Twenty curriculum problems, annotated

Long before the present attention to "Common Core," that traditional core of courses—language arts, math, science, social studies--was structuring and limiting education. The problems listed below have been around for many years. Note that some overlap between problems is inevitable, so annotations will often touch on similar themes.

1. The standard "core" curriculum ignores vast and important fields of knowledge.

Missing: Study of principles of group dynamics (essential knowledge for people in the workplace), principles of graphic communication, historical forces such as group responses to loss of autonomy, polarization that leads to conflict, the close relationship between economic diversity and stability, ways to analyze effects of technological development on human behavior, ways of dealing with problems in interpersonal relationships, the effects of emotion in selective perception, and much more that lies between and beyond the traditional disciplines. (See item 3 below for more information about this.)

A small example: Preparing a set of instructions that someone else can follow accurately is a skill useful for anyone, but developing that skill isn't a part of the standard curriculum.

2. The standard "core" curriculum has no criteria establishing what new knowledge to teach, or what old knowledge to discard to make room for the new.

The total amount of information is expanding geometrically, and is simply overwhelming. Even textbooks are out of control, overloading students with more and more information. Without mental tools for sorting and organizing what they're learning, students are certain to forget most of the vast number of "facts" to which they're exposed. Here's a good bet: The amount of information students remember from any textbook is *inversely* proportional to its weight.

Of course, there's a bigger underlying problem here: the erroneous assumption that education is all about absorbing information; a giant, expensive game of Trivial Pursuit.

Education should focus clearly on development of *skills* for information gathering, mental processing, communicating, and problem solving. Further, education should develop learners' understanding of the kinds of relationships and meta-relationships that characterize all of reality, i.e. an understanding of *systems*. Even traditional school subjects would benefit from an overarching systemic approach that allows learners to sort and classify what they're

investigating, determining which information is crucial, and which is trivial. Simple analytical concepts that will give a framework for this classification come from general systems theory.[1]

3. The standard "core" curriculum breaks knowledge apart, ignoring its systemic, mutually supportive nature.[2]

Understanding any major problem or issue—crime, urban gangs, discrimination, energy sourcing and distribution, environmental concerns, taxation, public services, international or other conflict, waste disposal, poverty, infrastructure, abuse of power, resource depletion, land development, corruption, etc.—requires an understanding of links between human behavior, economics, statistics, societal norms, technology, biology, demographics, public media, historical change, and often much more. Classes sometimes focus on issues, but usually in superficial ways featuring arguments of people for and against whatever is being discussed. Nowhere does the curriculum deal with relationships between such things as attitudes toward the future and investment, links between shared insecurity and growth of religious feeling, or dysfunctions caused by faulty assumptions (e.g. "Merit pay improves performance").

To understand complex reality, students need to understand its underlying systems, the interrelationships that create those systems—physical, environmental, social, economic, political, etc.—and the meta-relationships between them. Solving any problem requires an in-depth understanding of the significant systems that are linked to that problem.

This may sound more difficult than it is. Even elementary students, given simple concepts for system analysis, can use those concepts in creative ways to develop understanding of themselves, each other, and the world around them.

"In training a child to activity of thought, above all things we must beware of what I will call "inert ideas"—that is to say, ideas that are merely received into the mind without being utilised, or tested, or thrown into fresh combinations...

"The result of teaching small parts of a large number of subjects is the passive reception of disconnected ideas, not illumined with any spark of vitality. Let the main ideas which are introduced into a child's education be few and important, and let them be thrown into every combination possible. The child should make them his own, and should understand their application here and now in the circumstances of his actual life. From the very beginning of his education, the child should experience the joy of discovery. The discovery which he has to make, is that general ideas give an understanding of that stream of events which pours through his life, which is his life."

Alfred North Whitehead, "The Aims of Education" (Presidential address to the Mathematical Association of England, 1916)

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[1] **Marion Brady,** *What's Worth Learning*, **p. 16ff. http://www.marionbrady.com/documents/WWL.pdf**
[2] **See http://www.marionbrady.com/documents/QuotesFragmentation.pdf**

4. The standard "core" curriculum is keyed not to learner aptitudes, abilities, and interests, but to learner ages.

Virtually every course taught in today's schools assumes that students in each class should proceed along in lockstep, all learning at the same rate. This is, of course, at odds with reality. Learners vary hugely, and even within a class of students supposedly selected for ability, students will differ a great deal in their grasp of ideas. Here's a fundamental principle that's ignored: *Until and unless a learner has a grasp of whatever idea or concept is the present focus of instruction, there's no point in moving on to the next idea or concept.*

Ideally, education wouldn't ignore the individual differences between learners, but would instead build on them, moving each toward her or his maximum potential. This, of course, requires administrative support for much classroom flexibility, skilled teachers, reasonable class sizes, and continuous back-and-forth dialog between teacher and each learner, so what's happening educationally may be tailored to that learner's needs.

5. The standard "core" curriculum has no built-in mechanisms forcing it to adapt to social change.

Education today is almost entirely textbook-based, with a host of negative consequences. The information in textbooks (and the high-stakes tests that follow) is largely dictated by the expectations of those doing the selecting, and this is a powerful force keeping innovation to a minimum. What the selectors expect to see is what they're used to seeing. Unfortunately, there's no way to anticipate much of the knowledge that learners will require as adults, but it is certain to differ a great deal from the contents of those textbooks, which already don't fit learner's needs.

6. The standard "core" curriculum disregards the brain's need for order, organization, pattern.

The randomness of what is being taught within our core courses is a major problem. Since learners are not given a mental system for creating order from the torrent of information each receives, they will remember and be able to use very little of that information. The education theory in effect seems to be, "If you throw enough mud on the wall, some of it is bound to stick."

It doesn't have to be that way. As we've said, there are simple organizing conceptual tools based in general systems theory that can provide a comprehensive mental filing system for everything being learned. These organizing concepts link and integrate knowledge within and across disciplines, giving insight into much that is missing from general education today.

7. The standard "core" curriculum is so inefficient it leaves little or no time for apprenticeships, internships, co-op programs, projects, and so on.

The reasons for inefficiency—passive learning, too much random information, failure to engage students—are described elsewhere in this list of problems. The time used in schooling is way out of proportion to the amount learned. Increasing this time—one of today's "increase the rigor" trends—doesn't improve the amount students learn significantly.

Learning is far deeper and more effective when the learner participates actively in the learning process, rather than passively reading and listening. Opportunities for active learning are disappearing from our schools and lives; even laboratories and workshops are fading away.

The old phrase "use it or lose it" applies powerfully to what is learned in school. Given little chance to apply what they're learning, it's not surprising learners soon forget most of it. (This is a second reason for poor retention of what is taught—see item 6 above.)

8. The standard "core" curriculum emphasizes secondhand rather than firsthand knowledge.

Acquiring understanding *first hand* means acquiring it from reality (or from direct evidence such as primary sources). This allows exercise of cognitive skills far beyond those needed for passive, textbook-based learning, and actively involves the learner in the learning process. Active involvement in investigation and problem solving increases the learner's pleasure in learning, and ensures that what is learned will be understood in more depth and retained permanently.

> "We must rise above the exclusive association of learning with book-learning. First-hand knowledge is the ultimate basis of intellectual life. To a large extent book-learning conveys second-hand information and as such can never rise to the importance of immediate practice. Our goal is to see the immediate events of our lives as instances of general ideas. What the learned world tends to offer instead is one second-hand scrap of information illustrating ideas derived from another second-hand scrap of information. The second-handedness of the learned world is the secret of its mediocrity."
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> Alfred North Whitehead, "The Aims of Education" (Presidential address to the Mathematical Association of England, 1916)

9. The standard "core" curriculum vastly overworks short-term memory.

Virtually every textbook focuses on conveying a large body of information to the reader, then tests retention of that information. Recall and limited low-level application are the only significant mental operations expected. Some students excel at the kind of short-term memorizing this standard approach requires, but most don't. There's no correlation between that memorizing ability and later success in life.

10. The standard "core" curriculum treats brain-building play, art, music, dance, and so on, as "frills."

There's a growing body of evidence that indicates that art, patterned movement, music and similar activities contribute in a major way to growth and success of learners, even improving academic performance. It's apparent that prolonged contact between a learner's buttocks and the seat of a chair tends to inhibit learning.

11. The standard "core" curriculum costs a great deal to "deliver."

A great deal of what is happening in classes is expensive, and that cost is increasing. Quickly-obsolete textbooks, computers, and high-stakes tests drain tax dollars into corporate coffers.

But a bigger factor is the inefficient and shallow learning engendered by traditional textbook-based, passive education. Much of the knowledge and even the skills that are "covered" in school are soon forgotten, because they aren't exercised by being applied to the real world.

People wring their hands over the learning that seems to drain out of kid's heads during summer break. It's clear that what was learned was learned superficially, and wasn't truly understood.

Besides these costs, there are hidden but huge expenses caused by the problem of those students who are so turned off that they become dropouts.

12. The standard "core" curriculum emphasizes reading to the neglect of other ways of learning.

Long before kids go to school, they're learning by observing, by poking and prodding, by listening, by trying out possibilities, and the like. These forms of learning are largely ignored once school is begun, giving learners the false impression that reading is the only significant way of acquiring knowledge. Second-handed, pre-processed versions of reality, rather than reality itself, are the focus of almost all schooling.

Life beyond school requires abilities to observe and make sense of the surrounding environment and the humans that impact each person's experience. Developing those abilities isn't part of what goes on in school. Most of the answers to future personal and shared problems won't be available from words on a page or screen.

Methods of learning called, variously, "discovery," "inquiry," "constructivist," or "active," and those that focus on projects are essential to generating the intense experiences needed for in-depth learning. These experiences exercise the full range of cognitive processes that learners need for life-long problem solving.

13. The standard "core" curriculum is so at odds with the natural desire to learn that laws, threats and promises are necessary to keep learners on task.

Active learning that gives learners reasonable control over their learning experiences is intrinsically motivating, developing the learner's curiosity and creativity. Passive, textbook-based learning, accompanied by intimidating tests, kills off the natural desire to learn. The accountability "reforms" being pushed on schools make this situation worse, increasing students' dislike for school.

Part of the motivation problem associated with the existing curriculum lies in the isolation of that curriculum from the real world, in the view of learners. They see much of what they're covering in school as irrelevant to their situations, interests and needs. They're right, of course.

Students actively investigating real-world situations to find important relationships will re-discover the satisfaction that goes with real learning.[3]

14. The standard "core" curriculum is silent on complex ethical and moral questions.

Most ethical issues are related to values and assumptions that come into conflict. These may differ from person to person, group to group. Despite their importance, study of values and assumptions are not a significant part of the traditional curriculum. For example, if those in power assume "those living in poverty just lack incentive to improve their condition" their society will tend to perpetuate social stratification. By reasonable standards, rigid social stratification is an ethical issue.

> "For many secondary schools I suggest that surveying and maps are the natural applications. In particular, plane-table surveying should lead pupils to a vivid apprehension of the immediate application of geometric truths...To have constructed the map of a small district, to have considered its roads, its contours, its geology, its climate, its relation to other districts, the effects on the status of its inhabitants, will teach more history and geography than any knowledge of Perkin Warbeck [*a pretender to the English throne—ed.*] or of Behren's Straits [*off the east coast of Canada—ed.*]."
>
> Alfred North Whitehead, "The Aims of Education" (Presidential address to the Mathematical Association of England, 1916)

Understanding ethical and moral issues also requires a grasp of the complex consequences of personal and group actions. For example, purchase of almost any item from the local big-box store seems inconsequential, but manufacture, shipping and sale of that item required significant expenditure of energy (usually as fossil fuel) and use of other resources. Repeated millions of times, purchase of "minor" items impacts the whole globe. The eventual disposal of that item, again writ large, will have other costs and consequences.

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[3] See http://www.marionbrady.com/IntroSystems/DrWilliamWebb-Testimonial.pdf

Buying that item at a big-box store rather than borrowing it, purchasing it second-hand, making it at home, or buying it elsewhere has other impacts on community and world. Understanding those costs and consequences requires an understanding of atmospheric and earth sciences, cost analysis, human behavior, economic principles, international trade, and more. Some of these subjects may be "covered" in school, but understanding their interlocking relationships are certainly not a focus of present-day curriculum, and those relationships are at the core of ethical problems.

15. The standard "core" curriculum isolates educators in "fields," making dialog about their shared task difficult.

Reality is seamless, and breaking it up into disciplines creates unnecessary barriers. For example, language arts may have the goal of helping the young send and receive information effectively via words, but communication that is isolated from the world of humans and their surroundings (the focus of other disciplines) is an empty exercise. Why not combine courses and disciplines, so the young read, write, observe, illustrate, and in general develop a wide range of communication skills while simultaneously applying these skills to subjects such as science, social studies, and history? This would bring educators from different fields into the same room, working with the same group of learners, and everyone would benefit.

16. The standard "core" curriculum gives thought processes other than recall short shrift, or no attention at all.

Our learners should be inferring, generalizing, hypothesizing, analyzing, finding analogies, making inductive and deductive leaps, valuing—using many complex forms of thinking that are vitally important in real-world problem solving, but are nearly impossible to evaluate "objectively." However, because machine-scored tests predominate, and these tests can only evaluate memory and low-level application of information, more complex thinking skills are ignored. This is an old problem, but one that isn't going away, despite "Common Core" lip service to critical thinking.

One major reason for this lack is the almighty textbook. It contains pre-processed information—conclusions formed or picked up elsewhere by the author. All the complex thinking was done before the textbook was written, leaving nothing for the kids to do but remember conclusions they read in the book, and perhaps apply that information in some simple, standardized way.

Learners require unprocessed learning sources, so they have an opportunity for real thought. Those learning sources? Selected parts of the surrounding real world. A new kind of textbook would point to local reality such as the kid's own school, and ask various versions of "What's going on here?" rather than giving

explanations and conclusions. The school is a microcosm of life that presents almost unlimited possibilities for investigation.

17. The standard "core" curriculum snubs major sources of America's past strength and success: individual initiative, imagination, and creativity.

This problem is huge. Those concerned about America's rank in economic performance among nations (cited by so many as the main reason for education "reforms") are ignoring these elements of education that were the real reason for American success in the past. True reform would enhance these individualized elements of education, but the short-sighted "standards and accountability" movement now in control actually kills them off.

Our economic well-being is important, but better reasons for education are to enhance the ultimate freedom and potential of each citizen. These goals (even the limited one of economic success) absolutely require individual initiative, imagination, and creativity. Encouraging each learner to move beyond "standardized" performance to develop special interests and skills is the key to development of those who can be leaders in every kind of endeavor.

18. The standard "core" curriculum lends itself to "minimum standards" testing rather than maximum performance evaluations.

Every kid is different. Those who could excel and lead their fields as adults aren't being challenged by lock-step education. Those with special talents and interests are largely ignored. Education now focuses on improving math and reading skills of that group of learners who are performing below some arbitrary level, as indicated (often inaccurately) by tests. Narrowing of the curriculum is inevitable due to short-sighted emphasis on this one group.

Evidence suggest that even the goal of raising performance of those students lacking in adequate reading and math skills isn't being achieved by many subjected to present-day reform rigor.

19. The standard "core" curriculum is implemented in ways that ignore research on retention in grade, class size, length of school day, homework, need for a sense of autonomy, and other important issues.

For years now, non-educators—philanthropists, legislators, and state governors—have been allowed to make decisions based on vastly oversimplified ideas about education. They've been ignoring powerful evidence that suggests that those ideas (and the policies that they engender) are, at minimum, ineffective, and often harmful. Naïve assumptions about learner and teacher motivation, the value of market forces, the efficacy of computers, and the causes of failure, for

example, have been tested and found to be wrong, but the wrong-headed policies remain in place.

20. The standard "core" curriculum has no overarching aim.

The list of supposed aims for schooling is a long one. We've listed some of them,[4] and described the consequences. All the varied aims have some validity, but the effects of all that variation are schools with little central aim at all.

An Alternative:

Identifying problems with the existing curriculum is an empty exercise unless alternatives are proposed. We've generated five paradigm courses to demonstrate a different kind of curriculum—one that is integrated across disciplines, requires active learning, focuses on reality rather than second-hand information, and helps develop imagination, creativity and a full range of cognitive skills. **These courses may be downloaded by educators, for use with their own learners—*free*, no signup, no advertising, no strings.** Where the courses have been tried, they've been accepted by kids enthusiastically, particularly by some completely turned off by traditional schooling. See
http://www.marionbrady.com

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4 See **http://www.marionbrady.com/articles/2009-WashingtonPost12-3.pdf**