Abusing Math Reform Standards

Whenever a reform movement gains popularity, there are those who will jump on the bandwagon because identifying with the movement will benefit give them personal power and recognition. They are often ignorant of the true nature and purpose of the movement, so they pick a few choice phrases from the manifesto and either pretend to, or actually implement, a few of the ideas they believe are characteristic of the movement. By picking out a few ideas and using them out of context, they purport to achieve reform, but are unsuccessful in achieving the goals of the reform. Then they attribute their failures to the ideals of the reform. Others who oppose the reforms are quick to point out these failures in an attempt to discredit the reform efforts.

Misusing the math standards can give reform math a bad name. Using only one part of reform math out of context can be worse than no reform.

Some examples of misusing math standards:

1. Group work used for simple drill and practice problems requires no group collaboration and often results in one person doing the work for the others to copy. Group activities should be chosen to require the participation of all group members in solving and discussing complex problems that would be difficult for an individual to solve and that extend understanding beyond memorized rules and procedures.

2. Group tests on rote skills only tests the memorization ability of a few in the group who are good memorizers and pass their information to the others. Group tests should deepen understanding of concepts through activities that require the application of math insights to complex problems.

3. Hands-on activities that are fun but do not teach math concepts. All activities should focus on learning and understanding math and include assessment of learning.

4. Calculators used for simple arithmetic problems that should be estimated or memorized. (e.g. 2+ 4 or 10 x 6) Calculators are not substitutes for brains. They should be used to expand math calculations beyond simple arithmetic facts so that learning can focus on more complex tasks. Understanding what to put into a calculator and how to estimate, check and interpret the answer is more valuable just pressing buttons to perform simple calculations.

5. Students talking in class but not about math. Students should be talking to discuss problem strategies, and learn to communicate math as they discuss math problems and procedures.

6. Real life applications that are unrealistic. Real life applications from textbooks are often contrived and produce answers that are obviously magnitudes too large or small for reality. The best real life applications collect data from students' lives and experiences so

they can learn how to use math outside the classroom, connect with other subject areas, and experience the satisfaction of verifying their answers with a reality check.

7. Using a student centered approach, but teaching obsolete skills. Rationalizing denominators, factoring, multiplying sets of signed numbers, and using logarithms for computation are some examples of obsolete skills that have been replaced by the capabilities of calculators and computer technology. Spending more than a perfunctory time on these skills wastes class time and decreases incentives to learn more useful concepts.