A Publisher as Advocate for Change—Curriculum Development from the Vantage Point of Publisher

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Publisher, Key Curriculum Press

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Simon Fraser University
Publishers

National Curriculum
Regional Curriculum
State or Provincial Curriculum
Beliefs about School Curriculum

Orthodoxy: Publishers

Heterodoxy: Everyone Else
Publishers

Center for the Study of Mathematics Curriculum
High Costs, High Stakes, Poor Results
“Welcome to My Publishing World”

• New texts require an investment of $2M to $5M per year of curriculum
• Sales and marketing costs can be 50% of sales
• New books must generate a return on investment quickly
• Publishing is a high risk business
• Publishers are not very profitable
And you thought I wasn’t going to show Sketchpad!

Follow the Money with The Geometer’s Sketchpad
Where the Money Is Spent

\[
\begin{align*}
\text{Area Content (Royalties)} &= 8 \text{ cm}^2 & 0.10 \\
\text{Area Prod Services} &= 3 \text{ cm}^2 & 0.04 \\
\text{Area Cost of Goods and Bus Serv} &= 24 \text{ cm}^2 & 0.30 \\
\text{Area Sales & Marketing} &= 32 \text{ cm}^2 & 0.40 \\
\text{Area Profit} &= 9 \text{ cm}^2 & 0.12 \\
\text{Area Prof Dev & Support} &= 3 \text{ cm}^2 & 0.04 \\
\text{Sum of Areas} &= 79 \text{ cm}^2 & 1.00
\end{align*}
\]
Consequences:

- Publishers are risk averse
- Conformity is the safest strategy
- There are large barriers to market entry—and that works for the publishers who dominate the market
- Faced with choices on what to sell, publishers go with the easiest book to sell
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Discovering Algebra</th>
<th>Glencoe</th>
<th>Prentice-Hall</th>
<th>Holt</th>
<th>McDougal-Littell</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 0</td>
<td>Fractions and Fractals</td>
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<tr>
<td>Chapter 1</td>
<td>Data Exploration</td>
<td>The Language and Tools of Algebra</td>
<td>Variables, Patterns, and Graphs</td>
<td>Foundations for Algebra</td>
<td>Expressions, Equations, and Functions</td>
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<tr>
<td>Chapter 2</td>
<td>Proportional Reasoning and Variation</td>
<td>Solving Linear Equations</td>
<td>Real Numbers</td>
<td>Equations</td>
<td>Properties of Real Numbers</td>
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<td>Chapter 3</td>
<td>Linear Equations</td>
<td>Functions and Patterns</td>
<td>Solving Equations</td>
<td>Inequalities</td>
<td>Solving Linear Equations</td>
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<td>Chapter 4</td>
<td>Fitting a Line to Data</td>
<td>Analyzing Linear Equations</td>
<td>Solving and Inequalities</td>
<td>Functions</td>
<td>Graphing Linear Equations and Functions</td>
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<td>Chapter 5</td>
<td>Systems of Equations and Inequalities</td>
<td>Solving Systems of Linear Equations</td>
<td>Graphs and Functions</td>
<td>Linear Functions</td>
<td>Writing Linear Equations</td>
</tr>
<tr>
<td>Chapter 6</td>
<td>Exponents and Exponential Models</td>
<td>Solving Linear Inequalities</td>
<td>Linear Equations and Their Graphs</td>
<td>Systems of Equations and Inequalities</td>
<td>Solving and Graphing Linear Inequalities</td>
</tr>
<tr>
<td>Chapter 7</td>
<td>Functions</td>
<td>Polynomials</td>
<td>Systems of Equations and Inequalities</td>
<td>Exponents and Polynomials</td>
<td>Systems of Equations and Inequalities</td>
</tr>
<tr>
<td>Chapter 8</td>
<td>Transformations</td>
<td>Factoring</td>
<td>Exponents and Exponential Functions</td>
<td>Factoring Polynomials</td>
<td>Exponents and Exponential Functions</td>
</tr>
<tr>
<td>Chapter 9</td>
<td>Quadratic Models</td>
<td>Quadratic and Exponential Functions</td>
<td>Polynomials and Factoring</td>
<td>Quadratic Functions and Equations</td>
<td>Polynomials and Factoring</td>
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<tr>
<td>Chapter 10</td>
<td>Probability</td>
<td>Radical Expressions and Triangles</td>
<td>Quadratic Equations and Functions</td>
<td>Data Analysis</td>
<td>Quadratic Equations and Functions</td>
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<tr>
<td>Chapter 11</td>
<td>Introduction to Geometry</td>
<td>Rational Expressions and Equations</td>
<td>Radical Expressions and Equations</td>
<td>Exponential and Radical Functions</td>
<td>Radicals and Geometry Connections</td>
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<td>Chapter 12</td>
<td>Statistics and Probability</td>
<td>Rational Equations and Functions</td>
<td>Rational Functions and Equations</td>
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<td>Chapter 13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Probability and Data Analysis</td>
</tr>
</tbody>
</table>
• Publishers are fundamentally sales organizations
• Books tend towards a “please everyone” strategy
• Materials are designed to sell teachers, not educate students
• Insufficient money goes to editorial development
• It is cheaper to manipulate customer expectations than to educate students
• Books are a pedagogical “hodge-podge”
• Technology is marginalized and, as a result, poorly utilized
• In publishing, too often the economic “winners” don’t evolve
• And texts that aren’t quick economic successes are taken off the market and can’t evolve
• The options for students, teachers and schools are dwindling
<table>
<thead>
<tr>
<th>Curriculum</th>
<th>Publisher/Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investigations</td>
<td>Dale Seymour ➔ Pearson Scott Foresman</td>
</tr>
<tr>
<td>UCSMP Everyday Mathematics</td>
<td>Everyday Learning ➔ Wright Group/McGraw-Hill</td>
</tr>
<tr>
<td>Math Trailblazers</td>
<td>Kendall/Hunt</td>
</tr>
<tr>
<td>ThinkMath!</td>
<td>Houghton Mifflin-Harcourt</td>
</tr>
<tr>
<td>Building Blocks</td>
<td>SRA/McGraw-Hill</td>
</tr>
<tr>
<td>MathThematics</td>
<td>Houghton Mifflin ➔ McDougal Littell/Holt (Houghton Mifflin–Harcourt)</td>
</tr>
<tr>
<td>MathScape</td>
<td>Heinemann ➔ Glencoe/McGraw-Hill</td>
</tr>
<tr>
<td>Connected Mathematics Project</td>
<td>Dale Seymour Publications ➔ Pearson</td>
</tr>
<tr>
<td>Mathematics in Context</td>
<td>Encyclopaedia Britannica ➔ Houghton Mifflin–Harcourt</td>
</tr>
<tr>
<td>CME Project</td>
<td>Pearson</td>
</tr>
<tr>
<td>Core-Plus Mathematics Project</td>
<td>Janson Publications ➔ Glencoe/McGraw-Hill</td>
</tr>
<tr>
<td>Interactive Mathematics Program</td>
<td>Key Curriculum Press</td>
</tr>
<tr>
<td>Mathematics: Modeling Our World</td>
<td>Southwestern ➔ (COMAP)</td>
</tr>
<tr>
<td>UCSMP (Secondary) (3rd edition)</td>
<td>Scott Foresman ➔ Wright Group/McGraw-Hill</td>
</tr>
<tr>
<td>SIMMS Integrated Mathematics</td>
<td>Self-Published (Pearson Custom) ➔ Kendall Hunt</td>
</tr>
<tr>
<td>MATH Connections</td>
<td>It’s About Time</td>
</tr>
</tbody>
</table>
QuickTime™ and a DV / NTSC decompressor are needed to see this picture.
Bottom-line

Innovative curricula are not well served by the existing publishing models designed to serve traditional curricula and the needs of publishers. From development to dissemination, the constraints imposed on publishers and imposed by publishers operate to thwart innovation and limit the availability and market success of mold-breaking programs in schools. Clearly, teachers and students lose out as a result.
My Naïve Model

Development for Innovation

"Retired in the Classroom"  Early Innovators

Target audience during development
Market Forces Drive Expansion

As market evolves, “early innovators” becomes segment willing to adopt change.

I hadn’t counted on the “recession of ideas” of the last eight years in the U.S.!
Curriculum Used in Nova Scotia

(This slide has not been developed yet. I will talk about last three generations of NS materials that I am familiar with and use this as a transition to new possibilities)
CK-12 Foundation, a non-profit organization founded in January 2007, aims to reduce the cost of textbook materials for the K-12 market both in the US and worldwide. Using a collaborative and web-based compilation model that can be manifested as an adaptive textbook - termed the "FlexBook" - CK-12 intends to pioneer the creation and distribution of high quality educational web texts both as traditional print and online medium. At the same time, CK-12 hopes to use the leverage that open source models, like Linux software and Wikipedia encyclopedia, have used to continually improve regionally and temporally relevant content.

Search Our FlexBooks

Physics: People’s Physics Book, Light, Refraction, Reflection...
Mathematics: Algebra 1, Geometry, Calculus, Statistics...
Biology: Life Science, Human Body, Metabolism, Zoology...

Featured Book
The People’s Physics Book
James H. Dann, Ph.D., James J. Dann
The authors' intent is to produce an alternative textbook, as one part of a multifaceted strategy to teach physics conceptually and mathematically. As a reference guide and problem text, it is carried easily and is especially helpful in preparation for the AP Physics B & C exams.
Great Minds Are Evenly Distributed.

Great Textbooks Are Not.

Until Now.

Open College Textbooks
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Videos
Free Textbooks 1.07
Affordable Alternatives 1.03
Open Textbooks 1.44
Social Learning 1.32

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www.keypress.com
The University of Michigan recently announced that patrons of their Shapiro Library will be able to print “on-demand books” via their new Espresso Book Machine. The machine will print and bind—in just 5-7 minutes—a book from the library’s digital collection of out-of-print books. The average price for each book is $10.
Benefits and Possibilities with New Publishing Models

• Programs rich in technology— for dissemination and educational use
• Localized programs
• Teacher supported materials
• Open and more democratic programs
• Sustainable and living programs
• Materials as part of a rich ecosystem
• Rich mix of programs for students and professional development for teachers
• Free or low-cost textbooks
• Ability for generational succession of developers
• Wider reach of materials and impact of ideas
Bottom-line Requirements of New Publishing Systems and Models

• Electronic versions of curriculum
• Printed versions of curriculum
• Stable versions of curriculum
• Mechanisms to “vet” curriculum for assurance of quality
• Networks of vested users (“Texts 2.0”)
• Agility in adapting to customer needs
• Active quality improvement processes
• Web-enabled distribution
• Business back-end support for school customers
• Changed customer expectations and behavior
Issues to Work Out as We Look at and begin to Experiment with New Models

• Who supports the curriculum developers if curriculum is free?
• What types of collaborations among what sets of people with what expertise can make optimal use of collaborate curriculum development tools?
• How do we get schools and teachers to support new relationships with new players in the “curriculum business” that don’t fit the mold?

• Who can do the business “stuff” and on what basis?
Issues to Work Out

• How can we support student learning and teacher learning simultaneously with new integrated publishing tools?

• How can we extend our reach to other learning venues with web-enabled tools? And plan for it in our curriculum design!
• How do we work together to support new publishing models?
• How do we support and evolve the tools we need to do our work better?
  - Mechanisms to ensure curricular coherence
  - Ability to solicit and collect feedback from kids and teachers
Control of Content
- Developer Control
- Publisher Control
- User Control

Cost of Materials
- Free
- High Cost
- Low Cost

Developer Resources
- No Royalties
- Some Royalties
- Lots of $$$$%

Distribution Scale
- National Distribution
- Small/Local Use
- Moderate Scale

Character of Materials
- Conformist
- Innovative
- Mold Breaking

"Thud Factor"
- Opportunity to Revise

What do you value?
How much do you value it?

Traditional Publishing

Non-Traditional Publishing

X: User Control
✓: High Cost
X: Small/Local Use
✓: Conformist

X: High Cost
X: Lots of $$$$%