

BENEFITS OF A GOOD TEXT BOOK/CURRICULUM
by David A. Orbits, 8/24/09

The math text book is a critical learning tool of any formal education system. I think some who say otherwise are being disingenuous and seem to be trying to deflect the debate away from the text/curriculum so they can more easily install a text/curriculum that they favor. I watched Greta Bornemann, from OSPI, and others use this tactic in their testimony on HS textbook adoption before the Seattle School Board. Of course, if the text didn't really matter, then why was she testifying? With all due respect, I think it is as much a critical piece as the teaching style for the following reasons:

1. A good text / curriculum needs to provide plentiful practice with repetition spaced out in time so students can build long term memory and proficiency.
2. A text with good explanation and examples is a very important tool for those students who are able to find help at home. The direct effect is a productivity boost for the teacher because any learning support the student gets at home frees up teacher time to help the other students with one-on-one feedback. The absence of a text or a poor text acts as a drag on teacher productivity while a good text acts to reduce teacher workload.
3. A good text / curriculum makes it easier for all teachers by reducing prep time. This is especially helpful to the less motivated teachers in the workforce because they are generally less organized. Data shows there is as much variation in education quality from classroom to classroom as there is from school to school. (I have seen the differences in teacher motivation first hand during my years of being a math teacher volunteer in classrooms) Students in a class with a weakly motivated teacher and a weak text / curriculum are at a big disadvantage. More of these students will be behind at the end of the school year.
4. A weak (or new) teacher will not know what parts of a weak text need to be skipped or backfilled. Even though the math standards specify the curriculum content, many weak or new teachers will tend to teach directly from the text. This does not make them bad teachers, rather it simply reflects the variation in knowledge and skill in any large workforce, be it teachers or a high tech company. We can never expect to have the "perfect" workforce.
5. A good text / curriculum helps the new / weak teachers because of (1) the reduced prep time, (2) it lets them become productive more quickly, and (3) they can use the text to refresh their own math skills.
6. A more expert math teacher will discard the poor pieces of curriculum materials but when a teacher needs to replace a section of content in a poor text then the student that is out sick or the struggling student can't find the material covered in class when he or she is looking back to the text for clarification or review. This penalizes the weaker students who utilize the text to help fill in comprehension gaps occurring during class time. It also penalizes students who are sick, or on vacation, or who get pulled out during math class for other reasons. So while the more able math teacher can omit the weak pieces of a text/curriculum it is not a cost free action.

7. A curriculum and supporting text that makes math learning more effective and efficient has three benefits: (1) it increases student confidence and success with Math, (2) it increases a teacher's feeling of accomplishment and job satisfaction which may reduce turnover, and (3) better student learning makes parents happier which makes teachers happier at parent-teacher conferences.

8. More efficient classroom learning means more material can be covered in the school year with better long-term memory retention and/or reduces the need to increase math periods by stealing time from art, music, etc. The increased rigor of the revised math standards also argues for increased classroom efficiency.

9. It is far more practical to add extra sections of supplemental material to a well organized text in order to match the math standards than it will be to compensate for poor structure, inadequate examples or insufficient practice problems in a poorly organized text. This means that it is a bad idea to overweight a text/curriculum with alignment to the math standards and underweight what I will call the teaching support provided by the text/curriculum. This skewed weighting is what was done by the OSPI curriculum review process of 9/24/2008 where they weighted standard alignment at 70% and Instructional Planning and support at 4.5%.

The most effective teachers can identify the weaknesses of a curriculum / text. For example, some will eliminate large chunks of the TERC curriculum and replace it with materials from other sources. This is labor intensive and unfortunately the need to do so further increases the quality variation from classroom to classroom. Teachers need a high quality baseline curriculum that is well structured, has examples, and plenty of practice problems for the students. Teachers can then supplement with fun math activities (there are lots of them) as time permits. Subject material called for in the state standard but missing from a curriculum/text can be augmented once by the district or the state.

To put some numbers on it, the state wide math WASL results from the WA OSPI Report Card for School Year 2008-09 shows that:

1. 48% of Low-Income 3rd graders (16,742 students) failed with 28% (9,565) scoring at Level 1 (well below standard),
2. 64% of Low-Income 4th graders (21,983) failed with 36% (13,348) scoring at Level 1,
3. 66% of Low-Income 7th graders (20,470) failed with 45% (13,855) scoring at Level 1,
4. 79% of Low-Income 10th graders (18,932) failed with 46% (11,129) scoring at Level 1.

The tenth grade numbers are actually worse than shown because the dropout students have not been accounted for.

I submit that the textbook materials matter a great deal to both the weakest teachers and the weakest students and parents. Well structured materials with solid math, clear examples and plentiful practice problems spaced out in time are critical to provide the best support to the weakest of our students and teachers and to enable the best possible home support.