

Panel III Report

Response to Steve Rasmussen

Steven Rasmussen
President, Key Curriculum Press

In the final plenary Steve Rasmussen gave us a spirited presentation of his view of the role of publishers in mathematics education. He began by telling us that his outlook is primarily based on his experiences in the U.S. and that he is high school oriented.

The first part of his presentation was focused on his belief that the curriculum “is determined by publishers whose textbooks are made to conform to the market leader’s causing there to be a minimal variance across texts. This establishes a de facto curriculum that is hard to change.” (Notes from slide 4.) To illustrate this point, slide 4 of his presentation shows the table of contents of the four leading secondary algebra textbooks. Steven contends: “From my vantage point, U.S. publishers have a greater affect in determining outcomes in school mathematics than all other factors. ... As a publisher, I am keenly aware of the power that I have, and it confounds me that the field of mathematics education doesn’t see what I see.” (Notes from slide 5.)

Mr. Rasmussen characterized publishing as a high costs, high stakes, poor results business. Slide 8 contains a graphical breakdown of how publishers spend the income they generate. In describing the income of publishers, he points out that “less than 15% (and probably closer to 10%) of the dollars spent by schools are returned in a form that touches on anything of educational value” (Notes from slide 8.) and that “publishers are fundamentally sales organizations.” He described examples of *mold-breaking* programs developed by small publishers “most of whom went out of business! Large corporate publishers typically are predators, buying programs from small publishers only after the risk is gone.” (Notes from slide 12.) He concludes that “innovative curricula are not well served by the existing publishing models designed to serve traditional curricula and the needs of publishers.”

Starting with slide 20 Steven gives an overview of the emergence of a new publishing paradigm. He describes how “[t]he tools are here or will be soon to offer organized professional communities all the capabilities to make professional mathematics resources without publishers.” On the subsequent slides he gives us examples of two new publishing models, one from “Flexbook” and the other from “Flatworld knowledge”. These examples show promise of “free or inexpensive resources online and free or low-cost printed textbooks” which are “teacher-developed and teacher-supported materials of quality equal to or superior to traditionally published materials.” This new paradigm generates many new challenges, “Who will own our resources?” “What are the mechanisms to socially ‘vet’ resources for assurance of quality?”, ...

Steve’s closing concern indicates: “and finally, what role, if any, will publishers play in the new paradigm?”

Responders

Richard V. DeMarchant
Coordinator —Education Standards Unit
British Columbia Ministry of Education

Richard's began by commenting on the role of legislation in curriculum in the British Columbia context: "Each school year a board must offer to all students in grade "X", an educational program that meets all the prescribed learning outcomes set out in the applicable educational program guide"

"Resources" have some special characteristics when approved under the Western and Northern Canadian Protocol.

- align with the WNCP CCF
- contain both student and teacher components
- are reviewed by teachers
- available in English and French (1)

Once a resource is approved by the WNCP it is automatically approved in all 7 WNCP jurisdictions.

These requirements offer challenges to traditional publishers and in the context of the new publishing paradigm described in Steve's presentation.

Mathieu Gauthier
High School Math Teacher
Enseignant de mathématiques et d'informatique
École Mathieu-Martin of Dieppe
New Brunswick

Mathieu explained to us the textbook situation in New Brunswick. New Brunswick has a small population, one ministry but two systems, English and French. The French math textbook is a translation of an English textbook used in Western Canada (MathPower). It contains learning activities, is in colour, relates math to real life situation, includes technology, is more based on problem solving than the previous textbook but some problems are based on Western Canada realities. He described the challenges in implementing the program using this textbook and closed with the comment "Our influence on the textbook market is minimal, so we must rely on the contents of existing textbooks and limited to translations available on the market."

Lorraine Baron
K-12 Mathematics Curriculum Coordinator
School District 23 (Central Okanagan)
Kelowna, BC

Lorraine identified a common thread in the three plenary talks as she described how the audience, and mathematics educators in general, should be aware of our assumptions, and that this was reflected in all three plenary talks

In Plenary I, Dr. Rina Zazkis described the assumptions we make when teaching mathematics that are assumed by our teaching culture and are rarely questioned, in Plenary II, Dr. Hugh Burkhardt discussed the assumptions we make when communicating mathematics, and in plenary III, Steve Rasmussen tackled the assumptions we make when ‘resourcing’ mathematics, for example:

- that new texts should be well crafted and piloted
- that the cost of texts is mostly produced from the work done to improve pedagogical content
- that texts as we know them even are necessary.

She asked: “Who has the power when it comes to creating the knowledge that will be disseminated through print or electronic resources?”

- From the Canadian perspective, the curriculum is legislated, and publishers are under pressure to conform.
- In Canada also, there is evidence that some publishers understand the importance of professional development, and are not just resource-making factories.

Still with respect to power, Lorraine asks: “What are the greatest influences on teacher practice?” According to one study, the greatest influences are: textbook/instructional materials, provincial assessment, provincial curriculum guides, school principal, initial teacher preparation, in-service training other teachers (teaching culture, assumptions), student interests, student needs, teacher’s knowledge about particular topics teacher’s beliefs about which topics are important (Studies of Education Reform, 1996)

Lorraine concludes by exploring the question: “What do educators need?”

- We need well- engineered resources of all kinds from which to choose, including paper, electronic and others.
- We need time to learn.
- We need innovative, collaborative, democratic pedagogy, assessment practices, and resources
- We need to develop teacher and student agency, and offer less pressure, and more support.

Miroslav Lovric
Professor
Department of Mathematics and Statistics
McMaster University

Miroslav is an author whose perspective is higher education. At this level university instructors select textbooks and publishers aren't so strong. There is strength in the community and ways to bring pressure and change. He said "I wish publishers make lots more money ... so that they can engage in riskier projects." He talked about the need for precision in mathematical language. "Colloquial language is sometimes clear: 'square of a chocolate,' 'area of a circle,' 'Earth is a sphere,' etc. BUT in many cases in mathematics it could be a cause of misunderstanding and students' systematic errors." He went on to show us examples in the media and in mathematics textbooks where colloquial language is misleading and examples for mathematics textbooks where the authors show too much and where the illustrations shown may prevent students from creating their own imagery.

The plenary concluded with questions from the floor.