A Critical Thinker's Guide To Educational Fads

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Introduction

The history of education is also the history of educational panaceas, the comings and goings of quick fixes for deep-seated educational problems. This old problem is dramatically on the increase. The result is intensifying fragmentation of energy and effort in the schools, together with a significant waste of time and money. Many teachers become increasingly cynical and jaded.

It is time to recognize that education will never be improved by educational fads, and that the manner in which educational trends are marketed guarantees that they will be transformed into fads. Fads by their nature are fated to self-destruction. Parents, educators, and citizen activists need to understand the problem of educational fads so that they can effectively distinguish substantive efforts at educational reform from superficial ones. Hence the motivation for this guide.

By "fad" we mean an idea that is embraced enthusiastically for a short time. In schooling, this typically means a short-lived emphasis on a seemingly wonderful new idea that will transform teaching and learning without much effort on anyone's part. Since by definition a fad will quickly come and go, it cannot be expected to improve instruction in any significant way. By "trend" we mean a general tendency or movement in a certain direction. Trends in schooling typically last 7-10 years, but may last longer.

Included in the sidebar on this page is an incomplete list of some of the educational trends or fads on the market today. Each has ideological advocates. Each must be critically assessed for theoretical

Educational Fads

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underpinnings and proper application. Note: For some of the fads or trends in this guide, we mean "an emphasis on…," as in "assessment," "intelligence," and so forth. This should be clear as you read through the list.

To these may be added a variety of programs focused on drug abuse prevention, child abuse prevention, sex education, extracurricular activities, school improvement, gang control, violence prevention, hunger and malnutrition, mainstreaming, individualized education, special education of differing varieties, dropout prevention and at-risk, and so forth. The list is seemingly endless.

Educational Fads

Most educational trends or fads originate in reasonable ideas. All reasonable ideas about education enhance instruction when integrated into a substantive concept of education. They fail when imposed upon instruction through a non-substantive, fragmented conception of education, which is unfortunately typically the case in schooling today. In this guide, we briefly critique many of the current educational trends and fads.

Our goal is to make the basic idea behind each of these fads intelligible so that its proper use — and likely misuse — can be taken into account. It is our aim to provide the reader with key questions to be raised in discussing these ideas. Each trend or fad is commented upon in three ways:

- the essential idea behind the trend or fad,
- the proper educational use (when integrated into a substantive concept of education), and
- the likely misuse (when the idea is unreasonably applied).

It is not our goal to provide a full and complete explication of any of these. In general, we recommend the Phi Delta Kappan for more detailed articles on virtually all of these trends or fads.This journal is readily available through most public libraries. Our goal is to provide a foundation which can be used to put all educational trends/fads into immediate perspective, making it possible for interested persons to grasp the essential idea and understand the potential use and misuse of that idea. With these understandings one can make sense of discussions of educational reform issues. One can then formulate the relevant and substantial questions and seek the answers one deserves.

We provide the "essential idea" so the reader will understand the basic thinking behind this trend or fad. We provide the "educational use" so the reader will understand how the idea may legitimately be used or taken into account in instruction. We provide the "misuse" so the reader may be on the lookout for its inappropriate (and often most likely) use.

Most people are overwhelmed by the sheer mass of educational fads. Most educators feel pulled in a variety of directions by them. Some become passionate devotees of one of the fads at the expense of substantive education. And virtually all educational trends with any substance are transformed into fads by a flawed or superficial understanding of the basic idea behind the trend combined with a non-substantive concept of education to begin with.

We need to get off the educational fad roller coaster altogether. We can do this if we take a substantive concept of critical thinking seriously for the first time in our educational history. To get off the educational fad roller coaster is to refuse to conceive of any idea as a cure-all. It is to treat all ideas as elements subordinate to a substantive concept of education.

Substantive and Non-Substantive Concepts of Education

By a substantive concept of education we mean one that highlights the essential components of education, consequently one that has clear implications for how we should understand "the educated person" and how we should design the educational process. Many popular concepts of education are non-substantive in that they are vague and fragmented, and therefore superficial and misleading. They do not highlight the common dimensions of the various disciplines. They do not illuminate essential intellectual standards. They do not define essential intellectual traits (the personal characteristics that, when acquired, direct the right use of the mind). Instead, they lead to instruction that mainly trains, indoctrinates, or socializes rather than educates the individual. They produce "counterfeits" of educated persons because they ignore essential abilities, standards, and traits in the instructional process.

A Substantive Concept of Education *(The Educated Person)*

Standards and Abilities

Educated persons share common intellectual standards and abilities. An educated person values and seeks to achieve clarity, accuracy, precision, relevance, depth, breadth, logicalness, and significance in thinking. Conversely, no person can be said to be educated whose thinking is characteristically unclear, imprecise, inaccurate, irrelevant, superficial, narrow-minded, illogical, or insignificant.

Similarly, an educated person masters the elements that underlie and define the structure of all thought:

- An educated person routinely seeks to identify key purposes and goals and explicitly formulates questions, problems, and issues necessary to accomplishing those purposes and goals.
- An educated person gathers relevant information and makes reasonable inferences from that information (in tackling questions, problems and issues they are seeking to answer, solve, or resolve).
- An educated person notices key assumptions (that underlie thinking) and important implications and consequences (that follow from thinking).
- An educated person effectively analyzes key concepts and recognizes points of view and is able to shift either or both when necessary (in attempting to solve a problem or resolve an issue).

Intellectual Traits and Values

An educated person demonstrates intellectual humility, intellectual honesty, intellectual autonomy, intellectual integrity, intellectual perseverance, intellectual empathy, and fair-mindedness in thought, work, and in every part of life. These characteristics are the essential foundations for the right use of the mind. Lacking these characteristics, humans think and act egocentrically, do not respect reason and evidence (except when it is in their selfish interest to do so), and are indifferent to the welfare of others (with whom they do not egocentrically identify).

These intellectual standards, abilities, traits, and values — integrated — define the educated person. Without them one is unable to internalize the logic of academic content or reason effectively or fair-mindedly about problems and decisions in everyday life.

A Substantive Concept of Education
(The Educational Process)

A substantive concept of education not only highlights the qualities of the educated person, but also implies the proper design of the educational process. There are essential minimal conditions for cultivating educated minds. These entail modes of instruction that facilitate development of the standards, abilities, and traits of the educated person. All of the traditional content areas of school may be, but typically are not, taught so as to conduce to those standards, abilities, and traits.

For example, when history is substantively taught, it is taught as historical thinking, the major goal: to give students practice in thinking historically

(analyzing, evaluating, and reconstructing historical interpretations and problems). As a result, students learn not only how to read historical texts with insight and understanding, but also how to gather important facts and write well developed historical essays of their own. Through this mode of instruction, students come to see the significance of historical thinking both in their own lives and in the life of culture and society. History becomes — in such a transformed mind, — not random facts from the past, but a way to reason about the past to make intelligent decisions in the present and reasonable plans for the future.

When science is substantively taught, it is taught as scientific thinking, the major goal: to give students practice in thinking scientifically. As a result, students learn not only how to read science texts with insight and understanding, but also how to formulate plausible scientific hypotheses, make reasonable scientific predictions, design scientific experiments, gather facts scientifically and make justifiable scientific inferences based on the facts gathered. When this is done effectively students come to see the significance of scientific thinking both in their own lives and in the life of culture and society. In such a transformed mind, science becomes, not random technical facts and theories to be memorized, but a way to reason about the world to understand its systemic functions and the ways its laws can be used for the welfare of persons and the biosphere.

When mathematics is substantively taught, it is taught as mathematical thinking, the major goal: to give students practice in thinking mathematically. As a result, students learn not only how to read math texts with insight and understanding, but also how to formulate and analyze mathematical problems, and how to reason from the information stated in those problems to solutions (which they are able to explain and test). When this is effectively done, students come to see the significance of mathematical thinking both in their own lives and in the life of culture and society. In such a transformed mind, mathematics becomes not random facts about numbers and spatial objects to be memorized for a test, but a way to reason about the quantitative dimensions of the world, a precisely-defined set of ideas and insights that can be used for the welfare of persons and the biosphere.

When literature is substantively taught, it is taught as literary thinking. The major goal: to give students practice in thinking analytically and critically about literary texts. As a result, students learn not only how to read novels, plays, short stories, and poems with insight, understanding, and appreciation, but also how to formulate and analyze literary problems, reasoning from information in a literary text to plausible interpretations and judgments of appreciation (which they are able to explain and defend on reasonable grounds). When this is effectively done, students come to see the significance of literature, literary thinking, and imagination both in their own lives and in

the life of culture and society. Literature becomes an important way to learn about human nature and the human condition as well as a lifelong source of insight and pleasure.

When students are taught using a substantive concept of education as the guide to the design of instruction, they learn to initiate, analyze, and evaluate their own thinking and the thinking of others (within all the content areas they study). Doing so, they come to act more reasonably and effectively in every part of life. They are able to do this because they have acquired intellectual tools and intellectual standards essential to sound reasoning and personal and professional judgment. Self-assessment becomes an integral part of their lives. They are able to master content in diverse disciplines. They become proficient readers, writers, speakers, and listeners. They use their learning to raise the quality of their lives and the lives of others. They become reasonable and fair-minded persons capable of empathizing with views with which they disagree and disagreeing with views uncritically accepted by those around them. They are able to use their reasoning skills to contribute to their own emotional life and transform their desires and motivations accordingly. They come to think, feel, and act effectively and with integrity.

"Fixing" Schools Superficially

There are no panaceas in education. There is no one simple way to fix the schools. To fix the schools we must fix the thinking that is running the schools. We must persuade those whose thinking is running schools to adopt a substantive concept of education.

But there are a variety of persons whose thinking is running the schools, and we can directly control only one person's thinking, our own. So even if we are part of the process and our thinking is influencing what is happening in school, there are always a variety of others whose thinking is bound to impact the quality of learning. This is what makes the problem vexing and unlikely to be solved in the short run. Consider the variety of those whose thinking is clearly involved.

The Thinking of Administrators

Few administrators have a substantive concept of education. Very often the thinking of administrators is focused on troubleshooting short-range problems, handling complaints, settling disputes, and making sure that legal and bureaucratic requirements are met. Typically, concepts of education, substantive or otherwise, seem an insignificant abstraction unrelated to their day-to-day problems. At the same time, the thinking of key administrators shapes decisions which have immediate and long-range consequences on teaching and learning. They make decisions which significantly impact the design of inservice programs, the curriculum, and the evaluation of

teaching and learning. Their leadership, or lack thereof, determines whether a substantive concept of education ever becomes the subject of discussion, not to mention whether it is ever taken seriously, by parents, teachers, or school board. With regard to inservice programs, administrators often find it politically expedient to provide a variety of choices from an array of fads popular with different groups of teachers. Rarely is there integration between these programs. Virtually never are presenters required to integrate their recommendations into a substantive conception of education.

The Thinking of Teachers

Few teachers have a substantive concept of education. Very often teachers are focused on day-to-day survival, getting lessons prepared, avoiding local politics, fitting into the system, incorporating the latest fad into their classes (often at the direction of administrators on some new fad bandwagon), and attempting to fulfill curriculum requirements. Covering bodies of content often drives instruction, with masses of papers to grade and other requirements to be met. Immediate, short-range imperatives seem (to them) to dominate their lives. Thinking about the long-term and about a substantive concept of education often seems to them like "pie in the sky" — abstract, theoretical, and unrealistic.

The Thinking of Students

The thinking of students produces a positive or negative response to their teachers, fellow students, and the content to be learned. Very few students have a substantive concept of education. Most think of the schools either as a place to socialize and have fun or a place to be passively tolerated. Most students have never heard a discussion in class about what education is, and hence about what one should strive to achieve in learning, and why. Until students develop a substantive concept of education they are not likely to actively cooperate in developing standards, abilities, and traits essential to the educated mind.

The Thinking of Parents

The thinking of parents shapes decisions in the parenting process, which, in turn, has significant implications for the attitudes and understandings that students bring into the classroom. Unfortunately, few parents have a substantive concept of education. Some even press for the memorization of masses of content since that is what they did as a student (and they assume that they were educated thereby). Or they are primarily concerned with their children's grades and test scores, pressing them to perform well in order to graduate from high school, go to college, or attend a prestigious university. Rarely do parents have a clear (not to mention deep) concept of the educated person.

The Thinking of School Board Members

The thinking of the school board members results in long-range school goals and decisions, and the broad policies to be followed in pursuing those goals. Yet few board members have a substantive concept of education. Few have the intellectual tools for formulating a reasonable idea of the educated person. Few are themselves engaged in lifelong learning.

The Thinking of Legislators and Governors

The thinking of legislators and governors creates public policy and determines levels and kinds of financial support for schools and instructional programs. Most assume that they understand exactly what the schools need. Though, if truth were told, few have a substantive concept of education.

The Thinking of Activist Citizens

The thinking of activist citizens challenges, pressures, modifies, redirects, or reinforces the status quo in the schools. Nevertheless, few activists have a substantive concept of education, though many sense that there is something fundamentally wrong with the schools.

Fixing the Schools
(Substantively)

Non-substantive thinking at any level is bound to have a negative effect on education. The tragedy is that as a culture, we have yet to learn to take responsibility for the superficiality of our thinking. We think, but we do not know how we think. We think, but we are unable to take our thinking apart. We think, but we do not understand the standards and criteria we are using as we think. We think, but we do not know how to adjust our thinking to the nature of the problem or question we are thinking about. Put most simply, we think, but we generally don't think in such a way as to grasp the problems we are facing non-superficially.

If there is a single answer to human problems, disciplined, reflective, substantive thinking is that answer. But everyone must develop disciplined reasoning abilities for themselves. Everyone must cultivate the skills and dispositions of the critical mind within their minds, using their own thinking. We cannot get into your head and fix your thinking. We cannot forcibly change your view of your thinking or of what is wrong or right with the schools. We cannot even force you to take your own thinking seriously or to pay more attention to it. And you, in turn, are in the same circumstance in relation to others. You cannot get into the head of someone else and fix their

thinking. Administrators who think well and have a substantive concept of education cannot implant that concept in the heads of other administrators, nor in the heads of teachers and parents. Teachers who have a substantive concept of education cannot implant that concept in the heads of other teachers, nor of their students. One person can influence another, finally, only with the cooperation of that other. And from the inside of your own mind, your own thinking usually appears to be damned good, and not really in need of changing. (In other words, if everyone thought like you, the world would be a pretty fine place, right?)

What follows, then, is a brief summary of educational trends and fads for your consideration. Our goal is to persuade you that there are no "magic bullets" for the schools. The only reasonable solution to raising the quality of education is in-depth thinking based on a substantive concept of education. This developed concept is the basis for incorporating reasonable ideas for school improvement while avoiding the fragmentation and faddishness that usually results. Superficial, fragmented thinking continually backfires on us, undermines our future, distorts our past, and wastes the opportunities of the present.

Disciplined, substantive thinking at the heart of educational reform offers the best hope for long-term success. We will demonstrate its power and necessity by using it to systematically review and assess many current educational trends and fads. By systematically developing our own thinking and by systematically encouraging, stimulating, and rewarding the in-depth thinking of others, we do all that we can to improve the quality of the schools.

Now, before we begin our commentary on each individual trend or fad, we will do two things. First, we will summarize the essential learning requirements (in attaining a substantive education) under three categories: skills and abilities, intellectual standards & traits, and modes of thinking. Second, we will suggest questions that should be asked of every reform enthusiast, independent of the trend or fad they may be advocating.

Attaining Substantive Education[1]

Skills and Abilities Essential to Learning Across the Curriculum

The student understands and effectively uses the elements that underlie the structure of all thinking in all domains of human thought.[1]

To meet this requirement, the student will:

- accurately identify key purposes and goals and explicitly formulate

1 For an overview of the conceptual underpinnings of critical thinking, see the appendix.

Questions You Should Ask of Every Reform Enthusiast

- What is your concept of education?
- What is your concept of an educated person?
- What abilities must persons develop (to be considered educated)?
- What intellectual standards must they acquire?
- What intellectual traits?
- What is your concept of the educational process? (How does one go about educating a person?)
- What intellectual structures are present in all content (that enable students to relate or contrast what they are learning in one subject with what they are learning in other subjects)?
- How should content be presented in the teaching process? (How should history be presented? Science? Math? Literature?)
- How should students learn content? (How should they learn history? Science? Math? Literature?)
- How should we understand the fundamental goal in teaching any given subject?
- When we assess students during the learning process, what should we focus our assessment on?
- How does _____ (insert name of trend or fad) serve a substantive concept of education? Use this question as a lead into questions that probe the relationship of the trend or fad to essential abilities, standards, and traits. Then lead into questions that probe the relationship of the trend or fad to the essential ingredients in the educational process.
- How will it help students analyze and evaluate their own thinking and the thinking of others more effectively?
- How will it help them act reasonably and effectively in their lives?
- How will it help them make self-assessment an integral part of their lives?
- How will it help them master content in diverse disciplines?
- How will it help them become proficient readers, writers, speakers, and listeners?
- How will it help them improve the quality of their lives and the lives of others?
- How will it help them become reasonable and fair-minded persons?
- How will it help them use their reasoning skills to contribute to their own emotional life and that of others?
- How will it help them think, feel, and act effectively and with integrity?

people, and for the people; very few could explain the differences between a government ***of***, but not ***by*** or ***for*** the people.

What is more, few students have any sense of what it is to be a lifelong learner or what it is to evaluate and assess their thoughts, their emotions, their behavior, their decisions, and their lives. Thus some of the most important ways assessment should be used and fostered are being almost completely ignored in schooling today.

As a result of their instruction, many students confuse assessment with subjective expressions of likes and dislikes. Many students, and far too many teachers, think that all evaluation is arbitrary and nothing more than a mere personal opinion. They fail to see that all genuine assessment culminates in a reasoned judgment, can therefore be questioned in a number of ways, and requires proper application of intellectual standards.

We have a long way to go before we begin to expect quality assessment of significant learning, primarily because teachers themselves do not, as a rule, have a clear concept of significant learning. We have a long way to go before we begin to teach students the nature of assessment and how to make disciplined self-assessment an integral part of their lives.

Authentic Pedagogy & Assessment

Essential Idea: The push for "authentic pedagogy" is based on the insight that students will not be appropriately prepared if they are not given tasks and tests that reflect the actual problems they will eventually face in their work and personal life. It follows that students should be taught content so that they truly understand it and, most especially, grasp how to apply it in the world. If they learn in this way, their learning will be "authentic." Authentic pedagogy and assessment often refer not only to skills and abilities relevant to functioning in the real world, but more specifically, to effectively dealing with complex problems and issues, similar to those we all face as humans living a complex human life.

Examples of authentic assessments often include:

- performance of the skills, or demonstrating use of a particular knowledge.
- simulations and roleplays.
- studio portfolios, strategically selecting items.
- exhibitions and displays.

The idea is that classroom experiences should reflect real life as much as possible, and authentic assessments should evaluate the extent to which students will be able to use their skills in real world situations.

Proper Educational Use: There is an excellent match between the drive for "authentic" pedagogy and assessment and the need to focus instruction on a substantive concept of education, for what makes a substantive concept of education powerful is that it embodies the learning most essential to success in everyday life. There is nothing more useful in the world than thinking that is clear, accurate, precise, relevant, deep, logical, and significant. To think and behave successfully in the world, one needs to monitor one's thinking for main purposes and goals and think in a disciplined way to achieve those purposes and goals. One needs to formulate accurately the most important questions, problems, and issues and gather key relevant data and information that will solve the problems one faces. A similar point may be made for each essential ability and each essential trait. For example, if one lacks confidence in reason, one will not bother to gather and respect evidence. One will egocentrically ignore sound reasoning when one wants to.

So, certainly we should regularly review what we are teaching to determine the extent to which what we are teaching is a good match with what we want students eventually to be able to understand and to do in the world. When there is a poor match, we should modify our teaching accordingly. For example, if we are having students memorize formulas in math class, we need to ask ourselves if memorizing formulas is what enables people to do math in the real world. Or again, if studying history involves memorizing historical facts to repeat on tests that assess such memorizing, then we need to question why we are teaching history in the first place. We must ask ourselves whether we believe that historical thinking is an important part of success in life, and if so, how it can be fostered in the classroom.

It is important to design instruction so that it lays a solid foundation for success in life. Students must be taught with a clear sense of what kinds of challenges and problems they will later face. Their tasks in the classroom should mirror those later challenges and problems. If they will later have to deal with complexity, then we should design instruction so that they must deal with complexity today in the classroom. If later they will have to define and explain problems and consider alternative strategies for solving them, then we must assign tasks in school that require students to define and explain problems and consider and evaluate alternative strategies for their solution. If students are later going to have to evaluate their own thinking and assess their own work, then we must teach them today to understand what evaluation and assessment require and assign them tasks which require them to evaluate their own thinking and work.

As school is presently structured, students rarely engage in disciplined evaluative reasoning. Nevertheless, evaluative reasoning is essential to both learning and practice of every academic subject. If students do not learn how to assess their own work, conduct, emotional responses, thoughts, and

judgments, they will not be prepared for any important dimension of life. As parents, workers, consumers, and citizens we are continually called upon to assess. If we do not know how to do it, if we confuse it with our subjective reactions and preferences, our quality of life suffers.

In short, we should teach students to regularly assess their own work using appropriate intellectual standards because the proper application of these standards is necessary to living a rational life. We should teach students to regularly analyze reasoning because reasoning is ever present in human life and the quality of one's life depends on the quality of one's reasoning. We should teach students to develop intellectual virtues, traits and dispositions because these are necessary to fair-minded critical thought.

Likely Misuse: It is easy to misunderstand instruction and assessment. Instructional tasks which appear to foster genuine understanding may not in fact mirror what students will experience in their lives. To mirror reality, classroom structures and "authentic" assessments must focus on the *improvement of reasoning* so that students will, as they live their lives, reason better having been through these programs.

In considering the common tenets of authentic assessment —

- performance of the skills, or demonstrating use of a particular knowledge
- simulations and role plays
- studio portfolios, strategically selecting items
- exhibitions and displays

We might ask the following questions:

- What skills are being fostered and how will these skills enable students to reason better in the complex world they will face?
- How do we determine the "particular knowledge" students will need, given that adults change careers seven times in a lifetime, on average? And then how can students demonstrate that they would use this knowledge in real world situations?
- What types of simulations and roleplays will be used, and how will they mirror reality? How can we ensure that students use intellectual standards in assessing their own and others' reasoning in simulations and roleplays, and that application of standards will transfer to real-life reasoning situations?
- What will be contained in these portfolios and what specific reasoning abilities, skills, and traits will they foster?
- What types of exhibitions and displays will be used and how will their use aid students in reasoning better through real-life complex problems?

In other words, looking at typical "authentic" assessments, it's not clear that they would foster deep learning or develop understandings critical to the

educated mind. It will depend upon what each assessment specifically entails and how it is used in teaching and learning.

Put another way, those who advocate for authentic learning often describe authentic learning in ways that require significant contextualization. It is easy to talk about being rigorous and requiring serious intellectual work, but what such rigor and serious work consists in needs to be explicated within a well-specified, substantive concept of education.

For example, regarding "authentic assessment," most students and many teachers have little understanding of the difference between objective **evaluation** and subjective **reaction**. The result is that the standards used in assessment are typically either very task specific (and hence not very generalizable) or arbitrary (reflecting highly subjective preferences). When students are called on to evaluate work, they often do little more than state what they like or dislike. Authentic instruction and assessment should be linked with a vision of assessment that clearly distinguishes genuine evaluation from mere subjective reaction. Both students and teachers need to grasp the fact that all genuine assessment culminates in a reasoned judgment and hence can be questioned (and cross-checked) in a number of distinctive ways. For instance, we can question the purpose, the formulation of the question, the information collected, the criteria or standards used, and the way the standards were applied.

According to Fred Newmann and Gary Wehlage pedagogy is "authentic" only if it:

1. is "linked to a vision for high quality student learning," and
2. leads to "teaching that promotes high quality standards," that is, teaching that "requires students to think, to develop in-depth understanding, and to apply academic learning to important, realistic problems." (Successful School Restructuring, Center on Organization and Restructuring of Schools, p 3.)

Block Scheduling

Essential Idea: The idea behind "block scheduling" is usually tied to the general idea of restructuring schools. It represents one of the advocated changes in "structure"— in this case, a change in how time is divided into instructional periods. The thinking behind the idea is something like this: In the traditional school, the school day is divided into so many periods that too much time is involved in moving about and in getting settled. As a result, there is too little time in the traditional class for getting into a topic in depth. The proposed solution is fewer subjects and more time "blocked" out in longer periods that lend themselves to in-depth work.

Proper Educational Use: There can be no question but that the traditional middle school and high school are often structured into so many instructional periods per day that there is very little time in any given period to learn anything in-depth. The idea of teaching fewer subjects in longer time blocks in greater depth is an excellent idea, in general. The more time we have with students, the deeper we can generally go within a topic, issue, subject.

Likely Misuse: The main pitfall in block scheduling is that no problems are automatically solved by having more time dedicated to a subject on any given day. The key is not time but what teachers do with it. If teachers use it for longer lectures or for more busywork, nothing will really change. The goal, then, is to use the longer time blocks *effectively*. To achieve this goal requires long-term staff development in which teachers begin to shift their habits of instruction as they shift their conception of instruction (including how to focus on key organizing ideas, how to require reasoning rather than subjective reactions, how to teach for depth of understanding and student self-assessment).

Once again, the key is whether the longer blocks provide a way of focusing on the abilities, standards, and traits of mind essential to a substantive conception of education, and in helping students learn how to use those abilities, traits and standards in thinking within the logic of the subjects they are studying. This requires, of course, that the teachers learn how to model thinking for the students (e.g., historical, mathematical, scientific thinking), how to engage the students in that thinking (by specific classroom activities and assignments), and how to hold the students responsible for evaluating their thinking (as they think and after they think). By itself block scheduling solves none of our problems.

Bloom's Taxonomy

Essential Idea: The idea behind Bloom's Taxonomy is the notion that teaching lends itself typically to a predictable order in teaching and learning.

- **Knowledge.** First, there must be something to learn, some identifiable "knowledge" to acquire.
- **Comprehension.** Second, to gain that knowledge one must initially "comprehend" it in some way.
- **Application.** Third, comprehension is abstract and not "concrete" until one can "apply" the concept to cases, situations in the real world.

- **Analysis.** Fourth, to more deeply understand an idea one must be able to break it down into components.
- **Synthesis.** Fifth, to understand an idea one has "analyzed" requires that one can connect the parts into a whole and see their interrelationships.
- **Evaluation.** Sixth, to grasp what one has learned one must "evaluate" that learning for its completeness and accuracy.

Proper Educational Use: If one qualifies the basic "steps" delineated above and limits the claims made by each to modest ones, then the taxonomy has some usefulness. For example, it is impossible to give students knowledge to start the learning process. Teachers can, however, have in mind something they want students to learn and can present that content in some way to students for processing. This processing and initial "comprehension" will be closely interrelated. Once students have some initial comprehension, teachers can help them ground that comprehension in examples (application to the real world).

Here is one way to put the first three stages of Bloom's Taxonomy.

1. Have the students state in their own words what they are trying to learn (initial knowledge).
2. Have the students elaborate in their own words what they understand in their initial statement (initial comprehension).
3. Have the students exemplify in their own words what they have stated and elaborated, using their own examples from their life experience (initial application).

This three-step process, which is a beginning place for all learning (demonstrating the ability to state, elaborate, and exemplify the meaning of a concept, idea, etc.) is an example of the proper use of the stages that Bloom calls Knowledge, Comprehension, and Application.

The second three steps (Analysis, Synthesis, and Evaluation) can be similarly explained. Initial comprehension and exemplification can be followed by the process of breaking down knowledge into eight component parts:

- the *purpose* of the knowledge,
- the *question* that drives one to seek the knowledge,
- the *information* that underlies the knowledge,
- the *concepts* that organize the knowledge,
- the *assumptions* embedded in the knowledge,
- the *conclusions* we come to in arriving at the knowledge,
- the *implications* of the knowledge, and

- the *point of view* that enables us to put all the parts together in an integrated vision.

Once we can break down knowledge into components (analysis), we can then seek to put the parts together into a systematic, integrated whole (synthesis). And finally, we can evaluate our thinking to determine whether it is clear, accurate, precise, relevant, deep, broad, logical, significant and justifiable (all of which must be applied, of course, as relevant to the issue or problem being analyzed).

Likely Misuse: To effectively apply Bloom's categories to instruction, teachers must think through each category each time they are used. Otherwise, these categories are likely to be used superficially.

- First, teachers should focus learning on significant knowledge (helping students thereby ground themselves in fundamental and important ideas). In other words, knowledge in and of itself is neither good nor bad. Teachers need to think through ideas, distinguishing the deep from the superficial, the important from the unimportant, and focus on those that matter most in learning.
- Second, the order of the *steps* can be varied in accordance with the demands of context and situation. In other words, the steps should not necessarily be seen as steps, but rather important concepts or processes in learning. For example, there is a form of evaluation appropriate to each of Bloom's *steps* in learning. Evaluation cannot be restricted to the final step in learning. Or to take another example, when we say knowledge, we might mean initial understanding, or we might mean deep ownership of an idea. Deep ownership or knowledge of an idea may take many months or even years to comprehend.
- Third, each of the steps in analysis can itself involve stating, elaborating, and exemplifying (thus analysis itself can involve several intellectual processes and require multiple abilities).
- Finally, Bloom's taxonomy does not define critical thinking. Rather critical thinking enables teachers to use Bloom's taxonomy effectively, should they choose to use it.

In short, teachers can think critically or uncritically while using the categories of the taxonomy.

Brain-Based Teaching & Learning

Essential Idea: Since the human brain unquestionably provides the main physiological and neurological basis for human learning, it is reasonable to think that information about the nature of the brain might provide us with information about the nature of human learning and

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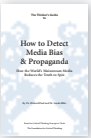

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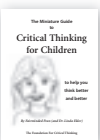

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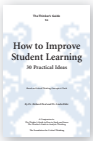

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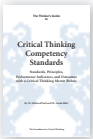

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