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- ✦ Prioritizing Efforts to Improve Student Learning
- ✦ Writing: A Necessary Skill in Every Subject
- ✦ Cultivating Wide-Awakeness:
An Imperative Mindset in Education



Leaders of Learners

January 2015
Volume 7, Issue 1
ISSN 2331-7526

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Research Foundations for Digital Curriculum Solutions

Introduction

Solving the Two Sigma Problem Through Research-based Technology

Thirty years ago, Benjamin Bloom wrote an influential article in which he identified a fundamental challenge of universal education, what he termed “the two sigma problem.” Bloom cites research comparing one-on-one tutoring to conventional whole-group instruction. He finds that the average student in the tutoring group performed two standard deviations (sigma) better than the average student in the whole-group instruction group. Bloom argued that the focus of educators should be determining how to replicate the effects of one-on-one instruction in classroom settings. “Can researchers and teachers devise teaching-learning conditions that will enable the majority of students under group instruction to attain levels of achievement that can at present be reached only under good tutoring conditions?” asks Bloom.¹

In the thirty years since, educators have employed a variety of techniques to tackle the problem identified by Bloom. While some progress has been made, replicating the full impact of one-on-one tutoring to create a two-sigma effect remains elusive. Fortunately, through the possibilities created by classroom technologies, students can

receive computer-based personalized instruction that is beginning to produce sizable learning gains approaching those found in Bloom’s tutoring group.²

Compass Learning[®] provides solutions that are built to address Benjamin Bloom’s challenge. To accomplish this, Compass Learning selectively incorporates specific research-based practices to consistently achieve superior learning outcomes. We say selectively because most educational practices have at least a modest, positive effect on student learning. As researcher John Hattie notes, “Almost everything works. Ninety percent of all effects cited in education are positive.”³ Simply having a positive effect, as Hattie notes, is a “trivial claim.” For this reason, Hattie provides common-sense advice: focus on those strategies that have the biggest impact on the learning process. Robert Marzano refers to such strategies as “high yield,” in that while they do not work the same way for all students and situations, the strategies have higher probabilities of success than other approaches.⁴ Compass Learning leverages several high-yield strategies in designing its solutions:

- The value of ongoing feedback
- Explicit instruction and the gradual release of responsibility

- Student-centered learning environments
- Reduced cognitive load
- Diagnostic-prescriptive model

This research foundations paper will offer discussion of the research foundation for these strategies, as well as discuss the Compass Learning use of them.

Formative Feedback

One of the most researched and empirically sound strategies in teaching and learning is the value of formative feedback (assessment) to the teaching and learning process. Simply put, understanding how learners progress as they are learning makes an enormous impact on how much they will learn. In their seminal article, “Inside the Black Box: Raising Standards Through Classroom Assessment,” Black and Wiliam define formative feedback as including “all those activities undertaken by teachers — and by their students in assessing themselves — that provide information to be used as feedback to modify teaching and learning activities.”⁵ Formative feedback involves both students and teachers making use of evidence. Such learning environments encourage students to become teachers, and teachers to become students.⁶ Compass Learning solutions help teachers to become students of their classrooms, and empower students to become active participants in their own education.

Over the years of their research, Black, Wiliam, and others have provided several key factors for successful formative feedback systems. Four such factors include:

- Students are actively involved in their own learning processes
- Effective feedback is provided to students
- Teaching activities are adapted in response to assessment results
- Students are able to perform self-assessment

How Compass Learning integrates these key factors in its solutions

Students are actively involved in their own learning processes

Many factors influence student learning, and while teachers have the largest effect amongst the controllable factors, students themselves play an important role in the teaching and learning process. Learning does not just happen to students; they must actively engage in the process to make it effective. Compass Learning creates solutions for classrooms that are student-centric. Students are placed at the center of the experience as they actively navigate and explore personalized learning environments built specifically for their strengths and weaknesses. Teachers monitor student activity to ensure appropriate progress is being made, but the students assume the most active role in the process.

Effective feedback is provided to students

Researchers have noted the importance of not just providing feedback to students, but doing so with regularity. The most compelling evidence-based case for feedback has shown that providing students with feedback two to five times a week through short-cycle assessments and activities is most effective.⁷ Compass Learning has built this feature into its suite of solutions by providing multiple activities and assessments for students to complete each week as part of their customized learning path. Feedback comes to students in the form of both scored and unscored activities. In doing so, Compass Learning practice is consistent with Black and Wiliam’s research. The organization recommends students complete 4–6 activities per week in its implementation guides and professional development packages, and provides teachers with monitoring tools to measure the degree of progress students make against this goal.

Teaching activities are adapted in response to assessment results

If instruction does not adapt as a result of the assessment activity, then the entire formative feedback loop breaks down. Undoubtedly, this is a challenge for many classroom teachers, particularly when they manage rosters of students that may near two hundred. The challenge of providing a personalized learning experience that adapts to individual student needs each week is daunting. Fortunately, personalized learning based on assessment results is a core principle for the Compass Learning instructional model.

Understanding the unique starting place of each student is only helpful if we can provide personalized learning experiences to students—ones that are tailored to their individual strengths and weaknesses. Compass Learning accomplishes this through the construction of personalized learning paths for students. When students take a Compass Learning diagnostic assessment, NWEA™ MAP®, Scantron Performance Series®, or Renaissance Learning® STAR assessment, personalized learning paths specific to the students' academic needs are dynamically assigned to each student. Learning architects at Compass Learning have devised key decision points in the learning paths that redirect student learning based on the formative feedback students generate. The data generated by students in the system (assessment scores, time-on-task, number of tasks completed, percent of learning paths obtained) is shared with teachers through comprehensive progress-monitoring tools. In this way, teachers have reliable visibility to the formative feedback process in Compass Learning solutions.

Students have the opportunity to perform self-assessment

Again, assessment is fundamental to robust formative feedback processes, and returning back to Black and Wiliam's original definition of formative feedback, all activity performed by teachers and students used to modify teaching and learning activities should be included. Students are often overlooked for their ability to self-assess, but as Hattie notes, students' estimates of their performance have a 0.80 correlation with their actual performance.⁸ Central to student engagement in learning is actively assessing their performance against a goal. Video game researchers like Jim Gee have observed that this is one of the most compelling aspects to video games (players of games receive feedback against their performance continuously).⁹

The Compass Learning student-centric design well-positions students to perform self-assessment. As students complete their individualized learning paths, they engage regularly with interactive elements and assessment content that provide the opportunity to gauge their performance against their own goals and expectations. Because the environment is built for their learning needs rather than an entire class, students are often more involved in the learning process than they would otherwise be.

Section Summary

It should not surprise the reader that technology-based learning solutions offer tremendous potential for formative feedback. Researchers have long considered technology-based systems as rich with potential for applications leveraging feedback loops. In this digital age, we certainly may need to consider how we can extend Black and Wiliam's original

formulation. Valerie J. Shute of ETS provides a helpful beginning to that work with her conceptualization of formative feedback:

In technology-assisted instruction, similar to classroom settings, formative feedback comprises information—a message, display, and so on—presented to the learner following the learner’s input (or upon request, if applicable), with the purpose of shaping the perception, cognition, or action of the learner (e.g., Moreno, 2004; Schimmel, 1983; Wager & Wager, 1985). The main goal of formative feedback—whether delivered by a teacher or computer, in the classroom or elsewhere—is to enhance learning and/or performance, engendering the formation of accurate, targeted conceptualizations and skills. Such feedback may be used in conjunction with low- or medium-stakes assessments, include diagnostic components, and even be personalized for the learner (Albertson, 1986; Azevedo & Bernard, 1995; Narciss & Huth, 2004; VanLehn, 1982).¹⁰

Gradual Release of Responsibility to Students

Overview

Albert Bandura^{11,12} developed social cognitive theory from finding that individuals were able to develop new knowledge and skills through observation. This differed from the prevailing behaviorist view that learning came through the association of stimuli with responses. From social cognitive theory, personal factors, behaviors, and environmental factors reciprocally interact to shape learning and development.^{13,14} Because personal factors, behaviors, and environmental factors interact, learners evaluate information from the environment, regulate, and monitor their own behaviors.

Self-beliefs, such as self-efficacy, which characterizes learners’ beliefs related to their competence at a task, are critical to learners’ processes of evaluating, regulating, and monitoring their behavior. Self-efficacy beliefs are formed through learners’ processing of information from four sources: mastery experience, vicarious experience, social persuasions, and positive emotional and physiological states.^{15,16,17} Mastery experiences (successful experiences) strongly support learners’ self-efficacy; vicarious experiences (observing others’ successful experiences, as well as social persuasions and positive emotional and physiological states) also support learners’ self-efficacy.

Educational researchers and educators have developed instructional strategies based on social cognitive theory and the focus on social cognitive theory on self-beliefs, especially self-efficacy. To these instructional strategies, modeling successful performance is critical. According to Schunk, “Students first observe models explain and demonstrate skills, then practice them.”¹⁸ In other words, learners first observe the teacher or another source successfully perform a task, then practice. This practice can be supported by first being supported through scaffolds in the forms of the instructor, peers, resources, or technological tools.¹⁹ These scaffolds should then be gradually faded, so that learners can then practice, then perform the skill, on their own.²⁰

Factors needed for success:

- Observing models
- Multiple scaffolds
- Fading of scaffolds
- Enactive experience

How Compass Learning integrates these key factors in its solutions

Observing models

Students need consistent modeling of ideas as they gradually assume responsibility for content. In conventional education settings a teacher models, facilitates learning, and provides self-efficacy information. Students who observe teachers explain and demonstrate concepts and skills are apt to learn and believe that they are capable of further learning.”²¹ Compass Learning integrates teacher modeling through the development of its digital learning objects. Digital learning objects provide direct, modeled instruction to students in areas of where the student lacks mastery. As the lesson unfolds, students assume a greater percentage of the learning as they move to modeled examples, guided and independent practice. Importantly, using computer-mediated environments to model instruction provides consistency to the student experience, and research suggests consistency is important. “In studies in which models act one way and tell observers to act differently, children are more influenced by actions than verbalizations (Bryan & Walbek, 1970). Teachers need to ensure that their instructions to students (e.g., “keep your desk tidy”) are consistent with their own actions (teacher’s desk is tidy),” writes Schunk.²² Consistent modeling in the Compass Learning digital learning objects limits the likelihood of inconsistent instructional signals.

Schunk also finds that consistent modeling should include worked examples including step-by-step solutions. Best practice suggests the use of multiple representations, using diagrams and narration. All these elements are incorporated in the Compass Learning digital learning objects. The benefit for the gradual release of responsibility is clear: “worked example

provides a model— with accompanying explanation—that illustrates how a proficient problem solver would proceed. Learners study worked examples before they attempt to solve problems themselves.”²³

Multiple scaffolds

To successfully release responsibility to students, multiple scaffolds need to be employed. Scaffolding is a process that allows novice learners to extend their learning beyond their present competency. The scaffolding is constructed by the adult (or perhaps a more competent peer) through the structuring of the instructional tasks. As the student gains competency, the support structures are relaxed, fostering independence for the student.²⁴

The Compass Learning digital curriculum provides well-designed scaffolding to student learners. Rather than teachers breaking down curricular domains to smaller instructional components for scaffolding, the Compass Learning learning architecture group builds such scaffolding into this digital learning hierarchy. This not only saves teachers valuable time, but also provides students with consistent and high-quality curricular scaffolding.

Fading of scaffolds

Scaffolds act as supports through the learning process, but their influence fades over the course of the instructional cycle. One way this is realized in classrooms is through Bandura’s participant modeling technique, wherein a teacher initially provides significant support for a lesson through modeling and assisting. Gradually, however, the teacher in the Bandura model reduces his/her assistance to students as they become more proficient in the skill. “The key,” writes Schunk, “is to ensure that the scaffolding keeps learners in the [Zone of Proximal Development],

which is raised as they develop capabilities. Students are challenged to learn within the bounds of the ZPD.”²⁵

The architecture found within Compass Learning solutions is predicated on fading scaffolding and the ZPD. Compass Learning data processes place students on the fringe of their content competency, and then offer a tapered support approach which culminates with independent work and evaluation.

Enactive experience

Enactive learning experiences enable students to learn from their own mistakes and successes. Systems that provide feedback to learners as to the accuracy of their understanding are not only an excellent instructional support, but also a source of motivation for learners. Students seek successful consequences and will refine behaviors that lead to failures. The Compass Learning learning environments provide real-time feedback to students about the accuracy of their understanding. Doing so not only helps students correct understanding gaps early in the learning cycle, but also creates an enactive experience. The value of this feedback extends beyond enactive experiences and is the subject of the next section of this research review.

Student-Centered Learning Environments

An important principle in research-based design is to center the experience on the needs of the user. In the case of computer mediated instruction, at least two important user groups must be considered: students and teachers. Making systems work easily for teachers is very important. After all, teaching can be incredibly complex and demanding work. A teacher’s time is paramount. As Doug Lemov says, “Time is water in the desert” for teachers.²⁶ Yet in the case of most learning technologies, students are the primary users.

It is important for educational software developers to consider deeply the student experience when defining their work. The research is unambiguous that student-friendly learning environments increase the efficacy of the learning experience. For example, Richard Mayer’s Principle of Personalization shows that students performed up to 40% better when content was delivered in a first-person, conversational style rather than with a formal tone.²⁷

Part of making learning technologies student-friendly is positioning students as active participants, rather than passive receivers of information. In a study published in the *Journal of Educational Psychology*, Mayer and research partner Roxana Moreno note that “...programs can result in broader learning if the communication model is centered around shared environments in which the student is addressed as a participant rather than as an observer.” As Hattie notes, “While we can learn without knowing it...for most of us there needs to be a deliberate attempt to assimilate or accommodate new learning. That means a major precursor to learning is engagement in the learning (emphasis added).”²⁸ Hattie points us also to William Purkey’s research, which shows that in order for learning environments to be effective, students must be “invited” to the learning experience. Students must explicitly feel part of the learning experience and understand the objective.²⁹

Compass Learning has a team of entertainment writers to take the rigorous instructional content it has developed and turn it into conversational, age-appropriate activities meant to invite students to the learning experience. Delivering content using an interactive conversational interface allows Compass Learning products to:

- Stimulate the brain
- Connect response to prerecorded characters

- Create suspension of disbelief and give the computer human-like qualities
- Create feelings of personal connection

Doing so creates a positive learning experience for students, which increases the impact and permanency of the learning experience. Students retain what they learn when the learning is associated with a strong, positive emotion.^{30,31} Age-appropriate humor and positive feedback are incorporated throughout Compass Learning activities to engage the student and create positive feelings about the learning activities. Studies have shown that when classroom activities are pleasurable, the brain releases dopamine, a neurotransmitter that stimulates the memory centers and promotes acetylcholine, which increases focused attention.³²

Reducing Cognitive Load

Overview

Recent research in educational psychology³³ as well as in the interdisciplinary field of the learning sciences³⁴, have helped to direct attention to the ways in which learners construct knowledge through an active process of inquiry, discovery, and problem-solving. This view of how learners construct knowledge - constructivism - has become increasingly prominent in education, and has appeared in K-12 contexts through learner-centered instructional strategies like problem-based and experiential learning³⁵.

Other educational psychology and learning sciences researchers have argued that constructivism and learner-centered instructional strategies have merits, but are ineffective when they fail to take into account how learners process information, and how learner-centered instructional strategies can backfire and overload learners' information processing. Kirschner, Sweller, and Clark (2006) show how pedagogies based on a constructivist view of learning

that provide minimal guidance to students, such as problem-based and experiential learning, are intuitively appealing, but are not as effective at helping students to learn as pedagogies that provide students with direct instructional guidance.³⁶

Specifically, Kirschner et al. (2006) argue that learner-centered, constructivist pedagogies that provide students with minimal guidance are ineffective because they fail to take into account human cognitive architecture, the organization of knowledge.³⁷ According to cognitive load theory,³⁸ working memory can become overloaded when learners are not provided sufficient guidance, especially when learning new material, because learners are unable to connect the new material to what they already know. Thus, following from cognitive load theory, when insufficient guidance is provided to learners, learners will not be able to store what they are learning in long-term memory. From this research, Kirschner et al. argue that direct instruction, not problem-based or experiential learning, is the preferred method for reducing cognitive load and helping students to learn.

Although direct instruction and learner-centered, constructivist pedagogies were described by Kirschner et al. (2006) as opposites, Hmelo-Silver, Duncan, and Chinn (2007) argue that in problem-based learning, students are in fact provided with guidance in the forms of scaffolds.³⁹ Scaffolds include instructors, learners' peers, technological tools, and other important resources. Hmelo-Silver et al's argument is important because it suggests that the direct instruction strategies advocated by Kirschner et al. that reduce cognitive load can be integrated into constructivist pedagogies. In other words, direct instruction can be an emphasis in the context of engaging students in learner-centered pedagogies. Specific techniques for reducing learners' cognitive load are described in the next section, with an emphasis on techniques that

primarily reduce cognitive load through direct instruction.

Factors needed for success include:

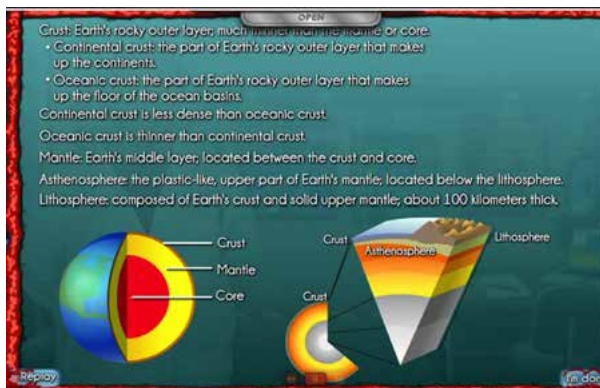
- Coordinate printed text with graphics
- Use graphic organizers and concept maps
- Provide students with scaffolds
- Sequence material from simple to complex

How Compass Learning integrates these key factors in its solutions

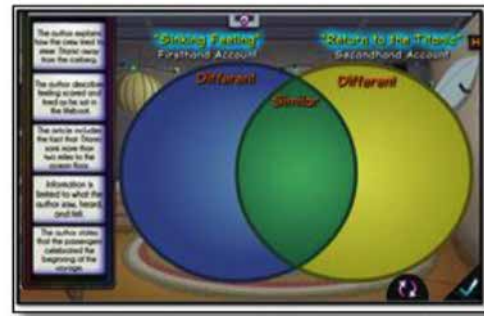
Coordinate printed text with graphics

Coordinating printed text with graphics is a simple, but effective means to reduce the cognitive load. Research suggests best practice is to place corresponding graphics and text near each other. This is true for print and digital learning environments.⁴⁰

Compass Learning frames the design of each digital learning object with this principle in mind. Students are provided multiple representations of information (through graphics, text, and video) and those representations are provided through a coordinated presentation. Math instruction, for example, often occurs with a split screen with one side sharing bulleted highlights of key ideas and the other side presenting graphs of the concepts. See below for an example in science:



Use graphic organizers and concept maps



There are at least two types of information: learned and novel. Learned information are those ideas that exist in long-term memory and were acquired through previous learning. Novel information is those new concepts that have not been internalized. Novel information represents a far heavier cognitive load, and thus, when presenting novel information to students, certain strategies should be considered. “Wherever possible,” writes Sweller, “[novel] information should be in an organized form so learners do not have to expend working memory resources in imposing an organizational structure.”⁴¹ Compass Learning employs techniques like graphic organizations and thinking maps to provide learners an organizing framework for novel information. Use of Venn diagrams and other forms of graphic organizers are common to the Compass Learning digital learning objects.

Provide students with scaffolds

As discussed earlier in this research foundations paper, scaffolding is an important technique to support student learning. While scaffolding is important for the gradual release of responsibility from instructor to student, it also serves the important purpose of supporting student learning as competency is being developed. Examples of scaffolding to manage the cognitive load include

providing data representations, labor intensive calculations, and the strategic storing of information in ways that allow the learner to focus on the core concept of the task, rather than procedural detail.⁴² Such principles are very much part of the Compass Learning design. As an example, consider the data representations below used with early learners of math as one of many example of reducing cognitive load.



Sequence material from simple to complex

Cognitive load can also be managed through sequencing material from simple to complex.⁴³ Compass Learning accomplishes this both through the construction of learning paths for students (comprised of well-sequenced digital learning objects) and through its flexible design, which allows teachers to leverage their own scope and sequence.

Diagnostic-prescriptive model

In introducing his text on educational psychology, David Ausubel wrote, "...if I had to reduce all of educational psychology to just one principle, I would say this: 'The most important single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly.'"⁴⁴ Ausubel's words are an elegant simplification of a diagnostic-prescriptive model approach to teaching and learning. Ausubel is not alone in his recognition of an evidence based approach. The Institute of Education Sciences (IES) publishes a number of guides directing educators to employ approaches that utilize diagnostic data to inform a specific prescription for students.^{45, 46}

For the diagnostic-prescriptive model to be effective, both components must be well-constructed. Solutions must effectively assess students' strengths and weaknesses. IES recommends that a two-step assessment process precede an instructional prescription. IES recommends that assessment begin "with an initial screening assessment to identify those students who need extra help. This step should be followed by assessment with diagnostic tests to provide a profile of literacy strengths and weaknesses."⁴⁷ The same can be said for mathematics. In its intervention solutions, Compass Learning employs this same two-step process of assessment to provide educators sufficient evidence to assign personalized learning paths to students. Compass Learning uses a screener to identify which grade-level a student is functioning at, and then employs a series of diagnostic assessments to fully identify the students' content mastery gaps.

A robust assessment model is only as effective as the prescription that follows. Compass Learning has thousands of high-quality digital learning objects that have been manually aligned to various

standard sets (state-based, Common Core, and nationally normed assessments). Student learning gaps identified through the diagnostic assessments can then be targeted through a collection of digital learning objects — what Compass Learning calls a learning path. Learning paths represent an effective model of prescription because they are tightly aligned to the diagnostic assessment results, leading to the kind of focused, individualized instruction that Benjamin Bloom described in his “2 Sigma” review. ■

End Notes

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Prioritizing Efforts to Improve Student Learning

By Tony Frontier, Ph.D.

We've all been there. We reach the point in the team meeting, the data retreat, or the strategic planning meeting where it is time to stop describing areas of student need and start to identify initiatives that will improve student learning. Ideas put on the table may include more instructional time, a different schedule, better methods of identifying students for specific programs, new formative assessment packages, and more. Now the real work begins; determining which of these initiatives, if any, will have the greatest impact on student learning, and moving that initiative from concept to action.

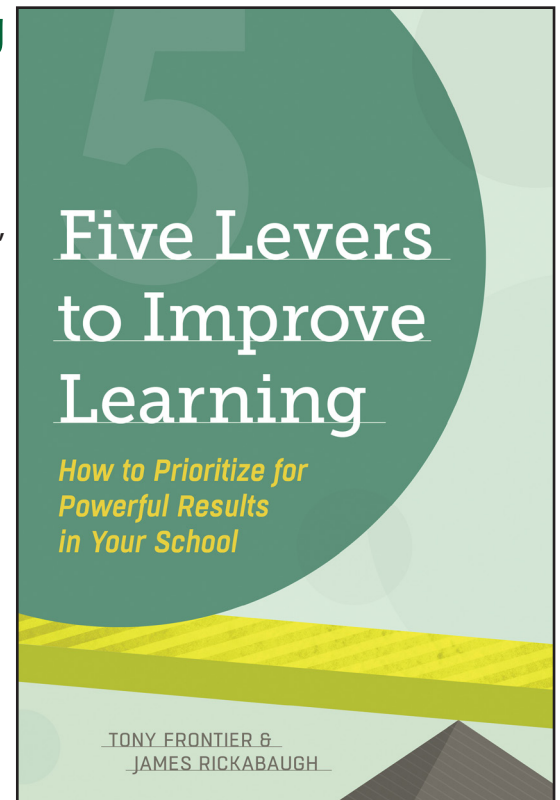
What are the characteristics of initiatives in our field that are most likely to improve student learning? In our book *Five Levers to Improve Learning; How to Prioritize for Powerful Results in Your School*, Jim Rickabaugh and I describe a framework that can be utilized to discern and identify

characteristics of initiatives likely to succeed, and let go of initiatives that will require significant time, effort, and energy, yet will likely fail to improve student learning. Guided by our own work in classrooms, schools, and districts, we sifted through decades of research, meta-analyses, and syntheses of meta-analyses to validate a practical model that can help educators find clarity among the clutter and keep focused on the only constants in our field; kids and learning.

Our conclusion: the levers that can most efficiently change schools are often the least effective at improving student learning. This is counterintuitive; it challenges some deeply held beliefs about schools and school improvement. To understand why this occurs requires an understanding of the underlying patterns of where we invest efforts to make change. While there are thousands of initiatives to choose from when working to improve schools, almost all of them can be placed into one of five categories of leverage.

Each of these five categories presents a predictable set of potentials and limitations. Understanding these patterns can help teachers and administrators prioritize when - and how - to best leverage structure (such as schedules and logistics), sample (such as student grouping practices), standards (expectations for quality), strategies (methods of teaching students or supporting teachers) or conceptions of self (what students believe to be true about themselves as learners) in a manner that mindfully connects efforts and resources to intended outcomes.

Through the lens of these five levers, educators can develop a shared vocabulary to re-conceptualize the characteristics of meaningful change and prioritize efforts in classrooms, schools and districts. These include how to:



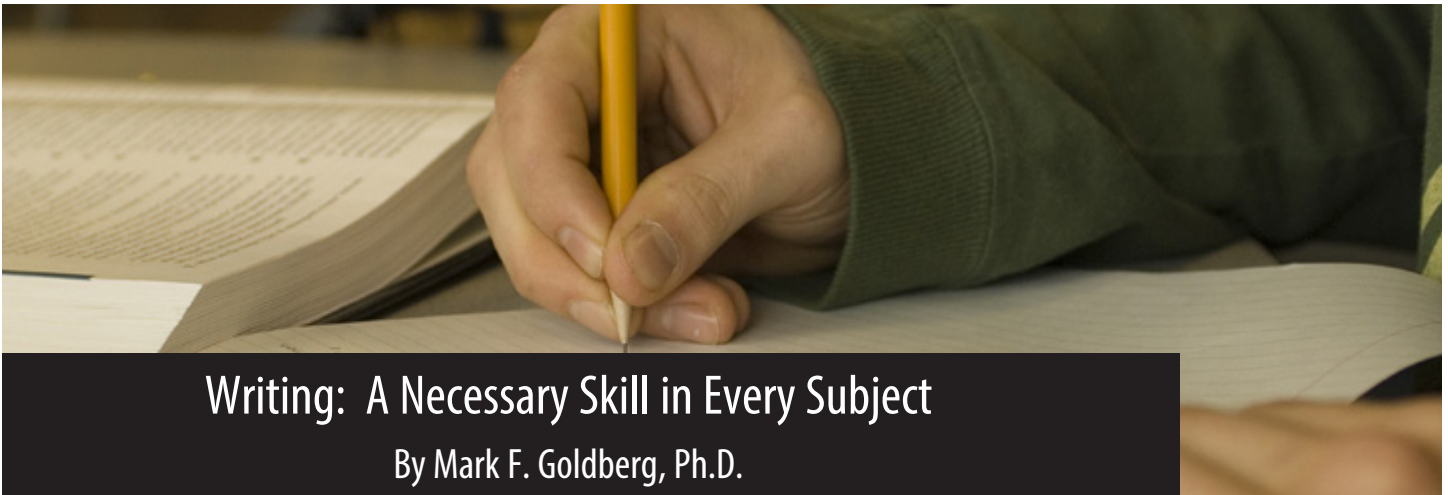
- Avoid “leverage errors” – such as assuming that changes in structure will automatically lead to changes in experience that influence student learning.
- Tap the power of “leverage advantages” – such as recognizing the crucial role of students’ perceptions of themselves as learners and the characteristics of classrooms and schools that build student autonomy and develop student ownership for learning.
- Understand why most external mandates do not yield improved student learning and how schools and districts can re-frame and re-prioritize those mandates in a manner that ensures they are meaningful for teachers and students.
- Understand the critical differences in leadership behavior when planning to maintain the status quo, implement transactional change, and guide transformational change.
- Understand how to avoid the biggest mistake leaders make when navigating change and how to turn that potential liability into an asset that allows you to more effectively prioritize efforts and resources.
- Consider the implications of the assertion that the levers that can most efficiently change schools are often the least efficient at changing students’ experiences in those schools.
- Ask specific, critical questions to prioritize efforts to leverage resources to empower teachers and students in a manner that maximizes learning.

Will your next initiative to improve student learning be successful? The answer to that question may have less to do with how hard you work than it has to do with where you work to leverage improvement. A shared language to prioritize around the counter-intuitive, but predictable, inter-relationship among structure, sample, standards, strategy, and self can guide efforts to leverage change in a manner that supports kids and improves learning.

About the Author



Tony Frontier is an award winning educator, an Assistant Professor of Leadership Studies at Cardinal Stritch University, and an ASCD Faculty Member. He consults internationally on topics of effective instruction, student engagement, teacher supervision, and school leadership. His most recent ASCD book, *Five Levers to Improve Learning: How to Prioritize for Powerful Results in Your Schools* was published earlier this year.



Writing: A Necessary Skill in Every Subject

By Mark F. Goldberg, Ph.D.

The bestselling author Stephen King refers to the craft of writing as “magic,” and that is true, but with some caveats. Marge Scherer, the editor of ASCD’s “Educational Leadership” (EL) refers to King in her introduction to the excellent April 2014 issue on “Writing : a Core Skill.” Scherer and King would agree that to create that magic students must first learn the craft of writing much as a carpenter or surgeon learns the tools and skills necessary to create their forms of mastery and magic. I want to make the case for writing in every subject and follow that with fifteen concrete examples of what administrators and teachers could do. Administrators must lead and, to some extent, participate in this, or it just won’t happen.

Writing is a very necessary skill in almost any profession or skilled work one can name. Lawyers write briefs, police officers write summaries of an accident, e-mail has replaced letters to a large degree, engineers, doctors, skilled craftsmen and others write reports; other writing forms are executive summaries, position papers, short notes, college assignments from a short paper to a doctoral dissertation and dozens of other forms of writing that are required in college and work. Writing is crucial in getting grants. Many organizations have newsletters. I recently had to replace my air conditioning and heating system. The company representative I chose wrote two paragraphs summarizing the work that would be done.

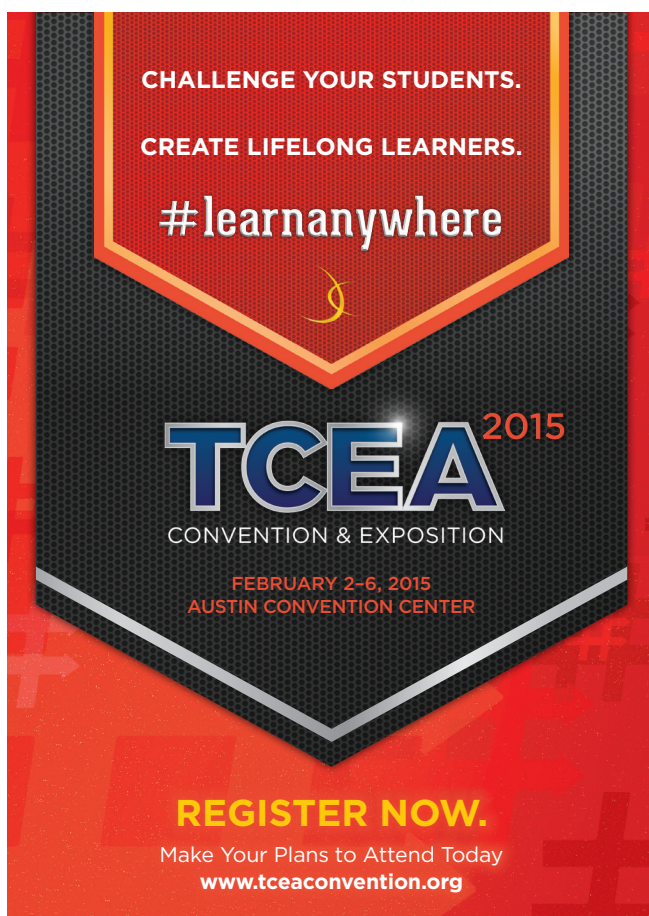
This article is directed at all administrators and teachers, writers themselves in everything from reports to evaluations, whom I want to encourage to place writing after the acronym STEM (Science, Technology, Engineering, Math). Writing occurs across the curriculum, and all students should expect to write in every class and to write with joy and a sense of discovery as often as possible. After all, you don’t know precisely what you are going to say until you have written and probably revised your work, and that is one element of Stephen King’s magic, the surprise of writing.

Unfortunately, “Many children believe that the purpose of writing...is to pass tests” (Jeff Anderson, EL, April 2014, p.12), and they have good reason to believe that. Several years ago, Richard Sterling, then the Executive Director of the National Writing Project (NWP), invited me to take part in a committee sponsored by the NWP meeting at the University of Texas at Austin. The CEO of the College Board, the president of the University of Texas, and representatives from a number of organizations including the National

Council of Teachers of English were in the room, and every chance they got recommended that the writing be characterized by a mature and significant prompt, or several prompts from which the student could choose, and within time limits allow any form of prose writing that responded to the prompt.

The majority of the people in the room did not want to put students in a straitjacket where they were drilled in composing a five-paragraph essay and nothing else. Sadly, that's exactly what happened. The College Board singled out the five-paragraph essay, and teachers, particularly English and social studies teachers, began to teach and require that format to the exclusion of just about everything else. The College Board did not absolutely require that the five-paragraph format be followed, but it was the only recommendation they gave in their brochure which appeared a few months after all of their meetings had taken place. Pick up your local newspaper or a magazine of your choice and see how many five-paragraph essays you can find.

In 2007, the Carnegie Corporation of New York, as part of their Advanced Literacy program, issued a report on writing titled "Writing Next: Effective Strategies to Improve Writing of Adolescents in Middle and High Schools." Dozens of research studies were referred to in the report as well as several meta-analyses of research. Many of the practices of the NWP were confirmed as effective. This came as no surprise to me, having written articles about the NWP as well as interviewed and written about the founder, the late James Gray, and a few years later an article about Jim's successor Richard Sterling.



I was aware of The Council for Basic Education's endorsement of the NWP as well as research conducted by Michael Scriven, Director of the Evaluation Institute at the University of San Francisco and Paul Diederich of the Educational Testing Service. In January 1984 in one my early articles on the NWP, I cited several other researchers and their thoughts about the burgeoning and still young organization which was then called the Bay Area Writing Project and sometimes the National Writing Project, soon to expand to well over 100 sites across the country and become known to all as the National Writing Project. Today there are over 200 sites anchored at universities in all 50 states.

Professor Donald Graves of the University of New Hampshire and Professor Sondra Perl of Lehman College of the City University of New York found that "having the students choose topics and retain control over

WRITING *continues on page 18*

their writing, share their writing with the class or in small groups, and solicit help from peers”(Mark F. Goldberg, “Kappan,” p. 356) improved writing. Of course, additionally teachers required students to respond to prompts or to write in many other formats from reports to reviews, logs and analysis. Going back to Stephen King’s “magic,” one of the most significant things Graves and Perl learned, Graves using standard research and Perl, doing an ethnographic study, was that when the teacher wrote along with students there was a measurable increase in students’ willingness to write as well as the quality of their writing. (Goldberg, “Kappan,” p.356) This is research supported, but I suppose it is also part of the magic of writing.

Perl, Graves, James Moffet, Nancie Atwell, Donald Hall, Ross Burkhardt , Carl Nagan and dozens of other writing experts also found that putting fluency first and mechanical editing second also increased the quality of student writing. They were not learning how to use quotation marks, spelling or subject-verb agreement in an abstract way or a vacuum; they were learning to use grammar and spelling and writing conventions in their own papers which would often, after revision(s), be shown to the whole class.

Why should students learn to write well in the first place, particularly in this age of increasing technology? First, the technology makes the act of writing much easier, but it has little effect on the writing itself. The essential content is not helped by technology, but everything from finding information to spelling correctly and revision are much enhanced by technology. Grammar and style are still problematic, but that may improve with time,

particularly grammar. Style is very individual and idiosyncratic, and technology may not offer much help there. When you see a Van Gogh painting, you recognize it; when you see a Picasso, you recognize it. When you read “The Catcher in the Rye,” the style and voice of J.D. Salinger, through Holden Caulfield, is on every page.

Teachers, even those who are excellent writers and are well trained in the teaching of writing, have a difficult time with writing assignments, and that is captured in one word: time, not time in the classroom but time reading the assigned writing. It is common for secondary teachers to see anywhere from 120 to 160 students each day. Even if your assignments or student-chosen assignments are only a paragraph or two, well, just do the math.

What can teachers do? I put modeling first because it applies to all of the examples below. Students should constantly see what quality writing looks like in every genre.

- **Modeling Excellent Writing.** Students can benefit from what Kelly Gallagher calls “mentor sentences.” (EL, April 2014, p.30). I would expand that to mentor paragraphs and whole essays as well. Whenever a teacher of any subject comes across an extremely well-written sentence, paragraph or essay, copy it for students to read. Before students write, they should see age-appropriate excellent writing. They won’t slavishly imitate these excerpts because they’ll have looked at many examples; however, the more good writing students read across the curriculum, the more they will understand what quality looks like in chemistry, English, physical edu-

cation and art. Teachers and administrators can share this material with each other, so you end up with a rich source from which to draw, excerpts on any topic taken from a sports magazine, a novel, a newspaper or even from a previous year's student paper. Yes, I did say administrators as well. The more administrators play a role, the more teachers understand that writing is important in their schools. Administrators should sometimes sit in on a class and write with the students and teacher.

- **Writing Groups.** Writing groups are a great help. The teacher carefully chooses which students to be in which groups based on the teacher's judgment of what will be the best grouping for this particular assignment. Students need help in how to work in a group before the groups are formed. The job of the teacher then becomes going from group to group to offer suggestions and help. Using the group as the primary audience and the teacher's work with each group is one way of many to assess just how well students are doing without spending fifteen hours slogging through student writing at home.
- **Length of Assignments.** Sometimes assignments can be very short. For instance, piggy backing on tweeting, students might be asked to write the first four sentences of an assignment with prompts on local topics of interest: football and concussions, bullying, or some local political issue that students should know about. Students might also be able to choose their own topic. Students can be limited to 100 or 150 words. After revision, the teacher can read each of these carefully crafted four sentences. This writing may be individual or take place in a writing support group.
- **Sentence Combining.** As a professional editor, I can say that almost everyone needs an editor. Students in secondary schools are just learning to write, to hone their craft. Often we see very short sentences, or the writer says the same thing several times. Combining sentences has been around for a long time, but we don't make good enough use of it. Penny Kittle in the EL issue on writing talks about this and gives a specific example. "I give students four sentences. Biff graduated # 7 in his high school class and missed only three questions on the SAT. He was undefeated in tennis senior year. He received a generous scholarship in math. He was denied admission to three universities he hoped to attend." She then has students work to combine this information in one or two sentences. What can be left out, what can be put in a clause, how many good combinations can the class or small groups put together?
- **Variety and Random Reading of Student Writing.** Students should learn about everything from writing summaries, a short article that will be submitted to the school newspaper, a book review or other essays that may run to 1000 words. These should be based on both fiction and non-fiction. The teachers with 150 students will not read every essay with care, perhaps not even read every essay. Students will know this in advance. When the teacher is only going to read one-fifth of the completed essays with care, they should be chosen randomly. Teachers will reach a point where cer-

tain students have not had their essays read and will say, "This time I will read the essays by students I haven't got to yet, but I will also read some random essays, so all of you should work hard." Once again, some or all of this writing could occur in a group.

- **More about Variety and "Standard Assignments."** There are all sorts of writing that students will do. There is no harm in teaching the 5-paragraph essay or the I-Search paper used in many English classes. The I-Search allows students to pick a question of importance to that student and then write about how he/she did "research" to reach conclusions. It is important for the teacher to make the point that these are only two of dozens of writing forms or techniques that students will experience.
- **Writing Across the Curriculum.** Writing is not the job of English teachers only. Writing across the curriculum should be promoted wherever and whenever possible. Students should write in physical education and chemistry and every other class. Perhaps the student maintains a log of all the physical exercises done over a period of a month, entering two or three sentences each day, or how the student set up an experiment in chemistry or biology. The student learns about logs and hypotheses and results.
- **Brainstorming.** Before writing, a group or a class can brainstorm about a important topic in their community or a book or magazine article they have all read. This will give students ideas about which they might want to write. There are other techniques that miniaturize brainstorming. For instance, the teacher asks each student to write in a few words three or four things on the student's mind right now; then the students are asked to focus on just two thoughts and write a couple of sentences about each. When the students make a final choice, they are assured of two things. They can and should leave out anything too personal for the class and teacher to know. Their first drafts may be read aloud, but no classmates will see the paper. President Kennedy and Tennessee Williams were notoriously poor spellers who wrote quite powerfully, but both revised and/or had their work edited before showing it widely.
- **Analytic Essay.** The student might write an essay in which he/she analyzes the bias in a newspaper article or a school rule that is controversial. Picking apart someone else's writing with the intention of showing a bias or a poorly crafted argument is hard work and requires very careful reading in whatever the subject area of the article.
- **Argumentative Writing.** A first cousin of analysis is the argumentative essay in which a student takes a side and presents evidence to convince people of the rightness of his/her point of view. Here the student takes a stand, knowing that readers may analyze his/her writing just as the students did when practicing analysis. Solid examples and some research, always age appropriate, will be required.

- **Poems and Fiction.** Students should write poems or short stories. Writing poetry is difficult and teaches students that every word counts. Writing a story teaches students a great deal about plot and character. As an aside, third-year law students at Harvard a number of years ago were asked what undergraduate course or part of a course was the most beneficial for these lawyers-in-training. The winner: poetry. Rationale: close reading was required. Imagine: poetry in art or music or physics!
- **Contrast Writing.** Students can be asked to compare or contrast two pieces of popular music, two film stars, two TV shows, two books, two biology or art essays taken from a national magazine or.... This a fairly difficult assignment, but can be used in age-appropriate ways. Obviously, a seventh grader will not be able to do this as well as a high school senior.
- **Publication.** Writing for publication provides motivation to work at the top of your game. Not all student writing is appropriate for publication, but there are times when issues come up that lend themselves to this. It could be a position paper a student, or group or class wants to send to the board of education to get them to do something or change their mind on an issue, perhaps presenting reasons for allowing seniors to leave campus for lunch at nearby places where a car is not required. It may be that some middle school students want to send letters to the local newspaper about an article that was just published. Many schools have a school newspaper, and some schools have a literary journal.
- **Thesis Writing.** Thesis statement and support is another writing possibility, one more example of a writing cousin, this time to the I-Search paper. This is a good topic in writing across the curriculum because the assignment is so wide open and allows the student to choose the thesis. The student's thesis could be anything from what might happen as a result of running a mile a minimum of three times a week for a month to an assertion about some very current topic of interest to the student. This may require keeping a log or reading newspaper articles or interviewing some people.
- **Revision.** The single most important skill in a writer's toolbox once he/she has a rough draft is revision. This is lapidary, shining the jewel again and again until it sparkles. Students need to learn that teachers, reporters, playwrights, science writers, theater and movie reviewers, short story writers, writers of masterpieces all revised. No one just sits down, writes five or ten or more paragraphs and sees they are as close to perfect as that writer can get them. There are natural writers, writers who have the gift, but even they revise. Every great quarterback, soccer player, golfer has coaches and revises her/his swing or kick or throwing.

I'll conclude with a method of learning what constitutes poor, average and very good writing in your school.

1. Assign a number to each student in a particular grade. No name appears on the paper the student will write. If you are in a large school, a representative sample of about 100 papers will do. Make sure you have students in every level in the grade included. If you only have 50 or 60 students in a grade, you use all of the papers in that grade.
2. You will need three teachers to do this. I always had one or two English teachers in the group because they are used to seeing a lot of student writing.
3. Give each student the same prompt. The prompt should be as interesting as you can make it. I leave that to the three teachers. You probably want a prompt that will elicit one or two pages. If students are writing on a computer, the limit is two pages, double spaced, number 12 font. Translate that into handwriting if students will be writing with a pen. All students should have the same amount of time to write and revise. If your school has forty-five minute periods, the students might write on day 1 and finish the draft and revise on day two. This can easily be adapted to schools with block or Day A and Day B scheduling.
4. All the students write on the same day or days.
5. The 100 or so papers are collected and nine are taken out of the pile.
6. The three teachers read the first nine papers, talk about them, and separate them into three piles. You need not have three papers in each pile at this point. You are just trying to arrive at a beginning agreement of what poor, average and very good papers look like. This will make your work much easier and faster as you move through the rest of the papers. If you need to do 3 more papers to feel comfortable, fine.
7. The teachers read the rest of the papers. Each teacher reads each paper. The three teachers need to agree on which pile each paper goes in – that's why there are three teachers and not 2 or 4; if you can't agree, a two to one vote will prevail. Disagreements happen fewer times as you get to twenty or twenty-five papers. Each teacher will keep track of the numbers on the papers and whether they go into group 1, 2 or 3. Stop after each 25 papers or so, say which pile you think each paper should be in, discuss a paper where the pile assignment is close, and then continue. "Close" means that one teachers says, "I could go either way on this one."
8. Now you must make a forced choice, roughly an equal number of papers in each pile. If you are reading 100 papers, at least 30 must be in each pile. You will probably look at the papers that were two to one and agree on moving some of those up or down.
9. Now you do the most interesting part of the work. Pick out the three to zero papers from each pile, and talk about which two represent the average for that level. Now look at the pile of very good papers. Which one paper is the very best? This will take some discussion.

You now have a good idea of what constitutes poor, average and very good writing in your school as well as one paper that represents excellence. In confidence, you can now show teachers in a particular grade what you have found. You also can work backward from the best paper to construct a rubric, if you want that, of what constitutes the three levels of writing. You select, say, the four dominant features that made the outstanding paper your choice. Now, using those same features, you can show how excellence devolves into very good, average and poor writing.

Much of the above will require strong administrative support and probably will occur over a period of two or three years. Getting teachers of all subjects on board is an important goal, but if several teachers opt out, you must be realistic. Getting 100% cooperation on anything is difficult, but should not stop the writing program from going forward with 80% of the staff. There are times when something should be mandated, perhaps some feature of school safety. If a perfectly good, hard-working teacher does not wish to do this, often time will pull that teacher into a strong writing program.

Some of my suggestions can be improved by teachers or altered to fit the culture of a particular school. In fact, teachers and administrators may discover excellent ways to get students to write and share their writing that I have not included here. With almost any article I have written over the years, that has been the case. Teachers and administrators are on the “front line” every day and sense how something new and better will serve their purpose.

About the Author



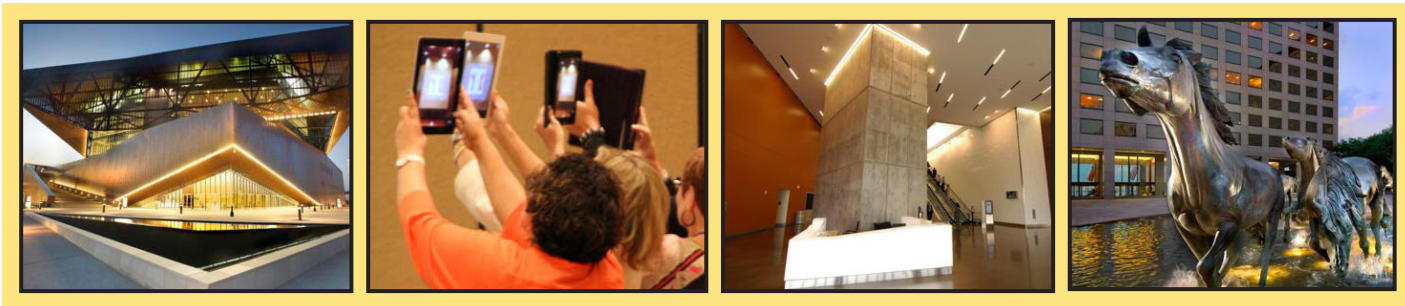
Mark F. Goldberg, Ph.D.

Dr. Mark F. Goldberg had a 32-year career in public education as a teacher, professor and public school administrator. Since 1994, Dr. Goldberg has written five books, over 100 articles, and edited 51 books to publication, several with ASCD and Corwin Books. He lives in Austin.

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Cultivating Wide-Awakeness: An Imperative Mindset in Education

By Zhu Gang

Introduction

In spring 2014, I attended an academic conference held at the College of Education at University of Houston. The keynote speaker, researcher Dr. Linda McNeil, states that in the age of standard-based educational period, to improve students' achievements, we exceedingly rely on standardized tests, which inevitably stifle students' creativity. In summary, Dr. McNeil's main point is that although our purpose is right, our methods to achieve it are problematic themselves. To some degree, we lack consciousness and reflectiveness in contemporary education reform. To remedy this deficiency, we need to cultivate wide-awakeness in education. From my perspective, wide-awakeness can shed light on educational research and practice meaningfully.

Maxine Greene (1977) develops her understanding of wide-awakeness. Initially, she cites insightful words from Henry David Thoreau's *Walden* that:

The millions are awake enough for physical labor; but only one in a million is awake enough for effective intellectual exertion, only one in a hundred millions to a poetic or divine life. To be awake is to be alive. I have never yet met a man who was quite awake. How could I have looked him in the face? (Greene, 1977, P120):

From these words, we can find that the ultimate purpose of Thoreau is not urge people to live solely in the woods. However, it is to "move others to elevate their lives by a "conscious endeavor," to arouse others to discover-each in his or her own terms-what it would mean to 'live deliberately'." (Greene, 1977, P120). Where education is concerned, cultivating wide-awakeness means the facility of heightened consciousness and reflectiveness in this humanitarian endeavor. Further, wide-awakeness is not abstract and illusory. Yet, it has concreteness. As philosopher Alfred Schutz suggests below:

By the term "wide-awakeness", we want to denote a plane of consciousness of highest tension originating in an attitude of full attention to life and its requirements. (Greene, 1977, P121)

Inspired by McNeil and Greene's viewpoints, I find that we really lack wide-awakeness, an essential and imperative mindset in terms of educational research and practice. In face of so many bureaucratic regulations and "top-down" educational reforms, we take "theory-practice-policy" split phenomenon for granted. When talking about high-performing countries like Shanghai-China, Finland and Singapore, we admire their stunningly-high scores and determined to redesign our reform agenda (Tucker, 2014), but we are not aware if their practice are really feasible in US.

Similar situation not only happens in US but in China. When Chinese government initializes nation-wide curriculum reform at the beginning of 21st Century, the curriculum experts and policy-

makers adopt many fresh ideas and pedagogical principles from western countries (including Japan). But when implementing the newly-designed curriculum, they unexpectedly find many problems. One case in point is that new curriculum experts unduly boost “inquiry-based learning” irrespective students’ real age and abilities. Consequently, this approach went against the originative purpose: improve students’ learning. Even though “inquiry-based learning” is appealing, if not used wisely, it will waste students much time and energy at the expense of what they should really acquire. Finally, it will miserably lower the final educational quality.

To bolster my point, I will detail the necessity of cultivating wide-awakeness in education in three niches, namely: (1) New curriculum reform debate in China; (2) American public education reform in the context of GERM; (3) Attune to teachers’ best-loved self in American teacher education reform.

Albeit these three examples are inseparable, they share similarities in terms of the underlying consciousness. Explain it further, we need to retrospect and reflect the trajectory of educational research and practice underpinning these reforms through the lens of wide-awakeness. Through analyzing these three cases, I propose that it is imperative for us to cultivate wide-awakeness in educational research and practice.

(1) New Curriculum Reform Debates in China

In 2001, the Chinese government officially initialed nation-wide curriculum reform. Among the camps of curricular reform, some researchers (Wang, 2004; 2008), mainly come from Beijing Normal University, believe that curriculum is essentially the accumulation of knowledge from generations to generations. Accordingly, learning is mainly an indirect cognitive process which involves the rapports between students and teachers. On the contrary, other researchers (Zhong & You, 2004), mainly come from East China Normal University) propose that curriculum is the distillation of collective experiences between different races for centuries. Departing this core point, learning denotes a constant process which (re)organizes students’ personal and professional experiences.

For this theoretical dichotomy, each school of researchers can defend their statements and find corresponding supports (Deng, 2013). Does this mean that the dichotomy unsolvable? No! When we jump out of the established boundary, we can find that each piece of theory comes from constrained realities. It cannot encompass and thus entail all the complex situations in the public schools in China. When I conducted the school-based curriculum implementation in northern part of China in 2011, I find some under-performing and hard-to-staff secondary schools lack resources available to design and teach school-based curriculum. Additionally, in some other K-12 schools, burdened by plethoric province (or city)-mandated standardized tests, some teachers have to simplify group-study or inquiry-based learning. The reason comes from that they think these learning methods are not effective and suitable for standardized tests. To make satisfying progress, the teachers have to prioritize all kinds of tests. So they have to save time on “inquiry-based learning methods” highly recommended by some curriculum experts in China.

From my vantage point, I think Schwab’s practical research on curriculum can enlighten this paradox. If we over-rely on theories in curriculum area, we may without doubt make this domain moribund (Schwab, 1969). The wise and feasible way to solve Chinese curriculum reform needs eclectic approach and deliberation (Schwab, 1971). On one hand, it needs the reconciliation of dichotomous arguments on the four commonplaces of curriculum proposed by Schwab (1971): the learner, teacher, subject matter and the milieu. On the other hand, we need to address the

complexity by developing “overlapping common sense” between multiple theories, practice and policies. Overall, this task is also a wide-awakeness cultivating process since it needs us to step out of our “comfortable zone” and move it to a heightened consciousness.

(2) American Public Education Reform in the Context of GERM

Up to now, the topic concerning whether American public education is successful is still very controversial (Ravitch, 2013; Zhao, 2009, 2012). When Shanghai-China, Finland, Singapore and other educational high-performing countries are gaining world-wide attentions, American educational reformer urges us to redefine and redesign K-12 public education as evidenced by “Surpassing Shanghai” (Tucker, 2011).

However, the deep-rooted paradox about school reform in America can be termed as “so much reform, so little change” (Payne, 2008). Specifically, we have abundant school reform rhetoric or roadmaps (Mehta, 2012), but the whole public educational system are still static and inert in many aspects (Eisner, 1990).

From my standpoint, we need to develop an alternative ecological perspective on school reform in America. In this case, Elloit-Eisner’s Educational reform and the ecology of schooling (1992) can give us some senses of awakeness.

Unlike many other researches on school reform, in this well-articulated paper, Eisner poignantly offers new educational ecological lens to analyzing why educational reform is so hard to change at the school level. He insightfully states that we often employ a language of change that reveals a shallow and mechanistic conception of what real change requires. As a result, we consider school as robust institutions where the initial intentions and strategies of reform are hard to impetrate into the schools themselves. For instance, Eisner criticizes that many experts who are far away from schools and classrooms offer decontextualized in-service education programs for teachers. These advice-givers undoubtedly weaken its potential usefulness and thwart teachers’


professional development.

Departing from these erroneous images of school, Eisner (1992) advocates that we need to consider schools as living system. The reason comes from the fact that American educational reform is like a pendulum swing. It goes back and forth and does not develop toward positive direction. Therefore, we should reexamine our implicit or explicit understanding of what schools really are and should be. To explain it further, Eisner endorses (1992) that there are five dimensions of school reform: the intentional, the structural, the curricular, the pedagogical, and the evaluative. All of these five dimensions form a kind of ecology of schooling. From Eisner’s viewpoint, in order to achieve meaningful and educationally significant school reform, we need to collectively address these five dimensions.

Finnish educator Pasi Sahlberg (2011) summaries in his Finnish Lessons that contemporary global educational reform movement or GERM are featured by standardization, focus on core subjects, the search for low-risk ways to reach learning goals, use of corporate management models, test-based accountability policies. Numerous examples like Finland and Singapore convincingly prove that these strategies cannot really improve one country’s overall educational quality. If America still adopts these techniques, they will not stand itself as one of the high-performing countries in the world. This is one aspect of wide-awakeness we need to imbed. The other aspect of wide-awakeness is that we should not constrain ourselves within one dimension of school reform like structural or curricular update. Just the opposite, it is wise to develop comprehensive and ecological viewpoints to reexamine the public education reform.

(3) Attune to Teachers’ Best-loved Self in Teacher Education

Against the backdrop of college-base teacher education system, on one hand, pre-service teachers often receive what Freire (2009) criticizes “packaged teacher education” training to some extents, which



means: "...[Teachers] blindly follow prepackaged educational materials produced by some experts in their offices to unequivocally demonstrate their authoritarianism. The development of the so-called teacher-proof materials is a continuation of experts' authoritarianism, of their total lack of faith in the possibility that teachers can know and can also create." (p.15)

On the other hand, many practicing teachers are jeopardized by high expectations and excessive workloads, which result high teacher attrition. Accompanying this phenomenon is increasing state-mandated standardized tests and widely-utilized value-added evaluation. Both of which further contribute to higher teacher turnover throughout the nation.

Facing this tricky problem, how can we fix it by cultivating wide-awakeness? Attune to teachers' best-loved self is my answer. In Schwab's scholarly work, the "human person", he observed, is a "self-moving living thing" that is able to "produce itself", to "develop itself", and to create a "personal history" that is non-replicable (Schwab, 1964, p. 8). Additionally, Schwab underlines that teachers have "different bents" (Schwab, 1983, p. 241), and, hence, no enactment of curriculum would be complete without his/her active engagement. For him, the teacher was the "fountain head of the curricular decision" (Schwab, 1983, p. 245). Accordingly, teachers should be agents of education instead of just curriculum implementer (Craig, 2012)

Schwab's poignant arguments give us some senses of wide-awakeness. If we sustain teachers' best-loved self by shifting the image of teachers from "curriculum implementer" to "curriculum maker" (Craig, 2008), we will better support teachers' professional life and the multilayered contexts that influence teachers' development.

Teaching should be a real respected profession and teachers should have autonomy. For those policy-makers, they should understand that no reform effort can get off the ground without... a teacher willing and prepared (Bruner, 1996, p.84). Further, researcher Cheryl Craig gives us a fantastic summary and reflection below:

Regardless of how big school reforms begin, how grandiose and complicated our stories about them may be, how many sponsors we identify, how much financial support we garner, and how much high-minded and pure-hearted our purposes may be, we inevitably return to the individual teacher as a knowledgeable and knowing potential agent of one...and the essence of that teachers' best-loved self." (Craig, 2003. P.201)

At present, many strands of American teacher education are governed by technical rationality (Schön, 1983). This epistemology assumes that teachers are blank slates and knowledge consumers in the context of school reform. So they are always positioned at lower knowledge terrain. However, when reformers have wide-wakeness, they will learn that teachers are "policy transformers" and agents in many aspects. If we do not sustain teachers' best loved-self, teachers will not really actively involve their daily teaching and school reform.

Closing Remarks

In this paper, I "talk across" several examples about curriculum reform debate in China, public education reform and teacher education in US. Why do I choose these unconnected cases? For my analysis on curriculum reform in

China, I was a master student and a following research fellow at one Chinese university then. I have many professional experiences revolving curriculum reform debate in China. When I am pursuing my PhD degree in teaching and teacher education in America, my research agenda broadly focuses on American teacher education in the milieu of national and state reforms.

Although these three examples are not intimately connected, they stand themselves as good evidences that it is imperative for us to update our mindset, namely, the wide-awakeness. From this vantage point, the three examples underpinning my argument have internally logical connections. In Maxine Greene's words, "Made aware of the multiplicity of possible perspectives, made aware of incompleteness and of a human reality to be pursued, the individual may reach a 'plane of consciousness of highest tension'." This is the starting-point where this paper lies. It is also the ending- point.

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Calendar of Professional Learning

February 10-12, 2015
Instructional Rounds
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Academy XIII
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Session two of three

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STEM Leader Institute
Austin, TX

February 26-27, 2015
Curriculum Leadership
Academy XII
H-E-B ISD
Session one of three

March 5, 2015
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Texas ASCD present the
STEM Leader Institute
Plano, TX

March 24-25, 2015
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Transforming Learning to the
New Normal
Houston, TX

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Texas ASCD and ICLE present
Transforming Learning to the
New Normal
Dallas, TX

March 25-27, 2015
Instructional Rounds
Keller ISD

April 14-15, 2015
Digital Leadership Academy
with Eric Sheninger
Dallas, TX

June 15-17, 2015
Texas ASCD's ignite¹⁵
Transforming Curriculum
with Technology
Irving Convention Center
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June 23-24, 2015
Curriculum Leadership
Academy XII
H-E-B ISD
Session two of three

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