

Closing the Achievement Gap and Promoting Greater Access to Gifted Education Programs

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Two major but related problems that present challenges to the American education system are the achievement gap that exists between middle class students and low-income and minority groups and second, the underrepresentation that exists among these groups in special programs for students who are gifted and talented. This article proposes two strategies that can be implemented to address these challenges. The first strategy deals with the ways in which we assess students' academic skills and the second deals with the types of pedagogy that can be designed and implemented to develop the strengths, interests, and talents of young people.

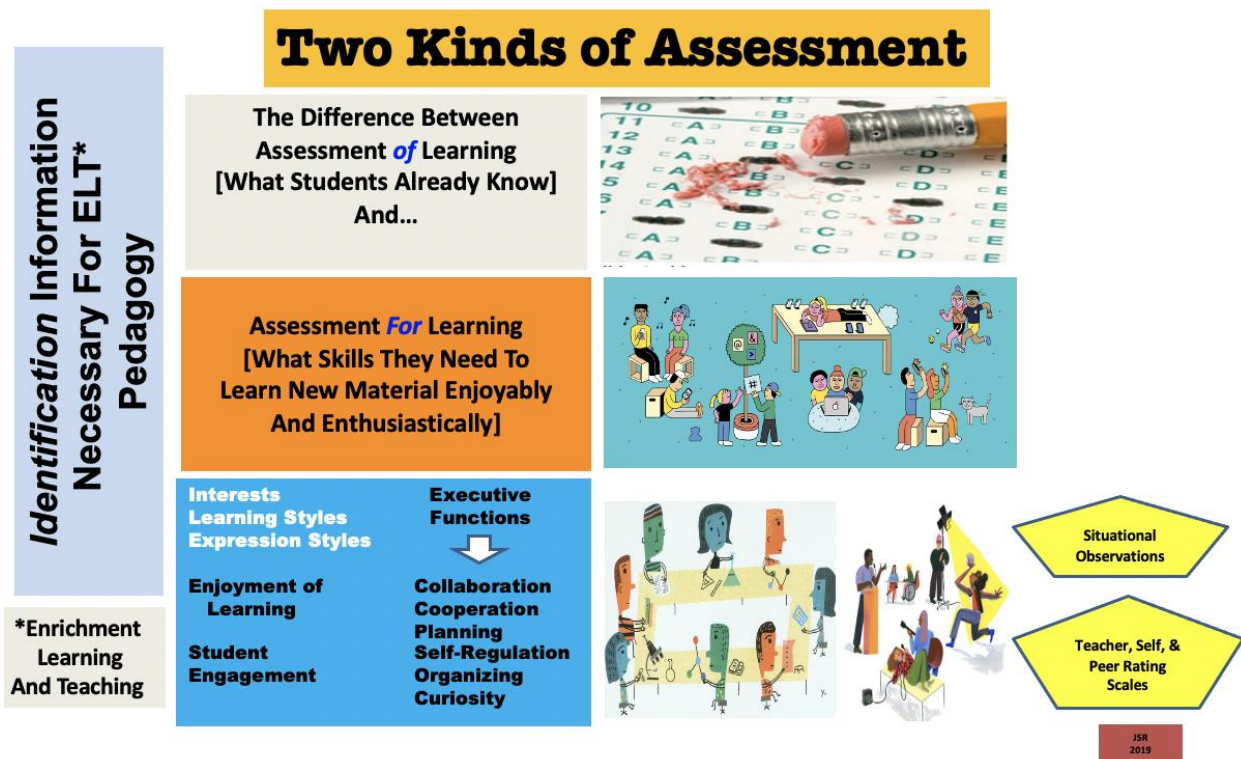
Problem 1: Assessment *for* Learning Vs. Assessment *of* Learning

The first issue calls attention to the important difference between assessment *for* learning and Assessment *of* learning. Classic measurement theory makes a distinction between these two types of assessment. Assessment of learning, often called summative assessment, is used to evaluate student content learning, skill acquisition, and academic achievement at the conclusion of a defined instructional period—typically at the end of a project, unit, course, semester, program, or school year. Summative assessments are generally formal, structured, norm or criterion referenced, and are often used to normalize performance so that students can be measured, compared, and then remediated, usually through skill targeted drill and practice instruction. Information about instruments that assess these factors is available in both print format (Renzulli, 1997) and digital availability (Field, 2009; Renzulli & Reis, 2007). This type of assessment has dominated most school-related decision making through the use of state administered standardized achievement tests.

Assessment *for* learning falls into the category of formative assessment. Formative assessment is ongoing, flexible, and usually informal and includes information that is gathered for the purposes of modifying instruction during an individual lesson or for future instructional planning. It is based on information gathered from the students during or prior to instruction (i.e., pre-assessment); and is used to adapt teaching to meet student needs. Both types of assessment are important but, “Formative assessment with appropriate feedback is the most powerful moderator in the enhancement of achievement” (Hattie & Timperley, 2007). Assessment for learning gathers data, usually from the students themselves, and focuses on students as individuals. These data typically include interests, instructional style preferences, preferred modes of expression, and other co-cognitive factors. This type of information provides insights into how teachers can modify teaching and learning activities for individuals.

The focus of the remainder of this commentary will be on the types of assessment for learning that emphasizes students' individual learning characteristics and preferences. This type of assessment focuses on individual rather than group data and is not used to rank students, though it can be used to form small groups who share relevant interests or other characteristics. A figural representation of these two types of assessment and suggested characteristics that should be a focus of assessment for learning is presented in Figure 1.

Figure 1
Two Kinds of Assessment



One of the fastest growing areas of interest in the identification of young people for talent development opportunities is a focus on non-cognitive skills variously referred to as “soft skills,” “character skills,” “social intelligence,” and “executive function skills.” One of the reasons for this new emphasis is the greater attention being paid to these skills by both college admissions officers and human resource specialists in all areas of job employment, especially for high level jobs that require leadership, innovation, problem-solving, and the ability to work collaboratively with others. Although these skills are not as easily measured as the cognitive skills measured by standardized aptitude and achievement tests, they do, nevertheless, add a new dimension to the ways in which we consider human potential. They cannot be taught or evaluated in the same didactic and prescriptive manner that we teach young people to memorize information for traditional “right-answer” tests. And since today’s emphasis on social emotional development is consistent with the types of skills described below, this work gives some

direction to the social and emotional skills whose importance has recently been recognized and that are now being included in educational planning.

Developing Students' Executive Function Skills

Executive function skills are challenging to place into a workable framework, and a great deal of interaction exists between and among the many skills that have been identified as important in the taxonomy depicted in Figure 2. Indeed, several of these skills could potentially be categorized under other headings, and one of the goals of current research is to determine the most accurate organizational structure for understanding these skills. We believe there is sufficient evidence in the soft skill literature to support some general suggestions about the types of pedagogy that are likely to make developing these skills enjoyable and engaging for both teachers and students (Anderson, 2002; Culclasure et al., 2019; Dawson & Guare, 2004; National Research Council et al., 2012; Ornellas et al., 2019).

Figure 2
Taxonomy of Executive Function Skills

<p>A. Action Orientation</p> <ul style="list-style-type: none"> Goal setting Decision Making Networking Organization Persistence Time Management Delegation of Responsibilities Focus Attention to Details 	<p>B. Realistic Self-Assessment</p> <ul style="list-style-type: none"> Appraisal of Personal Strengths and Weaknesses Confidence in Leadership Skills Willingness to Accept and Act Upon Constructive Feedback Optimism Self-Management Self-Motivation Sense of Humor
<p>C. Social Interaction</p> <ul style="list-style-type: none"> Listening Written, Verbal, and Non -Verbal Communication Friendliness Respect for the Opinions of Others Cooperation and Collaboration 	<p>D. Awareness of the Needs of Others</p> <ul style="list-style-type: none"> Empathy Tolerance Generosity Kindness Patience Calmness Trust
<p>E. Altruistic Leadership</p> <ul style="list-style-type: none"> Teamwork Positive Reinforcement Recognition of Other's Strengths Negotiation and Mediation Openness to Idea Exchange 	

The best way to develop these skills in young people is to provide them with experiences in which executive function skills must be used and applied, rather than taught through direct instruction. Simulations and project-based learning are authentic ways of getting students both academically and socially and emotionally involved in

more real-world experiences. Simulations are instructional scenarios where the learner is placed in a situation defined by the teacher. They represent a reality within which students interact. The teacher controls the parameters of the situation and serves as the guide-on-the-side rather than the information giver. Asking students, for example, to play different roles in designing a safe playground for preschool children, planning a school magazine, developing school-based exercise program, or dealing with a bullying situation are all easy ways to promote both cognitive skills as well as non-cognitive traits that are part of learning new skills. Thousands of free game-based simulations can be found on-line (e.g., <https://www.learn4good.com/kids-games/simulation.htm>) that simulate everything from learning to fly an airplane to building a zoo or dissecting and preserving your own mummy. Publications on Interact sites offered by Social Studies School Service provide simulation-based curricular units for social studies, math, science, and literacy (<https://www.socialstudies.com/?s=Interact>).

Real-world projects from examples we have observed, such as organizing a school book sale or building hydroponic gardening tables for senior centers, are excellent ways for students to develop empathy and the cooperative and collaborative skills that are mentioned in the taxonomy. These projects also provide a real-world application of curricular topics (e.g., math skills in a school store; biological knowledge for a hydroponic garden).

A key to successful project-based learning is giving students a choice in the area in which they are interested and would like to work. In teacher-initiated projects, students may wish to select their role within the overall project (such as designing the hydroponic setup or selecting appropriate plants in the gardening tables for senior centers example mentioned above). In the enrichment cluster component of the Schoolwide Enrichment Model (Renzulli et al., 2013), students choose both the topic and the various role(s) they would like to play in the project or service they decide to complete. First, they select the cluster of greatest interest in which to participate, and then they select which role they will play to support the cluster's major goal, which is to produce a product, service, performance, or presentation that is designed to have an impact on one or more targeted audiences. Many of the executive functions "come together" as students in enrichment clusters work cooperatively to bring their audience-oriented projects to the highest possible level of development. We sometimes describe this type of work as encouraging young people to be thinking, feeling, and doing like practicing professionals, even if their work is at a more junior level than adult professionals in a given field.

Executive functions contribute to improved academic outcomes as well as supporting social and emotional learning, self-confidence, and self-efficacy (Culclasure et al., 2019; Durlak et al., 2011; Richardson et al., 2012). By prioritizing the integration of academic and executive functions skills, we can make learning a more enjoyable and engaging process. The key to successfully integrating cognitive and co-cognitive skills is to avoid the direct teaching of executive function skills, focus on the project-based learning method, providing teacher guidance on locating and using how-to information, and emphasize the importance on student-selected product genre, design, format, and target audiences.

An Extension and Enhancement to Universal Screening and the Use of Local Norms

The big buzz today when it comes to identifying low income and minority group students is the use of universal screening and local norms, concepts that we support and introduced into our own state identification guidelines many decades ago (Renzulli & Vassar, 1967). But the larger question is what kinds of instruments and procedures we should be using to make decisions about the opportunities, resources, and encouragement that need to be provided to low-income and minority group students because universal screening tools favor traditional types of skills and creative thinking styles, which may be more indicative of exposure to enriching environments than academic potential. Any kind of screening that focuses on norms seldom takes into account exogenous factors that influence any and all types of testing and school performance. Predictably, this has resulted in more affluent, White students receiving a designation of gifted. And when all is said and done, local norms still use the cut-off-score approach that has dominated our identification process.

In many states and countries, students at the third-grade level and above are universally screened by taking state or education ministry required standardized achievement tests. Current research is being conducted on performance-based assessment that shows promise of using this type of assessment procedure for universal screening of primary grades children (Little et al., 2018; Kearney, et al., 2019). Most states and countries also use some kind of teacher rating scales which are usually analyzed utilizing locally developed norms or norms provided by the distributors of the scales. When we use any kind of norms (national, state, local), we are continuing to use criteria that makes comparisons between and among students rather than the individual strengths and interests of any individual student. Although metric-based scores and national, state, and even local norms inform us about the distribution of traditionally measured academic abilities of groups, they do not zero in on individuals' co-cognitive strengths that are so important for decision making about the need and opportunity to provide supplementary services. These strengths do not make a person gifted or not gifted in the norm-based or entity interpretation of the word, but they are a starting point for decision making about who should be considered for advanced learning and creative/productive opportunities in particular academic domains and topical strength areas. When all is said and done, local norms tell us *how we interpret* any kind of metric-based information we collect; however, the more important issue is *what kind of information* we choose to gather.

We can achieve greater equity in gifted education programs for underrepresented populations by supplementing norm-based approaches to identification with additional information that documents students' interests, talents, learning styles, expression style preferences, motivation, and executive function skills in singular areas where there is performance-based evidence of high potential emanating from students' actual participating in challenging activities. These types of skims are listed in the lower section of Figure 1. As Paul Brandwein, the author of a classic book on gifted students as future scientists consistently noted, "By their deeds, ye shall know them."

What Terman's Work Tells Us Today About Developing Gifts, Talents, and Behaviors in Young People

The monumental work of Lewis Terman (1959) on identifying high IQ young people is well known, but he is also known in the research and evaluation literature for conducting one of the world's most famous longitudinal studies. What was learned after following up these subjects for almost 40 years? The following quote from the final volume his five-book series called *Genetic Studies of Genius* provides a hint of often unrecognized conclusions of Terman's work.

A detailed analysis was made of the 150 most successful and 150 least successful men among the gifted students in an attempt to identify some of the *non-intellectual factors* that affect success. Since the less successful subjects do not differ to any extent in intelligence as measured by tests, it is clear that notable achievement calls for a lot more than a higher order of intelligence.

The results of Terman's follow up study indicated that personality factors are extremely important determinators of achievement. "The four traits on which the [most and least successful groups] differed most widely were *persistence in the accomplishment of ends, integration toward goals, self-confidence, and freedom from inferiority feelings*. In the total picture the greatest contrast between the two groups in *all-round emotional and social adjustment, and in drive to achieve*." (Terman, 1959, pg. 148; italics not in the original).¹

These traits are obviously more difficult to measure or create norms for than the assessment of achievement or cognitive abilities. If, however, they were found to be major determinants of high creative productivity, should we look both for the means to identify them in young people? And more importantly, should we consider the ways to develop them through the types of challenging learning experiences that we provide for *all* young people. This is exactly the reason why we recommend two types of general enrichment for *all* students in our Schoolwide Enrichment Model (Renzulli & Reis, 2014). The ways in which students respond to these general enrichment experiences can serve as an example of ongoing performance-based assessment. We have also encouraged regular classroom teachers to do the same thing by *infusing* high-engagement enrichment activities into prescribed curricular topics (Renzulli & Waicunas, 2018).

Very few identification procedures make any use of information based on *student* completed instruments or information that teachers gather by observations they acquire from performance in regular curricular activities or special enrichment opportunities. We call the use of these student-completed instruments Assessment *for* Learning as opposed to metric-based assessments that provide information about Assessment of learning—what a student already knows as opposed to what he or she might want to do if we look at the results of these student-completed instruments. We have, therefore,

¹ It is partially this research that resulted in my inclusion of Task Commitment as one of the three major components of the Three Ring Conception of Giftedness (Renzulli, 1978).

also recommended a series of student completed questionnaires that focus on some co-cognitive developed tools for the Assessment *for* Learning. These instruments do not replace but rather supplement traditional assessment of learning tests. The ways in which students respond to these student-completed assessments helps determine advanced level follow up opportunities, as well as the resources, and encouragement students may need to pursue them.

Building A Multi-Criteria Identification Process

The assessment for learning traits can be integrated into a multi-criteria identification process by preparing a strength-based profile for every student. As mentioned above, both print and digital formats of these co-cognitive instruments are available for teacher and student use and even parent ratings about their child's interests and strengths can be included (Renzulli et al., 2017). Information from these ratings and performance-based assessment notations from a teacher observations form called the *Action Information Message* (Renzulli & Reis, 2014, pp. 80–84) should be included in regularly scheduled grade level or school wide enrichment team meetings. Two “ground rules” should serve as guides at these meetings. First and foremost, the focus should always be on strengths rather than deficits. Second, equal attention should be placed on the assessment for learning information as well as information that based on cognitive and achievement test results. Culturally and linguistically diverse students, as well as lower-income students are frequently excluded from special programs mainly because of lower test scores. These young people, however, do not differ as much from the more economically privileged students in their capacity to develop strong interests, to work cooperatively with others, and to display many of the executive skills listed in Figure 2. In some ways, the strategies they have developed as they have met and overcome challenges in their own lives have provided them with strong leadership and other executive function skills (Hackman et al., 2015). Our goal for using assessment for learning skills in identification is not to label students as gifted or non-gifted, but to determine how understanding these strengths will serve as a compass for pointing us in the direction of challenging, enjoyable and engaging learning experiences.

Like a Swiss Army Knife

All of the above is predicated on the belief that we are willing to rethink identification as a talent development process rather a labeling process—some students are “gifted” and receive all of the services and some are not, and therefore receive nothing but a prescribed one-size-fit-all curriculum. A talent development process means that we will conduct our “universal screening” by looking at the interests, strengths, motivation, and a broad range of other co-cognitive skills in our total school population and provide appropriate services when there is recognized potential in any areas of interest or strength. To do this, we must use a variety of assessment instruments and procedures that look at many different cognitive and non-cognitive potentials. Thanks to advances in technology, several of these instruments can be completed and analyzed online using various Internet based and artificial intelligence programs.

A regular pocketknife has two blades, both used for cutting, but a Swiss Army Knife has approximately 29 tools that do many different jobs. Quick fixes based only on cut-off score, regardless of whatever norms one chooses to use, means that the potentials of many young people will not have the opportunity to benefit from the kinds of services that have made the field of gifted education an important contributor to the education landscape. So, we need more tools, including the assessment of interests, motivation, task commitment and other areas that are important to the development of talents.

Summary

Assessment For Learning is a personalized approach to providing young people with opportunities, resources, and encouragement to develop their special interests and talents and encouraging them to express themselves in preferred modes of communication. We do not want to fall into the norms trap that overshadow summative assessment and even the use of local norms, both of which are widely used to create percentiles and other statistics for making comparisons between and among students of various age and demographic groups. A personalized approach means that students learn more about themselves by responding to surveys about their interests and the ways they learn and produce, and that teachers use this information to make informed decisions about how to capitalize on student interests and strengths. We have already developed a number of these instruments (Interests, Learning Styles, and Expression Styles) and have included them in the Student Profiler that is part of the Renzulli Learning System (<https://renzullilearning.com/>).

We are currently seeking teachers to help us validate an instrument for assessing students' executive functions (<http://s.uconn.edu/efpilot2>), and we plan to develop a student-completed version in the near future. We are also creating two other tools that teachers and their students will complete to examine the students' perceptions of learning at school. One tool is designed to measure perceptions of School Relationships, Enjoyment of Learning, and Engagement in Learning, and the other is designed to provide a profile of the types of enriched educational experiences students perceive. We hope that these measures can later be used to examine correlations between these perceptions and more traditional objective measures, such as academic outcomes and attendance.

A major challenge facing the field of education of the gifted and talented is the underrepresentation of low income and culturally and linguistically diverse students as well as students who have been labeled twice exceptional (extremely high ability while simultaneously being challenged with learning disabilities). In order to open the door wider for these students to have access to talent development opportunities, we must not ignore traditional normative approaches; however, we must be flexible enough to add additional important information that can be gained through assessment for learning.

Part 2: A Change in Pedagogy Is Necessary to Promote the Strengths and Talents of All Young People

A major challenge facing today's schools is the achievement gap that exists between advantaged students and students placed-at-risk. Half of all immigrants, culturally diverse, and low-income children never graduate from high school and in many of our cities more than 30 percent of low-income students score at the lowest percentiles on national reading and math tests (Bridgeland et al., 2006). An even sadder commentary exists in the ways we have addressed this achievement gap and the resulting collateral damage that has dragged down good teaching, restricted high potential low-income and minority students from participation in special programs for the gifted and talented, deskilled many of our teachers, squeezed subjects other than math and reading out of the curriculum, and produced data juggling, test result falsification, and outright lying on the parts of desperate administrators who want to avoid being branded leaders of "failing schools." This challenge calls attention to the drill and practice, memorization, and worksheet pedagogy that is over emphasized in schools that serve low-income and minority students.

How Did We Get to This Place in Time?

How did we get here? Why has not the estimated three trillion dollars spent on school reform since the 1960s made more of an impact? We have tried just about everything—smaller schools, year-round schools, single sex classes, after school mentoring, school uniforms, charter and magnet schools, school-business partnerships, merit pay for teachers, paying students for performance, private management companies and for-profit schools, take-overs by mayors and state departments of education, distributive leadership, site-based management, data-based decision making, and just about every reform into which someone can insert the words, "standards based" and "accountability." All of these 'so-called' promising solutions have been suggested as silver bullets that can save our lowest achieving students, but they have not worked.

What do all these reform initiatives have in common? Most are built on structural changes, designed by well-intentioned policy makers or agencies (usually far removed from the classroom), and calculated to have an impact on entire school districts, states, or even nationally. More important, however, is that these structural changes have drawn mainly upon a low-level pedagogy that is highly prescriptive and didactic—approaches to learning that emphasize the accumulation, storage, and retrieval of information that will show up on the next round of standardized tests.

The mainstream diet for the majority of low income and struggling learners has been dominated by a remedial and compensatory pedagogy that has not diminished the achievement gap; and, I would argue, has actually contributed to its continuation. Many of these programs are designed to find out what a child cannot do, does not like to do, and sees no reason for doing, and then teachers are told to spend most of the classroom time beating him or her to death with it. This compensatory pedagogy of

prescription and practice simply has not worked! Evidence of this failure is plainly evident in one national report after another, and yet we continue our search for yet another quick-fix solution through structural rearrangements rather than alternative pedagogical modifications. But the solutions, by whatever new names we give them (e.g., Competency Based, Outcomes Based) are always reiterations of the same pedagogy—the same drill-and-practice model for learning. And the universal criterion for accountability always remains the same, again with new names given to the same old achievement tests of decades past. It is the singular reliance on these tests for accountability, and the exclusion of other important outcomes of schooling that forces the pedagogy of prescription and practice that lobotomizes our teachers in the process. Is it any wonder that some of our very best teachers are leaving the profession and fleeing the schools in which prescription has become the almost universally practiced pedagogy?

Time for a New Approach

If these approaches have continued to produce dismal results, perhaps it is time to examine a counter-intuitive approach based on a pedagogy that is the polar opposite of the pedagogy that Pavlov used to train dogs! Accountability for the truly educated mind in today's knowledge-driven economy should first and foremost take account of such high-end learning skills as the ability to:

- plan a task and consider alternatives
- monitor one's understanding and the need for additional information
- identify patterns, relationships, and discrepancies in information
- generate reasonable arguments, explanations, hypotheses, and ideas using appropriate vocabulary and concepts
- draw comparisons and analogies to other problems
- formulate meaningful questions
- transform factual information into usable knowledge
- rapidly and efficiently access just-in-time information and selectively extract meaning from that information
- extend one's thinking beyond the information given
- detect bias, make comparisons, draw conclusions, and predict outcomes
- apportion time, money, and resources
- apply knowledge and problem-solving strategies to real world problems
- work effectively with others
- communicate effectively in different genres and formats
- derive enjoyment from active engagement in the act of learning
- creatively solve problems and produce new ideas.

These learner-centered skills accomplish important goals; they grow young minds, promote genuine student engagement, and increase achievement. Although focusing on these outcomes may be counter intuitive to the “more-practice-is-better” pedagogy, we need only examine the track record of compensatory learning models to realize we have been banging our collective heads against walls and following an endless parade of reforms being forced through the schoolhouse door with no results.

But we also need to infuse into the curriculum a series of motivationally rich experiences that promote student engagement, enjoyment, and a genuine enthusiasm for learning. Common sense and our own experience tell us that we always do a better job when we are working on something in which we are personally engaged—something that we are really “into,” and that we truly enjoy doing. Take, for example, the demonstrated benefits in performance that result from extra-curricular activities that are based on a pedagogy that is the opposite of the pedagogy of drill and practice. How many unengaged students have you seen participating joyfully in the school newspaper staff, the basketball team, the chess club, the debate team, or the concert choir? Their engagement occurs because these students have some choice in the area in which they will participate. In addition, they interact in a goal-oriented environment with other likeminded students interested in developing expertise in their chosen area; use authentic problem solving, interpersonal, and creative strategies; produce a product, service, or performance; and their work is brought to bear on one or more intended audiences other than, or at least in addition to the teacher. The engagement that results from these kinds of experiences exemplifies the best way to approach learning, one that differs completely from the behaviorist theory that guides so much of prescriptive and remedial education.

A Continuum of Learning and the Need for Inductive, Inquiry Based Learning

All learning, from diapers to doctorate, exists on a continuum ranging from deductive, didactic, and prescriptive on one hand to inductive, investigative, and inquiry oriented on the other. Students who have not achieved at high enough levels are subjected to endless amounts of repetitious practice material guided by the didactic model. Then, when scores do not improve, we often think that the obvious solution is to simply redouble our efforts with what has been popularly called a “drill and kill” approach to learning; an approach that has turned many of our schools into joyless places that promote mind numbing boredom, lack of genuine student and teacher engagement, absenteeism, increased dropout rates, and the other byproducts of over dependence on mechanized learning.

We should be wise enough to blend the benefits of an inductive and investigative pedagogy into a system that has mainly failed our at-risk populations. And we also should be smart enough to note the rising dissatisfaction of middle-class parents whose children are also becoming subjected to the same drill oriented, test prep curriculum. One parent recently speculated that there was a sinister conspiracy afoot to close the achievement gap, and the conspiracy consisted of dragging down the scores of high achieving students!

Although student engagement has been defined in many ways, we view it as the infectious enthusiasm that students display when working on something that is of personal interest and that is pursued in an inductive and investigative approach to learning (Renzulli & Reis, 2014). It is through these highly engaging approaches that students are motivated to improve basic skills and bring their work to higher and higher levels of perfection. True engagement results from learning activities that challenge

young people to “stretch” above their current comfort level, activities that are based on resources and methods of inquiry that are qualitatively different from excessive practice. Our guiding principle in this kind of learning is simply: No Child Left Bored!

Research on the role of student engagement is clear and unequivocal—high engagement results in higher achievement, improved self-concept and self-efficacy, and more favorable attitudes toward school and learning. This research that points out the crucial difference between time-spent and time-engaged in school activities. In research about the internationally known PISA studies, the single criterion that distinguished between nations with the highest and lowest levels of student achievement was the degree to which students were engaged in their studies (Willms, 2003).

It will not be easy to turn around a school system whose leaders have made massive financial and policy investments in one particular brand of learning, nor will it be easy to circumvent the powerful influence of the textbook and test publishing industries that have thrived on a prescriptive curriculum and standardized test-driven approaches to accountability. But a gentle and evolutionary rather than revolutionary approach to school reform is possible if we begin to take advantage of the remarkable advances that have taken place in the information technologies, advances that have brought within each the equivalent of a dozen teaching assistants in every classroom, all day, every day.

Dr. Leon Lederman, the Nobel Prize winning physicist, recently said, “Once upon a time, America sheltered an Einstein, went to the Moon, and gave the world the laser, electronic computer, nylon stockings, television, and the cure for polio. Today we are in the process, albeit unwittingly, of abandoning this leadership role.” Every school classroom in this country has young people who can continue this remarkable tradition. But the tradition will not survive without a national resolve to change the pedagogy that drives instruction in classrooms that serve these young people.

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