

A Critical Thinker's Guide  
to

# Educational Fads

*For Parents, Educators, and Concerned Citizens*

**How to Get Beyond  
Educational Glitz and Glitter**

*By Dr. Richard Paul and Dr. Linda Elder*

The Foundation for Critical Thinking

## 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

Alignment  
 Assessment  
 Authentic Pedagogy  
 & Assessment  
 Block Scheduling  
 Bloom’s Taxonomy  
 Brain-Based Teaching  
 & Learning  
 Character Education  
 Charter Schools  
 Choice (*Vouchers & Privatization*)  
 Constructivism  
 Cooperative Learning  
 Core Knowledge  
 Creative Thinking  
 Critical Thinking  
 Cultural Literacy  
 Didactic Teaching  
 Emotional Intelligence  
 Feminism and Gender Issues  
 Gifted Education  
 Global Education  
 Inquiry-Based Learning  
 Integrated Curriculum  
 Intelligence  
 Learning Styles  
 Multiculturalism  
 Multiple Intelligences  
 No Child Left Behind  
 Outcome-Based Education  
 Phonics vs. Whole Language  
 Portfolio-Based Assessment  
 Problem Solving  
 “Raise the Standards”  
 Movement  
 Restructuring Schools  
 Movement  
 School-Based Management  
 School Choice  
 School-To-Work Movement  
 Self-Esteem Movement  
 Socratic Questioning  
 Teaching for Understanding  
 Thematic Curriculum

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<sup>1</sup>

### 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.<sup>1</sup>

To meet this requirement, the student will:

- accurately identify key purposes and goals and explicitly formulate

<sup>1</sup> For an overview of the conceptual underpinnings of critical thinking, see the appendix.

questions, problems, and issues requisite to accomplishing those purposes and goals in mastering subject matter and content.

- effectively gather relevant information and data and make reasonable inferences from that information (in seeking to answer, solve, or resolve questions, problems or issues) in mastering subject matter and content.
- notice key assumptions (that underlie thinking) and important implications and consequences (that follow from thinking) in mastering subject matter and content.
- effectively analyze key concepts and ideas, recognize relevant points of view, and shift one's concepts or viewpoint when necessary (in attempting to solve a problem or resolve an issue) in mastering subject matter and content.

## Intellectual Standards Essential to Learning Across the Curriculum

The student understands and effectively uses interdisciplinary intellectual criteria essential to sound thinking.

To meet this requirement, the student will assess thinking:

- for its **clarity** (effectively determining whether it is well-stated, elaborated, illustrated, and exemplified).
- for its **accuracy** (effectively determining whether it is free from errors, mistakes, or distortion).
- for its **precision** (effectively determining whether it is in need of further specification and exactness)
- for its **relevance** (effectively determining whether it bears on the matter at hand or question at issue).
- for its **depth** (effectively determining whether it deals adequately with the complexity of the matter at hand or question at issue).
- for its **breadth** (effectively determining whether it deals adequately with important alternative points of view).
- for its **logicalness** (effectively determining whether it makes sense and is consistent).
- for its **significance** (effectively determining whether and to what extent it deals with questions, problems, or issues of importance — as against those that are trivial or peripheral).
- for its **fairness** (effectively determining whether it takes into account the views of relevant others in good faith).

## Intellectual Traits Essential to Learning Across the Curriculum

The student acquires the intellectual dispositions that, when developed, direct the right use of the mind.

To meet this requirement, the student will display the following:

- **fair-mindedness:** (a commitment to treating all viewpoints on their merits alone, without reference to one's own feelings or selfish interests, or the feelings or selfish interests of one's friends, community or nation).
- **intellectual autonomy:** (a commitment to analyzing and evaluating beliefs on the basis of reason and evidence; thinking for oneself).
- **intellectual civility:** (a commitment to taking others seriously as thinkers, even if they disagree with us, granting respect to the person and full attention to their views)
- **confidence in reason:** (a commitment to reasonability, to thinking coherently and logically, to following evidence rather than blind belief).
- **intellectual courage:** (a willingness to express unpopular beliefs when such beliefs seem more reasonable than popular ones; a willingness to examine one's own beliefs for justifiability).
- **intellectual curiosity:** (a strong desire to figure things out, to pose and pursue questions of one's own in attempting to make sense of the world).
- **intellectual empathy:** (a commitment to imaginatively placing oneself in the belief system or point of view of others to appreciate insights available from their perspectives).
- **intellectual humility:** (a commitment to understanding the nature and extent of one's ignorance, the limitations of one's knowledge) .
- **intellectual integrity:** (a commitment to be true to one's thinking, to be consistent in the intellectual standards one applies, to practice what one advocates for others, and to honestly admit discrepancies and inconsistencies in one's own thoughts and actions).
- **intellectual perseverance:** (a commitment to do challenging intellectual work over an extended period of time, despite difficulties, obstacles, and frustrations).

## Modes of Thinking Essential to Learning in Every Subject

The student learns to think within the logic of the subjects studied.

To meet this requirement, the student will, using the elements of thought, master essential modes of thinking such as:

- **historical thinking:** posing significant historical questions; analyzing, evaluating, and reconstructing historical interpretations; understanding multiple historical concepts and alternative historical viewpoints; reading historical texts and writing historical essays with insight and understanding; using historical thinking to make intelligent decisions in the present and plans for the future.
- **civic thinking:** posing significant social and civic questions; analyzing, evaluating, and reconstructing interpretations of social trends; understanding multiple social and civic concepts and conflicting social and political viewpoints; reading a wide variety of newspapers and news magazines critically; writing social commentary with insight and understanding; evaluating present social and political practices and policies in the light of social ideals and human rights; using civic and political thinking to make intelligent decisions in the present and plans for the future.
- **scientific thinking:** posing significant scientific questions; analyzing, evaluating, and reconstructing scientific interpretations; formulating plausible scientific concepts, theories and hypotheses, making reasonable scientific predictions, designing scientific experiments, gathering scientific facts, making justifiable scientific inferences; distinguishing scientific from theological reasoning; using scientific thinking to make intelligent decisions in the present and plans for the future.
- **mathematical thinking:** posing significant mathematical questions and problems; analyzing, evaluating, and reconstructing mathematical interpretations and relationships; making justifiable mathematical inferences; mastering mathematical concepts and principles; using mathematical thinking to make intelligent decisions regarding quantitative matters; reading math texts with understanding of the mathematical thinking therein.
- **literary thinking:** posing significant literary questions and problems; analyzing, evaluating, and reconstructing literary interpretations and relationships; making justifiable literary inferences; using literary thinking to make intelligent decisions regarding stories and poems; thinking analytically and critically about literary texts; reading novels, plays, short stories, and poems with insight, understanding and appreciation; reasoning from information in a literary text to plausible interpretations and judgments of appreciation (and being able to explain and defend such interpretations and judgments on reasonable grounds).

## 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?

## Still Other Questions About the Trend or Fad:

- How will it help us fix the thinking that is running the schools?
- How will it help administrators shift their emphasis from troubleshooting short-range problems, handling complaints, settling disputes, and making sure that legal and bureaucratic requirements are met, to focusing on facilitating the achievement of a substantive education?
- How will it help administrators focus on long-range consequences of the manner in which teachers teach and students learn?
- How will it help make a substantive concept of education an important topic of day-to-day discussion?
- How will it help us overcome the problems of fragmentation and superficial learning?
- How will it help teachers change their focus from day-to-day survival to teaching for substantive learning based on a substantive concept of education?
- How will it help students shift from thinking about the schools either as a place to socialize and have fun or a place to be passively tolerated to thinking about the schools as a place to learn how to learn (for life)?
- How will it help parents develop a substantive concept of education?
- How will it help school board members think in terms of setting long-range goals and broad policies that serve a substantive concept of education?
- How will it help all those who influence or participate in schooling come together as a community of thinkers focused on cultivating an atmosphere and environment conducive to education (substantively conceived)?

## Educational Fads and Trends

Now let us turn to our analysis and critique of educational fads and trends. In each case, we provide the essential idea, the proper educational use, and the likely misuse. We have no illusion that our coverage is exhaustive. Rather we exemplify how to get at the root idea of a fad and see its most essential value and danger.

### *Alignment*

**Essential Idea:** The growing concern with “alignment” in education is connected with a growing recognition that the fragmentation and “incoherence” now existing in school structure, instruction, and learning is unacceptable. Too often what is happening in school does not “add up” to anything substantial, or even intelligible. There are a number of problems contributing to the “non-aligned” (fragmented) state of education today.

One of the contributing factors is the degree to which persons employed in the schools are specialists (narrowly focused on what they do, without effective coordination with others).

Another factor is the failure of mission statements (intended to be a tool of integration and convergence) to say anything clear or substantial. Most mission statements are loose conglomerations of vague, high-sounding, but largely empty phrases pieced together by a committee (in order to present a positive image of the schools to parents and community leaders).

A third factor is found in the design of textbooks. More and more textbooks are virtual encyclopedias, the reading of which one author recently characterized as “a mind-deadening experience.”

A fourth factor is the largely unintegrated way teachers themselves originally learned the subjects they now teach. We teach as we were taught. Too frequently teachers passed their college courses largely through rote memorization and cramming before the exam. Their own learning having been fragmented, what they now teach has taken on the character of a list. They teach this and this and that and that, then this and this, then that and that, then this and that, then that and this.

The end result is that little is taught that is substantial or deep. All too often, *quantity covered* substitutes for *quality learned*. To conclude, there is no question but that an emphasis on alignment is important. The question is, what should alignment entail? What precisely are we aligning and how are we aligning it?

**Proper Educational Use:** *With* a substantive concept of education at the core of schooling, every significant element in the educational process can be



set out in integrated fashion: curriculum, teaching methods, textbook use, content coverage, assessment, outcomes, standards, and staff development. Fragmentation and superficiality can be targeted using practical strategies. The intellectual standards, essential abilities, and traits serve as major focuses for what is to be aligned. Curriculum, teaching methods, textbook use, coverage, assessment, outcomes, standards, and staff development should each be examined to determine whether and how they foster these foundations.

Of course, it is not enough to integrate **within** subjects. Integration must be achieved **across** subjects, and that becomes possible only when there is a shared recognition of the one deep common denominator of all subjects, namely that they are all modes of thinking and reasoning and hence all require thinking and reasoning if one is to learn them. In other words, mastering a subject is learning how to reason through a body of content (reasoning about numbers, reasoning about history, reasoning while reading, reasoning while writing, reasoning about plants, animals, social groups, etc.).

**Likely Misuse:** Without a substantial concept of education as a guide to what needs aligning, alignment is likely to be superficial and misleading. The mere outward appearance of alignment is likely to substitute for genuine and substantial alignment. That mere appearance is easily created by changing verbal descriptions without substantially changing what is being done in the classroom. In other words, expressions may be introduced into the curriculum and mission statement that imply alignment, even though there is no shared substantial concept of education. True alignment is no simple matter since it presupposes an analysis and assessment of all the elements of education viewed through the prism of a substantial conception of education. In the light of it, the teaching of every subject is redesigned. Key organizing ideas for curriculum and instruction are created. Content is rethought as modes of thinking. Assessment is recast to mirror the emphasis on the essential abilities, standards, and traits. Professional development for teachers is focused on the teaching strategies appropriate to a substantial conception of education. All other inservice programs support a substantial conception of education.

Without a substantial concept of education to serve as a guide and test, none of these essential alignments are likely to occur. Instead, the fragmented thinking of educators will remain unexamined while words implying alignment will be scattered throughout curriculum and instructional guides. Teachers will have no conception of how to teach science as scientific thinking or literature as literary thinking. They will not think to teach reading as “the thinking of a skilled reader.” Math will not be taught as mathematical thinking.

What is more, thinking itself will not be properly analyzed or assessed. Teachers will lack a concept of the essential structures in thought — and hence will not analyze using those structures.

They will not have been taught how to assess thinking for clarity, accuracy, precision, relevance, depth, breadth, logicalness and significance — and hence they will not do so. Students will fall back on their habits of preparing for tests by memorizing bits and pieces from textbooks or class lectures. The teachers will not know how to teach for such crucial traits as intellectual perseverance or intellectual humility. Without intellectual perseverance students give up as soon as work becomes difficult or challenging. Without intellectual humility students lack an awareness of the extent of their ignorance (and hence are unmotivated to learn).

In short, though alignment is essential to the educational process, what is more important is *what* we are aligning and *how* we are aligning it.

## Assessment

**Essential Idea:** Teaching cannot be effectively designed unless it includes a sound conception of how to assess the nature and quality of student learning. One cannot make adjustments in teaching if one does not know to what extent students are learning what we are intending them to learn. For many years much schooling has been based on false assumptions about student learning. Often we have assumed, for example, that because students had successfully memorized content for a test they actually understood it or could use it effectively when its application to the real world became imperative.

In many ways, the quality of schooling reflects the quality of assessment being used in schooling. For example, if we assess recall and memorization as a major point of emphasis, then we generate masses of citizens skilled only at tasks that require memorization and recall. Or again, if we focus assessment on superficial information that is learned in a fragmented way, we are cultivating minds that are superficial and fragmented.

We must design assessment in light of the primary goals of schooling. This presupposes that we think through these goals and not simply develop goals that are vague, high-sounding, but largely empty of meaning.

It follows that if one of our primary goals is that students become lifelong learners and critical thinkers, then a primary goal in assessment is to determine the extent to which students are learning how to assess and improve their own thinking and learning.

**Proper Educational Use:** Both educators and students need to learn the fundamental logic of assessment: its contrast with subjective preference, how to set assessment goals, how to ask evaluative questions, how to gather facts relevant to the questions asked, how to set up evaluative criteria, how to fairly apply evaluative criteria to the facts we have gathered. Virtually all human thought and action is permeated with value judgments that require

evaluative thought. We must evaluate persons, books, foods, cars, homes, relationships, jobs, schools — everything that can have merit or worth, can help us or harm us.

Therefore, we must include in our design of education a sound conception of how student learning is going to be assessed. We must ensure that there is integration and convergence across the following parameters: the mission statement, the curriculum, the use of textbooks, the design of instruction, and the design of assessment. We must begin with an assessment of that alignment. We must make sure that assessment is focused on a substantive conception of education. The total design of teaching and learning must be so focused.

This means we must assess whether teachers are teaching and students learning the essential abilities, essential standards, and essential traits. We must also assess such matters as how teachers are hired, evaluated, and given professional development training; how administrative policies and practices impact student learning; how student attitudes and work habits impact student learning; how parental support, or lack thereof, impacts student learning. The total system at work must be evaluated from the perspective of our responsibility to provide all students with a substantive education.

**Likely Misuse:** It is easy to misunderstand assessment. Assessment should not be seen as good in and of itself. Teachers, students, indeed all of us, continually assess situations, people, experiences. And, unfortunately, we often use inappropriate standards in assessing whatever we are assessing. So there is nothing magic in the *idea* of assessment. What we want to do is to assess *well, reasonably, logically, accurately.*

In the classroom, it is easy to assume that we are effectively monitoring student learning when we are not (again, merely because we are “assessing” it). Typically we miss the most obvious forms of instructional failure. For example, many students are learning to hate math (as a result of math instruction). Many students are learning to dislike school (as a result of instruction in general). Many students are learning that school is a place that does not deal with questions or issues of importance to their world. Many students are learning that when one is learning one should be passive, quiet, take notes, and memorize (when a test is drawing near). None of these “learnings” are intended. And for years we hardly noticed them. Even now we almost never assess the extent to which our instruction is failing in significant ways.

Typically, students are “learning” that knowledge is determined by the teacher. This is connected with the fact that students often get good grades merely by telling teachers what they want to hear—even when students don’t understand the meaning of what they are saying. Hence, though many students could define democracy as a government of the people, by the

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

hence about how to enhance learning through instruction. The idea behind brain-based teaching and learning, then, is to study the results of the most current research into brain functions in order to figure out how to design instruction that is compatible with those findings.

**Proper Educational Use:** Research into the brain can at best provide us with *hypotheses* about pedagogy and learning. These hypotheses are by-products of someone's interpretation of the significance of some research on brain functions. In any case, these hypotheses must be tested against what we know about the human "mind" from common experience. For example, we know that human minds sometimes function self-deceptively, that humans often "protect" themselves from potential guilt feelings by construing the facts in a self-serving and misleading manner. Humans typically see things in ways that justify pursuing their vested interest. They find ways to make that pursuit look like a moral crusade.

These are "facts" about (a significant slice of) human behavior. Brain research, therefore, cannot prove that self-deception does not occur, for we know through experience that it does. What brain research can do is to help illuminate how the brain functions when we engage in self-deception. As things now stand, however, brain research sheds little light on how the brain deceives itself. Our present knowledge of self-deception comes from direct experience and from studies that focus on self-deception from a non-neurological stand-point.

We can now generalize from this example (of brain research and human self-deception) to brain research in general and what we know about the mind in general. We have been gathering facts about the human mind for literally thousands of years.

It is easy to state any number of important truths about the human mind that are not subject to "disproof" through brain research. Consider the following:

1. Beliefs about the family, personal relationships, marriage, childhood, obedience, religion, politics, schooling, etc. are significantly (though not exclusively) shaped by cultural, national, and familial influences.
2. As humans we have a strong tendency to think egocentrically and sociocentrically about the world.
3. We tend to assume that others are correct when they agree with us and incorrect when they do not.
4. We tend to assume that the groups to which we belong — our religion, our country, our friends — are special, and better than the groups to which others belong.
5. We tend to assume that what coincides with what we want to believe is true.
6. We tend to assume that what advances our wealth, power, or position is justified.

There are many such facts about the human mind that brain research at some time in the future may help us explain neurologically. It would be a mistake, however, to think that we are close to those explanations or that the explanations in themselves will help us determine how to “minimize” our pathological mental tendencies.

What we need to do when exploring current interpretations of present brain research, then, is 1) be cautious about inferences made about teaching and learning (they are *interpretations* of research data, not necessarily facts in themselves), 2) qualify any interpretations by what we already know about the mind independent of brain research, and 3) remember that the key question is, “How does this interpretation of brain functioning further our ability to foster intellectual abilities?”

**Pitfalls:** There are a number of dangers potentially inherent in translating “results” from brain research into “designs” for teaching or “strategies” for learning. One of the most important is based in the fact that the “results” from brain research come in two forms: “hard” data and “soft” interpretations. On the one hand, the hard data from research comes closest to being “scientifically” trustworthy; however, it provides us with little help in designing teaching and learning precisely because it has no clear-cut implications for us to follow in that design (without some accompanying, mediating, “interpretation”). On the other hand, interpretations based in brain research are often controversial precisely because they are “soft.” They are not science, but relatively rough attempts to take the science of the day and translate it in order to put it to some use (usually in an area for which its initial development was not intended).

The history of education is filled with attempts of educators to translate from the science of the day to “truths” of pedagogy. This history alone should make us very cautious. Consider the energy and enthusiasm that accompanied the attempt to translate behavioral science (over the last 40 years) into educational reality. Now brain research enthusiasts are playing down the research of behavioral science and applauding the research of neuronal, biochemical science. The fact is that anyone attempting to move back and forth between “science” and “pedagogy” had better be an excellent critical thinker in both domains. What is more, such a person should be familiar with the history of such attempts and the common results of them (a distorting of the teaching process in one direction, only to be counter-distorted in another direction by the next new wave of “popularized” research).

A second danger comes from the very justification often used in brain-based teaching and learning, namely, that research into the nature and operations of the brain is a massive field in a state of accelerating change. Not too long ago, many popularizers were mesmerized by the prominence of the “right” and “left” brain theory. We were told with great solemnity that everyone was

either a “right-brained” or a “left-brained” person, that our various thoughts were produced by either the right or left brain, that we should therefore identify which brain was prominent in our various students and teach accordingly. Present brain-based enthusiasts have abandoned these sweeping hemispheric pronouncements. (while presenting us with new “authoritative truths”). It is clear that it makes little sense to radically shift our pedagogy every few years to “fit” the latest popularized notions from research.

## *Character Education*

**Essential Idea:** The idea behind character education is a concern with “unethical” behavior in our society. Those who advocate this approach argue that we have a responsibility to foster ethics in our young people so they will contribute to our collective well being rather than become habituated to anti-social, self-serving behavior. They argue for the need to develop citizens who have internalized fundamental ethical values and principles and, as a result, live lives that embody those values and principles. Character education is successful, then, to the extent that it helps cultivate citizens who are kind, thoughtful, considerate, empathic, honest, responsible, and just. No reasonable person would argue against this goal.

**Proper Educational Use:** Character education succeeds only to the extent that those who design it can clearly distinguish two very different processes:

1. the indoctrination of students into socially approved beliefs and behaviors, on the one hand, and
2. the cultivating of universal ethical principles and traits, on the other.

The danger is that administrators and teachers are not experts in “ethical principles and values.”

Like most humans they have a tendency to make judgments about right and wrong that are a confused product of ethical values, social taboos, religious teachings and legal facts. Put another way, many teachers have not been taught the essential difference between social values (which vary from society to society) and ethical principles (which are invariable from society to society, and apply to all sentient creatures). Consequently, when they set out to teach students ethical principles, teachers often inadvertently teach for social conformity. Genuine ethical development is then confused with social and ideological conformity.

So, though nearly everyone gives at least lip service to a universal common core of general ethical principles — for example, that it is morally wrong to cheat, deceive, exploit, abuse, harm, or steal from others, that everyone has a moral responsibility to respect the rights of others, including their freedom

and well-being, to help those most in need of help, to seek the common good and not merely their own self-interest and egocentric pleasures, to strive to make this world more just and humane — few have developed the ability to distinguish ethical judgments from social, political, religious, and legal ones.

Students, then, need practice in discriminating between ethical principles and social rules. They need practice in ethical reasoning, not indoctrination into the view that one nation rather than another determines these ethical principles. Students certainly need opportunities to learn basic ethical principles, but more importantly they need opportunities to apply them to real and imagined cases, and to develop insight into both genuine and pseudo ethics. They especially need to come to terms with the pitfalls of human moralizing, to recognize the ease with which we mask self-interest or egocentric desires with high-sounding ethical language.

In a substantive approach to ethics, students learn the art of self-critique, of ethical self-examination, to become attuned to the pervasive everyday pitfalls of moral judgment: intolerance, self-deception, and uncritical conformity. They learn to recognize the misuse of ethical language at the service of social and political ideologies, emotionalism, and/or vested interests. They learn to distinguish clear-cut cases of ethical right and wrong from controversial cases (requiring the examination of argumentation from multiple points of view). They learn to identify social witch-hunts that prosper in the guise of ethical crusades. They become familiar with documents that articulate universal ethical principles, like the Declaration of Independence and the UN Declaration of Human Rights. They develop ethical humility, ethical courage, ethical integrity, ethical perseverance, empathy and fairmindedness. These traits are compatible with the holding of many belief systems (whether conservative, liberal, theistic, atheistic, etc.).

In a substantively designed curriculum, consideration of ethical issues is integrated into diverse subject areas, including literature, science, history, civics, and society. This requires that teachers understand the abilities, standards, and traits of an educated person and that they understand how to foster those abilities using the modes of thinking that define the curriculum. For most of them, this requires professional staff development in critical thinking applied to ethical reasoning. For example, at present most teachers do not have a clear understanding of the differences between ethical *principles* (which tell us in a general way what we ought and ought not to do), *perspectives* (which characterize the world in ways which lead to an organized way of interpreting it — conservatism, liberalism, theism, etc.) and *facts* (which can be distorted to fit a particular point of view).

**Likely Misuse:** The problem, then, is not at the level of general principles. Very few people in the world take themselves to oppose human rights or stand for injustice, slavery, exploitation, deception, dishonesty, theft, greed,

starvation, ignorance, falsehood, and human suffering. On the other hand, no nation or group has special ownership over any general ethical principle. Indeed, virtually all social groups tend to uncritically assume that their social rules and taboos are an embodiment of universal ethics. Lacking these fundamental distinctions, teachers are likely to encourage either absolutistic thinking or ethical and intellectual relativism, both of which result in dangerous forms of pseudo-ethics in the world (for example, social witch hunts, persecution, intolerance, invasion of privacy, misuse of the criminal justice system, and narrow-mindedness). The misuse then is a predictable “use” for all of those who have not learned how to distinguish the ethical from the religious, the social, the legal, and the ideological. This is the vast majority of teachers, administrators, and citizens.<sup>2</sup>

## Charter Schools

**Essential Idea:** The idea behind the charter school movement is that the public school system is not able to reform itself because it is hamstrung by legal and bureaucratic constraints and a rigid tradition and that only a school freed from the constraints of school district bureaucracy will be able to create needed changes. And unlike private schools, which naturally enjoy this freedom, charter schools are open-access and free to the public. Charter schools are schools which are “chartered,” each with their own academic emphasis and special approach to change and excellence. It is assumed that when parents are able to choose between charter schools and traditional public schools, the competition engendered will serve as an incentive to improve the quality of public school performance.

**Proper Educational Use:** It is plausible that increased autonomy produced through increased freedom from bureaucratic constraints is likely to produce some change in classroom instruction. However, it in no way guarantees long-term, substantive change. Change may be change for the worse, or merely cosmetic in nature. For charter schools to be genuinely successful, they must be guided by insightful leadership. The principal and at least some of the teachers must be well-informed enough to seek long-term objectives, avoid superficial or empty rhetoric (such as is found in most mission statements), recognize that the quality of instruction is dependent on the quality of thinking that designs and implements instruction, grasp that the quality of learning is dependent on the quality of the thinking that produces that learning, and understand that only a foundational commitment to intellectual standards and critical thinking across the curriculum will produce the kind of change that substantively improves how students learn and grow.

<sup>2</sup> For a more in-depth understanding of ethics, see Paul, R. and Elder, L. (2006). *Understanding the Foundations of Ethical Reasoning*. Dillon Beach, CA: Foundation for Critical Thinking, [www.criticalthinking.org](http://www.criticalthinking.org)

**Pitfalls:** Charter schools succeed, like those which shift to school-based management, only to the extent that teachers and administrators have a sound understanding of what impedes high quality learning and what needs to be done to cultivate it, and are willing to make a long-term commitment to facilitate it. However, research conducted by the Center for Critical Thinking, (Paul, et al., California Teacher Preparation, 1997), in combination with extensive experience in assessing teachers' performance at professional development workshops, strongly implies that very few teachers presently have the skills essential for the paradigm shift in instruction required for substantive change. For example, research demonstrates that few teachers today understand what critical thinking is or how to teach for it. What is more, this understanding cannot be developed in the short run.

To spell this out further, very few teachers understand intellectual standards or can distinguish them from what are commonly called "rubrics." Few teachers are comfortable with either theoretical questions or abstractions (both of which are essential to understanding of, and teaching for, disciplined thinking). Very few teachers know how to teach math as mathematical thinking, science as scientific thinking, geography as geographical thinking. Very few teachers know how to integrate ideas within their subject, or across subjects, or how to foster effective problem solving or communication. The result is that even with the freedom of a charter school, teachers and their administrators are likely to design systems and instruction in ways that produce superficial rather than substantive change.

## *Choice (Vouchers & Privatization)*

**Essential Idea:** The essential idea behind "choice-based" strategies for the improvement of education is the same idea that stands behind capitalism as an economic system. The notion is that if schools were forced to compete for students (as businesses are forced to compete for customers), then schools would be forced to improve the quality of their instruction (or fail for want of students). At present, there is little incentive for schools to improve since they will continue to receive public funds whether they improve or not.

There are many variations and alternative strategies for putting this basic idea into practice. One is that private schools should be allowed to compete with public schools. Another is that public schools should be forced to compete with each other (but not with private schools). One common vehicle for this competition is a "voucher" (a certificate representing a fixed amount of money redeemable by schools chosen by parents for each child). When the competition involves for-profit private schools as well as public schools, then the concept of "privatization" is also involved. Privatization can also be



introduced by taking “bids” on the running of whole school systems.

As with the concept of charter schools, the basic thinking is that the twin vehicles of “choice” and “competition” will force improvement. As long as public schools exist as a monopoly with guaranteed numbers of students, why should they improve? Why not let private investors enter into the school “design” competition? Since “for-profit” economics has worked in industry, why not “for-profit” education? What is more, if we are going to save money by outsourcing a wide variety of school services, why not outsource instruction itself?

**Proper Educational Use:** It is premature to judge the effectiveness of this strategy since few experiments have been conducted under this model. It is likely that the effectiveness will vary in accordance with particular design. Some designs might work while others fail. It seems inappropriate and unreasonable to simply rule out the possibility that it might bring about improvement in instruction.

**Pitfalls:** There are dangers inherent in the use of the model of competition between schools. The most significant is that of ensuring a level playing field. For example, if public schools are forced to compete with private ones and private schools refuse to admit the more “costly” special education students, then the competition is not really fair. A second important difficulty is in determining appropriate assessment measures to use in assessing the quality of the product “delivered.” The “choice” model assumes that parents themselves are good judges (or at least as good as that of traditional educators) of the quality of education. This may or may not be true. Some parents may be satisfied with schooling that indoctrinates their children into a narrow political or religious ideology.

In any case, vouchers and privatization cannot be expected to guarantee a substantive education for a greater number of children unless there is evidence that parents will tend to opt for schools that foster deep learning. Unless and until parents have a substantive concept of education clearly in mind, this is unlikely.

## ***Constructivism***

**Essential Idea:** The essential idea behind a constructivist orientation is the notion that students learn only that knowledge that they actively “construct” in their own minds. I cannot learn for you and you cannot learn for me. The teacher cannot inject knowledge into the heads of students. The student cannot gain knowledge through passive listening or mindless repetition. Rather, the job of teaching is that of designing instruction so that students

construct deep and abiding understandings through active intellectual work. For students to construct a new idea, they must read the idea, write the idea, speak the idea, and think the idea into their system (of ideas). Constructivism emphasizes the limitations of traditional didactic teaching, which they see as sacrificing depth of understanding for superficial content coverage. The problem of instruction becomes, from the constructivist standpoint, the problem of creating activities which result in students working a new idea into a system of ideas in their heads. The envisioned result is not perfect understanding (since any new idea is influenced by the ideas students already have, many of them flawed), but better understanding.

**Educational Use:** The idea of constructivism is traceable to thinkers like Piaget who emphasized that “human knowledge is essentially active.” For Piaget, “to know is to assimilate reality into systems.” It is to construct networks of thoughts and actions which are integrated by the work of the mind. Hence, to understand the learning of children, Piaget often asked them open-ended questions that enabled them to explain what they were learning in terms that made sense to them. What he found out, of course, is that children are often learning something quite different from what we think they are learning. The systems of meanings by which they interpret school content reflect the immaturity of their minds. We need frequently to remind ourselves to discover what students really think (beneath the surface of what they say). We need to find out what meanings they are inwardly, and often privately, constructing as they engage in learning inside and outside of school.

Unfortunately much of today's instruction and testing do not determine student systems of meaning and it is often possible for students to get good grades by relying on rote memorization and cramming. They then select the correct “true” or “false” options often without fully understanding what is meant by any of the options. They may even be able to mouth correct definition without at all understanding the meaning of the concept they are focused on or its important implications.

Constructivists realize that lower level student learning strategies do not result in personal construction. They are aware of the problem of short-term memorization. They realize that when we emphasize a constructivist approach to learning, we force students to process what they are learning in a deeper way. Students must then interweave what they are learning (at any given time) with other things previously learned.

**Likely Misuse:** Having recognized that active learning is a necessary condition to higher order learning, we must not assume that it is a sufficient condition. Thus the active “construction” of meaning in and of itself is not sufficient. Let us not forget that the construction of ideas is used in the learning of criminal behavior, in standard peer group learning, and in the socialization processes that result in prejudice, shared illusions, and

stereotypes. Gossip, hatred, fear and even math anxiety are all “constructed” in the minds of students all over the world every day. The group influence that occurs in gangs provides a powerful example of undesirable construction of ideas whereby gang members together create meanings that enable them to behave in manipulative, hurtful, and even deadly ways.

If construction in learning is to go beyond uncritical construction, it must embody clear-cut self-assessing processes whereby students raise their learning to a more self-critical level. Students must learn, in other words, to probe their own thinking: seeking and eliminating mistakes that impede excellence in thought. Students must develop the ability and propensity to assess their learning as they are learning, to assess the ideas they are constructing in their minds as they are learning those ideas. They must learn and regularly use appropriate standards for doing so — standards such as clarity, accuracy, precision, depth, breadth, fairmindedness and logicalness.

Students must learn to routinely ask such questions as “Are we thinking clearly enough?” “Are we sure that what we are saying is accurate?” “Do we need to be more precise?” “Are we sticking to the question at issue?” “Are we dealing with the complexities in the question?” “Do we need to consider another perspective or point of view?” “Are our assumptions justifiable or are they faulty?” “Is our purpose fair, or are we only concerned about advancing our own desires?” “Does our argument seem logical, or is it disjointed, lacking cohesion?”

Such questions must become part of the routine process students use in the privacy of their own thinking when constructing ideas in their minds.

Furthermore, intellectual standards must be applied to all of the important structures in thought: to its guiding goal or purpose, to the central question, to the information used in reasoning through the question, to the judgments made in considering the information, to the concepts guiding the judgments, to the assumptions that underlie the judgments, and to the implications that follow from it.

Students must learn to use information and language accurately and precisely to ensure that the information they use is relevant to the issue at hand. Students must come to understand that when they are addressing a complex issue, they must explicitly deal with its complexities and consider differing relevant points of view.

In short, the active construction of meaning is not enough. That construction must be disciplined throughout by careful application of the intellectual standards that keep the best thinking on track. Thinking does not naturally actively engage appropriate standards. In fact, most students (and people in general, for that matter) are naturally drawn to use (because they have actively constructed) standards for assessing thinking which are both egocentric and sociocentric. Most people agree with only that which agrees with what they

already believe (egocentric) and that which agrees with what those around them believe (sociocentric).

These natural unintellectual constructions are not easily overcome. Rather they are effectively dealt with only when appropriate intellectual standards are carefully cultivated over a considerable period of time. They are effectively dealt with only through increasing commitment on the part of students to developing their minds as educated persons.

## *Cooperative Learning*

**Essential Idea:** The idea behind cooperative learning is the notion that students can learn more when they work together, for working together results in the pooling of knowledge and helping each other learn more than they would alone. It is also argued that the world of business increasingly needs people who are good team players and that cooperative learning in the schools prepares students for a team playing role at work.

**Proper Educational Use:** The basic idea behind cooperative learning is a good one. First, if instruction is appropriately designed, students of high ability can help improve the thinking of less skilled students through cooperative learning. Any structure that requires students to give voice to what they are learning (to write it, speak it, explain and exemplify it to others) fosters learning, both in the person giving voice and the person responding with questions (questions that, for example, encourage the first student to explain more).

Furthermore, when students learn to give one another high quality feedback on their intellectual work, the work of students both giving the feedback and receiving feedback is improved. Put another way, when students help other students identify deficiencies in their thinking, they learn to better identify deficiencies in their own thinking. *It is in teaching that we learn.*

The second argument for cooperative learning is also a good one. Learning to work effectively with others is clearly desirable and useful. It is an important life skill often missing in schooling. This includes learning to enter other points of view in a fair-minded way, to reason empathically within conflicting viewpoints.

In the classroom, various cooperative learning strategies could be employed, including having students work in pairs teaching each other key concepts, putting students into groups of three or four and giving them problems to work through, etc.

*Yet the essential component of any cooperative learning assignment or process is its use of intellectual standards.* By intellectual standards we mean standards that can be applied to reasoning (independent of domain), standards such as

clarity, precision, logicalness, accuracy, relevance, breadth, depth and fairness. When we help students internalize these standards whether working alone or with others, students develop intellectual skills essential to the educated mind.

**Likely Misuse:** It is important to recognize, however, that cooperative learning does not in and of itself necessarily imply high caliber thinking. Indeed students can “cooperatively learn” either in a high quality or low quality way. We do not want students to engage in group work without consideration of the implications thereof. After all, gang members routinely engage in a form of cooperative learning, as do fascist regimes. Rather we want students to work in groups in an *intellectually responsible* manner. They can do so only if they understand and use appropriate intellectual standards. For example, without intellectual standards, student groups can easily misunderstand the nature of their work. They can think through complex problems in a superficial way — each superficial thinker reinforcing the superficial thinking of the others. “Yeah, that sounds good. I like that answer!” Without intellectual standards, groups can easily fail to consider the logical implications of their reasoning. Without intellectual standards, groups can easily fail to clarify the question embodied by the issue. Without intellectual standards, groups can easily pursue purposes that are not justifiable. Without intellectual standards, groups can easily fail to consider information relevant to their problem. Without intellectual standards, groups can easily fail to check information for accuracy before using it in their reasoning. Without intellectual standards, groups can easily use concepts in intellectually sloppy ways.

In short, cooperative learning in and of itself will not develop the reasoning abilities of students. Cooperative mislearning is a danger throughout. Only when cooperative learning is used in an intellectually disciplined way is its power realized in a fully productive manner.

## Core Knowledge

**Essential Idea:** The “Core Knowledge” movement<sup>3</sup> was established by E. D. Hirsch, Jr., author of *Cultural Literacy: What Every American Needs to Know* and *The Schools We Need and Why We Don't Have Them*. It is an “educational reform” movement based on the premise that a grade-by-grade core of common learning is necessary to ensure a sound and fair elementary education. According to the Core Knowledge Foundation, Hirsch has argued that “for the sake of academic excellence, greater fairness, and higher literacy, early schooling should provide a solid, specific, shared core curriculum in order to help children establish strong foundations of knowledge.” The content of this core curriculum has been outlined in two

<sup>3</sup> The quotes in this section were taken from the Core Knowledge Foundation website: [www.coreknowledgefoundation.org](http://www.coreknowledgefoundation.org), March 2007.

books and states explicitly “what students should learn at each grade level... the Core Knowledge Sequence represents the common ground upon which a faculty meets and collaborates to teach a sequenced, coherent curriculum. In this cumulative curriculum, the knowledge and skills learned each year become the students’ foundation for learning in subsequent years.”

According to *Core Knowledge*, “Children learn new knowledge by building upon what they already know. It’s important to begin building foundations of knowledge in the early grades because that’s when children are most receptive, and because academic deficiencies in the first six grades can permanently impair the quality of later schooling. The most powerful tool for later learning is not an abstract set of procedures (such as “problem solving”) but a broad base of knowledge in many fields.”

“Literacy depends on shared knowledge. To be literate means, in part, to be familiar with a broad range of knowledge taken for granted by speakers and writers. For example, when sportscasters refer to an upset victory as ‘David knocking off Goliath,’ or when reporters refer to a ‘threatened presidential veto,’ they are assuming that their audience shares certain knowledge.”

The idea behind the “core knowledge” movement, then, is that there is a definable “core” of information that everyone must know in order to function well within in their culture.

**Proper Educational Use:** It is possible to modify the Hirschian notion of “core” knowledge to one that is more compatible with *fostering the educated mind* through the development of intellectual skills. In that case, we focus on the core ideas and concepts, principles and theories, which are at the root of various domains of thought. In teaching, biology, for example, we would then focus on the core concepts and principles of biology, but teach them as embedded in a domain of thought: biological thinking. In principle, then, there is good reason to focus on *core* ideas and principles, but this is a far cry from what has been advocated by those who have published definitive lists, concepts and information erroneously defined as “core.”

**Likely Misuse:** It is very easy for a focus on a body of information to become an occasion for rote memorization which typically leads to short term recall and superficial understanding. When there is no deeper organizing idea than that of *content to be covered in a specific sequence*, and lacking the necessary organizer of *thinking* that content into one’s thinking in a disciplined and permanent way at the heart of the process, it is unlikely deep learning will occur.

The Core Knowledge Foundation implies that students can somehow learn information without thinking it through in a meaningful way. The idea seems to be something like this: *Give students lots of information and “knowledge” and then they will have that knowledge when they need it.* But how are students to gain knowledge without thinking that knowledge into their

thinking? Moreover, without focusing explicitly on skills and traits of mind, how will teachers know that students are thinking content into their thinking in a *responsible way*?

The very fact that “Core Knowledge” asserts “The most powerful tool for later learning is not an abstract set of procedures (such as “problem solving”) but a broad base of knowledge in many fields,” is itself evidence that the importance of thinking in learning is misunderstood in this philosophy, and takes a back seat to taking in lots of information in a set sequence. To learn anything well, to work it into their thinking, students must use abstractions every day in the classroom, and they must use, in a sense, abstract procedures or processes for doing so. First, every idea within every subject is an abstraction because every idea within every subject is conceptual. And second, conceptual procedures are used whenever students, or indeed anyone, thinks ideas into their thinking. For example, to learn an idea, the student must be able to state, elaborate and exemplify it in their thinking. They must be able to demonstrate that they can and will apply that idea when the idea is relevant. All of this requires abstract processes. Otherwise, merely rote and not true “understanding” occurs.

Moreover, how are we to know that teachers themselves are thinking critically about the content they are expected to cover? How are we to know that teachers are not uncritically teaching cultural values that may themselves be questionable? How are we to know, in other words, that teachers are not merely indoctrinating students into the social rules, conventions, and mores of the culture in the name of creating a common ground for learning? Consider, *Core Knowledge* asserts that they ask teachers “to recognize the needs of each child as part of a larger community. All communities require some common ground. The community of the classroom requires, in particular, that its members share some common knowledge, because this knowledge makes communication and progress in learning possible.” It is important to recognize that common knowledge, and common ground are not good in and of themselves. We can *commonly agree* to see the history of our country in a distorted way in order not to face unpleasant truths about our past. We can agree on this *common ground*. But, from an intellectual perspective, we are not justified in doing so. Educated persons would see the problems in this way of thinking and guard against it. There is no shortcut to teachers learning to think critically about and through all content they are expected to teach, at all levels, in all grades. Otherwise indoctrination is all too likely.

## Creative Thinking

**Essential Idea:** Uncreative thinking, thinking that simply repeats old ideas without improving on them, is often a problem in human life. Using the tried — and true does not always work. Standard procedures, old solutions,



sometimes break down, sometimes become part of the problem rather than part of the solution. Sometimes it is important to be able to use thinking to *create* (conceive, invent, produce, author) new ideas which enable us to better achieve our purposes or discover new purposes.

**Proper Educational Use:** It is important to teach in such a way as to encourage students to think for themselves and explore new thoughts and ideas, not just rely on old ones. Students should realize that there are many things which we don't understand and that we often need new and bold ideas. Consequently, those who have emphasized *creative* thinking properly seek strategies and structures which encourage students to use their imaginations to seek nonstandard ways to do standard things, as well as to invent entirely new things that are useful. We need to encourage students to stimulate their creative potential. We need to continually send these types of messages to our students: "Be ready to look at things in new ways. Be ready to seek new paths, invent new ideas, turn things around in different ways. Question standard assumptions, question standard concepts, question what is taken to be acceptable. Be willing to think in unique and different ways. Be a pathfinder, not just a path follower."

**Likely Misuse:** When "creativity" is not deeply understood, it easily reduces to mere "novelty." And while all genuine creativity produces novelty, not all novelty is genuinely creative. It is easy to produce new *foolish* or *silly* ideas. It is easy to produce what is simply bizarre, strange, or odd. Students' writing is sometimes called creative when it is simply strange or unusual. Teachers who do not understand the important connection between creative and critical thinking often treat them as opposites rather than as conjunctive and complementary. They often inadvertently encourage pseudo creativity rather than genuine creativity. Genuine creativity does not run counter to critical thought, rather it builds upon it and is interwoven with it. Criticality continually heightens our sense of what is inadequate in what we presently do, think, or assume. It points in the direction of, and commonly suggests, what we need to aim at to get a useful new solution. It helps protect us from simply making matters worse. It saves us from running down blind alleys which are simply "new." It enables us to keep our common sense and wits about us.<sup>4</sup>

## *Critical Thinking*

**Essential Idea:** This basic concept of critical thinking is embedded not only in a core body of research over the last 30 to 50 years but is also derived from roots in ancient Greek. The word 'critical' derives etymologically from two Greek roots: "kriticos" (meaning **discerning judgment**) and "kriterion" (meaning **standards**). Etymologically, then, the word implies the development

<sup>4</sup> For a more detailed discussion of the relationship between critical and creative thinking, see: Paul, R. and Elder, L. (2004). *The Thinker's Guide to the Nature and Functions of Critical and Creative Thinking*. Dillon Beach: Foundation for Critical Thinking. [www.criticalthinking.org](http://www.criticalthinking.org)



of “discerning judgment based on standards.” In Webster’s New World Dictionary, the relevant entry reads “characterized by careful analysis and judgment” and is followed by the gloss: “critical, in its strictest sense, implies an attempt at objective judgment so as to determine both merits and faults.” Applied to thinking, then, we might provisionally define critical thinking as thinking that explicitly aims at well-founded judgment and hence utilizes appropriate evaluative standards in the attempt to determine the true worth, merit, or value of something.

The tradition of research into critical thinking reflects the perception that human thinking left to itself often gravitates toward prejudice, overgeneralization, common fallacies, self-deception, rigidity, and narrowness. The critical thinking tradition seeks ways of understanding the mind and then training the intellect so that such errors and distortions of thought are minimized. It assumes that the capacity of humans for good reasoning can be nurtured and developed by an educational process aimed directly at that end. It assumes that sound critical thinking maximizes our ability to solve problems of importance to us by helping us to both avoid common mistakes and proceed in the most rational and logical fashion.

For example, those who think critically typically engage in monitoring, reviewing, and assessing: goals and purposes; the way issues and problems are formulated; the information, data, or evidence presented for acceptance; interpretations of such information, data, or evidence; the quality of reasoning presented or developed, basic concepts or ideas inherent in thinking, assumptions made, implications and consequences that may or may not follow; points of view and frames of reference. In monitoring, reviewing and assessing these intellectual constructs, those who think critically characteristically strive for such intellectual criteria as clarity, precision, accuracy, relevance, depth, breadth, fairness, and logicalness. These modes of thinking help us accomplish the ends we are pursuing.

Critical thinking presupposes intellectual traits, dispositions or virtues in addition to intellectual skills. Not only do critical thinkers, for example, gather accurate information and make sure it is relevant to the question at issue, but they also think *fair-mindedly* in interpreting the information. Critical thinkers not only consider all relevant viewpoints, but they enter each viewpoint using *intellectual empathy* so as to fully understand those viewpoints. In other words, they think with intellectual humility, intellectual integrity, intellectual courage, intellectual perseverance, and so forth in reasoning through issues and problems, so as to ensure that they are thinking at the highest level of quality, that their thinking is reasonable, rational, just, in accordance with the issue, context, situation.

**Proper Educational Use:** Critical thinking is a universal need in education. It is essential at all grade levels in all subjects. This is true because all learning requires thinking and it is the role of critical thinking to ensure

that we are thinking at the highest level of quality, no matter what *content*, issue or problem we are reasoning through. Moreover, it is possible to learn how to think more effectively by learning how to think about one's thinking (independent of the subject or content). And there is no more pressing need than for people to take command of the thinking that is controlling their lives, affecting the lives of others, impacting life on the planet.

It is possible to take command of our thinking precisely because there are universal elements in thinking that we can understand and use to control what and how we think. Whenever we think (and whatever we think about), we think for a purpose within a point of view based on assumptions and leading to implications and consequences. We use data, facts, and experiences to come to conclusions based on concepts and theories in attempting to answer a question, solve a problem, or resolve issues. To illustrate, since all thinking involves purposes and goals, you can always improve your thinking (through critical thinking) by keeping your purposes and goals clearly in mind. Or again, since all thinking requires questions or problems as a central consideration, you can always improve your thinking (through critical thinking) by making sure that you state questions and problems in a precise and accurate way.

If we understand critical thinking substantively, we not only explain the idea explicitly to our students, but we use it to give order and meaning to virtually everything we do as teachers and learners. We use it to organize the design of instruction. It informs how we conceptualize our students as learners. It determines how we conceptualize our role as instructors. It enables us to understand and explain the thinking that defines the content we teach.

When we understand critical thinking at a deep level, we realize that we must teach content through thinking, not content and then thinking. We model the thinking that students need to master if they are to take ownership of the content. We teach history as historical thinking. We teach biology as biological thinking. We teach math as mathematical thinking. We expect students to analyze the thinking that is the content, and then to assess the thinking using intellectual standards. We foster the intellectual traits (dispositions) essential to critical thinking. We teach students to use critical thinking concepts as tools in entering into any system of thought, any subject or discipline. We teach students to construct in their own minds the concepts that define the discipline. We acquire an array of classroom strategies that enable students to master content using their thinking and to become skilled learners.

The concept of critical thinking, rightly understood, ties together much of what we need to understand as teachers and learners, leading to a framework for institutional change.

**If we truly understand critical thinking, for example, we should be able to explain its implications:**

- for analyzing and assessing reasoning.
- for identifying strengths and weaknesses in thinking.
- for identifying obstacles to rational thought.
- for dealing with egocentrism and sociocentrism.
- for developing strategies that enable one to apply critical thinking to everyday life.
- for understanding the stages of one's development as a thinker.
- for understanding the foundations of ethical reasoning.
- for detecting bias and propaganda in the news.
- for conceptualizing the human mind as an instrument of intellectual work.
- for active and cooperative learning.
- for the art of asking essential questions.
- for scientific thinking.
- for close reading and substantive writing.
- for grasping the logic of a discipline.

Each contextualization in this list is developed in one or more of the Thinker's Guides in the Thinker's Guide Library.<sup>5</sup> Taken together they suggest the robustness of a substantive concept of critical thinking.

In sum, critical thinking defines a network of "invariables" (structures we can use independent of the context) to design integrative, convergent instruction, instruction in which whatever students study is enhanced by everything else they study. We take command of all that is changing in our world, in part by learning how to focus on that which is not changing, and will never change—namely intellectual skills and traits, as well as the universal concepts and principles underlying them. In a world of accelerating change and highly volatile variables, it is only through command of that which does not change that we can acquire powerful tools of learning.

**Likely Misuse:** There are many problems associated with the use of the term critical thinking in schooling today, and more "pseudo" critical thinking programs than perhaps any other trend. In the first place, virtually all teachers erroneously believe that they understand and practice critical thinking already and that the problem of "uncritical" thinking is fundamentally that of their students (Paul, et al., California Teacher

<sup>5</sup> See The Thinker's Guides to Critical Thinking, Dillon Beach: Foundation for Critical Thinking Press, [www.criticalthinking.org](http://www.criticalthinking.org)



The Foundation for Critical Thinking  
PO Box 220  
Dillon Beach, CA 94929

## About the Authors

**Dr. Linda Elder** is an educational psychologist who has taught both psychology and critical thinking at the college level. She is the President of the Foundation for Critical Thinking and the Executive Director of the Center for Critical Thinking. Dr. Elder has a special interest in the relation of thought and emotion, the cognitive and the affective, and has developed an original theory of the stages of critical thinking development. She has coauthored four books on critical thinking, as well as twenty thinkers' guides. She is a dynamic presenter with extensive experience in leading seminars on critical thinking.



**Dr. Richard Paul** is a major leader in the international critical thinking movement. He is Director of Research at the Center for Critical Thinking, and the Chair of the National Council for Excellence in Critical Thinking, author of over 200 articles and seven books on critical thinking. Dr. Paul has given hundreds of workshops on critical thinking and made a series of eight critical thinking video programs for PBS. His views on critical thinking have been canvassed in *New York Times*, *Education Week*, *The Chronicle of Higher Education*, *American Teacher*, *Educational Leadership*, *Newsweek*, *U.S. News and World Report*, and *Reader's Digest*.

