

Proposed Changes

These suggestions represent a synthesis of student and instructor comments, interviews, and observations made by the coordinator and the principal investigators.

1. As noted above, students made several specific suggestions regarding CMET content. These included expanding and clarifying the fractions section, including more K-1 examples, expanding the patterns section and more fully discussing the importance of patterns, clarifying the concept of 10, and shortening the properties section.
2. Some “cosmetic” changes students suggested were to include blank pages or spaces for notes, include more illustrations, provide references for further reading, and put the citations for references at the end of each chapter rather than in the text.
3. Many students asked that CMET include more suggestions about how to teach. However, doing so would not seem to fit with either the nature of the MA 137 course or the intended goals of CMET. Explicit attention to teaching methods, beyond the “what is a problem-solving approach to instruction?”, is probably best left to a methods course or to the modeling provided by the MA 137 instructor.
4. As noted, the students in the questionnaires and the interviews saw very little connection the mathematics they will be teaching in elementary school to the mathematics and technological skills children will learn in middle school and high school. These connections are explicitly made in the CMET supplement. However, these connections need to be emphasized more and more of them made.
5. A few students suggested including more examples from elementary textbooks (i.e., more of the sample text worksheets). However, one the student indicated these worksheets should either be removed or emphasized more. The worksheets need some brief commentary accompanying them that highlights their strengths and weaknesses, or some questions that ask students to think about how children might solve the problems on the worksheets and what they might learn from them.
6. A large number of students indicated that the chapter review questions were not helpful. They suggested replacing them with problems or activities that would focus more on children’s methods of solving problems. For example, they suggested problems that would ask them to use children’s methods to solve a problem. One student also suggested having actual discussion questions rather than questions whose answers could be looked up in the CMET text.
7. The students almost uniformly liked the examples of classroom situations and the examples of children’s mathematical thinking. Still, many asked for even more examples of how children think and solve problems. Several students suggested including examples from “actual children” in the form of excerpts from interviews or transcripts of classroom episodes.
8. Quite a few students indicated that, in places, CMET was too wordy or too lengthy. Although they did not mention specifics (except for the properties section), the most likely offenders are the counting types and concept of 10 sections.

9. The Chapters and Sections need to be divided into subsection such as 3.11, etc. This will make it easier to align the supplement with different mathematics textbooks for elementary teachers. Often students were instructed to read to the middle of a page so that the material corresponded to what they were doing in their textbooks.
10. Move references, other than quotes, to the Instructor Supplement and use paraphrases of research based findings concerning how children learn and understand mathematics.
11. Reconfigure the problems and Questions for Discussion. The revised supplements will have four separate components. First, mathematical problems for prospective elementary teachers to solve. Second, children's solutions to these problems with further comments about how the children solved the problems. Third, new and revised Questions for Discussion moved to the end of each section. Fourth, a limited number of class activities interspersed in the text. Again these activities are designed to help pre-service teachers understand how children understand mathematics.
12. Possible test and quiz questions added to the Instructor's Supplement.