
Instructional Materials Will Not Improve Until We Change the System

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If instructional materials continue to be developed in order to sell rather than on their ability to facilitate teaching and learning, education will suffer.

The concern over textbook quality—and the quality of instructional materials in general—is not new. Some of today's textbooks are indeed worse than those of a generation ago, and some are in fact better. But all suffer from problems that are endemic to the way such materials are developed, marketed, purchased, and used. Consequently, most of today's materials are mediocre products incapable of contributing very much to the achievement of excellence in education.

To elaborate, I'd like to cite a selection from *The Statutes of the State of New York Relating to Common Schools* (1847) in which a state superintendent discusses elementary school textbooks:

It is believed that there are none now in use in our schools that are very defective, and the difference between them is so slight that the gain to the scholar will not compensate for the heavy expense to the parent and school caused by the substitution of new books with every new teacher. And the capriciousness of change with which some are apt to indulge on this subject cannot be too strongly or decidedly resisted. Trustees of districts should look to this matter when they engage teachers.

One consequence of the practice is the great variety of textbooks on the same subject, acknowledged by all to be one of the greatest evils which afflicts our schools. It compels the teacher to divide the pupils into as many classes as there are kinds of books.

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He then urges remedial action:

Whenever the superintendents find this difficulty existing, they should not fail to point out its injurious consequences and to urge a remedy by the adoption of uniform textbooks as speedily as possible. To accomplish this, let the Trustees, under the advice of the teacher inspectors and superintendents, determine what textbooks shall be used in each study.

This 137-year-old advice to school administrators demonstrates (1) the historic importance of instructional materials in teaching and learning in American education, and (2) the origins of the deeply embedded systemic condition that has broadly affected the development, selection, and use of such materials from 1847 to the present.

De Facto Delegation of Responsibility

In its current form, the problem is that instructional materials must meet the needs of almost 50 million learners (some of whom are well prepared to learn and some of whom are not) and two million teachers (some of whom are well prepared to teach and some of whom are not). The problem is further complicated by the need for curriculum consistency and instructional continuity across classrooms, grade levels, schools, and even entire school districts while avoiding what might be considered a "national curriculum"—that unique anathema of American education.

While today's teachers—like those in 1847—are extremely dependent on textbooks to meet their own and their

students' needs, the population of teachers and learners has changed significantly in size, makeup, and background during the last 137 years. Nonetheless, there seems to be a tacit, almost unconscious, systemwide agreement to give lip service to these changes, but not to act on them. This is evident in the fact that textbooks and their related materials constitute a *de facto* delegation of curriculum design and instructional decision making to people outside of schools. Far too many state and local education agencies simply fail to do the hard work of

curriculum design that would give individual schools and teachers more control. Hence, many states and local districts essentially delegate-by-default their curriculum design work and instructional decision making to the developers and publishers of instructional materials.

These developers and publishers, not wishing to call attention to the delegation-by-default phenomenon, say, in their defense, that—for reasons of marketing and editorial sanity—they follow the direction they get from those few state and city agencies that

not only *do* the work of curriculum decision making and design, but who *communicate the results of their work to publishers in a direct manner*. The fact that the agencies that engage in this delegation-with-direction also represent large and potentially lucrative segments of the market makes publishers quite responsive to such direction. Yet a textbook that specifically responds to the needs of a school district in Texas may be a long way from responding to the needs of the teachers and students in say, Connecticut, or Minnesota, or Utah. Occasional-

Figure 1. Schema of the Materials' Marketplace.

MARKETPLACE SETTING	PREDOMINANT VALUES	"EVALUATORS"	EVALUATIVE CRITERIA	EVALUATIVE FEEDBACK
Education Industry	corporate	developers/ producers (companies)	<i>feasibility</i> (Can it be made at a reasonable cost?) <i>marketability</i> (Will it make it in the market?) <i>profitability</i> (Will it make an acceptable profit?) <i>acceptability</i> (Will it be accepted by committees and teachers?) financial bottom line (Will it pay?)	Feedback loop necessary for the continuous improvement of materials' ability to communicate effectively to learners is hardly, if ever, closed. The ultimate consumers experience with materials seldom is a factor that shapes the decision-making of the education industry, state agencies, school boards, and/or school selection committees. (This is less so when good teachers who are sensitive to learning needs are given the permission, the training, the time, and the support to select materials.
State Education Agencies or Local School Districts	societal	screeners/ adopters (committees)	<i>contents</i> (philosophy and coverage) <i>acceptability</i> (ethnic, racial, religious, sex fairness) <i>usability</i> (by teachers and learners, durability) <i>cost</i> (initial and continuing)	
School Buildings and/or Classrooms	group/ pragmatic	selectors/ prescribers (teachers)	<i>contents</i> (appropriateness, coverage, objectives) <i>understandability</i> (by learners) <i>usability</i> (ease of use and durability) <i>likeability</i> (reactions of kids) instructional bottom line (Will it play?)	
Classrooms and Homes	personal/ affective/ utilitarian	user/learners (ultimate consumers)	when in school: Do I enjoy it? Does it make clear what I am to do? Can I do it? Of what value is it to me?	
Homes and Businesses	personal/ utilitarian/ spiritual	(Ex-Students)	when an adult: (non-teacher) Was it of value to me? Is it what I want my child to learn? Did it help prepare me to function well as an adult? Will it prepare my child well for the future?	

ly concern over this state of affairs is voiced in professional journals or at meetings among educators. But until the school districts in Connecticut, Minnesota, or anywhere else begin to take direct action, these concerns will also remain lip service.

Instructional Materials: What's Wrong?

Despite occasional criticism, for almost 150 years now, textbooks have been the easiest, most economical, and most convenient means of containing, articulating, and managing the curriculum. The problem is that they are far from what those who are required to learn from them deserve. This is confirmed by the shortcomings found in textbooks by EPIE over the last 17 years and more recently by researchers at the Center for the Study of Reading at the University of Illinois and elsewhere. Such well-researched, well-documented shortcomings clearly demonstrate that many of the instructional materials that are being accepted by purchasers of materials today are not of a quality that the ultimate consumers of such materials need and indeed deserve.

Unfortunately, those ultimate consumers—teachers and students—have no easy means of communicating to publishers and even their own districts that those materials are not as good as they need to be. As a textbook salesman said to me some years ago, "the reason for it is simple: *the kids don't buy the books.*"

That pithy analysis has always struck me as such an accurate assessment of the overriding reality of the instructional materials' marketplace that after hearing it I decided to develop a schema of the marketplace (Komoski, 1977). I began by asking: if the marketplace doesn't place its highest value on making sure that the products being developed and purchased are meeting the needs of the consumer, what competing factors are given a higher value? The result of my analysis was the *Schema of the Materials' Marketplace* (Figure 1). Clearly any such schema will miss some of the subtleties of the real world. But many persons involved

in that marketplace have indicated that this schema is both valid and useful.

Effects on Learners

One thing the schema does illustrate is that the usual purchaser-equals-consumer relationship that exists within almost every other marketplace in the economy is aberrantly nonexistent in education. I believe this is one reason why the economist Kenneth Boulding has described education as a pathological sector of our economy. Clearly, a current symptom of this pathology is the increasing concern about instructional materials—from textbooks to microcomputer software—and their effects on learners.

The fact that this concern ranges from education's most traditional teaching materials—textbooks—to its most modern—computer software—indicates that we are dealing with a problem that is deeply rooted in our educational system. Because it is so deeply rooted, the solution requires a perceptual shift—a seeing of things a bit differently, as part of a heretofore unrecognized systemic pattern. Such a shift in perception, if and when it comes, should lead to important changes in the development, selection, and use of these products.

If such a shift in perception doesn't come in this generation, our system of schooling will continue to become less and less able to achieve its stated purpose of enabling all students to fulfill their potential. The system will then be rejected as a viable social institution or will have to change its stated purpose to some other socially accepted—or at least, tolerated—purpose.

In light of such a systemic analysis, educational policymakers must begin to view current criticisms of instructional materials as symptomatic of a deeper problem that may seem to disappear for a time but will emerge again as a recurring illness, a chronic "dis-ease" from which school practice will continue to suffer.

These symptoms are covered by a wide range of specific criticisms about today's instructional materials:

- Unchallenging or uninteresting textbooks with simplistic, formulaized writing.

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- Textbooks that try to "cover" everything and hence "uncover" nothing in depth.

- Unimaginative computer software with poor documentation.

These criticisms reflect a malaise that can hardly be avoided when instructional materials are developed, marketed, and purchased on the basis of what makes them acceptable to purchasers rather than on how well they facilitate learning. The ultimate consumer, the learner, continues to get short shrift, and the penultimate consumer, the teacher, is caught in the middle, using—and dependent on—materials that are purchased primarily to meet an institutional need for pre-packaged curriculum consistency and continuity. Nevertheless, both sellers and purchasers feel they are doing the best they can, given the realities of the system within which they are operating, realities that neither sellers nor purchasers seem capable of confronting.

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A 19th Century Invention

The 1847 Statutes make it very clear that the selection of textbooks by individual teachers must be treated as a costly and capricious act of self-indulgence—a practice considered “injurious” and “one of the greatest evils which afflicts our schools.” And, indeed, the practice must have been injurious to a fledgling system for which the control, cost, content, and implementation of a coherent curriculum were the overriding systemic considerations.

To an extent, these will always remain legitimate. They become a problem, however, whenever they are not properly balanced by a concern for short- and long-term effects of instructional materials on learners.

This is not to say that instructional materials haven't played an important and very positive role in American education. During the 19th century it was quite understandable that state and local education administrators used the textbook to provide curricular structure in a new and rapidly expanding public education effort in a country that was also expanding. It is also understandable that those individuals chose to use a product of standardized mass production. It was an educational technology for, and of, the

times, just as much as the computer is today. But today the textbook in its essentially unchanged form should be recognized for what it is: a 19th century invention that has failed to evolve effectively during the 20th century.

Because the major challenges of mass education were largely administrative in nature, the standardized textbook became much more of an administrative tool and instructional organizer than a means of facilitating learning. Thus, learners who were either unprepared for or unmotivated to respond to that standardized, textbook-based administration of instruction quickly became rejects of the system, thus simplifying administrative and instructional tasks. Even though many learners regularly dropped out of the system, there seemed little to criticize about the materials that they were expected to learn from. After all, administrators judged “none to be very defective” and most students were able to use them with no great difficulty.

During the 19th century, those “most students” were a self-selected—or parent-selected—minority of young people who came to and remained in school. Early in the 20th century, however, when societal attitudes and educational policies started to change, millions of learners were conscripted into schools for their own and society's good. The system's response to these compulsory learners was to attempt to adapt to their learning needs in ways that, though understandable, were not very helpful to many of them. Materials changed, but they were still essentially modified versions of the same mass-produced, standardized 19th century textbook. They were merely simplified to respond to the lowered expectations of many teachers and administrators toward the growing numbers of students whom they felt lacked the intellectual capacity of their peers.

“We discovered,” said an NEA spokesman in 1911, “that the dragnet of compulsory education was bringing into our schools hundreds of children who were unable to keep up with their companions, and because this

interfered with the ordinary administration of our school systems, we began to ask why these children were backwards” (Joncich, 1962). While such a statement demonstrates an awareness of a need to respond differentially to learners who were ill-prepared for schooling, it was beyond the system's capacity to do so. Instead, the curriculum was reduced to what all learners “most needed to know.” Despite this combination of lowered expectations and incapacity to respond differentially, educational rhetoric has consistently spoken about challenging and developing each student's learning capacity to its fullest.

Textbook-Related Options

Even efforts to develop materials that could be understood by most students took the form of textbook-related options that clearly didn't really work for all students—particularly the ever-present *workbook*. Thus, in 1949, 102 years after the 1847 administrative advocacy of consistency of instruction through the uniformity of textbooks, an official statement of the educational publishing industry describes the value of the workbook as a device to “level out” the differences between “two classes of pupils”:

Every teacher knows ... what happens when the essay-type theme follows the reading of a lesson. The pupil who has developed the greatest skill and fluency in writing always turns in the best paper. Another pupil, who may have mastered his history or geography, may not be able to write well enough to make the teacher know that he knows. The workbook exercise levels out this difference between these two classes of pupils and puts them on common ground. The clever writer no longer has an advantage over the less articulate pupil.

The standardized workbook has become a widely used instructional option, but hardly much of an improvement over the standardized single textbook product of a hundred years earlier.

In other sectors of the economy (in which purchaser usually equals consumer), the 20th century shift away from a single, standardized, mass-produced version of a product with growing numbers of standard options

often produced a healthy competitive scramble to meet—or to create—a changing consumer market. In education, however, such options have tended to be trivial. Few publishers have ever developed them in order to be more responsive to differential learner needs.

There are reasons why such products have not been developed. Like the education officials of 1847, today's state and local agencies expect that publishers will market products, none of which "are very defective" and that all will be about the same quality and cost. In fact, many purchasers of instructional materials would very likely resist differential pricing, even if a publisher could prove the superiority of products so priced. The administrative and practical problems caused by purchasing and using such materials just might not be worth it.

On the whole, the 20th century shift from uniform product standardization toward optionization (via both standard and nonstandard options) has been more difficult to achieve for education than for other sectors of the economy. One result has been the purchase of trivial instructional options that are too frequently nonrelevant and nonresponsive to the needs of the majority of learners. Yet the uninterrupted production, marketing, and purchasing of many products such as workbooks and drill-and-practice computer software continue unabated. In fact, given the present preponderance of drill-and-practice computer software now on the market—of the estimated 7,000–10,000 pieces of educational software currently on the market, about half are drill-and-practice (EPIE, 1985)—the education industry may be on the verge of electronically

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trivializing learning for millions of students well into the 21st century.

This is quite unfortunate considering the fact that it is through the use of these product options—textbooks, workbooks, and video and computer software—that we are attempting to pass on to learners the skills, processes, functions, attitudes, and values we feel are essential to our society. Presumably, these are the tools that among other things should also be capable of educating young persons to deal successfully with the conflicting and often confusing lessons and values embedded in the myriad-messaged media that teach the young without a license to do so. Nonetheless, one finds few educational products—licensed or otherwise—that deal with the development of the critical viewing, reading, and thinking skills needed to deal effectively with life in the information age.

Of course, no mere material—textbook, videotape, computer software, or videodisc simulation—can "teach" such important human skills. Isn't a human teacher needed to do such teaching? And isn't a teacher the essential catalyst for learning? As an ex-teacher, I believe these things, but schools aren't structured as though they were true. After all, a century-and-a-half of organizing, controlling, and monitoring the curriculum through standardized textbooks and their related standard options has produced a largely unadmitted, and largely uncritical, teacher dependency on those materials. This heavy teacher dependency on materials has—in large part—exacerbated the long-established administrator dependency on materials as well. It is a symbiosis that is not contributing to the health of the system.

This is the core of the systemic problem of which most educators are too much a part to recognize. One can only hope that the evidence of the depth and breadth of this administrator-and-teacher dependency on instructional materials, when joined with evidence that such materials are unresponsive to the needs and capacities of learners, will prompt corrective action.



Research Findings

The evidence alluded to above began with three studies during the 1970s. The first was conducted by the EPIE Institute from 1974 to 1976 and involved over 12,000 teachers from all 50 states. The second, essentially a replication of the EPIE study, was conducted at the North Carolina Research Triangle during 1976–77 for the National Science Foundation (1978). The third study was conducted at Ohio State University (Frymeir, Davis, and Clinefelter, 1979).

The first two studies provided the base line data that teachers and students use instructional materials during 90 to 95 percent of classroom time in both elementary and secondary schools, use textbooks about 70 percent of that time, and that schools spend about 1 percent of their annual budgets on instructional materials. The second study confirmed the first study's textbook-use figure but did not consider other types of materials. The third study, which concentrated on the use of materials in middle elementary school classrooms in 11 states, found that 98 percent of all curriculum content being taught in such classrooms was contained in the instructional materials being used.

Some of the studies since that time go beyond these base line findings. A study of 539 classroom teachers reported that those teachers felt that by using their assigned basal textbooks, they were meeting their school administrator's expectations. In fact, 77 percent of the teachers surveyed stated that they believed they would not be allowed to teach without using their basal workbooks and worksheets. However, when questioned, administrators stated their own conviction that the use of such materials by teachers was based on *teacher* consensus (Shannon, 1982).

Two additional research findings support this failure to match learner needs with appropriate materials. In the first, EPIE reported that although about half of the 12,000 teachers surveyed reported not having a voice in the selection of materials they were

required to use, they overwhelmingly and uncritically accepted the materials that had been selected for their use as *appropriate* to their students' capabilities.

Two years later, another EPIE study (cited in *A Nation at Risk*) found that although administrators and teachers may assert that the materials a school purchases are appropriate to the needs of learners, this is not always the case. In this NIE-funded study, EPIE researchers looked at the appropriateness of textbooks in relation to the capabilities and prerequisite knowledge of the learners who were to use those textbooks throughout the school year. They found that in affluent schools, 60 percent of the learners scored 80 percent or better on a September test of the content of the books that had been purchased for their year-long use. When those students were retested nine months later, their test performance regressed. The same study found that 87 percent of students in poorer districts, who scored very low (38 percent or less) on a pretest of the contents of books purchased for their year-long use, showed no improvement on the post-test administered after they had used their assigned text for nine months. However, although 7 percent of the students in those poorer schools did as well (80 percent or better on the September pretest) as the majority of learners from the more affluent schools, they—along with the learners in more affluent districts—were required to use the assigned textbook for the full school year despite their preknowledge of 80 percent or more of its contents (EPIE, 1980a).

General Goals

The time to move toward much-needed systemic change related to instructional materials is long overdue. Fundamental changes must be carefully introduced into the system and consistently supported over time.

There are three general problem areas to look at first:

1. Most textbooks (especially in the sciences and social sciences) are filled with "meta-content"—they tell *about* a

discipline in order "to cover" it, rather than *engage the learner in the skills and processes of that discipline* to a level of mastery for even a small, but significant aspect of that discipline.

2. In most textbooks and most other materials as well, the specific language, examples, illustrations, graphics, directions, and other means of communication employed are not tested with learners and verified as to the materials' ability to communicate in a clear and engaging manner to those learners—and then revised and improved, as needed, on the basis of such direct learner feedback (EPIE, 1980b).

3. Too many instructional materials lack an overall integrity of instructional purpose, content, teaching/learning activities, and assessment and feedback components. They just don't "hang together," yet they try to be everything to everybody. It is this overall instructional integrity and focus that is a major requisite for an effective instructional material.

However valid these and other criticisms happen to be, I doubt that there will be any *lasting* improvement in the overall teaching/learning effectiveness and general quality of instructional materials until the more general and more deeply entrenched historic/systemic problems are consistently and persistently dealt with. This requires action at the policy level within states, districts, and individual schools.

First and foremost, there must be a commitment to both the intellectual and instructional integrity of every instructional material developed and purchased for use by learners. Second, teachers must be trained to recognize such integrity when selecting materials and to know when it is missing. Once trained, teachers must be given the professional prerogative to reject specific materials or to effectively compensate for their shortcomings as they see fit. In short, redesigning materials is not enough. We must also redesign the kind of training teachers receive as selectors and users of materials. Denny's (1978) analysis of the course offerings of teacher training institutions found only a handful of courses in the analysis and evaluation of in-

structional materials being offered across the entire U.S.

Specific Actions

To meet these general goals, state and local policymakers must take specific actions that follow from the historical analysis and research findings discussed here. I recommend six steps.

1. Make the three-way materials-to-learner-to-teacher "fit" the central concern in the development and selection of instructional materials. This may sound like a recommendation calling for the "individualization of instruction." It is not. It simply calls for taking the time and making the effort to put into the hands of teachers and students materials that can be readily understood and that communicate something of educational value in a well-written, well-researched, and engaging manner.

2. Give teachers the time and the training to become more discriminating selectors and "fitters" of materials to student needs, as well as more accountable users of the texts and other materials they may select for student use.

3. Give teachers more responsibility for the selection of learning materials. Administrators should see to it that access to independently researched, well-integrated information about high-quality, nontrivial instructional options is available.

4. Give teachers the time and means for exchanging useful ideas and strategies for adapting the materials they have selected to better meet individual learner needs, or for teaching as effectively with or without materials.

5. Develop a process for improving materials using regular and systematic feedback from learners before and after publication so that every instructional material being marketed to schools will be under periodic scrutiny.

6. Establish budgets, training programs, and purchasing and selection policies that recognize that the development and use of better quality materials is going to take time and cost money. To do this, school boards must be urged to install policies that reorder administrative and fiscal priorities.

Instructional Integrity and Focus

A nontrivial instructional option is a learning material that possesses what I have already referred to as *instructional integrity and focus*. Such a material has a teaching and learning wholeness that is the result of:

1. A clearly apparent educational intention for the learners who are going to use it.

2. A coherence and currency of content that engages learners intellectually in ways that are consistent in scope and depth with the stated intentions.

2. Teaching and learning activities that engage the learner in mastering the intellectual content and processes in such a way that the learner will be open—even eager—to learn more.

4. Mechanisms that help both the learner and teacher to continuously assess student mastery of the material and to inform the publisher of how to improve the product's effectiveness.

When there is coherence in the handling of those important elements of an instructional material, then that material may be said to have instructional integrity and to be a nontrivial option.

Were more of the materials developed for use by learners and teachers to attend to these elements, and were teachers trained to expect, discover, demand, and select only such materials, more learners would be able to internalize the disciplined knowledge and the skills schools exist to impart. Unfortunately, too few of the materials teachers and learners are using today have such integrity. More important, too few school purchasers are willing to demand or pay the price for such materials.

Whenever teachers are expected to use materials that lack instructional integrity, they must make up for that lack or fail in their responsibility to facilitate student learning. Too often it is the learner who is judged as having failed. And whenever this happens, we have evidence of a major systemic problem that makes the American educational enterprise much less than it should be at the threshold of the 21st century. □

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