The University of Chicago School Mathematics Project

UCSMP Newsletter

No. 34 Winter 2005-06

Wright Group/McGraw Hill to Publish UCSMP's Pre-Kindergarten Through Grade 12 Curricula

UCSMP is pleased to announce that the Wright Group/McGraw-Hill will publish the third edition of UCSMP's secondary mathematics curriculum, as well as the first edition of a new course tentatively titled *Pre-Transition Mathematics*. The first programs will be available beginning in 2007. The Wright Group currently publishes the *Everyday Mathematics* elementary textbooks, and we are excited to have the complete UCSMP Pre-K through grade 12 curricula available from a single publisher.

UCSMP is proud of the 22 years of meticulous research and development that have gone into its materials, resulting in increased test scores for students at all levels. We look forward to working with the Wright Group/McGraw-Hill in this endeavor. Kathleen Ludwig, the Wright Group's Executive Editor for Product Development, says, "We are delighted to build on our successful partnership with UCSMP to offer a complete mathematics program for students from grades Pre-K through 12. Teaching students to understand and appreciate mathematics is more urgent than ever in our global economy, and these new programs will help teachers to accomplish that goal."

Although the UCSMP curriculum continues to undergo revision in response to evolving needs, UCSMP's mission has not changed. As Director Zalman Usiskin says, "Today's students need more than computation skills. Our research

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Call for Schools to Field Test Secondary Curriculum

Last summer, UCSMP authors and staff began work on the third edition of UCSMP's secondary curriculum, as well as a new course, primarily for the 6th and 7th grades, currently referred to as *Pre-Transition Mathematics*. The schools that field test pilot versions of the new and revised courses are invaluable partners in this exciting and ambitious project. We are now taking applications from schools interested in participating in field trials of three of these courses during the 2006-07 school year: *Pre-Transition Mathematics*, *Geometry*, and *Advanced Algebra*.

Pilot editions will be supplied free to all classes selected for our studies. Although the study is not limited to schools that fit the following categories, we are particularly interested in three kinds of schools: (1) those that can supply matched classes using other materials for comparison studies; (2) those in which students have been using UCSMP materials (*Everyday Mathematics*) since first grade; and (3) those willing to consider participating in multi-year longitudinal studies of students using UCSMP materials beginning in 6th or 7th grade. Testing and the completion of questionnaires by students at the beginning and end of the school year are required of all classes in our studies. In future years we will be looking for schools interested in participating in studies of the later books used in the UCSMP secondary curriculum.

Detailed information about the field tests and an application form for each text can be found at: <http://socialsciences.uchicago.edu/ucsmp/testsites.html>. Review will begin on March 1, 2006. We will notify schools by March 15. Later applications will be accepted if openings for study schools remain. If you have questions after reading the information online, please contact Denisse R. Thompson, Director of Evaluation, at (773) 702-8775 or denisse@uchicago.edu.

Inside this issue . . .

STAFF PROFILE

Debbie Leslie

Developing Curricula to Empower Students and Teachers

Debbie Leslie, early childhood team leader for *Everyday Mathematics* (*EM*), feels strongly that curricula should inspire, rather than limit teachers. Curricular materials should help teachers respond to students and enable them to feel the joy and challenge of teaching. Ideally, a teacher's manual should be a guide rather than the "be-all, end-all" of teaching, and a resource that encourages teachers and students to think and ask questions. With her seven-person team, Debbie strives to create developmentally-informed materials that will give pre-kindergarten and kindergarten teachers who wish to explore and extend beyond the curriculum opportunities and encouragement to do so, while providing clear guidance and excellent content for those who prefer more direction. Debbie's approach to her work demonstrates her great respect for teachers as well as her belief that education can be improved through curriculum like *EM*.

Debbie Leslie, Early Childhood Team Leader

Debbie draws on her own team's expertise as she attempts to achieve this balance, and says that collaborating with others is one of the most enjoyable parts of her job. Each team member brings teaching experience from different classrooms and communities, offering an individual perspective and deep knowledge of the pre-kindergarten and kindergarten worlds. The group writes almost everything together, incorporating these different experiences. Debbie pulls the pieces together into a cohesive whole. She enjoys the entire process – writing, editing, organizing projects, meeting with teachers, and spending time reviewing early childhood education research.

Debbie's interest in working with young children, who are "interesting, challenging, and energetic," can be traced to her undergraduate years. While a student at Yale University she majored in molecular biochemistry, but she found that, when looking for summer jobs, she was drawn to day-care centers and elementary schools rather than laboratories. After graduation, she spent two years teaching kindergarten at a private school affiliated with Yale.

Originally from Evanston, Illinois, Debbie left the east coast in 1992 to pursue a Master of Science in Teaching degree and teacher certification at the University of Chicago. Her advisor was Max Bell, the original architect of *EM*. For her MST project, she assisted with the first longitudinal study of the *EM* curriculum, interviewing new users. She has worked on *EM* materials on a regular basis ever since, reviewing manuscripts while teaching kindergarten and first grade, and taking time off from teaching to help with the second edition of the curriculum. Debbie has also worked with Max and Jean Bell on developing elementary science curriculum materials through the Chicago Science Group. She remains committed to and involved in this project.

Debbie is attracted to early childhood education in part because of the autonomy teachers of young children have to tailor curriculum to their students' interests. And why not follow the children's lead, given the extraordinary ability she finds they have to get to the heart of the matter during classroom discussions? She shares an example. When young students look at a 0-100 number grid, they begin to discover patterns, and quickly become enthused. They share observations: "All those numbers start with a 1, then all those numbers start with a 2, and it keeps going up each number!" They ask questions that stimulate discussion, such as: "Why does everything go from 0 to 9 and then start over again?" or "Do the numbers just keep going up and up forever?"

While Debbie appreciates children's enthusiasm and energy, her own energy seems boundless. She is the mother of three sons, all under the age of seven. Along with her active career and home life, she makes a point to learn new things often, so that she always remembers what the process of learning is like. These experiments have had mixed results. She describes herself as a "chronically beginning tennis player" (now part of a beginners' league) and wryly remembers her attempts to ice-skate ("I learned then about being a quitter").

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CMSI EVALUATION REPORT

Preliminary Evaluation Results from the CMSI[1]

In the spring of 2003, the Chicago Public Schools (CPS) began to reshape its portfolio of mathematics programs. One of the first steps was the creation of a new Office for Mathematics and Science (OMS) responsible for all facets of mathematics and science programming and infrastructure in the district. OMS formulated the Chicago Mathematics and Science Initiative (CMSI), which has been described in earlier newsletters (Vo1ume 31, Spring 2003, and Volume 33, Winter 2005). The CMSI involves a coherent alignment of district policies, adoption of high-quality research-based programs (including *Everyday Mathematics*), more support for teachers (including increased high-quality staff development), and rigorous quantitative and qualitative evaluation by both internal and external professionals to be used in both formative and summative ways (see <http://cmsi.cps.k12.il.us> for further details).

CPS Context

The Chicago Public Schools (CPS) is the third largest school district in the nation comprising over 600 schools, employing approximately 27,000 teachers, and serving more than 430,000 students in grades Pre-K through 12. Currently, 51% of the students in CPS schools are African-American, 36% Hispanic, 9% Caucasian, 3% Asian; and 85% are considered low-income as defined by the National Free Lunch Act under Title I federal funding programs. Approximately 14% of students are categorized as limited-English-proficient.

CPS is a school district with site-based management. By Illinois law, there are strict limits to what decisions can be mandated by the district. The authority for making most curricular, personnel, resource allocation, and partnership decisions is assigned, by law, to the Local School Council of each Chicago public school. Within this local control environment, district policies formulated under CMSI have encouraged and provided incentives for schools to adopt research-based mathematics programs: either *Everyday Mathematics* or *Math Trailblazers* at the elementary grades and either *Connected Mathematics* or *MATH Thematics* at the middle grades. During the 2003-04 school year there were 146 elementary schools using at least one of these curricula in at least one grade, with schools implementing *Everyday Mathematics* comprising a large proportion of those schools (50%). The number of implementing schools rose to 221 in the 2004-05 school year (55% using *Everyday Mathematics*) and to 322 in the 2005-06 school year (58% using *Everyday Mathematics*).

CMSI Research

Research and evaluation are integral to the CMSI. As programmatic elements of the CMSI have been phased in, the evaluation plan (Wenzel & Feranchak, 2004; CPS' OMS Evaluation Group, 2003, 2004, 2005) has been progressively implemented. This article focuses on one component of this evaluation work, namely some of the early quantitative research on the outcomes of students as measured by their performance on standardized achievement tests.[2]

Illinois utilizes a criterion-referenced state assessment—the Illinois Standards Achievement Test, generally referred to as the ISAT—which consists of about 80 single-right-answer, multiple-choice items, and two open-ended mathematics questions per grade level. This test employs item response theory (IRT) true test score equating using a one-parameter Rasch model to place each year's results onto the reporting scale. The ISAT was given to 3rd, 5th, and 8th graders in mathematics during the time period of this study. There are eight content subsets on the math ISAT including: Estimation/Number Sense/Computation, Algebraic Patterns/Variables, Algebraic Relationships/Representations, Geometric Concepts/Points and Lines, Geometric Relationships/Sort and Compare, Measurement and Estimation, Data Organization and Analysis, and Probability. The open-ended questions are scored on a 5-point rubric (0-4) in each of three dimensions: "mathematical knowledge" (knowledge of mathematical principles and concepts which result in a correct solution to a problem), "strategic knowledge" (identification and use of important elements of the problem that represent and integrate concepts which yield the solution, for example, models, diagrams, symbols, algorithms), and "explanation" (written explanation of the rationales and steps of the solution process, including a justification of each step, is provided).

For this study, analyses were done at both the school and student levels. Three groups of schools were created based on whether or not they were implementing one of the mathematics curricula listed above and for how long (using 2003 as the baseline year), and differences in the groups' performance on

CMSI EVALUATION REPORT

the ISAT were examined. Specifically, the groups that were examined were:

- Non-implementers
- 1st year math implementers (using one of the four curricula in 2004-05)
- 2nd year math implementers (using one of the four curricula both in 2003-04 and in 2004-05)

No attempt was made to further sort schools by the degree or quality of the implementation. Since many CMSI schools implemented gradually, often with only a single teacher at each grade adopting the endorsed curricula in the first year, this is a significant limitation of the research design.

Results and Discussion

Analyses began by examining whether there were significant differences between these three groups on the ISAT gain scores of their students. From Chart 1 (below), it can be seen that students in 1st year math implementing schools outperformed their peers in two of the three grades tested while students in 2nd year implementing schools outperformed students in the other two groups in all three grades tested. While these results are suggestive it should be noted that this analysis is cross-sectional (i.e. looking at the performance of 3rd graders in two consecutive years). A limitation of this approach is that the two sets of 3rd graders may not be equivalent across years.

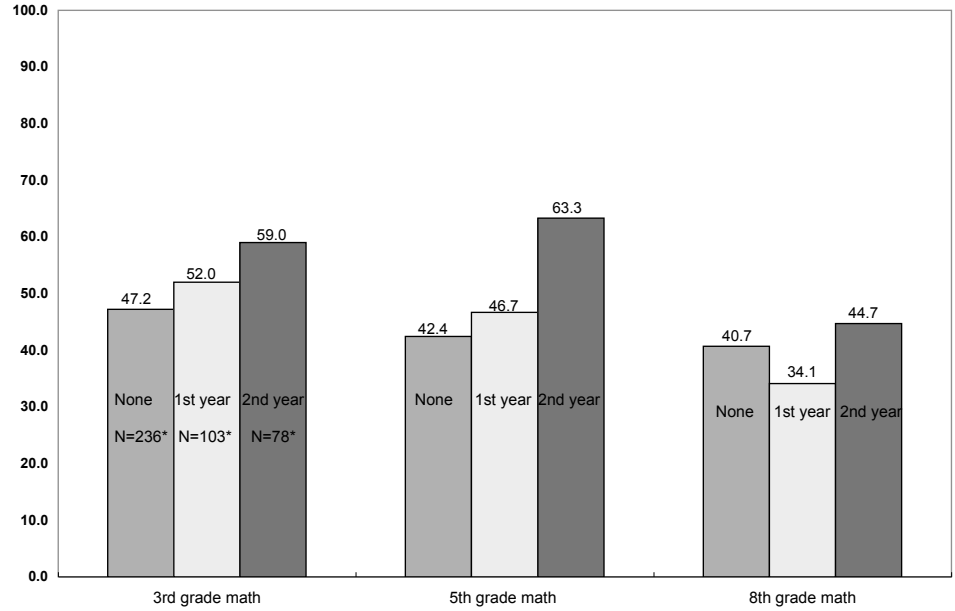
To eliminate this limitation, analyses were conducted within the same year by examining whether there were significant differences between these three groups on the various ISAT mathematics subsets in 2005. While most subsets did not have significant differences[3] there were a few findings (see Charts 2-3, next page) that did, namely:

- 3rd graders in 2nd year math schools scored higher than did students in non-implementing schools on the Geometric Concepts subset. On all the other subsets the performance of the two groups was the same (i.e. not significantly different).
- 5th graders in 2nd year math schools scored higher than did students in non-implementing schools on the Estimation/Number Sense/Computation, Algebraic Relationships/Representations, Geometric Concepts, and Probability subsets. On the other four subsets the performance of the two groups was the same.

It should be noted that these results are similar to those found in other studies (e.g., Sconiers, Isaacs, Higgins, McBride, & Kelso, 2003), in that in no cases did the non-implementers outperform the 2nd year implementers, while on several measures the opposite was true. Thus students in implementing schools taught by teachers using one of these four research-based materials do no worse in aggregate, and on some mathematical content do better, than students taught by teachers not using these curricula.

Further analyses examined student performance on the extended response items. In these analyses an average "knowl-

Chart 1: *Percent of Non-implementing, 1st year implementing, and 2nd year implementing schools with mean ISAT scale score gains from 2003-04 to 2004-05*



* The number of schools shown are for 3rd grade, numbers are slightly different for other grade levels because of differences in grade configurations of different schools.

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edge," "strategy," and "explanation" score was determined by averaging across these dimensions on the two extended response items. In addition, a total extended response score was calculated by summing the total of each of the dimensions across the two items. The results of these analyses are as follows:

Chart 2: *3rd grade ISAT math subsets in 2004-05**

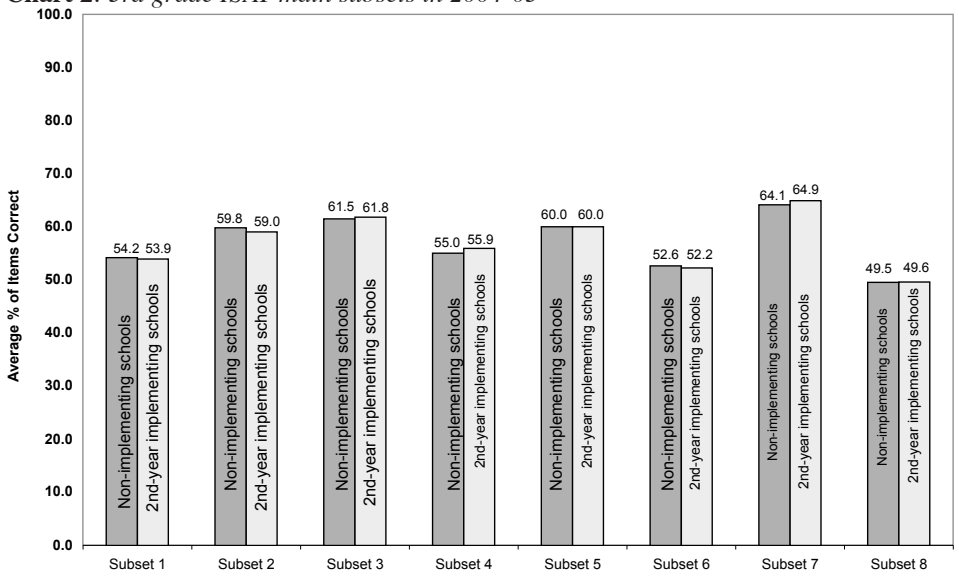
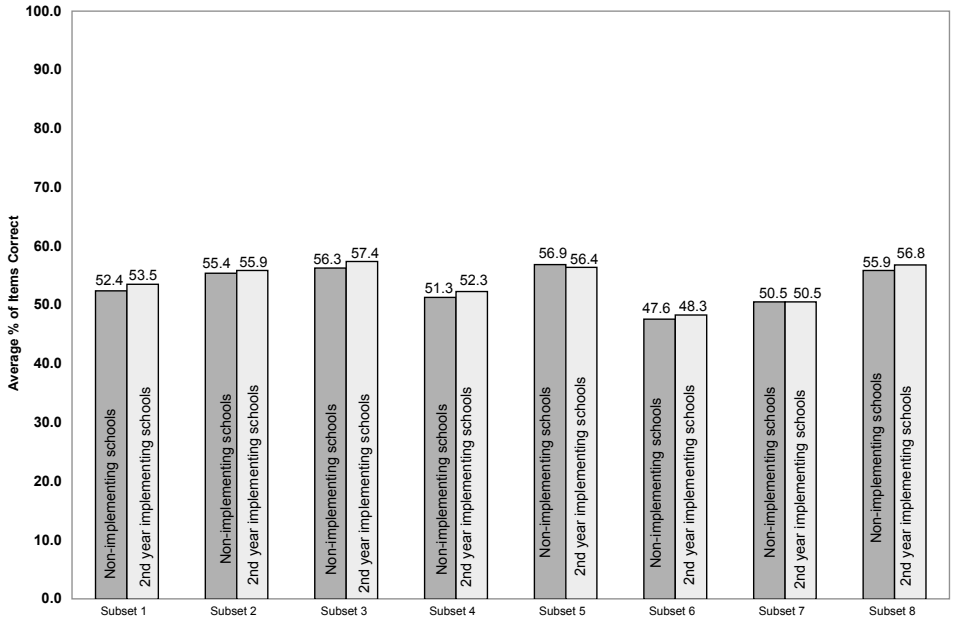


Chart 3: *5th grade ISAT math subsets in 2004-05**



** In Charts 2 and 3, the subsets are as follows.* ***Subset 1****: Estimation, Number Sense, and Computation;* ***Subset 2****: Algebraic Patterns and Variables;* ***Subset 3****: Algebraic Relationships/Representations;* ***Subset 4****: Geometric Concepts;* ***Subset 5****: Geometry Relationships;* ***Subset 6****: Measurement;* ***Subset 7****: Data Organization/Analysis;* ***Subset 8****: Probability.*

Note that in order to be a statistically significant ($p < .05$) difference, the difference between these two groups must be 0.9 or greater. Otherwise the performance of the two groups is not statistically different.

- 3rd grade students in 2nd year math schools scored significantly higher on average "strategy" than did any other group. On all the other extended response measures the performance of the two groups was the same.
- 2nd year math schools had higher percentages of 3rd and 5th grade students scoring a 4 (the highest score possible) in "knowledge" and 3rd grade students scoring a 4 in "strategy" than did students in non-implementing schools. On all the other extended response measures the performance of the two groups was the same.

It should be noted that there are limitations to these analyses in that the starting performance of students was not explicitly controlled for in these analyses. This is due to the construction of the ISAT assessment which equates the overall mathematics test difficulty from year to year, but does not do so at the subset level nor for extended response questions. Thus it is not possible to reliably use previous years' scores as a control variable. However, in order to explore the possibility that the students in the three groups were not comparable as judged by their previous mathematical performance, student level analyses were extended using the overall ISAT mathematics scale score.

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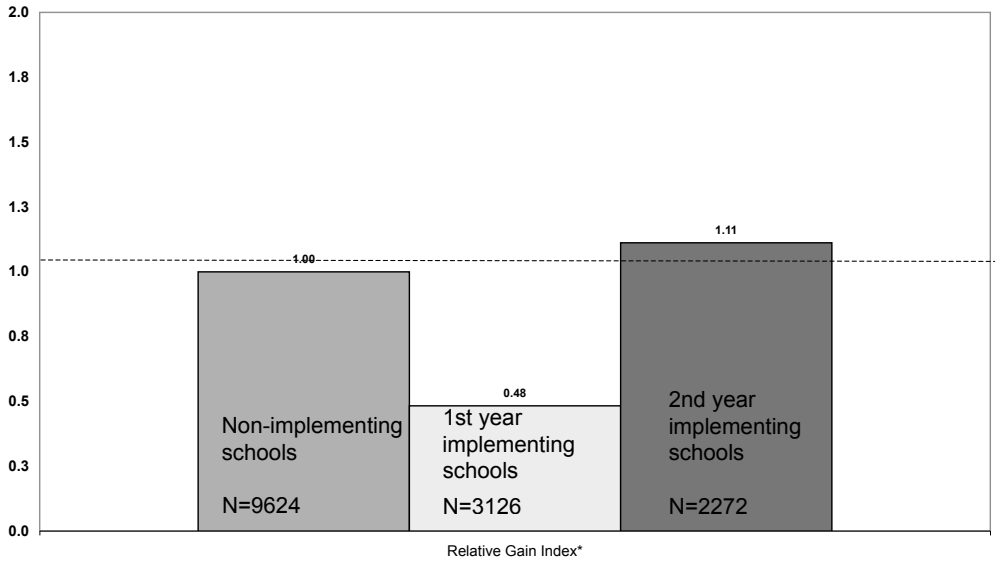
Longitudinal gains in scale scores (as shown in Chart 4, below) for the same students as 3rd graders in 2003 and 5th graders in 2005 were examined for students who remain in the same school in 2004 and 2005. By restricting the sample to students remaining in the same school, effects of student mobility are minimized. Additionally, it is more likely that students remaining at the same school have experienced two years of the implemented curricula. The results of these analyses showed that, while the gains of students in 1st year math schools did not meet those of the non-implementing schools, students in 2nd year math schools surpassed both. Other multiple year comparisons involving the same students are not possible using ISAT data at this time since the assessment is not given in every grade level. In future years the evaluation design will phase in these additional analyses (for example, changes from 5th grade to 8th grade). Of course, other longitudinal analyses will be possible once the State Board of Illinois begins administering the mathematics ISAT to students in every grade, 3rd to 8th, in 2005-06 as required under the No Child Left Behind Act. We are also analyzing the lower gains seen in 1st year math schools, and developing improved measures of implementation fidelity. Information about this topic may be available in the future, through an OMS report or this newsletter.

In order to investigate further possible effects due to CMSI-provided professional development, we examined the results of students as a function of the amount and intensity of grade-specific, curricula-specific professional development that teachers at their schools attended during the 2004-05 school year. The measure of professional development used in these analyses was the number of CMSI professional development hours attended by teachers in a given school divided by the number of total hours possible divided by the total number of teachers at that school. Thus the measure takes into account the average dosage of professional development received by teachers in the school. As can be seen from Chart 5 (next page), students in schools with high CMSI professional development dosages outperformed those in schools with moderate and low dosages. All of these differences are statistically significant and tend to confirm the importance of professional development.

Future Directions

This work is being extended in several ways. First, additional student level analyses that explicitly control for initial performance will be undertaken. Second, datasets that connect students to their individual teachers are being constructed. And third, better measures of the amount of

Chart 4: *Longitudinal Gain of Students in Math Between Their 3rd and 5th Grade ISAT Relative to Students in Non-implementing Schools*



** In order to compare longitudinal gains across multiple years, a comparison group is necessary. Since we do not have data from all test-takers in the State yet, here we have compared the gains of various groups to the gain of students in non-CMSI implementing schools and report the index as a ratio of the gain of a particular group to the gain of the non-CMSI implementing group (who are assigned a value of 1.00). So, for example, students in the 2nd year implementing math schools did 11% better than the students in the non-CMSI implementing comparison group.*

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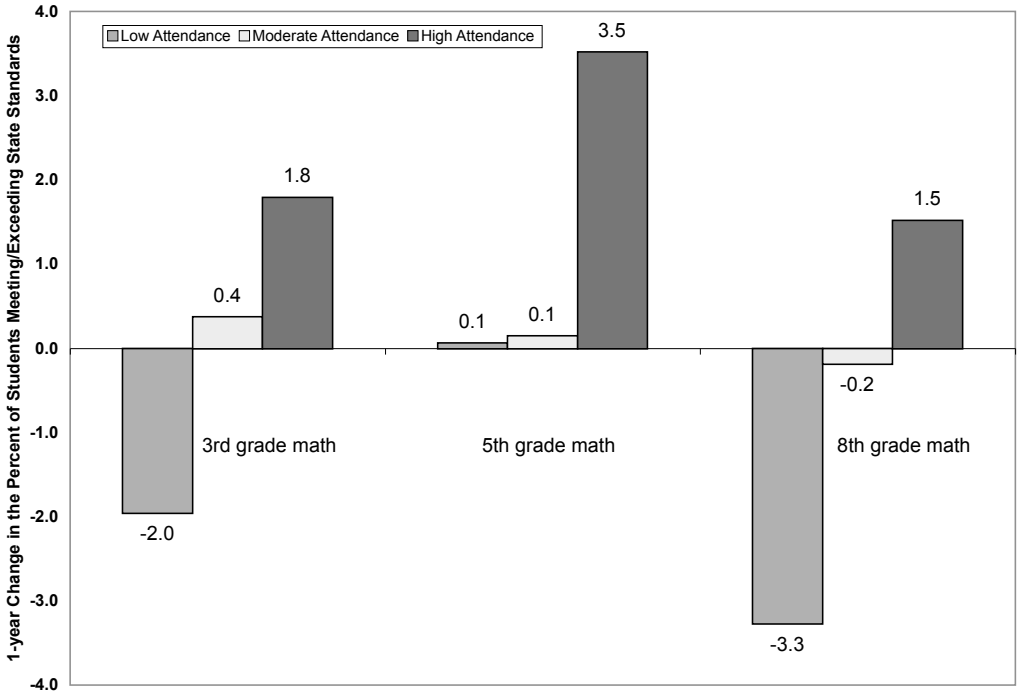
professional development and of curricular implementation intensity and fidelity are being developed.

These steps will allow CPS, OMS and UCSMP researchers to carry out several new analyses. Once teachers and students have been linked in the datasets, for example, relationships between student outcomes and teacher professional development can be investigated at the individual level rather than by using school-level measures. Other teacher data such as certification type and teaching experience can also be incorporated more usefully into these analyses. Both the linkage of students and teachers, and the improved measures of professional development and of implementation intensity and quality, will allow for more complete and accurate characterizations of both the treatment and comparison groups. This should make any programmatic effects more evident in the analyses. Linking teachers and students will allow for other methodologies to be used, including hierarchical linear modeling that nests students within classrooms within schools, and models effects at several levels simultaneously (Byrk & Raudenbush, 1989).

Conclusions

While there are certainly important limitations to these analyses, three preliminary conclusions appear to be emerging. First, CMSI improvement strategies seem to be showing positive mathematics achievement gains as measured by the state criterion-referenced ISAT assessment. Significantly more schools that completed their second year of implementing CMSI programs saw gains in their average student performance compared to other district schools as measured both by the overall ISAT scale score and on several ISAT mathematical subsets. Second, continued exposure to CMSI programs appears to have a cumulative, positive effect on student achievement. Individual students who have been exposed to CMSI mathematics programs for two years show significantly greater gains than others over that same time period. Finally, schools that take advantage of CMSI professional development show greater gains than those schools that attempt to implement the programs with minimal CMSI professional development support. In CMSI implementing schools where teachers regularly attend CMSI professional development workshops, students are showing larger gains than students in schools where teachers have low attendance at CMSI professional development. As the CMSI continues to expand and intensify and as new datasets and measures are constructed, larger and more sophisticated data analyses will become possible. These analyses will test whether these preliminary conclusions continue to be supported.

Chart 5: *Relationship Between CMSI Professional Development Attendance and Student ISAT Performance*



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ONLINE RESOURCES

An Invitation to Join UCSMP's Forums

Online Address Change

UCSMP offers two online discussion groups: a general forum and a forum for those specifically interested in the *Everyday Mathematics* curriculum. We encourage readers to join these groups in order to share their experiences with UCSMP materials, ask questions, and learn about upcoming conferences, opportunities, and new publications.

The general forum is dedicated to the exchange of ideas related to the implementation of the K-12 curriculum as a whole, and to discussion of UCSMP's secondary materials. This forum's online subscription page recently moved. To sign up, please visit: <https://listhost.uchicago.edu/mailman/listinfo/ucsmp4um> and follow the directions. If you think you are a member of this forum but have not received messages lately, you may wish to sign up again.

The second forum, offered by UCSMP's *Everyday Mathematics* Center, supports the implementation of the *Everyday Mathematics* curriculum. Those interested in this discussion may join the forum by visiting the subscription page at: <https://listhost.uchicago.edu/mailman/listinfo/ucsmp-el> and following the directions.

UCSMP Online

You can also learn more about UCSMP by visiting our Web site, <http://social-sciences.uchicago.edu/ucsmp>. If you have a question or general inquiry, you may send email to us at <ucsmp@uchicago.edu>. To learn more about *Everyday Mathematics*, visit the *EM* Center Web site at <http://everydaymath.uchicago.edu>.

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References

Byrk, A. S. and Raudenbush, S.W. (1989). "Toward a More Appropriate Conceptualization of Research on School Effects: A Three-level Hierarchical Linear Model." In *Multilevel Analysis of Educational Data* edited by R. Darrell Bock. San Diego, CA: Academic Press.

CPS. Office of Mathematics and Science Evaluation Group. (2003). "2003-2004 Evaluation Framework and Work Plan." Chicago, IL: Chicago Public Schools.[4]

— . (2004). "2004-2005 Evaluation Framework and Work Plan." Chicago, IL: Chicago Public Schools.

— . (2005). "2005-2006 Evaluation Framework and Work Plan." Chicago, IL: Chicago Public Schools.

Sconiers, S., Isaacs, A., Higgins, T., McBride, J. & Kelso, K. R. (2003). "The ARC Center tri-state student achievement study." Lexington, MA: The Consortium for Mathematics and Its Applications.

Wenzel, S., and Feranchak, B. (2004, March). "Evaluation of the Chicago Math Science Initiative: Choices made within contextual challenges." Paper presented at the 2004 National Science Foundation Invitational Urban Indicator Data and Evaluation Workshop, Yosemite, CA.

Footnotes

[1] This article was contributed by Bret Feranchak, Senior Research Analyst of the Chicago Public Schools' Office for Mathematics and Science.

[2] Those interested in some of the other evaluation work completed as part of CMSI, please see: <http://cmsi.cps.k12.il.us/ViewProgramDetails.aspx?pid=160>.

[3] Significance tests used a .05 level as the level of significance.

[4] For a copy of these evaluation work plans, please see: <http://cmsi.cps.k12.il.us/ViewProgramDetails.aspx?pid=2162>.

CSMC CONFERENCE

Asian Pacific Rim Educational Perspectives Shared at CSMC International Curriculum Conference

On November 11-13, 2005, the new research Center for the Study of Mathematics Curriculum (CSMC) held its First International Curriculum Conference on the University of Chicago campus. Focused on the design and implementation of K-12 mathematics curricula in four countries with national curriculum – Japan, Singapore, China, and Korea – the conference brought ministry officials, textbook authors, and educational experts from these countries together to share their approaches, ideas, and challenges.

Presenters from each country provided an overview of their curricula, and U.S.-based speakers, reactors, and conference participants were welcomed into a dialogue about these perspectives. Smaller sessions gave all participants a chance to engage directly with the presenters, and panels addressed issues related to the status of calculator and computer technology in the K-12 curriculum, and the role of testing.

Those who were not able to attend can still see the PowerPoints from the conference's plenary sessions. They are now available on the CSMC Web site, at <http://mathcurriculumcenter.org/internationalconference.html>, with the conference program (complete with presenters' biographical sketches).

CSMC is a consortium of eight project partners: Michigan State University; University of Missouri; Western Michigan University; Horizon Research, Inc.; The University of Chicago; Columbia, MO Public Schools; Grand Ledge, MI Public Schools; and Kalamazoo, MI Public Schools.

The University of Chicago is proud to be a contributing partner, and would like to thank all of the presenters who made the conference a great success. Special thanks go to the international presenters who traveled far to participate:

- Lee Peng Yee (National Institute of Education; Singapore)
- Hee-chan Lew (Korea National University of Education; Cheongwon-Gun, Chungbuk, Korea)
- Li Jun (East China Normal University; Shanghai, China)
- Ryosuke Nagaoka (The University of the Air, Tokyo, Japan)
- JeongSuk Pang (Korea National University of Education; Cheongwon-Gun, Chungbuk, Korea)
- Soh Cheow Kian (Curriculum Planning and Development Division; Ministry of Education; Singapore)
- Sun Xiaotian (Central University for Nationalities; Beijing, China)
- Shigeo Yoshikawa (Department of Educational Curriculum; Ministry of Education; Tokyo, Japan).

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Thanks to our funders!

Since 1983, UCSMP has received funding from: Amoco Foundation • National Science Foundation • Ford Motor Company • Carnegie Corporation of New York • Stuart Foundation • General Electric Foundation • GTE Corporation • Illinois Board of Higher Education • Citicorp/Citibank • Exxon Education Foundation • Chicago Public Schools • UCSMP Elementary & Secondary Curriculum Royalties

PROJECT UPDATES

CEMSE Initiates Science Education Research Program

What makes an educational program last? How can instructional materials be implemented with fidelity, yet also be adapted to different contexts and situations? What strategies for high quality instruction have an impact on students? How can policy and central offices support successful, innovative programs?

These are just a few of the questions that Jeanne Rose Century hopes to explore as Director of Science Education Research at the University of Chicago's Center for Elementary Mathematics and Science Education (CEMSE). In this new position, she will start a program of science education research that CEMSE Co-Director Andy Isaacs describes as an expansion of earlier efforts to conduct and support research and development for the education of children in mathematics and science. Isaacs says, "We think that mathematics and science should be coordinated better. There is a lot of overlap and commonality in these disciplines. I think a lot of the techniques used in science education research are similar to those used in math education research."

Century agrees. "Science education goes hand in hand with mathematics education. A lot of the issues are the same. Some of the interesting topics, such as why programs last and what brings about lasting change, are relevant in all subject areas. Science has been my avenue into asking those broader questions about change and improvement. We are interested in the places where it is most needed."

CEMSE Team Leader David Beer describes Century as the ideal person to begin the new program. "She has experience with various projects that have to do with inquiry-based science, in terms of creating and implementing curriculum, as well as studying implementation and sustainability – making curriculum work on the ground. We have found that her interest in studying inquiry-based science education has a number of connections with the way we look at standards-based mathematics." Citing a primary shared concern of science and mathematics education research, Beer notes that one of CEMSE's priorities is to develop ways to identify programs in which implementation is relatively faithful, so that researchers can determine the effectiveness of curriculum.

In her first weeks on the job, Century has been meeting University of Chicago faculty members interested in science education so that CEMSE and these scientists are aware of each other's work. She hopes to see CEMSE become a resource within the University, a place for people to find information, advice, and partnership. Over the long term, she would like CEMSE to be visible outside of the University of Chicago as a hub for science education work – including research, evaluation, and outreach – that is usable, meaningful, and applicable.

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continued from page 1: Wright Group to Publish

has allowed us to develop mathematics programs that emphasize problem-solving, everyday applications, reading, and technology to help students learn, understand, and use the mathematics that is so important in today's world."

The second edition of UCSMP's curriculum for grades 6-12 continues to be available from Prentice Hall (see next page for contact information).

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continued from page 2: Debbie Leslie

Most recently, Debbie has become involved with the Rochelle Lee Fund's Reading for Deeper Meaning Program, which helps teachers facilitate literature discussions in their classrooms. She meets with a group of fifth grade Chicago Public School teachers each month to discuss how adolescent literature is taught. As is often the case when teachers gather, the question that comes up – "Is there enough discussion in the classroom?" – applies to all subjects, not just literature. The teachers are engaged in a conversation about fostering real discussion, rather than asking questions with a single answer. This conversation is important to Debbie, who hopes that the important role that discussion plays in learning infuses the *EM* early childhood materials.

Although Debbie's passion for teaching has not diminished, she is happy to have found another form of meaningful work. "When I am teaching," she says, "I know I am doing something worthwhile. I want to feel the same way here. I look at what we are doing and ask, 'Is this really good for kids?' I wholeheartedly believe it is."

CONTACT INFORMATION

UCSMP Directory

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PLEASE NOTE THE NEW ADDRESS!

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