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## Editorial: A Global Intellectual Collage

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## A Global Intellectual Collage

**Bharath Sriraman, Editor**  
**The University of Montana**

Welcome to another eclectic blockbuster issue of the *Montana Mathematics Enthusiast*. This issue features nine journal articles from all around the world with a wide variety of interesting topics for math enthusiasts, math education researchers, teachers and students. The geographic range of the authors and the sheer magnitude of perspectives presented by the articles both embodies the spirit of the journal and again testifies to the benefits of open access for the exchange of ideas across institutional and national boundaries.

Some statistics of the growth of the journal have been requested by contributors and readers which are now candidly presented. In the time period May 2005-06, 46 manuscripts were received of which 16 were published in the two issues (vol3, no.1 and vol3, no.2). The acceptance rate of manuscripts after peer review is roughly 33% and the average time period from submission to publication is 6-10 months. Contributors should note that proof based math articles and mathematics education articles using esoteric statistical techniques take much longer to be reviewed in comparison to other manuscripts because of the difficulty of finding referees competent in highly specialized areas of research. Prospective authors should consult the aims and scope of the journal to determine whether our journal is an appropriate outlet for their work.

The journal has recently received indexing in *Academic Search Complete*, a new EBSCO product, in addition to being listed in the approximately 300 library directories worldwide. Access statistics continue to be amazing. Interested readers can look at the journal statistics given at the end of this issue for details on places from which our journal is being accessed.

Another issue that is need of discussion and serious consideration is the fact that mathematics education research is of growing interest in regions in the world historically under-represented in numerous publications. We would like to cultivate this growing interest and take steps to remedy this unfortunate situation for these researchers. From many of the e-mails and manuscripts I have received for the journal, the two main issues that have come up are: (1) Providing language support to non-native English speakers on promising manuscripts; (2) Providing current research literature on topics being researched and literature on advances in methodologies for researching problems. To date we have been able to provide this type of support for authors from under-represented countries and will continue to do so. Our long term goal is to use the journal as a platform to bridge schisms between countries on the cutting edge of advances in mathematics education and those attempting to get there. I will take this opportunity to thank members of the editorial board who have been particularly sympathetic to this vision and given of their time to help potential authors.

This journal issue contains mathematics education research articles that employ very interesting frameworks and methodologies. In the article by Martina Janáčková and Jaroslav Janáček, the combinatorial thinking of a high school student in the Slovak Republic is analyzed via the use of four isomorphic problems and by then carefully delineating student strategies by the method of “atomic analysis” developed by Milan Hejný. The method of “atomic analysis” examines every

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nuanced detail in the written work of a student and allows researchers to broaden the range of possible strategies employed by students. In this paper, these researchers describe ten different strategies used by a student on these combinatorial problems. The paper by Giorgio Bagni (Italy) reflects on 50 years since the publication of Ludwig Wittgensteins landmark work *Bemerkungen über die Grundlagen der Mathematik*. Bagni writes on the creative power of language, and how the language itself is embedded into the rest of human activities. Readers interested in the foundations of mathematics will find Bagni's exposition of interest. Birch Fett (Montana) writes a historical expository paper on the golden ratio and its repeated occurrence in nature, in art, and in music. Fett also points out to various non-European civilizations which were aware of the golden ratio. This paper also provides some unusual modern connections of the golden ratio with day to day life. The next paper comes from Saudi Arabia, in which Balarabe Yushau examines the influence of blended e-learning on students' attitudes towards mathematics and computers. Yushau's paper reports on the results of two quantitative attitude batteries administered to a random sample of 70 students of the preparatory year program of King Fahd University of Petroleum & Minerals (KFUPM) in Dhahran. Catherine Kelly explores problem solving in elementary classrooms while focusing on how children use (perform tasks) manipulatives and/or tools in problem solving while working on mathematical tasks. Her paper should serve as a useful research based resource for teachers contemplating the "correct" use of manipulatives.

Eddie Gray (UK) and Demetra Pitta-Pantazi (Cyprus) contribute an in depth analysis of the relationship between 8-11 year old students' numerical achievement and their possible disposition towards the construction of particular frames of reference. The paper uses the characteristics of a variety of kinds of images to focus upon frames of reference and explores a possible relationship between children's verbal descriptions of concrete and abstract nouns and the different ways they respond to aspects of elementary arithmetic. This paper provides an exemplary application of Marvin Minsky's framework of frame system theory. The next paper by Om P. Ahuja (Ohio) compares U.S performance on international assessments like TIMSS and PISA to other countries and discusses issues related to the goal of creating world-class high quality mathematics education for all K-12 American students. In particular, the author chooses to apply the success story of Singapore to the U.S context. The editor is interested in reactions to this paper from those interested in weighing the pros and cons of such comparative analyses. Alex Friedlander and Tzipora Resnick (Israel) contribute a paper on the use of sunrise and sunset data with ninth graders and present numerous pedagogical possibilities with the use of such activities. The final paper by Iliada Elia (Cyprus) and Panayotis Spyrou (Greece) makes use of implicative statistical analyses to propose a triarchic conceptual-semiotic model of the concept of function, which describes students' thinking and understanding of the notion of function across different modes of representation. The instrument used by these researchers provides interesting recognition tasks.

The last few pages provide worldwide access details of the journal. On a concluding note, we are still on schedule to release a special monograph issue of the journal focused on mathematics education and social justice (vol.3,no.3) in December 2006. Thank you for your continued support and input. As usual commentaries, book reviews and volunteers for refereeing are always welcome.