as after-school Math Clubs
- identifying contexts in the lives of students, their families, and their communities in which mathematics is implicated, and using these contexts as an educational resource
- arranging visits of students to campuses where they can interact with role models

Distinctive structural features of the schools trailblazing culturally responsive mathematics education in Grades 3-5 will be:

- explicit reference in school policy to the diversity and sociocultural reality of students
- full communication with families and use of community resources of knowledge, expertise, and out-of-school educational opportunities
- partnership with the Graduate School of Education at Portland State University.

In the Graduate Teacher Education Program at PSU, teacher candidates will continue to learn about mathematics from a critical multicultural perspective, and will have field placements in the partnering schools.

COMMUNITY PARTNERS

Our United Villages/Rebuilding Centre

"Inspiring people to value and discover existing resources to strengthen the social and environmental vitality of communities".

The Rebuilding Center and associated community organization Our United Villages (ourunitedvillages.org) has educational outreach and will provide materials for hands-on activities for children to learn aspects of mathematics such as measurement and geometry in the course of design and construction.

SCRAP

"Our mission is to inspire creative reuse and environmentally sustainable behavior by providing educational programs and affordable materials to the community."

Existing educational activities and facilities at SCRAP (scrappdx.org) will be made available to the project, along with materials for hands-on mathematical activities.

Portland Art Museum

The museum (portlandartmuseum.org) offers educational programs for schools, including free seminars and workshops. Its collections include many fine examples of artifacts that can be used for explorations of geometrical patterns and design.

Basketry Tray – Unknown Klamath artist, Courtesy: Portland Art Museum.

PARTICIPATING SCHOOLS

Rosa Parks School
Principal: Tamala Newsome
http://www.pps.k12.or.us/schools/rosaparks/

Trillium Public Charter School
Principal: Kieran Connolly
http://trilliumcharterschool.org/

PROFESSIONAL DEVELOPMENT

Teachers from each of the participating schools will participate in a yearlong professional development based in their schools. They will be supported to form communities of practice sharing expertise and experience. Their status will be that of colleagues working with the Portland State University team to culturalize curriculum and assessment material, and in documenting and disseminating accounts of their experience through publications and presentations. Primary means for the delivery of these goals include:

- professional development with course credits
- meetings for teachers, PSU faculty, teacher candidates, and visiting scholars
- cycles of planning, teaching, and reviewing lessons based on the existing adopted curriculum

The project will culminate in June 2015 in a teacher-led conference in which the participating teachers and their students will showcase their work to members of the community, other teachers, policy makers and administrators, and scholars, with reactions and commentary from project consultants Marta Civil, Geneva Gay, and Danny Martin.

PROJECT TEAM

PRINCIPLE INVESTIGATOR

Dr. Swapna Mukhopadhyay is a professor in the department of Curriculum & Instruction of the Graduate School of Education. She teaches mathematics education from the perspective that treats mathematics as socially and culturally constructed. With her colleagues, she will conduct the yearlong in-service course for teachers at the two schools. Email: swapna@pdx.edu, Phone: 503–725–8495

SUPPORT TEAM

Dr. Brian Greer is a mathematics educator with a background in mathematics and psychology.

Frank Heimerdinger is an experienced elementary school teacher, and a doctoral candidate in Curriculum Instruction, Graduate School of Education.

Harrell Fletcher, a fellow of the Institute for Sustainable Solutions, directs "Art as Social Practice" in the College of the Arts at Portland State University, which encourages students to discover place within its social and historical contexts.

Artemio Paz is an architect and planner with a particular interest in design education.

Contact

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