

## *Data Brief*

### **Perspectives on CMSI-supported Curricula: Comparing Backgrounds of School-Based Instructional Leaders**

April 5, 2004

Stacy A. Wenzel

Prepared for the CPS Office of Mathematics and Science  
By the UIC CMSI Evaluation Project

This Data Brief is based on survey data collected from several key CPS instructional leaders charged with implementing CMSI-supported math and science curricula in elementary schools. The basic characteristics of these leaders and their views about these curricula are reported as of the beginning stages of the Chicago Math Science Initiative (CMSI).

#### **Method**

Those surveyed include the following key instructional personnel in 2003-2004 CMSI curricula implementation:

- Math Specialists in math Intensive Support schools
- Science Specialists in science Intensive Support schools
- First wave teachers in math Intensive Support schools
- First wave teachers in science Intensive Support schools
- Teacher leaders in Readiness schools

Surveys were administered in three different waves. Specialists were all surveyed on July 21, 2003. First wave teachers were surveyed throughout August 2003. Readiness teachers were surveyed in early October 2003. Details on each of these survey administrations follow.

**Specialists.** Data on CMSI 2003-2004 Cohort I Intensive Support Specialists come from a self-report survey that they filled out on the first day of professional development workshops attended during the last two weeks of July, 2003. The surveys were administered by the UIC CMSI Evaluation Project, the external evaluators. Of the estimated 77 participants in these workshops, 46 or 60% consented to take part in this research and completed surveys. Of those participating, 30 or 65% were math Specialists and 13 or 28% were science Specialists. The remaining 3 indicated that they were from schools other than Intensive Support schools and/or did not indicate what position they held.

**First wave teachers.** Data on CMSI 2003-2004 Cohort I Intensive Support school first wave teachers come from a self-report survey that they filled out on the first day of professional development workshops attended during the period of August 11 through the 21<sup>st</sup>, 2003. The surveys were administered by the UIC CMSI Evaluation Project, the external evaluators. Each teacher would attend a total of 3 to 5 days of workshops on a specific CMSI supported curriculum. Of the 898 participants in these workshops, 474 or 53% consented to take part in this research and completed surveys. Of those participating, 66% were first wave teachers from CMSI Intensive Support schools, 2% were math Specialists and less than 1% were science Specialists. The remainder indicated that they were either some other type of CPS teacher or did not answer.

**Readiness Teachers.** Data on CMSI Readiness School teachers come from a self-report survey that they filled out at a meeting they attended between October 6 and 9<sup>th</sup>, 2003. This meeting was an introductory session for a series of 5 full-day workshops throughout the school year on preparing to become a first wave teacher in 2004-2005. This survey was administered by the Office of Mathematics and Science internal evaluators. Of 477 participants at these Readiness meetings, 388 or 81% responded to this survey. Of these 388, 84% were Readiness teachers and the others were teachers from other types of CPS schools.

**Content and Length.** The survey was designed to be completed during a 45 minute to one hour period. The survey completed by Specialists and first wave teachers was 11 pages long and the Readiness survey was 14 pages long. Specialists and Readiness teachers were given one hour to complete the survey. While most of the first wave teachers were given an hour, some were given as little as 15 minutes.

The items on the survey were primarily multiple choice (with a couple open ended written responses) and included topics covering:

- Descriptive characteristics
- Professional practices
- Classroom practices
- Perspectives on CMSI-supported curricula

**Analysis.** For the analysis that informs this brief, the data were cleaned. Then the specific groups to be considered for this analysis were compiled. The size of these samples compared to their known populations were examined. These data are shown below in Table 1.

**Table 1:  
Samples used for analysis compared to known populations, CMSI school-based instructional leaders**

	Sample for analysis (% of population)	Size of population Of these leaders
Math Specialists	30 (54%)	56
Science Specialists	13 (62%)	21
Math First Wave Teachers	237 (37%)	636 *
Science First Wave Teachers	78 (48%)	162 *
Readiness Teachers	325 (68%)	477 *

\* Number of teachers present for summer PD.

### Descriptive Characteristics

Here we examine the gender, ethnicity, and years of teaching in CPS of the CMSI instructional leaders in this inquiry. Tables 2, 3, and 4 present these findings.

**Table 2:  
Gender, CMSI Instructional Leaders**

	Men	Women	Missing
Math Specialists	23.3%	70.0%	6.7%
Science Specialists	7.7%	76.9%	15.4%
Math First Wave Teachers	8.9%	74.7%	16.5%
Science First Wave Teachers	14.1%	67.9%	17.9%
Readiness Teachers	15.1%	73.5%	11.4%

**Table 3:  
Ethnicity, CMSI Instructional Leaders**

	African Amer	Asian Amer	Native Amer	Hispanic	White	Biracial/ Multiracial	Other	Missing
Math Specialists	43.3%	.0%	0%	10.0%	36.7%	.0%	3.3%	6.7%
Science Specialists	15.4%	7.7%	0%	.0%	46.2%	15.4%	.0%	15.4%
Math First Wave Teachers	27.4%	3.4%	.4%	16.9%	39.7%	1.3%	1.3%	9.7%
Science First Wave Teachers	26.9%	3.8%	.0%	16.7%	43.6%	.0%	1.3%	7.7%
Readiness Teachers	37.2%	1.5%	.3%	12.0%	35.4%	1.5%	1.8%	10.2%

**Table 4:  
Years of Teaching in CPS, CMSI Instructional Leaders**

	Mean	N	Standard Dev	Min	Max
Math Specialists	15.1	25	9.5	1	38
Science Specialists	12.0	12	9.9	2	36
Math First Wave Teachers	9.6	212	8.7	0	38
Science First Wave Teachers	10.4	74	9.0	1	36
Readiness Teachers	11.1	305	9.8	1	36

According to the survey respondents, the solid majority of Specialists and teachers in these math and science leadership positions are women. However it is interesting to note that almost a quarter of the math Specialists are men.

Of those Specialists indicating ethnicity on surveys, we find that most math Specialists are African American (43%) or White (37%), while the group of science Specialists are about half White, with another 15% African American and 15% Biracial / Multiracial. First wave teachers from either math or science Intensive Support schools resemble each other with about 40% White, 27% African American, and 17% Hispanic. The group of Readiness teachers in comparison included a larger proportion of African American teachers (37%) and fewer White teachers (35%).

The math and science Specialists average more years of teaching in CPS than do teachers with 15 and 12 years average respectively. The average first wave or Readiness teacher has 10 or 11 years of CPS experience.

#### **Perspectives on CMSI-supported curricula**

In the early days of CMSI many educators in Chicago were not familiar with all of the research-based math and science curricula that CMSI chose to support. The following Tables 5, 6, and 7 summarize their familiarity as they responded to the question: “How familiar are you with each of these curricula?”

**Table 5:  
Never heard of this curriculum, CMSI Instructional Leaders**

	Everyday Math	Math Trailblazers	Connected Math	Math Thematics	FOSS Science	IES Science	SEPUP Science	LETUS Science	STC Science
Math Specialists	.0%	.0%	6.7%	10.0%	36.7%	63.3%	43.3%	50.0%	53.3%
Science Specialists	23.1%	46.2%	38.5%	38.5%	23.1%	53.8%	23.1%	38.5%	38.5%
Math First Wave Teachers	9.7%	29.1%	51.9%	55.7%	73.8%	82.3%	81.9%	79.7%	78.5%
Science First Wave Teachers	9.0%	42.3%	55.1%	55.1%	30.8%	66.7%	61.5%	65.4%	69.2%
Readiness Teachers	13.5%	31.7%	38.8%	44.0%	58.2%	71.7%	76.3%	78.5%	74.2%

**Table 6:**  
**'Have heard of it but not taught it' & 'Familiar but haven't taught it', CMSI Instructional Leaders\***

	Everyday Math	Math Trailblazers	Connected Math	Math Thematics	FOSS Science	IES Science	SEPUP Science	LETUS Science	STC Science
Math Specialists	66.7%	70.0%	63.3%	76.7%	36.7%	16.7%	36.7%	23.3%	23.3%
Science Specialists	61.5%	53.8%	46.2%	46.2%	30.8%	46.2%	53.8%	23.1%	38.5%
Math First Wave Teachers	51.9%	59.1%	33.8%	31.6%	12.7%	10.5%	9.7%	11.0%	12.2%
Science First Wave Teachers	48.7%	44.9%	32.1%	29.5%	50.0%	26.9%	34.6%	24.4%	25.6%
Readiness Teachers	60.9%	60.3%	49.8%	45.5%	28.0%	22.1%	18.2%	17.3%	21.5%

\* On the Readiness survey, respondent were given the choice of both "Have heard of it, not taught it" and "Familiar but haven't taught it". Other surveys were given the choice of "Familiar but haven't taught it".

**Table 7: Taught using this curriculum, CMSI Instructional Leaders**

	Everyday Math	Math Trailblazers	Connected Math	Math Thematics	FOSS Science	IES Science	SEPUP Science	LETUS Science	STC Science
Math Specialists	20.0%	16.7%	13.3%	3.3%	3.3%	.0%	3.3%	6.7%	3.3%
Science Specialists	7.7%	.0%	7.7%	15.4%	30.8%	.0%	23.1%	38.5%	23.1%
Math First Wave Teachers	28.3%	4.6%	7.2%	5.1%	5.9%	.8%	2.1%	2.1%	2.1%
Science First Wave Teachers	29.5%	3.8%	5.1%	5.1%	9.0%	.0%	.0%	2.6%	.0%
Readiness Teachers	21.5%	3.1%	6.8%	6.2%	8.3%	1.2%	1.5%	.9%	.3%

Tables 5, 6 and 7 offer a picture of Specialists and teachers who had a great deal of room to improve in terms of their familiarity and experience with the CMSI math and science curricula.

The science curricula were most unfamiliar to teachers, with the exception that most teachers at science Intensive schools had heard of FOSS. The most commonly taught of these science curricula by teachers was FOSS but here only 9% of first wave science teachers, 8% of Readiness teachers, and 6% of math first wave teachers had taught FOSS. In terms of science curricula, the science Specialists were much more experienced with these curricula. However while 20 to 30 % of science Specialists had taught with FOSS, SEPUP, LETUS and/or STC, the large majority had not. Virtually no one—Specialists or teachers--had taught with IES and very few had heard of it.

The math curricula were better known. Most teachers and Specialists had heard of Everyday Math and over 20% had taught using it (with the exceptions that only 8% of science Specialists had). Math Specialists were almost all aware of the 4 chosen curricula but those with teaching experience ranged from the 20% who taught with Everyday Math, 17% with Trailblazers, 13% with Connected Math and just 3% with Math Thematics. A higher portion of the teachers had taught with Math Thematics than had the math Specialists, but the group with the most teaching experience with this curriculum was the science Specialists.

In addition to their familiarity with curricula, these educators also indicated the number of years they taught these curricula. Table 8 summarizes these data for those indicating that they have taught these curricula between 1 to 10 years.

**Table 8:**  
**Years taught using this curriculum for those with between 1 and 10 years,**  
**CMSI Instructional Leaders**

	Numbers who have taught in this curriculum -- Mean of years taught -- Range of years taught								
	Everyday Math	Math Trailblazers	Connected Math	Math Thematics	FOSS Science	IES Science	SEPUP Science	LETUS Science	STC Science
Math Specialists	N=5 1.7 yrs 1 to 2 yrs	N=3 1.6 yrs 1 to 3 yrs	N=3 1.3 yrs 1 to 2 yrs	N=0	N=1 1 yr	N=0	N=1 2 yrs	N=2 1.5 yrs 1 to 2 yrs	N=0
Science Specialists	N=0	N=0	N=1 1 yr	N=0	N=1 2 yrs	N=0	N=0	N=0	N=0
Math First Wave Teachers	N=59 2.7 yrs 1 to 8 yrs	N=10 3 yrs 1 to 8 yrs	N=5 4.2 yrs 1 to 10 yrs	N=4 5 yrs 1 to 10 yrs	N=10 1.2 yrs 1 to 3 yrs	N=0	N=4 3.8 yrs 1 to 10yr	N=2 1.5 yrs 1 to 2 yrs	N=0
Science First Wave Teachers	N=19 4.5 yrs 1 to 10 yrs	N=2 1.5 yrs 1 to 2 yrs	N=1 1 yr	N=2 3yrs 1 to 5 yrs	N=10 3.7 yrs 1 to 9 yrs	N=0	N=0	N=3 2 yrs 1 to 4 yrs	N=0
Readiness Teachers	N=25 2.9 yrs 1 to 9 yrs	N=4 1.25 yrs 1 to 4 yrs	N=11 2.3 yrs 1 to 10 yrs	N=4 2.5 yrs 2 to 3 yrs	N=13 2.1 yrs 1 to 5 yrs	N=1	N=3 1.3 yrs 1 to 3 yrs	N=2 1.5 yrs 1 to 2 yrs	N=0

Of those with teaching experience in these math curricula between 1 and 10 years, the largest critical mass of teachers are those teaching Everyday Math with 59 math first wave, 19 science first wave and 25 Readiness teachers. FOSS also has a significant base of teachers with 10 math first wave, 10 science first wave and 13 Readiness teachers with experience.

There is also a few teacher who indicated they had more than 10 years. With Connected Math there were math first wave teachers with 20, 26, and 27 years. With Everyday Math there were math first wave teachers with 25 and 35 years, a science first wave teachers with 22 years, and a Readiness teacher with 15 years. With Math Thematics one math first wave teacher had 27 years. With FOSS one of the math first wave teachers had 13 years experience. Those indicating over twenty or thirty years were likely to have either been engaged with the research and development of these curricular products or they misunderstood the question given that these curricula were not commercially available at these times.