

CMSI Special Education Professional Development

A Report for the CPS Office of Mathematics and Science  
Prepared by the PRAIRIE Group, UIC College of Education

July 2008

Meghan Burke  
Jessica Lent  
Carol R. Fendt

For further information, contact Carol Fendt,  
crfendt@hotmail.com, 312-413-3367

### **Background**

Federal legislation such as the Individuals with Disabilities Education Act (IDEA) and the No Child Left Behind Act (NCLB) require the participation of students with disabilities in the general curriculum. The Chicago Math and Science Initiative (CMSI) is an example of a general education reform effort in which students with disabilities are included. The April 6, 2006 Special Education data brief from the PRAIRIE Group to the CPS Office of Math and Science (OMS) outlined the needs of students with disabilities to have full access to the CMSI, similar to their non-disabled peers. In that report we noted a few of the barriers these students faced: lack of CMSI materials, absence of in-classroom support for themselves and/or their teachers, and non-specific special education professional development for teachers.

Since the April 6, 2006 Special Education data brief, OMS has developed professional development for special education teachers to enable them to use the CMSI materials in their classrooms. In January 2008 the PRAIRIE Group wrote a data brief entitled "Special Education Issues in CMSI Revisited" regarding this tailored professional development and the ongoing barriers to students with disabilities participating in the CMSI. This data brief focused on three findings: (1) the high quality of special education professional development, (2) the need for further support for regular education teachers to allow their students with disabilities to participate in the CMSI, and (3) the need for communication between the OMS and the Office of Specialized Services (OSS). After this report was distributed to OMS, the Director of Math and Science arranged a meeting between the OMS and the Office of Specialized Services. At this meeting, representatives from the two departments agreed to work more closely together, hold regular meetings, and develop a collaborative effort to improve the participation of students with disabilities in the CMSI.

This data brief focuses on two questions included in the CMSI evaluation workscope for 2007-2008:

- (a) Are there areas in which special education professional development seems more or less useful and relevant?
- (b) What topics and presentation processes would the participants like to see incorporated into future professional development related to special needs issues?

## Methods

This data brief is based on surveys collected from four special education professional development sessions: two of the sessions were held in April of 2008 and the other two were held in May of 2008. The sessions included the following three CMSI math curricula: Everyday Math, Math Thematics, and Connected Math. Sixty-four teachers were surveyed. Of these, 32 (50%) were special education teachers—meaning they only taught students with disabilities.

The tables below illustrate the diversity of the participants in these professional development sessions.

Years teaching	1-5	6-10	11-20	21+	Total
Number of respondents	28	10	17	8	63
Percent of respondents	44.4%	15.9%	27.0%	12.7%	100%

Years using CMSI curricula	1	2	3	4	5	Total
Number of respondents	7	12	9	3	3	34 <sup>1</sup>
Percent of respondents	20.6%	35.3%	26.5%	8.8%	8.8%	100%

Number of CMSI professional development sessions attended	1-3	4-7	8-10	11-15	16-20	Total
Number of respondents	24	19	8	5	3	59
Percent of respondents	40.7%	32.2%	13.5%	8.5%	5.1%	100%

Furthermore, 32 of the 64 teachers (50%) were special education teachers (meaning they only taught students with disabilities).

To answer the evaluation questions, we developed a protocol in connection with staff from OMS (see Appendix A). Respondents' answers to these questions indicate four main ways professional development has been relevant to their work. Few respondents noted any issues with the

---

<sup>1</sup> Not all respondents answered all of the questions. Where possible we give the total number of respondents answering a given question.

relevance of sessions. However, respondents articulated how professional development might be improved to provide more relevance to teachers' work. In addition, respondents commented on additional supports they needed.

## Findings

This data brief addresses three findings: (1) the perceived effect of the special education professional development upon the participants' instruction (2) the themes participants would like to learn more about through future special education professional development sessions and (3) the additional supports participants need to fully include their students with disabilities in the CMSI.

### *Section A: Relevance and usefulness of professional development sessions*

#### *How professional development sessions were useful or relevant:*

Respondents overall had positive reactions to the professional development. When asked to rate "This session has increased my ability to meet the needs of students with special needs in math instruction" on a scale of 1-4, respondents' average rating was 3.24. Most participants, when asked to elaborate on their rating, described something they gained, exemplifying a positive feeling with the statement (and, thus, with the professional development session).

The participants mentioned strategies or ideas they gained and/or will use in their classroom and other supports of the professional development sessions:

- 21% (n=17) of participants mentioned that they will bring work centers/stations back to their classroom,
- 20% (n=14) mentioned the help they received with IEP (individualized educational plan) goal writing and/or understanding;
- 18% (n=13) said they got help with multi-age/level lessons and 10% (n=7) noted the multi-age/level resources as something they will take back to their classroom
- 17% (n=12) said they gained ideas and understanding about what accommodations and modifications they could make to improve instruction for their students
- 14% (n=11) said they learned strategies that they will use in the classroom
- 14% (n=9) mentioned networking and support
- 9% (n=6)<sup>2</sup> mentioned the hands-on activities during the professional development.

The most common response involved the work centers. One participant articulated, "[I will use] the center format using differentiated instruction to reach and foster all student learning." Another participant mentioned a specific moment when s/he will use them: "doing centers or math stations for when students finish their work so they aren't coming to me when they are done but taking initiative to find more work/activities to do." Participants seemed to believe that centers would help teachers work with students of different ages and abilities while maintaining the interest of their students in the math content; they found the centers to be a potentially useful

---

<sup>2</sup> Percentages are based on total number of responses given for a particular question. Thus, 14% of responses to one question may be different total number than 14% of responses to another question. Also, a non response is not accounted for in the percentage.

tool.

Regarding IEP goal writing and understanding, participants mentioned that they came to a new understanding about how IEP goals should be written. For example, one participant noted, “I really enjoyed the lady from the Office of Specialized Services because she gave concrete examples of how to write an IEP.” Another participant said, “Going over the goals with a focus on the students’ strengths and needs helped me to more clearly see the directions I need to go in writing more meaningful goals and benchmarks.” As individuals who work closely with students with disabilities, participants found value in going over IEP goal writing and how to make them most effective for their students. Similar to other responses, when referring to what they gained in the PD session, participants mentioned learning how to write better goals for their students. For this question, one person wrote, “[It was helpful to] learn about how to write the IEP properly and understanding new laws and regulations.” Another participant mentioned the goal writing formula; another referred to the IEP goal examples presented in the professional development as being helpful. Besides these few examples, most responses were vague about which aspect of the IEP lesson was useful, but clearly it is a component that resonated with special education teachers.

Participants also mentioned gaining more insight on multi-age/level lessons, or how to teach lessons to multiple ages and levels within their classrooms. For example, one participant wrote, “I feel like this workshop gave me lots of ways to differentiate for my students. I didn’t realize how easy it would be to pull from other grades to meet the students’ needs.” These participants noted in general terms their new-found knowledge: “I became aware of many ways to help my students of various learning styles to become fully engaged in math lessons.” For some participants, these tools were new to them: “we found out about the multi-age companion lessons.” For others, this was a reminder to utilize the multi-age companion lessons: “I will refer more frequently to the multi-age classroom/companion lessons in the unit organizer.” Thus, this information served to introduce some participants to useful tools within the curriculum and seemed to encourage others that it was a useful tool for them to try.

Participants also mentioned gaining more ideas about accommodations and modifications, particularly on how to use them in the curriculum and the distinction between the two. One participant said, “I have been given other accommodations to use that I had not previously used. I have also been given another modification I can apply.” Another individual added, “It is helpful to talk about modifications vs. accommodations and have ideas and examples of both.” Despite having used the curriculum throughout the year, this discussion of additional modifications and accommodations and clarifying the difference between the two was valuable to the participants.

Participants also mentioned specific strategies that they will take back to their classroom, specifically ways to help their students understand concepts better. For example, one teacher said, “Use a clear ruler for best fit lines or turn it sideways,” referring to a trick she learned in the professional development. Another teacher mentioned “the hands on approach to number sense (feeling the gram stackers, using a ruler to touch the correct number, etc.).” While only a few participants responded to this question by naming specific strategies, the majority of responses referred vaguely to “strategies” that teachers learned in the professional development that they intended to use with their students.

Participants also found it useful to speak with other teachers during the PD session. One participant mentioned it as being an important support for her/him: “the patience and understanding of all participants; the positive support from colleagues always helps when stressed or struggling for suggestions or ideas.” For another participant, it was more useful for sharing ideas about instruction: “Being with special ed. teachers and hearing and also talking about what works for us and what doesn't and how to make it better.” Another participant found it useful to meet with teachers “who use the program successfully.” Either way, this professional development provided a time for teachers with similar concerns to come together and share and support each other, which the participants found helpful.

Responses also included the mention of “hands-on activities,” but unfortunately no response elaborated on which activity or in what way it was helpful. Presumably the hands-on activities helped the participants in their understanding or provided insight into how they could use these activities with their students.

*How professional development sessions were not useful or relevant:*

Overall, the majority (94%, n=60) of respondents said that the professional development session was useful or relevant to their teaching. However, four participants (three in the same session) mentioned that the professional development was repetitive of previous professional developments session they had attended. Their responses included:

- I went to the regular 4<sup>th</sup> grade Trailblazers training a couple of weeks ago, and this was exactly the same lab. They did not teach us any strategies to use for special ed. students. It was exactly the same as regular ed. and therefore a waste of time for me.
- I don't believe this workshop helped me at all. I did not learn anything new that would help me with my special ed. students that I didn't learn in the 4<sup>th</sup> grade workshop.
- I signed up for special ed. math, not goal writing. I was expecting info on how to accommodate and modify the curriculum. I expected examples from text or other math resources. I received the exact class I had in December. I know how to write goals. Class was excellent from 1-2:15p.
- I would have liked more math and less special ed. I am certified in special ed. But not certified in math.

While these responses seem to be outliers, we include them here as they pose cautions to planners of professional development to differentiate between CMSI professional development sessions for regular education teachers and special education teachers.

***Section B: Participants' suggestions for improving professional development sessions***

*The topics related to special needs issues that participants would like to see incorporated into future professional development sessions.*

In answering what other topics they would like the special education professional development to address, the participants primarily arrived at the following four answers:

- 17% (n=11) said they wanted more information on materials modification,
- 14% (n=9) said they wanted more strategies that would work with their students,

- 11% (n=7) said they wanted more information about the IEPs, and
- 11% (n=7) said they wanted more information about using the CMSI curricula in their cross-categorical special education classrooms.

Regarding materials modification, participants requested more instruction on how to modify the grade-level-specific CMSI curricula for their students with special needs. For example, one participant stated, “[I want to know more about] how to teach students who are below grade level. For example, how to use the 7<sup>th</sup> grade curriculum to teach kids who are at a 3<sup>rd</sup> grade level.” In addition to modifying one specific grade level, another participant wrote, “Using multiple grade level material sets is tedious. It would really help to streamline that process.” Understanding how to modify the curriculum for different ability levels both within the same grade level and within multi-grade level settings seems to be a necessary topic to be covered by special education professional development given the reality of configurations of grade levels and ability levels within the classroom.

Regarding more strategies, participants stated that they would like to receive more specific strategies that will work with their students with disabilities. Put bluntly, one participant wrote “[I want] actual strategies/activities that will help our students with special needs.” Another participant wrote more specifically regarding needed strategies: “how to devise strategies for low performing students so they can feel some success in the program.” This statement is one example of the kinds of strategies that participants want from the professional development -- strategies that help the teachers use the CMSI curricula to meet the needs of all of their students with disabilities.

Eleven percent of participants stated that they wanted more information about how to write IEPs using the CMSI curricula. One participant wrote “[I want to know] how to properly complete paperwork (IEP etc.).” Another participant also wrote about IEP paperwork stating, “[I want to know about] IEP paperwork, how to keep better portfolios to prove student achievement that they have met their goals.” Similar to this participant’s comment, another area of concern regarding IEPs was writing goals. The concept of integrating the CMSI curricula into the IEP goals of the student with a disability was a common statement in the surveys. As one participant wrote, “[I want help with] IEP goals for E[veryday] M[ath]” and “more time on REALISTIC goal writing.”

Finally, participants also wrote about needing professional development to address using CMSI curricula in cross-categorical, multi-age classrooms. For example, one participant wrote, “[I want to cover] how to teach a lesson that would address K-4<sup>th</sup> grade at the same time as well as students with various disabilities such as Educable Mentally Handicapped, Trainable Mentally Handicapped, Autism and Emotional Disturbance.” Another participant wrote, “[I want to know] how to juggle various math levels (and subjects and grade levels) in the same room.” Put most simply, one participant wrote “How to make the lessons work for multi-grade levels. How are you differentiating?” These concerns reflect the specific needs of self-contained special education teachers in the district. With many cross-categorical, multi-age special education classrooms, it seems pertinent that special education professional development address using the CMSI curricula in these diverse settings.

*The themes that participants would like to see incorporated into future professional development related to special education issues.*

Regarding how to improve the special education professional development, by and large participants asked for the professional development to continue and to be held more often (38%) (n=25). Participants also stated they would like other participants to be included in the professional development sessions, such as case managers, general education teachers, and administrators (19%) (n=12). Possibly, the participants felt some of the information presented in the professional development sessions was pertinent to other school staff members or that they wanted other key personnel to hear what was talked about and/or use this time to plan implementation strategies as a team.

Participants repeatedly stated that more frequent professional development sessions that focus on special education are necessary. The responses ranged from broad statements of “continue separate sections of professional development” to more specific requests such as “we need to have this type of training at least once a month for all of our curricular activities we must teach according to our IEPs.” More frequently, the comments simply stated that “including more professional developments related or geared to special education alone” is necessary for the participants.

In addition to having more frequent professional development sessions, participants also stated that such professional development sessions should include more people, such as “regular education teachers,” “inclusion facilitators,” “case managers,” and “principals.” Regarding regular education teachers, a common reason for including these teachers (or making special efforts to include them) would be to improve the inclusion of students with disabilities in the regular education setting and to facilitate collaboration between special education and regular education teachers. For example, one participant suggested, “Coordinate with teachers from other areas-math, literacy, etc. to make sure students with special needs are included.” Another participant wrote, “Invite general education teachers. Focus on inclusion and teaching teams.” These statements relay the importance of special education professional development sessions not solely for special education teachers but also for other interested stakeholders who serve students with disabilities, and/or for professional development that supports team efforts at individual schools.

***Section C: What other supports do you need to implement the CMSI curricula with students with special needs?***

In response to this question, participants noted the following needed supports:

- 29% (n=19) stated they needed help securing all of the CMSI materials,
- 17% (n=11) stated they needed help modifying CMSI materials, and
- 14% (n=9) stated they wanted the additional support of more special education professional development sessions.

Nearly one third of the participants in all four sessions stated that having all of the materials was needed to implement the CMSI curricula with students with special needs. Not receiving all of the necessary materials to implement the CMSI has been a consistent issue in special education

classrooms, as noted in each evaluation report by PRAIRIE Group on this topic. As demonstrated by these survey responses, the lack of necessary materials continues to persist in special education classrooms. For example, one participant wrote “[I need] all of the materials – I am now very frustrated that my school told me to share with other teachers because I did not get a chance to really look through the stuff.” Another participant similarly stated, “We need to receive all the needed materials we need to incorporate these great lessons.” The ongoing problem of special education teachers not receiving the CMSI materials continues to need to be addressed by leadership within CPS (OMS, OSS, legal department, Area Offices, etc.).

In addition to having the necessary materials, the participants also stated they would like the materials to be modified for their students with special needs. For example, one participant stated, “It would be nice to have workbooks or text books geared towards special education students. Lessons should be broken down into small steps so that they can understand the material better.” Similarly, another participant wrote, “[I need] a student-friendly text for diverse learners.” These survey responses do not provide enough information as to what kinds of modifications should be made to the books to make them accessible for students with special needs. Further research and evaluation in this area may be necessary to understand what kinds of modifications can be made to the books to better include students with disabilities.

Finally, participants also asked for more special education professional development sessions. As one participant wrote, “Just continue the professional developments; they are useful as well as helpful.” Put more simply, another participant wrote, “[I want] on-going professional development throughout the year for troubleshooting.” The frequency of these responses both in answering this question and in answering the previous question demonstrate the importance, relevance, and helpfulness of these special education professional development sessions.

## **Conclusion**

This data brief outlines the experiences of participants in four special education professional development sessions. From these participants, a few common recurring themes arise:

### (1) Using the CMSI in Multi-Age, Multi-Ability Classrooms

In answering various questions, participants mentioned using the CMSI curricula in their multi-age, cross-categorical classrooms. In one respect, participants frequently commented that they would use the strategies they gained from the sessions to use the curricula in these diverse settings. Frequently, when asked what they would take away from the professional development, respondents answered that they would take back ways to accommodate and modify the curricula in these classrooms. For example, 10% of respondents said they gained strategies to use the CMSI in these multi-age classrooms. Furthermore, 18% of respondents said they gained the skills to use the CMSI in these classrooms. These frequencies demonstrate that the participants did gain knowledge from the professional development about how to use the CMSI in these diverse classrooms.

In combination with these responses, when asked what other topics and needs the respondents have, they frequently asked for more guidance about how to use the curricula in these

classrooms. Ranging from materials modification to strategies to accommodations and modifications, the respondents frequently requested more guidance and support in the professional development regarding how to implement the reform in these classrooms. For example, 11% of participants asked for special education professional development to talk specifically about how to use the CMSI in these diverse classrooms. As such, it seems that while the special education professional development is providing some guidance and impact in supporting CMSI instruction in these classrooms, one-tenth of respondents are asking for more help in the sessions about how to use the curricula in these settings.

## (2) Balancing the IEP Goals and the CMSI Effort

Respondents also frequently mentioned the IEP goals in their survey answers. Similar to the multi-age classrooms responses, these comments came in two forms: (1) as knowledge they would take back to the classroom and (2) as a topic they need further guidance about from the professional development. Twenty percent of respondents stated that they learned how to integrate the CMSI curricula and its objectives into the IEPs of their students. Furthermore, 20% stated that learning about IEPs was very helpful.

However, while the respondents stated the impact of learning how to integrate the IEP with the CMSI curriculum, respondents frequently asked for more guidance about integrating the IEP goals with the CMSI. For instance, 11% of respondents asked for this to be discussed as a specific topic in future special education professional development sessions. As such, it seems that this series of special education professional development provided a good jumping off point for providing this information; yet, more still needs to be covered in these sessions to better prepare teachers to intertwine IEPs with the CMSI curricula.

## (3) Lacking the CMSI Materials

A persistent problem since the inception of the CMSI is the lack of CMSI materials for special education teachers. This data brief demonstrates the continued lack of necessary materials for these teachers, with 29% of respondents stating they need these materials to implement the initiative. The longevity of this issue demonstrates the difficulty in trying to get the necessary curricular materials to these teachers. It is necessary to continue to find ways to ensure these teachers receive the relevant materials so they and their students can participate in the reform.

## (4) Needing More Special Education Professional Development

Participants repeatedly stated they would like to have more frequent special education professional development sessions. Increasing the frequency of these sessions was the most common response to how to improve the special education professional development (38%). Furthermore, when asked what other supports they needed, 14.3% of participants stated they needed more special education professional development sessions. These common responses indicate the importance of and need for these special education professional development sessions.

Reflection Questions:

While the use of written reflections as a way for participants to respond to what was or wasn't relevant in the professional development was successful in getting at general views of a large number of participants, it may not have provided program planners with specific enough data.

What might program planners do to elicit specific enough data on what professional development might cover in the 2008-09 school year and on what means of presentation will be most effective for participants?

How might OSS and OMS continue to partner to provide professional development to both teachers of special needs students within the regular education or special education setting?

**Appendix A**

**Special Education Professional Development**  
**Written Reflections 2008**

**Position:** \_\_\_\_\_ (teacher/City-wide  
Specialist/Specialist/Coach/Facilitator)

***If applicable:***

- **What grades do you teach/support?** \_\_\_\_\_
- **How many years have you been a special education teacher?** \_\_\_\_\_
- **If you are not a self-contained special education teacher, what percent of your students have special needs?** \_\_\_\_\_

**How many years have you used/supported CMSI curricula?** \_\_\_\_\_

**How many CMSI mathematics professional development sessions, not including this one, have you taken in the last five years?** \_\_\_\_\_

1. Please mark the extent to which you agree or disagree with the following statement:

*This session has increased my ability to meet the needs of students with special needs in math instruction.*

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

2. Please explain your answer. If you agree, describe the strategies and ideas you have gained. If you disagree what would have better addressed your needs?

3. What strategies and/or ideas will you take back to your classroom?

4. What other topics would you like the professional development to address? (What would make these sessions more relevant to your work?)

5. What has been helpful in this session?

6. How can we improve our special education professional development?

7. What other supports do you need to implement the CMSI curricula with your students with special needs?