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Students at the Center

JOBS FOR THE FUTURE

## An Introduction to the Deeper Learning Research Series

Prepared for Turning the Corner: Toward a New Policy Agenda for College, Career, and Civic Readiness Boston, Massachusetts | October 7-8, 2015



**Jobs for the Future** works with our partners to design and drive the adoption of education and career pathways leading from college readiness to career advancement for those struggling to succeed in today's economy.

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**Students at the Center** synthesizes and adapts for practice current research on key components of student-centered approaches to learning and deeper learning outcomes. Our goal is to strengthen the ability of practitioners and policymakers to engage each student in acquiring the skills, knowledge, and expertise needed for success in college, career, and civic life. This Jobs for the Future project is supported generously by funds from the Nellie Mae Education Foundation and The William and Flora Hewlett Foundation.

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-Rafael Heller, Rebecca E. Wolfe, Adria Steinberg

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# INTRODUCTION

In education circles, it has become commonplace to argue that in 21<sup>st</sup>-century America, "college and career readiness" (and "civic readiness," we would add) must be the goal for each and every student. This has led to productive discussion of what it actually means to be "ready" for college, careers, and civic life.

Students' command of academic skills and content certainly matters, but so too does their ability to communicate effectively, to collaborate with diverse peers and colleagues, to solve complex problems, to persist in the face of challenges, and to monitor and direct their own learning–in short, the various kinds of knowledge and skills that have been grouped together under the banner of "deeper learning."

This publication presents, together, the executive summaries of the 11 papers in the Students at the Center Deeper Learning Research Series. Each one is compelling in its own right, offering a provocative but even-handed perspective on a critical topic in education policy and practice. But we hope that you will read the entire series. As a collection, the papers represent a timely effort to take stock of the current state of affairs in secondary schooling, to move beyond some of the all-too familiar policy debates of the No Child Left Behind era, and to define new priorities for the coming years.

Begun in fall of 2014, with the generous support of The William and Flora Hewlett Foundation, this new series of commissioned reports aims not only to describe best practices in the nation's high schools, but also to provoke muchneeded discussion about those schools' purposes and priorities.

Please note that this collection is not meant to promote "Deeper Learning" as a brand name or to advocate for a specific school model or policy initiative. Rather, and in keeping with previous Students at the Center publications on student-centered approaches to learning, it is meant to encourage open-ended discussion about important and complicated questions that deserve serious attention: If college, career, and civic readiness require more than just high-level academic preparation-the focus of most education policymaking over the last few decades-then what are the implications for schools, educators, and students?

Each paper in the series approaches the topic from its own angle: Are these goals teachable, and what does it look like to teach them (asks **Magdalene Lampert**)? What sorts of instructional tools are needed in order to do so (**Chris Dede**)? Can these sorts of learning be assessed in valid and reliable ways (**David T. Conley**)? What can school systems do to create the conditions under which these sorts of teaching and learning are possible (**Meredith I. Honig and Lydia R. Rainey**), and where does this fit into the longer, historical trajectory of secondary schooling in the United States (**Jal Mehta and Sarah Fine**)?

One paper takes a close look at what it would mean for secondary schools to take career readiness (Nancy Hoffman) as seriously as they do the goal of preparing students for college, while another (Peter Levine and Kei Kawashima-Ginsberg) takes a similar look at the goal of civic readiness. A trio of papers explores questions related to educational equity and excellence: the first (Pedro Noguera, Linda Darling-Hammond, and Diane Friedlaender) asks what can be done to ensure that *all* students have meaningful opportunities to learn deeply, while another looks specifically at the education of students with disabilities (Sharon Vaughn, Louis Danielson, Rebecca Zumeta, and Lynn Holdheide), and a third focuses on English language learners and immigrant students (**Patricia Gándara**). And, finally, the series concludes with a paper (**Rafael Heller and Rebecca E. Wolfe**) that considers how to identify schools that are effective at teaching deeper learning skills and asks what we might learn by studying schools that show evidence that they provide not just solid academic instruction but also strong support for inter- and intrapersonal development.

The Deeper Learning Research Series is the second set of papers to be offered by the Students at the Center Initiative. Launched in 2010 by Jobs for the Future–with support from the Nellie Mae Education Foundation–the first research series was an effort to identify, synthesize, and share recent research findings on effective approaches to teaching and learning at the middle and high school levels.

The initiative began by commissioning a series of white papers on key topics in secondary schooling, such as student motivation and engagement, cognitive development, classroom assessment, educational technology, and mathematics and literacy instruction.

Together, these reports-collected in the edited volume *Anytime*, *Anywhere: Student-Centered Learning for Schools and Teachers*, published by Harvard Education Press in 2013-make a powerful case for what we call "student-centered" practices in the nation's high schools. Ours is not a prescriptive agenda; we don't claim that all classrooms must conform to a particular educational model-but we do argue, and the evidence strongly suggests, that most, if not all, students benefit when given ample opportunities to:

- > pursue ambitious and rigorous courses of study that take into account their individual needs and interests,
- > advance to the next level, course, or grade based on meaningful demonstrations of their skills and content knowledge,
- > learn outside of the school and the typical school day, and
- > take an active role in defining their own educational pathways.

Students at the Center will continue to gather the latest research and synthesize key findings related to student engagement and agency, competency education, and other critical topics. Also, we have created and/or curated (using an alignment and quality control protocol), and made available at <a href="http://www.studentsatthecenterhub.org">http://www.studentsatthecenterhub.org</a>, a wealth of free, high-quality tools and resources designed to help educators implement student-centered practices in their classrooms, schools, and districts.

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## A NEW ERA FOR EDUCATIONAL ASSESSMENT

By David T. Conley

#### **EXECUTIVE SUMMARY**

It is commonly argued that in order to succeed in today's postindustrial society, all young people need to complete a rigorous academic curriculum that focuses on advanced content knowledge, critical thinking, and problem solving. Nonetheless, most U.S. schools continue to measure students' progress by testing them on a narrow set of discrete reading and math skills. Indeed, these are just about the only indicators of student achievement that "count" in federal and state accountability systems.

In this paper, David T. Conley, well-known for his influential research on college readiness, draws on a wealth of recent research to argue that the time is ripe for a major shift in educational assessment, from an overreliance on standardized tests of math and reading, which tell us little about readiness for college and careers, to the use of multiple measures that together can help gauge progress in learning the broad range of content and skills that truly matter after high school.

Conley concludes with recommendations for state and federal policymakers to support and build on effective practices that have long been used in many schools and districts, but which have been crowded out, in recent years, by standardized testing.

Key findings include:

- College and career readiness depends on more than just academic knowledge and skills. Students also need to develop an array of personal and interpersonal competencies, as well as practical knowledge about the transition to life after high school. Examples include time management, perseverance, goal setting, selfadvocacy, and even financial planning.
- Schools can assess-and teach-a much wider range of competencies. Research shows convincingly that student motivation, persistence, self-discipline, problem solving, college planning, and other critical elements of college and career readiness can be assessed and taught effectively.

- > Traditional state tests are convenient but not very informative. Standardized, multiple-choice reading and math tests are reliable, familiar, affordable, and easy to administer. Unfortunately, they do not provide much useful information about students' progress toward long-term goals.
- The new Common Core assessments are good but limited. Early reviews show that the Partnership for Assessment of Readiness for College and Careers (PARCC) and Smarter Balanced Assessment Consortium (SBAC) assessments offer significant improvements over existing state tests, especially in asking students to analyze complex texts and respond to challenging writing prompts. But they, too, fall short of gauging true readiness for college and careers, since they focus only on language arts and math, and they offer no information about other critical indicators.
- States are taking a new look at performance assessments. Today, a number of states are returning to performance assessments (which gauge students' capacity to analyze high-level texts, write persuasive essays, give presentations, and otherwise demonstrate what they have learned) in order to get a better read on college and career readiness.
- College and career readiness are best measured through a combination of assessments. Multiplechoice achievement tests have their uses, but so too do diagnostic tests, performance tasks, informal assessments, and other means of checking on student progress. No single measure is sufficient both to judge schools' performance and guide instruction.

No single measure is sufficient both to judge schools' performance and guide instruction.

#### WHY IT'S TIME FOR A CHANGE

The nation's educators have access to a vast array of assessment methods and resources-everything from informal questionnaires and after-class meetings to formal writing assignments and commercially published diagnostic tools-that they can use to gain insight into students' learning across multiple subjects. The problem is that few schools take full advantage of this wealth of resources, given pressures (whether real or perceived) to improve student performance on high-stakes, standardized tests that do not, in fact, provide much useful information about student progress.

The current state of educational testing in the U.S. has much to do with a longstanding preoccupation with *reliability* (the ability to measure the same thing consistently) over concern for *validity* (the ability to measure the right things). Over the past several decades, this has led to the creation of tests made up many discrete questions, each one pegged to a particular skill or bit of knowledge, pitched at a particular level of difficulty. This enables test designers to come up with more or less equivalent questions year after year, ensuring that tests are reliable over time. However, it does so at the expense of validity. Too little thought is given to whether those questions assess what is most important for students to learn.

Further, such tests encourage schools to divide complex subject matter into isolated fragments. In order to prepare students to do well on these tests, educators have treated literacy and numeracy as though they were nothing more than a collection of distinct pieces to be mastered, with little attention to students' ability to put the pieces together or apply them to other subject areas or real-world problems.

Recent advances in cognitive science, which have yielded important new insights into how humans organize and use information, strongly recommend a shift toward assessments that measure and encourage more complicated ways of thinking. One critical finding is that the brain makes sense of input by determining its relevance to information it already knows and by creating a "big picture" of its meaning. Assessments, therefore, should provide opportunities for students to demonstrate their conceptual understanding, to relate smaller ideas to bigger ones, and to show that they grasp the overall significance of what they have learned.

Equally powerful is the growing body of evidence showing that students' attitudes toward learning-and the effort they are willing to exert-is at least as important as their initial aptitude. This contradicts the claim by generations of test designers that they can measure students' "true" ability levels in order to steer them into academic and career pathways that match their talents and capabilities. Further, it suggests that tests can have a powerfully negative effect on students' achievement over time, since low scores can discourage them from making the sustained efforts that would allow them to succeed.

Recent research also has greatly clarified what it means to be college and career ready. In previous decades, many educators were content to help students become eligible for postsecondary education (e.g., by helping them pass their required courses and attain a high school diploma). But in today's economy, that's no longer enough. If one hopes to earn a decent living and pursue a satisfying career, one can't just get through high school and enroll at college. One must actually be prepared to meet the demands of college and to complete a degree program.

Conley's own research, derived from information about tens of thousands of college courses at a wide range of postsecondary institutions, highlights four main factors that contribute to readiness to succeed in college: key cognitive strategies, key content knowledge, key learning skills and techniques, and key transition knowledge and skills. In order to make sure that students become truly ready for college, high schools should assess their progress, and support their development, in each of these areas. At present, though, few schools do so.

#### TOWARD A SYSTEM OF ASSESSMENTS

Assessments can be described as falling along a continuum, ranging from those that measure isolated pieces of student content knowledge to those that seek to capture deeper understanding in more integrated and holistic ways (as shown in Figure 1).

In the early 1990s, a number of states attempted to move toward the right side of that continuum, by adopting and experimenting with the use of "performance assessments," requiring students to show that they truly grasp the significance and complexity of the material they study, and to show their ability to use what they've learned, such as by writing persuasive essays, completing challenging projects, and solving complex math problems. While some states struggled to implement such assessment systems, others made good headway, creating high-quality tests that prompted students to write extensively, or requiring students to collect "portfolios" of their best work, in order to demonstrate their progress in high school. With the 2002 enactment of No Child Left Behind, however, those experiments in performance assessment mostly withered on the vine, as emphasis shifted toward the use of standardized tests.

Once again, though, the winds appear to have shifted, and a number of states are now taking a serious new look at adopting various forms of performance assessment. A dozen years into NCLB, not only are educators and the public clamoring for better assessments, but new research and technology promise to solve the managerial problems that states encountered in the 1990s, as they struggled to gather, store, and analyze the large amounts of information that performance assessments tend to generate.

Further, the implementation of the Common Core State Standards presents an opportunity for states to move toward assessment models that not only meet their accountability needs, but also provide students, teachers, schools, and postsecondary institutions with valid information that empowers them to make wise educational decisions. Two consortia of states (PARCC and SBAC) are developing tests of the Common Core standards, and both have been touted for their potential to overcome many of the shortcomings of NCLB-inspired testing. They offer well-conceived test items, as well as carefully designed

#### **Continuum of Assessments** THE BIG PICTURE PARTS AND PIECES Teacher-developed Standardized Multiple-choice Standardized Project-centered performance tasks performance tasks tasks multiple-choice with some tests of basic skills open-ended items **FXAMPLE FXAMPLE EXAMPLE FXAMPLE** FXAMPI F Traditional on-demand Common Core tests Ohio Performance ThinkReadv Envision Schools, NY tests (SBAC/PARCC) Assessment Pilot Assessment System Performance Stan-Project (SCALE) (EPIC) dards Consortium. International Baccalaureate Extended Essay

performance tasks, that require valuable writing skills and problem-solving capabilities. In short, these assessments should help signal to students that they are expected to engage deeply in learning and to devote serious time and effort to developing higher-order thinking skills.

The new Common Core assessments have shortcomings, as well. Not only do they continue to rely on items that focus on discrete bits and pieces of knowledge-rather than measuring students' understanding of larger conceptsbut they focus only on math and language arts, and they address only some of the deeper learning skills that matter to students' long-term success.

But there is no reason why educators can't practice more than one kind of assessment at a time. Indeed, a number of states are now creating school assessment models that combine elements from multiple approaches, some of which are meant only to guide instruction and not to evaluate students or their teachers. In the short run, Conley argues, states should be able to make real progress toward what he calls a "system of assessments," providing comprehensive (and not necessarily high-stakes) information about student progress in all of the areas that contribute to college, career, and life success.

And in the long run, Conley adds, it may be possible for states to create an even more sophisticated assessment system, one that allows students to collect and share much more specific and nuanced information about what they know and are able to do. Ideally, the old-fashioned high school transcript would give way to something like an online personal profile, including familiar data such as high school courses and GPA, but also providing links to one's research papers and capstone projects, self-assessments, teachers' reports, examinations passed, and other evidence of one's knowledge, skill, and growth in key areas.

#### CHALLENGES

Although some states, researchers, and testing organizations are seeking to develop new methods to assess deeper learning skills, none have yet cracked the code to produce an assessment that can be scored reliably at costs in line with current tests. Indeed, cost-efficient scoring may be the holy grail of performance assessment. Unless states find ways to evaluate complex student work at scale, or until they become willing to make the necessary investments, it's likely that they will continue to emphasize the use of simpler, machine-scored tests, at least for accountability purposes. And as long as the primary purpose of state-sponsored assessments is to reach summary judgments about the performance of students and schools (and, increasingly, teachers), validity will continue to be trumped by reliability and efficiency.

Thankfully, though, one important lesson to emerge from No Child Left Behind-and its decade-long rush to judge the quality of individual schools-is that not all assessments should be used for accountability purposes. While it will always be important to know how well schools are teaching foundational skills in language arts and mathematics, many educators and policymakers have come to understand that the pursuit of deeper learning will require a much greater emphasis on formative assessments that let teachers know what kinds of support they will need to provide in order to help students become ready for college and careers.

#### RECOMMENDATIONS

Many issues will need to be addressed in order to bring about the fundamental changes in assessment practice necessary to promote and value deeper learning. The question is: Can policymakers sustain their attention to this issue long enough to enact the policies to bring about necessary changes?

The recommendations offered here are meant to serve as a starting point for a process that likely will unfold over many years, perhaps even decades. (For a complete list of recommendations, see the full paper, available at <u>www.studentsatthecenter.org/topics/new-era-ed-</u> <u>assessment.</u>)

- 1. Define college and career readiness comprehensively.
- Adapt federal education policy to allow greater flexibility in the types of data that can be used to demonstrate student learning and growth.
- **3.** Look for ways to improve the Common Core State Standards and related assessments so that they become better measures of deeper learning.

- Build a strong base of support for a comprehensive system of assessments, including new measures of deeper learning.
- Determine the professional learning, curriculum, and resource needs of educators to implement a new system of assessments.

#### **ABOUT THE AUTHOR**

**Dr. David T. Conley** is the founder, chief executive officer, and chief strategy officer of the Educational Policy Improvement Center (EPIC). Dr. Conley also serves as president of EdImagine Strategy Group, professor of Educational Policy and Leadership, and founder and director of the Center for Educational Policy Research at the University of Oregon. Dr. Conley serves on numerous technical and advisory panels, consults with national and international educational agencies, and is a frequent speaker at meetings of education professionals and policymakers. He is the author of several books and numerous articles on the topic of college and career readiness, including his newest book *Getting Ready for College, Careers, and the Common Core: What Every Educator Needs to Know.* 

Dr. Conley developed and implemented the nation's first proficiency-based college admission system, PASS, used by the Oregon University System, then field tested at 52 Oregon high schools. In 2003, Dr. Conley completed Standards for Success, a groundbreaking three-year research project to identify the knowledge and skills necessary for college readiness.

Dr. Conley received a BA with honors in Social Sciences from the University of California, Berkeley. He earned his Master's degree in Social, Multicultural, and Bilingual Foundations of Education and his doctoral degree in Curriculum, Administration, and Supervision at the University of Colorado, Boulder.



#### A NEW ERA FOR EDUCATIONAL ASSESSMENT David T. Conley

Among education researchers, there is a growing consensus that college, career, and civic readiness depend on not just academic knowledge and skills but a wide range of social and developmental competencies, as well. Yet, most U.S. schools continue to use standardized, multiple-choice achievement tests, focusing exclusively on reading and math, as their primary means of gauging student progress. In this paper, David T. Conley, well known for his influential research on college readiness, argues that the time is ripe for a major shift in educational assessment. State and federal policymakers should embrace the use of multiple measures that, in combination, provide much deeper and more useful information about students' readiness to succeed after high school.

To download the full paper, go to <u>www.jff.org/deeperlearning</u>



## THE ROLE OF DIGITAL TECHNOLOGIES IN DEEPER LEARNING

By Chris Dede

#### **EXECUTIVE SUMMARY**

A wealth of recent research has shown that, in order to become truly well-prepared to succeed in college and careers, young people require not just high-level academic knowledge and skills, but also a range of inter- and intrapersonal competencies. These include the capacities to regulate and reflect on one's own learning, to solve complex problems, to participate effectively in teams, and to persist in the face of challenging tasks.

This paper argues that digital technology will be indispensible to the effort to scale up deeper learning in the nation's high schools. However, in order to realize the vast potential of digital tools, school reformers will have to rethink their own assumptions about the purpose of investing in such resources.

Educational technology is valuable not because it allows us to produce fancier textbooks and more elaborate presentations. Rather, it can and should be used to help teachers provide richer opportunities for students to debate complex issues, analyze challenging material, explore realworld problems; and assess their own learning. In other words, the point isn't to help schools do the same old things better, but to help teachers and students do better things.

Moreover, argues the author, Chris Dede, it's hard to imagine that the nation's educators could make a largescale shift toward deeper learning *without* reinventing their teaching tools and platforms to create new types of instructional environments in which students are empowered to do active, collaborative learning.

#### NEW DESIGNS FOR LEARNING: TWO PROVEN STRATEGIES

Along with colleague Barry Fishman, Dede recently completed an exhaustive survey of the empirical research into digital technology's impact on teaching. To date, they found, technology has been used mainly to automate conventional models of teaching, rather than to empower students and engage them in deeper learning. It is no surprise, then, that the results have been generally disappointing. The evidence suggests that school and district leaders should think carefully before investing in expensive new devices and software, especially ones that do little more than convert textbooks, worksheets, and rote activities into digital form.

At the same time, the research also shows that when technology has been designed to support effective instruction-especially to provide opportunities for deeper learning-then it does tend to have great benefits, suggesting that digital tools can serve as effective vehicles for large-scale school improvement.

Two technology-based instructional strategies have been found to be particularly effective: using **digital teaching platforms** and teaching with **immersive authentic simulations**.

The point isn't to help schools do the same old things better but *to help teachers and students do better things*.



#### DIGITAL TEACHING PLATFORMS

In brief, a digital teaching platform (DTP) is a classroom environment, featuring a network of computers that have been designed to empower teachers and students to interact in a range of ways that rarely occur in conventional teaching. DTPs are not meant to replace teachers or control their work; rather, they allow teachers to offer a form of blended or hybrid learning, mixing face-to-face and virtual student experiences. Teachers use the DTP to create lessons and assignments and to manage and evaluate student work, which can be individual or collaborative. A DTP also gives students access to curriculum content and assessments in digital form and supports real-time, teacherdirected online interaction in the classroom.

Most important, though, DTP's are powerful teaching tools only insofar as they are used to promote knowledge integration, personalize instruction, and promote collaboration among students.

#### Using DTPs to Promote Knowledge Integration

In classrooms that emphasize knowledge integration, teachers invite students to share their own emerging ideas and theories, help them detect gaps in their knowledge, and engage them in using new ideas to address compelling problems. The Web-based Inquiry Science Environment (<u>WISE</u>) is one example of a DTP-like environment that supports knowledge integration using case-based, collaborative learning. Students learning in a classroom using WISE might predict the sequence of events in specific chemical reactions, conduct virtual experiments on those chemicals, reassess their initial predictions, and discuss and debate their evolving ideas online. WISE also includes builtin assessments and rubrics that ask students to connect and distinguish their ideas, and give evidence to support their claims.

#### Using DTPs to Personalize Instruction

Digital teaching platforms can aid teachers in adapting instruction to meet the needs of individual students. For example, the <u>ASSISTments</u> provides data management and content for online learning. Its assessment tool identifies gaps in students' background knowledge so teachers can decide precisely which skills they need to strengthen in order for students to grasp new material. ASSISTments then tracks student progress so that teachers can continue to effectively target individual instruction.

#### Using DTPs to Promote Collaborative Learning

Digital teaching platforms can provide powerful support for collaborative learning. For example, the mathematics program <u>SimCalc</u> is configured to enable engaging wholeclass discussions by sharing student thinking and work in a networked classroom. Much of the pedagogy in SimCalc classrooms involves the teacher facilitating discussions among students about the dynamic representations on their computer screens. Research shows that these mathematical dialogues tend to involve the entire class, are highly engaging, and lead to deep understandings of mathematical formulas and theorems.

#### **IMMERSIVE AUTHENTIC SIMULATIONS**

Digital simulations can create powerfully immersive experiences for students, allowing them to learn and practice new skills and content in a virtual environment, then transfer what they've learned to the real world. In particular, two kinds of immersive media have been shown to be effective tools for promoting deeper learning: **multiuser virtual environments** (MUVEs, or "virtual worlds") and **augmented realities**.

#### MUVEs (or "Virtual Worlds")

In a virtual world, students can interact with digital objects and tools, simulated characters, and avatars controlled by

their peers in order to access educational experiences and environments not otherwise available in their classrooms.

For example, the <u>EcoMUVE</u> give students the opportunity to explore realistic, three-dimensional ponds and forest ecosystems while assuming the role of scientists. Over the course of the simulation, teams work together to investigate a complex problem, and collect and analyze data from a variety of sources over time, and generate and test hypotheses. Research studies across a range of classroom settings have validated the utility and effectiveness of teaching with EcoMUVE, showing that it motivates and engages students while helping them learn key scientific concepts, develop individual and collaborative skills related to scientific inquiry, and gain a deep understanding of complex causality (a concept that is often quite difficult for middle grades students to grasp).

#### **Augmented Realities**

Applying academic insights to the real world-and translating real-world experience into academic insights-is an essential feature of deeper learning. Augmented reality enables students to blend virtual and real-world experiences by using mobile wireless devices to superimpose digital information onto a physical landscape. For example, the <u>EcoMOBILE project</u> (designed to complement EcoMUVE), takes students on a field trip to a nearby pond, where they use handheld devices to help them collect data and record observations about the ecosystem; identify specific plants, wildlife, and geological features; call attention to particular aspects of the environment; show them illustrations of what's going on beneath the surface of what they see, and so on.

In short, whereas MUVEs allow students to learn by simulating real-world activities, augmented reality enhances their experience of the real world. In both cases, teachers can use the technology to help students connect abstract scientific content to actual, lived experience, giving them a much deeper grasp of the material than they would otherwise have.

#### RECOMMENDATIONS

The paper concludes by recommending three priorities for the coming years:

#### STAY FOCUSED ON REDUCING ACHIEVEMENT GAPS

The technology-enhanced innovations discussed here are meant not just to strengthen teaching and learning overall, but to help reduce the achievement gaps that divide our nation's students by ensuring that all children have access to powerful educational resources that can be customized to meet their learning needs.

More research and development will be required to identify precisely which digital tools will help us close these achievement gaps. But we know these instructional strategies are more likely to succeed than continued attempts to provide one-size-fits-all instruction.

## BUILD PROFESSIONAL CAPACITY TO USE DIGITAL TOOLS EFFECTIVELY

Ultimately, the effectiveness of technology will depend on educator capacity. Technology is not an end in itself, but a tool that can empower people to change the structure and delivery of education.

However, this requires professional development that helps educators not only learn new content and skills, but also rethink their basic ideas about teaching, a process that can be emotionally and intellectually challenging. Technology itself holds significant promise in this area, as online learning, community, and support can play a crucial role in helping teachers build capacity and reconsider their core beliefs about education.

#### INVEST IN RESEARCH AND DEVELOPMENT

To date, researchers have found that digital technologies have dramatic potential to promote deeper learning. However, much work must be done to make those technologies truly practical, affordable, and scalable. This will require greater and more targeted support for research and development than today's piecemeal funding.

The most important priorities are to build, test, and study high-quality teaching tools that promote deeper learning, and to help education stakeholders grasp the value of such tools, identify good ones, and invest in them wisely. This work will be best accomplished by a community of researchers, practitioners, and policymakers from a variety of fields, not by scholars working in isolation.

With investment, we can have the technology infrastructure to implement deeper learning models of education that prepare all students for the very different future they face. Whether we have the commitment and will to actualize such a vision remains to be seen.

#### **ABOUT THE AUTHOR**

**Chris Dede** is the Timothy E. Wirth Professor in Learning Technologies at Harvard's Graduate School of Education. His fields of scholarship include emerging technologies, policy, and leadership. His funded research includes five grants from the National Science Foundation and the Gates Foundation to design and study immersive simulations, transformed social interactions, and online professional development. In 2007, he was honored by Harvard University as an outstanding teacher, and in 2011 he was named a Fellow of the American Educational Research Association. He is current a Visiting Expert at the National Science Foundation.

Chris has served as a member of the National Academy of Sciences Committee on Foundations of Educational and Psychological Assessment and a member of the 2010 National Educational Technology Plan Technical Working Group. His books include Scaling Up Success: Lessons Learned from Technology-based Educational Improvement, Online Professional Development for Teachers: Emerging Models and Methods, and Digital Teaching Platforms.



#### THE ROLE OF DIGITAL TECHNOLOGIES IN DEEP LEARNING Chris Dede

To compete in today's global, knowledge-based, innovation-centered economy, young people must go beyond a high school diploma and acquire not just academic knowledge, but inter- and intrapersonal capacities. That is, they must engage in deeper learning. As schools shift away from traditional education models in favor or providing deeper learning environments, they are required to replace their outdated technology practices and implement a new infrastructure to support student learning. This report explores how partnering deeper learning strategies with effective technology designs allows for greater educational success.

To download the full paper, go to <u>www.jff.org/deeperlearning</u>



## LET'S GET REAL:

#### DEEPER LEARNING AND THE POWER OF THE WORKPLACE

By Nancy Hoffman

#### **EXECUTIVE SUMMARY**

While the phrase "college and career readiness" pervades current policy debates about high school improvement, "career readiness" often seems like an afterthought, tacked on as if to suggest that an academic, college-prep course of study-the real priority of most recent school reforms-will automatically produce better job prospects.

In the United States, we tend to assume that young people should become educated and then go to work, as though the two were entirely separate stages of life. But this dichotomy blinds us to the fact that work itself can be a powerful means of education. Indeed, the workplace is where many young people become most engaged in learning high-level skills and content, insofar as work gives them opportunities to apply academic subject matter to real-world problems.

Moreover, the workplace often pushes adolescents to grow up, challenging them to conduct themselves appropriately, regulate their own behavior, follow difficult assignments through to completion, work in teams, solve unscripted problems, and communicate effectively with colleagues of differing ages and backgrounds.

In short, the workplace is an excellent place for young people to develop the range of academic, interpersonal, and intrapersonal capacities that are referred to, collectively, as "deeper learning."

This paper argues that the current discussion about deeper learning in the nation's high schools ought to be reframed, in order to acknowledge that career readiness isn't just an outcome of the K-12 curriculum but a process-often overlapping with academic studies-through which young people learn deeply and prepare for working life.

## PUTTING THE CAREER IN "COLLEGE AND CAREER READINESS"

#### YOUTH EXPERIENCE IN THE LABOR MARKET

The recent recession had an inordinately heavy impact on the young, especially young people of color, youth from lowincome backgrounds, and youth who have either dropped out of high school or graduated without clear plans for further training or education.

Over the last decade and a half, the youth labor market has plummeted to levels not seen since the end of the Great Depression, and it appears to be recovering slowly, if at all. In 2000, 44 percent of U.S. teens were in the labor market; by 2011, the figure had dropped to 24 percent. And for urban, low-income teens of color, the odds of having a job-any job at all-now stand at roughly 10 percent. Further, among young people lucky enough to find paid employment, work tends to be sporadic and limited to the service economy, with first jobs paying much lower wages than in the past. In 1980, food and personal service categories (e.g., cooks, cashiers, waiters, hair and beauty workers, home care aides) accounted for 15 percent of youth employment; today, they account for 27 percent.

As a result, large numbers of young people-and a majority of those from low-income backgrounds-are unable to land starter jobs, which would have allowed them to gain initial work experience, earn some money, and feel the pride that comes with a paycheck. In the past, it was common for new high school and college graduates to have already had significant exposure to the workplace, its culture, and its demands. But today, growing numbers of students leave school without having any real job experience at all-and the less experience they have, the less likely they are to land a job in the future.

Given that fewer and fewer young people are able to find initial work experience on their own, it has become more important than ever for educators and business leaders to introduce teens to the workplace, help them learn about the range of work options they can pursue, and give them Today, growing numbers of students leave school without having any real job experience at all—and the less experience they have, the less likely they are to land a job in the future.

opportunities to develop work-related skills and knowledge that will allow them to gain a foothold in the labor market. Until school reformers take "career readiness" as seriously as "college readiness," teens will continue to experience leaving school as a sudden shock, rather than a smooth transition.

#### WORK AND THE MATURATION OF ADOLESCENTS

However, providing teenagers with exposure to the workforce isn't just an economic necessity; it also provides a critical opportunity for them to grow up.

In recent years, leading psychologists-Robert Halpern, most prominently-have argued persuasively that the nation's high schools are failing to engage adolescents in ways that respond to their developmental needs. As Halpern points out, many young people find school to be terribly boring, and it is not because boredom comes naturally to teenagers. A wealth of evidence suggests that many apparently disengaged students are, in fact, lively and engaged thinkers in their lives outside of school. Often, students who seem listless and uninterested in math or social studies turn out to be self-taught experts in computer programming, civil war history, music, or some other field of their own choosing, which they pursue with passion and commitment. School may fail to grab them, but they certainly are looking for things to grab onto, and which can help them define themselves as adults.

In order to mature, young people need to participate in activities that take them out of their comfort zones, challenge them, place them among adult workers in authentic settings, and ask them to perform. We can achieve this and better support the transition to working life, Halpern asserts, if schools mix in-school learning with out-of-school, work-based experiences that gradually increase as students advance toward the completion of high school.

#### INITIATING YOUNG PEOPLE INTO WORKING LIFE: THE VIEW FROM THE ALPS

Switzerland provides perhaps the most compelling example of an educational system that thoughtfully integrates academic and work-based learning. Certainly, the U.S. differs from that country in many ways, and it would make little sense for us to try to import the Swiss model. However, we might have something to learn from their efforts to promote deeper learning through exposure to the workplace.

The Swiss Vocational Education and Training (VET) system includes fields such as dance, music, child care, IT, elder care, and engineering, as well as traditional trades, banking, insurance, and advanced manufacturing. Roughly 30 percent of Swiss companies host 16- to 19-year-old apprentices who do everything an entry-level employee would do, under the wing of credentialed company trainers. Students get paid an average monthly starting wage of around \$700, rising to around \$1,200 by their final year.

Young people rotate among three learning sites-the workplace, a training organization that focuses on the given sector, and school-over a three- or four-year apprenticeship period. Learning is highly personalized, and students are encouraged to consider their options for further education or different careers. Further, the system does not deliver narrow occupational training but provides young people with a well-rounded education, combining classroom instruction in academic subjects with carefully supervised participation in the workforce, giving them opportunities to solve real-world problems, interact with adult workers, take on challenging assignments, and reflect on their own progress over time.

In short, the Swiss model amounts to a truly deep learning experience, showing that the classroom and the workplace can complement each other in powerful ways, providing young people with much-needed opportunities to ease into the workforce and transition into adulthood, while also preparing them to go on to higher education, if they choose to do so.

## WORK-BASED DEEPER LEARNING IN THE U.S.: PROBLEMS AND PROMISES

No education system in the U.S. features the length, depth, and specificity of Switzerland's VET. But this country does boast some excellent examples of schools that seamlessly integrate academics and career preparation and that treat the workplace as an important site for deeper learning.

#### EXEMPLARY MODELS

Impressive career education programs include up-to-date vocational high schools and centers, career academies, High Tech High Schools, Project Lead the Way, Big Picture Schools, Cristo Rey schools, and early college schools. Each provides applied learning related to the labor market, from programs linked to industries (e.g., finance, veterinary technology, information technology, and health care), to individualized multiyear mentorships, to an engineering curriculum that starts students on design thinking in the elementary grades. And each provides opportunities for students to engage in problem solving, teamwork, communicating with diverse colleagues, and other aspects of deeper learning.

Systemic statewide approaches are also being developed that aim to provide much larger numbers of students with workplace experiences. For example, Linked Learning aspires to enroll every California high school student in a career/academic interdisciplinary curriculum with pathways into postsecondary education. And the 11 state members of the Pathways to Prosperity Network, directed by Jobs for the Future in collaboration with the Harvard Graduate School of Education, are doing significant work to create career pathways in grades 9 through 14.

Collectively, these models represent a growing movement to rethink the role of career preparation in the high school curriculum and create integrated educational models that engage adolescents in learning advanced academic content through a combination of classroom activities and work-based experiences. Moreover, all of these models understand the workplace to be a powerful site for deeper learning.

#### THE EMPLOYER INTERMEDIARY CHALLENGE

A major challenge in designing work-based learning opportunities is encouraging employers, employer associations, and workforce nonprofits to provide apprenticeships and internships. The larger the number of students, the more difficult it becomes to make workplace experiences available. Further, teachers and school leaders need time and capacity to develop these experiences while attending to their other responsibilities.

Intermediary groups-such as workforce development boards, community foundations, and public sector organizations-can help states and school districts set up programs and broker relationships among high school educators, community colleges, and employers.

#### POLICY IMPLICATIONS

To scale up existing opportunities for work-based deeper learning, federal and state policies should incentivize:

- Employers to take young people into workplaces for meaningful learning experiences
- Educators to implement work-based experiences as a means of learning deeply

 Intermediary organizations to translate between educators and employers and provide the infrastructure that makes collaboration possible

Incentives may involve, among other measures, subsidies, tax credits, training levies, vendor contract requirements, teacher externships, investments in career pathways, expanded learning time, internship credit, state resources for Workforce Investment Boards, and new career education programs based on regional labor market trends. These approaches will require careful attention to principles of educational quality, with an emphasis on deeper learning.

Every young person should have the opportunity to gain the knowledge, skills, and competence needed to obtain meaningful work. This will require a substantial rethinking of American high schools. Learning to work, learning about work, and experiencing a productive workplace–all powerful frames for deeper learning–should be integral to secondary-level education.

#### **ABOUT THE AUTHOR**

**Dr. Nancy Hoffman** is a vice president and senior advisor at Jobs for the Future, a national nonprofit in Boston, focused on improving educational and workforce outcomes for low-income young people and adults. Hoffman is the co-lead of the Pathways to Prosperity State Network, a collaboration between JFF, the Harvard Graduate School of Education, and 11 states focused on ensuring that many more young people complete high school and attain a postsecondary credential with currency in the labor market. Beginning in 2002, Hoffman led JFF's work to develop early college high schools. Hoffman has held teaching and administrative posts at Brown, Temple, Harvard, Fund for the Improvement of Postsecondary Education (FIPSE), Massachusetts Institute of Technology, and elsewhere. She has also served as a consultant for the education policy unit of the Organization for Economic Cooperation and Development (OECD). Her most recent book is *Schooling in the Workplace: How Six of the World's Best Vocational Education Systems Prepare Young People for Jobs and Life*. Hoffman holds a B.A. and Ph.D. in comparative literature from the University of California, Berkeley. She serves on the Massachusetts Board of Higher Education.



#### LET'S GET REAL: DEEPER LEARNING AND THE POWER OF THE WORKPLACE Nancy Hoffman

Educators today assert that "college and career readiness" should be the goal for every high school student, but "career readiness" is too often an empty tagline. What does it mean to be ready for a career? In this paper, Nancy Hoffman argues that, in a period when very few teens have access to jobs, high school experience must incorporate gradual exposure to the workplace. Learning to work and learning about work are major milestones for adolescent social and cognitive development. If deeper learning is the end, then work is a powerful means. The United States needs to make visible the strong models of high schools incorporating work-based learning, and establish policies at the state and federal levels to scale and support them.

To download the full paper, go to <u>www.jff.org/deeperlearning</u>

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CIVIC EDUCATION AND DEEPER LEARNING

By Peter Levine & Kei Kawashima-Ginsberg

#### **EXECUTIVE SUMMARY**

A Nation at Risk, the 1983 report of the National Commission on Excellence in Education, tends to be remembered as a stirring call to boost the rigor of the high school curriculum and provide the American economy with a stronger workforce. Few recall, though, that it made an equally stirring appeal to the civic purposes of education, too:

"Our concern . . . includes the intellectual, moral, and spiritual strengths of our people which knit together the very fabric of our society. . . . For our country to function, citizens must be able to reach some common understandings on complex issues, often on short notice and on the basis of conflicting or incomplete evidence. Education helps form these common understandings."

In the three decades since, policymakers have all but ignored that concern, choosing instead to focus on basic reading and math, testing and accountability, and preparing individuals to compete in the job market. And in the meantime, young people's participation in civic life has languished (judging by their voting patterns, membership in community organizations, and other measures).

However, the most recent wave of school reforms appears to have passed its crest. Today, many Americans are calling upon their schools to spend less time preparing students for standardized tests and more time ensuring that they study a broad range of subjects-and that they study them deeply, with ample opportunities to practice critical thinking, problem solving, collaboration, effective communication, self-directed learning, and the development of an academic mindset.

The turn to deeper learning should go hand in hand with a renewed emphasis on the teaching of civics. Not only does deeper learning have great potential to promote civic outcomes and strengthen our democracy but, at the same time, civic education *exemplifies* deeper learning. When designed and implemented effectively, it provides students with exactly the sorts of challenging, collaborative, and highly engaging experiences that advocates of deeper learning celebrate.

#### CIVIC LEARNING IN CONTEXT: THE PAST AND THE PRESENT

The original rationale for public education in America was civic. Horace Mann, the most influential early proponent of public schools, believed that establishing free universal schooling would create citizens capable of fulfilling their responsibilities as voters and jurors.

By the mid-19th century, civics was well established in American education. Popular courses, including Civics, Problems of Democracy, and American Government, reached a majority of high school students. Students also learned civic skills and habits in extracurricular groups and clubs, such as student governments and school newspapers.

It is not clear that the total amount of classroom time spent on civics has declined since then. However, the curriculum has become more academic and less focused on contemporary problems, as high school social studies increasingly resembles college social sciences, emphasizing

Not only does deeper learning have great potential to promote civic outcomes and strengthening our democracy but, at the same time, civic education exemplifies deeper learning. The curriculum has become more academic and less focused on contemporary problems emphasizing the study of systems, rather than preparation for citizenship.

the study of systems, rather than preparation for citizenship. Although all states have civics standards, and 40 have a standardized social studies test, civic education is not a high priority in the current educational system.

#### EVOLVING CONTEXTS FOR CIVIC EDUCATION

Two current trends in American life-the growth of digital technology and the polarization of political discourse-have important implications for any new effort to emphasize civic education.

#### Civic Life Is Moving Online

Both politics and education are becoming increasingly mediated by digital technology. And while some might worry that the Internet is having a negative impact on civic life, distracting citizens from issues of public importance, the evidence suggests a more complicated dynamic. In fact, many Americans have become savvy in using the Web as a platform for political organizing and advocacy. Further, according to recent data from the Pew Research Center's Digital Civic Engagement project, young people who discuss political and current affairs online are far more likely to participate in other forms of civic engagement.

But even if many young people already use technology for civic and political purposes, schools still need to teach them to be effective and responsible digital citizens, both in and outside of school. For example, students should learn to distinguish reliable from unreliable online information, and they should become aware of the ways in which civic participation may differ in online and offline contexts. Further, there remains a significant class divide in the use of social media for civic purposes, suggesting that it may be important for schools to teach their least advantaged students how to take full advantage of the new media.

#### **Politics Is Polarized**

Americans are more politically polarized than they have been in decades, leading many to fear that if they introduce controversial topics in the classroom, the result will be unmanageable conflict among students and, perhaps, angry complaints from parents. Yet, at a time of such divisiveness, it is arguably more important than ever that schools teach civil deliberation and debate. Discussing controversial issues boosts students' knowledge and interest and has powerful effects on their understanding of logical argumentation and persuasion, particularly for children who come from homes where there is not much political discussion. While many parents and educators may be wary of classroom debates, and of the possibility that teachers will propagandize, they should be willing to tolerate occasional conflicts in order to preserve the principle that it is important to talk about pressing social and political issues in school. By the time they graduate, every student should have learned to listen respectfully to competing arguments, to consider all sides of complicated debates, and to analyze the logical premises and reasoning that support competing positions on matters of public importance.

#### DEEPER LEARNING SUPPORTS CIVIC EDUCATION, AND CIVIC EDUCATION SUPPORTS DEEPER LEARNING

Some have proposed that in order to improve civic learning, states should require high school students to take a civics class and/or pass the U.S. citizenship test. But in fact, almost every state already does require a civics class, and many students already take state civics tests that are more demanding than the naturalization exam. Neither of those approaches have an impressive track record.

We argue instead that the best way to strengthen civic learning is to focus on improving the instruction that students receive, with an emphasis on precisely the kinds of teaching that lead to deeper learning. When taught effectively, civics involves not just the study of American history and its laws (academic content) but also the analysis of and deliberation about complex social issues (critical thinking and effective communication), the taking or simulation of real-world actions by a group of students (problem-solving and collaboration), and careful reflection on what was accomplished and its efficacy (metacognition). If they fail to provide such deeper learning experiences, then required civics classes and tests have little impact.

At present, some students are lucky enough to participate in high-quality service learning programs, collaborative research projects, student-produced newspapers, classroom debates, mock trials, model legislatures, and the like. But such opportunities are rare, unevenly distributed, and most likely to be offered to college-bound students from affluent, majority white communities. Evidence shows that low-income students and students of color have fewer experiential civic learning opportunities and, perhaps not coincidentally, performed at a lower level on the 2010 NAEP Civics Assessment.

#### TOWARD A SHARED AGENDA FOR DEEPER CIVIC LEARNING

Civic education itself has long been divided into competing camps. Some advocates are concerned primarily with ensuring that young people understand the history and structure of the U.S. government–including its core documents and legal principles–while others give higher priority to empowering young people to participate in civic life, with an emphasis on civic action at the local level. The former tend to argue that our political system deserves reverence, and that instruction should foster a sense of patriotism and unity, while the latter tend to take a more a critical stance toward the existing political system, favoring instruction that celebrates diversity, localism, and active engagement in community issues.

But while advocates may debate the proper content and emphasis of civic education, they also share a lot of common ground. In 2003, for example, 50 politically diverse members of the Campaign for the Civic Mission of Schools were able to agree upon a core set of civic education practices, supported by expert opinion and existing research:

- 1. Instruction in government, history, law, and democracy.
- Discussion of current local, national, and international issues and events.
- **3.** Service learning linked to the formal curriculum and classroom instruction.
- Extracurricular activities that provide opportunities for young people to get involved in their schools or communities.
- 5. Student participation in school governance.
- 6. Simulations of democratic processes and procedures.

Note that these practices are designed to help young people develop a sophisticated understanding of social studies and civics content, while also helping them develop into competent civic actors who possess the range of skills that characterize deeper learning.

Further, civic learning can easily be integrated with other academic content areas-for example, students can discuss the theme of injustice in a literary work in English, explore debates about the environment in biology, or perform a statistical analysis of public health issues in math. When students have a chance to apply what they learn in the classroom to a real-world setting-through service learning, community projects, or simulations-they are asked to think critically, strategically, and collaboratively; confront unexpected circumstances and complex problems; communicate effectively with people who have different values, perspectives, and backgrounds; and reflect deeply on their own learning. These approaches can take better advantage of advanced technologies, should be assessed in more authentic ways, and can pervade the entire high school curriculum. In short, the relationship works both ways: Deeper learning is essential to high-quality civic education, and the study of civic issues (whether in social studies or other subjects) can be a powerful means of teaching the academic, interpersonal, and intrapersonal capacities associated with deeper learning, which contribute to success in college, the workplace, *and* civic life.

#### **ABOUT THE AUTHORS**

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#### **CIVIC EDUCATION AND DEEPER LEARNING** Peter Levine & Kei Kawashima-Ginsberg

This report proposes that the turn toward deeper learning in education reform should go hand in hand with a renewed emphasis on high-quality civics education. Not only does deeper learning have great potential to promote civic outcomes and strengthen our democracy but, at the same time, civic education exemplifies deeper learning, in that it provides students with challenging, collaborative, and engaging experiences. The report addresses evolving contexts for civics education and suggests a shared agenda, calling for new approaches in teaching civics that involve deeper and more collaborative learning, take better advantage of advanced technologies, are assessed in more authentic ways, and pervade the entire high school curriculum.

To download the full paper, go to <u>www.jff.org/deeperlearning</u>

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## DEEPER LEARNING FOR STUDENTS WITH DISABILITIES

By Sharon Vaughn, Louis Danielson, Rebecca Zumeta, & Lynn Holdheide

#### **EXECUTIVE SUMMARY**

More than 6 million students with disabilities–13 percent of the total student population–attend elementary and secondary schools across the United States. The majority spend most of the school day in general education classes. With the proper supports in place, these students are capable of meeting the goals described by advocates of deeper learning: mastering high-level academic content, thinking critically, communicating effectively, working collaboratively, solving complex problems, and learning how to learn.

#### ACCESS, EQUITY, AND OUTCOMES

By law, all children with disabilities have access to a free and appropriate public education. However, despite the policy reforms of the past two decades that address access, support, and accountability, and despite improved knowledge in the field of special education, outcomes for students with disabilities have remained virtually unchanged.

In response, the U.S. Department of Education's Office of Special Education Programs now requires states to detail precise steps they will take to improve results for students with disabilities. This new requirement could open the door for educators to implement proven practices for providing deeper learning opportunities for these students. However, school districts must overcome many existing challenges to ensure that students with disabilities have real opportunities to learn deeply. These include lingering prejudices against this population; insufficient organizational flexibility; poorly designed student assessment systems; and teacher evaluation practices that miss the nuances of effective instruction for students with disabilities. However, research shows that when schools make use of readily available teaching strategies and supports, even students who face quite serious challenges can develop the full range of knowledge and skills associated with deeper learning. Furthermore, all students, including those with and without disabilities, stand to benefit from these approaches.

# EFFECTIVE INSTRUCTION FOR STUDENTS WITH DISABILITIES

For all of the recent efforts to improve services for students with disabilities, perhaps the most important piece of the puzzle-educators' capacity to provide those services-has not been adequately addressed. Unless teachers actually know how to provide effective instruction to students with disabilities, and schools create the conditions under which such instruction can take place, outcomes will likely remain unchanged.

Because individuals identified as students with disabilities vary greatly in their skills, talents, and interests, the professional repertoire of every classroom teacher can and should include a number of specific instructional approaches-designed for students with disabilities but often effective for students of all kinds-that will allow them

School districts must overcome many existing challenges to ensure that students with disabilities have real opportunities to learn deeply.

# While these supports are especially helpful to students with disabilities, they tend to benefit all learners.

to respond to most learning needs, while leaving them time to provide more intensive support as appropriate. These strategies do not create an undue burden on teachers nor require teachers to give students large amounts of individual attention.

## TEACHING CORE CONCEPTS IN THE CONTENT AREAS

Subject-area instruction can be organized in ways that allow students to access meaningful content, grasp key concepts and vocabulary, and participate fully in highlevel discussions and projects, even though they may struggle to read and comprehend the material on their own. Instructional strategies include identifying a subject area's big ideas and key concepts and, over time, explicitly connecting them to specific examples and cases; assisting students in learning and using the academic vocabulary of the discipline; and having students work independently at first, to demonstrate comprehension, and then with team members to build, correct, and extend learning about content-area issues.

While these are common teaching strategies, they are particularly important for students with disabilities, for whom research suggests it is critically important that teachers provide these supports deliberately, explicitly, and systematically. While these supports are especially helpful to students with disabilities, they tend to benefit all learners. This approach requires no extraordinary effort or extensive professional development for general education teachers.

#### SUPPORTING COGNITIVE PROCESSING

Many students with and without disabilities struggle with some aspect of cognitive processing, such as memory, attention, and learning strategies. Students who struggle with cognitive processing tend to trail behind their peers in measures of academic learning and motivation. Using systematic and explicit instructional routines that are integrated with the teaching of specific academic content and skills can address executive functioning and selfregulation challenges.

When taught to use self-regulatory practices, such as problem solving, defining learning goals, and monitoring their own progress, students significantly improve their school performance and self-efficacy. These students come to recognize that their concrete actions can positively affect their learning and performance.

#### INTENSIFYING INSTRUCTION

Regular classroom teachers should also be prepared to provide more intensive support to students who need it. These methods leverage school resources more effectively rather than rely on extra efforts of teachers. Combining direct instruction with efforts to coach students in the use of research-based learning strategies is a relatively low-cost way to intensify instruction.

Increasing instructional time has been shown to be one of the most effective ways to help such students learn advanced content and skills. A more expensive but equally important consideration is the reduction of teacherstudent ratios. Small group size can be a powerful factor in improving outcomes for students with disabilities.

#### DIFFERENTIATING WHEN APPROPRIATE

Students with several and persistent learning needs who show little or no improvement, despite teachers' efforts to intensify instruction or the use of other proven practices, often benefit from data-based individualization (DBI). This requires careful integration of assessment and intervention and can result in referral to specialized staff and/or instructional aids. DBI carefully determines which students need support and what types of support they need. DBI can be labor intensive and costly, but when implemented well it leads to improved student outcomes.

## RECOMMENDATIONS FOR INTEGRATING DEEPER LEARNING

Many educational practices that promote deeper learning for students with disabilities can be effectively implemented at little to no extra cost, requiring only that classroom teachers learn and apply them thoughtfully and consistently. With these considerations in mind, we offer a number of overarching recommendations for local educators and policymakers at the local and state levels:

- Make it known to leaders and members of the educational community that empirical research strongly suggests that struggling learners can-when given appropriate instructional strategies and tiered levels of instructional and behavioral support-succeed in learning deeply and meeting rigorous achievement standards.
- > Make sure that *all* students have access to high-quality instruction in the core content areas.
- Make sure that general education teachers' professional standards, licensure requirements, and job descriptions assign them clear responsibility to provide effective instruction to students with disabilities.
- Ensure that teachers' pre- and in-service programs equip them to provide interventions that can help students with disabilities to access deeper learning.
- Ensure that state policies require schools to provide tiered levels of instructional and behavioral supports.

- Ensure that state policies create incentives for all teachers to share responsibility for providing effective instruction and supports to students with disabilities.
- Ensure that state and local educator evaluation systems reward-or at least do not penalize-teachers who use appropriate, evidence-based instructional strategies when working with students who have disabilities.
- Ensure that states implement college and career readiness assessments that address the full range of deeper learning competencies and include accommodations that enable students with disabilities to show what they know and can do.

Students with disabilities have the potential to succeed in college, careers, and civic life, and integrating researchbased recommendations can pave the way, with the added bonus of benefiting *all* students.

#### **ABOUT THE AUTHORS**

**Sharon Vaughn** is H.E. Hartfelder/Southland Corp Regents chair and executive director of The Meadows Center for Preventing Educational Risk at the University of Texas College of Education. She is the author of numerous books and research articles that address the reading and social outcomes of students with learning difficulties. She has served as the Editor-in-Chief of the *Journal of Learning Disabilities and the Co-Editor of Learning Disabilities Research and Practice*, and she is the recipient of the American Educational Research Association (AERA) Special Interest Group (SIG), distinguished researcher award and The University of Texas distinguished faculty award.

**Louis Danielson** is a managing director at the American Institutes for Research (AIR), and has been involved in programs that improve results for students with disabilities for over three decades. Until recently, he held leadership roles in the U.S. Department of Education's Office for Special Education Programs and was responsible for the Individuals with Disabilities Education Act (IDEA) national activities programs. A frequent contributor to professional journals, Dr. Danielson has published extensively and is a frequent speaker at national and international conferences and events focusing on special education.

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**Lynn Holdheide** is a senior technical assistance consultant for the American Institute for Research (AIR), with expertise in response to intervention, inclusive services, and the preparation of teachers to educate students with at-risk characteristics and disabilities. Previously, she worked at Vanderbilt University's Teacher Quality Center, where she spearheaded efforts to address the pressing challenges in evaluating teachers of students with special needs. She has been a special education teacher, and she served for nine years as a consultant to the Indiana Department of Education's Division of Exceptional Learners.



By Sharon Vaughn, Louis Danielson, Rebecca Zumeta, and Lynn Holdho

#### DEEPER LEARNING FOR STUDENTS WITH DISABILITIES Sharon Vaughn, Louis Danielson, Rebecca Zumeta, & Lynn Holdheide

The U.S. Department of Education's Office of Special Education Programs now requires states to fully disclose the precise steps they will take to ensure better outcomes for students with disabilities. This new requirement can aid educators in implementing effective practices for providing deeper learning opportunities for these students. With the proper supports in place, such as research-based instruction that encourages supportive teaching practices, students with disabilities can meet the goals defined by advocates of deeper learning. These evidence-based instructional practices have the added bonus of benefiting *all* students, with *and* without disabilities.

To download the full paper, go to <u>www.jff.org/deeperlearning</u>


#### EQUAL OPPORTUNITY FOR DEEPER LEARNING

By Pedro Noguera, Linda Darling-Hammond, & Diane Friedlaender

#### **EXECUTIVE SUMMARY**

Out of concern that the nation's schools-particularly those working with traditionally underserved populations-are not adequately preparing all students to succeed in college and careers, education policymakers have launched a series of major reform efforts in recent years. Most prominent among these are two initiatives that call for fundamental changes in the areas of curriculum and assessment: the Common Core State Standards and new common assessments that measure college and career readiness.

In the face of these changes, which call for a shift to deeper learning, many schools will need to transform their teaching methods, organizational systems, and approaches to leadership. When it comes to creating a rich learning environment, schools serving low-income students and students of color tend to have the furthest distance to travel. Many have struggled to maintain a broad curriculum and felt forced to focus on test preparation in the face of budget cuts, high-stakes exams, and increased segregation of students on the basis of race and socioeconomic status. Successful implementation of these major new policy initiatives will thus need to overcome inequities in funding, learning opportunities, and learning conditions that are pervasive in the American educational system and that contribute to the persistence of the so-called "achievement gap."

This report addresses the issue of equity in a crucial dimension: teaching and learning. We argue that to ensure equity in access to deeper learning, practices and policies must address the context for education both outside and inside of schools. To enable low-income students to learn deeply and successfully, schools that serve them must offer a high-quality instructional experience and the wraparound services that can help ameliorate the stressful conditions they experience in their communities.

#### RESOURCE EQUITY FOR DEEPER LEARNING

In this paper, we define equity as the policies and practices that ensure that every student has access to an education focused on *meaningful learning*, taught by *competent* and *caring educators* who are able to attend to the student's social and academic needs, and supported by *adequate resources* that provide the materials and conditions for effective learning.

As numerous studies have shown, family income and parental education are two of the strongest predictors of student achievement and educational attainment. Children in schools where poverty is concentrated underperform their counterparts in more economically mixed settings. Poverty also limits the amount and quality of academic and social support students receive outside of school. In addition, the current high-stakes testing environment has inadvertently reinforced long-standing tracking systems that deny students of color and low-income students access to a thinking curriculum, instead relegating them to remedial, rote-oriented, and often scripted courses of study.

Equity-based reforms in teaching and learning will thus be central to expanding access to deeper learning. These reforms must pay attention to the ways in which poverty negatively influences academic outcomes, ensure that our schools provide the academic and social supports that enable students to thrive, and address inequalities in public spending on education.

## WHAT EDUCATORS NEED TO KNOW TO ENABLE DEEPER LEARNING

Studies consistently find that highly effective teachers support the process of meaningful learning by

 Creating ambitious and meaningful tasks that reflect how knowledge is used in the field

# When it comes to creating a rich learning environment, schools serving low-income students and students of color tend to have the furthest distance to travel.

- Engaging students in active learning, so that they apply and test what they know
- Drawing connections to students' prior knowledge and experiences
- Diagnosing student understanding in order to scaffold the learning process step by step
- Assessing student learning continuously and adapting teaching to student needs
- Providing clear standards, constant feedback, and opportunities for revising work
- Encouraging strategic and metacognitive thinking so that students can learn to evaluate and guide their own learning

In recent years, educational policymaking has diverged from contemporary knowledge about child development. As the focus on holding schools accountable for student achievement (as measured by performance on standardized tests) has intensified, policymakers have paid less heed to research showing that children develop at different rates and that development is influenced by the interaction between the individual and the social environment.

Schools and academic programs that are committed to deeper learning and equity must resist the tendency to teach all students in exactly the same way, or to make judgments about their ability based upon a few arbitrary measures of progress. Rather, our understanding of learning and development makes it clear that to really bring deeper learning to all, we need a student-centered approach.

#### SCHOOLS THAT ENACT DEEPER LEARNING

Schools that engage low-income and minority students in deeper learning have stronger academic outcomes, better attendance and student behavior, lower dropout rates, higher graduation rates, and higher rates of college attendance and perseverance than comparison schools serving similar students. These schools, which operationalize simultaneous commitments to equity and deeper learning, provide:

- Authentic instruction and assessment in the form of project-based learning, performance-based assessment, collaborative learning, and connections to the world beyond school
- Personalized supports for learning in the form of advisory systems, differentiated instruction, and support for social services and social-emotional learning along with skills
- Supports for educator learning through opportunities for reflection, collaboration, and leadership, as well as professional development.

Many of these schools also have developed personalized systems of in-school support for students, along with access to health care, mental health services, and social supports.

#### INQUIRY-BASED PEDAGOGY AND GROUP LEARNING

Inquiry-based pedagogy and group learning prepare students for college, career, and life by promoting transferable skills such as critical thinking, problem solving, collaboration, and communication. To help students develop these skills, teachers must create opportunities for them to engage actively with course content, grapple with realworld problems, explore core questions, develop and test hypotheses, make generalizations, and communicate with audiences beyond the classroom.

#### MASTERY AND PERFORMANCE-BASED ASSESSMENTS

A student-centered deeper learning approach uses performance assessments that diagnose student learning needs, promote skill acquisition, and move students toward mastery. These assessments reflect the kinds of literacy, mathematics, and analytical tasks found in higher education and the work world. They can include Socratic seminars, exhibitions, projects, and portfolios, which encourage learners to draw on multiple kinds of knowledge in order to demonstrate higher-order and integrated learning. A focus on mastery is fundamentally student centered, for it ensures that students acquire the essential skills they will need in order to acquire more complex skills and abilities.

#### PERSONALIZED LEARNING PRACTICES

To achieve high levels of success for all students, schools must accompany high expectations with the academic, social, and emotional supports students need to span any gaps between those expectations and their own preparation levels. This is especially important for low-income students and students of color, who often enter high school underprepared for a college preparatory curriculum and lacking confidence in their own abilities.

## Student support through differentiated instructional practices

Student-centered schools emphasize the use of varied instructional strategies that accommodate the wide range of skills young people bring to the classroom. They often provide differentiated materials, extra tutoring in and out of class, and other kinds of individualized support, including the creation of an explicit, personalized learning plan for every student.

## Advisory programs: The core support for personalized learning

Advisory programs, in which groups of students meet daily with a teacher, provide a structure to facilitate deep and lasting relationships between teachers and students. Within advisory, teachers focus much of their attention on building a safe and caring community, which provides crucial peer support. Advisors themselves play a critical role in advocating for students, connecting with their families, and ensuring they do not slip through the cracks.

#### Support for students' social-emotional development

Some obstacles to the success of low-income students and students of color are not academic but psychological, consequences of facing the daily injustices of poverty and racism. Student-centered schools tend to make proactive efforts to help students learn to manage their emotions, develop an academic mindset, interact with others productively, and persist through obstacles. In many schools, advisory becomes a key setting for such socialemotional learning.

#### PRACTICES THAT SUPPORT EDUCATORS

Creating and sustaining schools committed to deeper learning requires a substantial investment in staff capacity, which can include efforts to: create a shared school-wide vision; support grade-level teacher collaboration; build teacher expertise in pedagogy, content, curriculum, and assessment; provide opportunities for staff to reflect on their practice; and foster district and community partnerships.

#### **POLICY IMPLICATIONS**

When educators and policymakers align educational practices with what they know about child development and learning, and when they adopt strategies to mitigate adverse conditions in impoverished communities, they can significantly enhance the ability of schools to promote equity and deeper learning. Three areas of policy support will substantially influence the ability of all schools to engage in student-centered practices that support deeper learning:

- Funding policies that ensure adequate resources are provided and are used productively
- Human capital policies that ensure highly effective educators are available to a broad range of schools so they can enact student-centered practices that support deeper learning

Instruction and assessment policies that influence what is taught and how student learning is measured

## A POLICY AGENDA FOR EQUITABLE ACCESS TO DEEPER LEARNING

#### **Funding Policies**

- 1. Adequate and flexible K-12 funding based on pupil needs
- Incentives to develop new school designs that can support deeper learning
- Resources for wraparound services that support student success

#### **Human Capital Policies**

- Educator standards that focus preparation programs on how to engage students in deeper learning
- Supports for educator preparation and induction that enable strong pedagogical skills
- 6. Time for collaboration
- 7. Meaningful professional development and evaluation

#### Instruction and Assessment Policies

- 8. More supports and fewer constraints for instruction so that schools can innovate
- **9.** New systems of assessment and accountability that support deeper learning
- **10.** Systemic learning that enables educators, schools, and agencies to learn from one another

#### **ABOUT THE AUTHORS**

**Pedro Noguera** is the Peter L. Agnew Professor of Education at New York University. Dr. Noguera is a sociologist whose scholarship and research focuses on how schools are influenced by social and economic conditions and demographic trends. He holds faculty appointments in the departments of Teaching and Learning and Humanities and Social Sciences at the Steinhardt School of Culture, Education and Development. He also serves as a faculty member in NYU's Department of Sociology and is the Executive Director of the Metropolitan Center for Research on Equity and the Transformation of Schools. From 2008-2011, he was an appointee of the Governor of New York to the State University of New York (SUNY) Board of Trustees. In 2014, he was elected to the National Academy of Education.

**Linda Darling-Hammond** is Charles E. Ducommun Professor of Education at Stanford University. She is faculty director of the Stanford Center for Opportunity Policy in Education and former president of the American Educational Research Association. Her research and policy work focus on educational and teaching equality and school reform. In 2008, she served as director of President Obama's education policy transition team. Her book, *The Flat World and Education: How America's Commitment to Equity will Determine our Future*, received the coveted Grawemeyer Award in 2012. Her most recent book, *Beyond the Bubble Test: How Performance Assessments Support 21st Century Learning* was released in 2014.

**Diane Friedlaender** is a senior associate at the Stanford Center for Opportunity Policy in Education, where she oversees research and professional development efforts. The studies she has led at SCOPE are, High Schools for Equity: Policy Supports for Student Learning in Low-Income Communities of Color, and Windows on Conversions, a multimedia exploration of redesign at four comprehensive high schools. She previously taught sociological and multicultural foundations in education and has also conducted research on school reform models, youth intergroup relations and youth development. She earned her BA from UC San Diego and PhD in Education Policy from the University of California, Los Angeles (UCLA).



#### EQUAL OPPORTUNITY FOR DEEPER LEARNING Pedro Noguera, Linda Darling-Hammond, & Diane Friedlaender

The quality of instruction for low-income students and students of color is increasingly becoming a concern in the United States. This report, part of the Students at the Center Deeper Learning Research Series, calls for fundamental changes in curriculum, assessment, and policy to ensure equity among students regardless of socioeconomic status. Access to a more rigorous curriculum for underserved students can bridge gaps by equipping students with the deeper learning skills they need to be college ready. The report proposes that implementing student-centered practices throughout school systems can provide all students with continuous opportunities to practice 21st-century skills through high-quality instruction and deeper learning.

To download the full paper, go to www.jff.org/deeperlearning

**DEEPER LEARNING RESEARCH SERIES** | HOW SCHOOL DISTRICTS CAN SUPPORT DEEPER LEARNING: THE NEED FOR PERFORMANCE ALIGNMENT

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#### HOW SCHOOL DISTRICTS CAN SUPPORT DEEPER LEARNING: THE NEED FOR PERFORMANCE ALIGNMENT

By Meredith I. Honig & Lydia R. Rainey

#### **EXECUTIVE SUMMARY**

School district leaders nationwide aspire to help their schools become vibrant places for learningwhere students have meaningful academic opportunities *and* develop critical thinking and problemsolving skills, the ability to communicate effectively, and other deeper learning capacities that are essential to success in later life. Historically, though, school district central offices have been ill equipped to support such ambitious goals.

However, a new wave of research suggests that central offices have a key role to play in creating the conditions that make deeper learning possible. Specifically, the authors call upon district leaders to embrace what they call "performance alignment," a continuous effort to ensure that every part of the district is on the same page, actively supporting teachers and principals as they work with students.

#### DEEPER LEARNING AND ITS CONNECTION TO CENTRAL OFFICES

For at least the past two decades-from Goals 2000 and No Child Left Behind to the Common Core-federal and state policymakers have called upon educators to raise academic standards and help all students to reach them, in order to ensure that they graduate from high school ready for college and careers. Numerous researchers have found that within school systems, it is teachers and principals who tend to have the most, and most direct, impact on students' progress toward meeting such standards. But fairly little is known about the contributions that district leaders and central office staff can and must make in order to make it possible for teachers and principals to be effective.

Little research or policy attention on central offices: In past decades, district central offices appeared mainly in the background of studies that focused on schools, and mainly as impediments to school improvement. More recently, attention to districts has increased somewhat, but the role of central offices also has been largely absent from policy education reform. Many foundations and state and federal policymakers have essentially forgotten about the critical role of central offices. Limited central office support for teaching and learning:

History is partly to blame for the lack of attention by central offices to improving teaching and learning. From the dawning of public schools in the United States, the central office's role focused mainly on record-keeping and compliance to state and federal laws; district staff rarely saw their work as having much to do with teaching and learning. Thus, when central offices were charged with helping to oversee and implementing standards-based reforms and other efforts to improve classroom teaching in the 1990s, they were a poor fit for the job.

Why central offices struggle to support improvements in teaching and learning: When district leaders try to shift their roles to support ambitious teaching and learning, the misalignment of central office resources, data, and other systems can make change arduous.

#### WHY IS THIS CHANGE SO HARD?

Competition and lack of coordination within central offices can impede their support for teaching and learning improvement. For example, the authors describe one district that provided its teachers with state-of-theart professional development in mathematics for many years, helping raise test scores. But in order to provide this support, the central office used up well over half of the days available for teacher training and most of the district's allotment for substitute teachers. This left few resources for professional development in other subjects, and achievement declined in those areas.

## Many foundations and state and federal policymakers have essentially forgotten about the critical role of central offices.

#### There is a lack of data to inform the use of scarce

**professional development resources.** The authors describe another district that initiated a major effort to provide professional development for teachers in schools identified, based on students' test scores, as having the greatest needs. But some of the targeted schools were already participating in a separate initiative to bring stronger teachers into those schools, and they had already recruited on-site teacher leaders to provide enhanced professional development opportunities. As a result, the district's efforts were redundant and not particularly helpful. With better data on local needs, resources could have been used much more effectively.

### The hiring and placement of personnel in many districts does not support improved teaching and learning.

Human resources departments tend to provide only limited screening of teaching candidates before passing them along to principals. As a result, principals must often spend enormous amounts of time reviewing dozens of candidates for each position, conducting interviews, and struggling to identify those whose instructional strategies and experiences are most aligned with deeper learning.

Central office staff who supervise principals rarely provide them with the kinds of support that can help them lead for instructional improvement. In many districts, supervisors devote much of their time to monitoring principals' compliance with central office directives. Often, they are also called upon to fill in for other parts of the office, serving an all-purpose district role that leaves them with little time to mentor and supervise local principals.

#### HOW CENTRAL OFFICES CAN SUPPORT SYSTEMWIDE DEEPER LEARNING

The authors have studied a number of districts that have confronted the mismatch between the goals of deeper learning and the limitations of central office staff capacity and systems. These districts are taking steps to ensure that all parts of their daily work-particularly those related to human resources, curriculum and instruction, and principal supervision, but sometimes involving administrative functions such as payroll processing and transportationmeaningfully supports principals and teachers' efforts to help all students reach ambitious academic and personal goals.

The authors identify three main elements common in districts pursuing performance alignment:

**Define high-quality teaching and principal and teacher leadership.** Districts that align their work to performance make their goals clear and mobilize their resources appropriately. At the school level, clear and explicit definitions of strong performance set the stage for teachers and principals to develop a shared understanding of the kind of teaching they aim to develop and how principals can support it.

#### Guiding questions for district leaders:

- > What would the office look like if it were truly designed to support instructional leadership, high-quality teaching, and-ultimately-deeper learning?
- Are staff engaged in work that is not in service of such results?
- > Beyond simply helping them do their current work more efficiently, what can be done to engage teachers in the right work?

Ensure that principal supervisors are truly focused on supporting principals' instructional leadership growth. To become better instructional leaders, principals often need intensive and personalized support from district supervisors. Viewing principal supervisors as an important but largely untapped resource, districts that pursue performance alignment take deliberate steps to reduce the time supervisors spend on operational and regulatory functions, so that they can shift their focus to providing direct support to principals. Ensure that all district staff members focus their time and other resources on activities that support schools' pursuit of deeper learning. It is particularly important that district leaders identify conflicts within and among parts of the central office, encouraging staff to break out of long-standing siloes and find ways to bring their work into alignment. For example, if HR systems make it difficult or impossible to reassign or remove administrators, then supervisors may end up devoting all of their time to trying to help a handful of ineffective principals, leaving them no time to support the rest. And if supervisors neglect to mentor new principals, then HR will soon be faced with a slew of openings to fill. In short, each part of the district must recognize how its work makes it possible for the others to function effectively.

#### CONCLUSION

Strong, coordinated support from school districts' central offices is essential to realize deeper learning for all students. This goes well beyond shifting organizational charts-it should reach into the daily work of all central office staff members and engage them in redesigning their roles.

#### **Recommendations include:**

- District and state leaders-and policymakers and foundation leaders-must recognize the urgent need to support major improvements in central offices. Because aligning for performance relies so heavily on remaking the day-to-day work of the central office, district leaders should invest in building the capacity of their own staff, rethinking staff assignments, and redesigning outdated systems and administrative roles.
- Collect and use the right data: New data systems can help by capturing and displaying information well beyond test scores, allowing central office staff to better understand the quality of teaching, learning, and

principal leadership in their schools, and to see how they might align their work to support improvement.

- Address teaching and learning across the subject areas: As districts make decisions about professional development for schools, they shouldn't assume that each academic subject area requires its own distinct services, each one funded at the same level. Rather, they should consider working collaboratively, making joint decisions as to where professional development needs are greatest, and which services can be provided across departments and schools.
- Build bridges within the central office-especially between curriculum and instruction and human resources: In districts aligning to performance, C&I and HR leaders collaborate to ensure that professional development aligns with the placement of teacher and principal candidates. C&I and HR leaders can also eliminate or streamline existing tasks to maximize the time staff spend on supporting better teaching and learning.
- Search out additional opportunities for alignment: District leaders should consider the ways in which every department-even those with less obvious connections to instruction, such as facilities and transportation-can contribute to teachers and principals' efforts to promote deeper learning. At times, effective instruction and principal supervision may depend on the bus driver, the payroll staff, or the maintenance crew.

#### **ABOUT THE AUTHORS**

**Meredith I. Honig** is an associate professor of policy, organizations, and leadership and director of the District Leadership Design Lab (DL2) at the University of Washington, Seattle. She founded DL2 in 2013 to help improve the quality of knowledge and support available to school district central office leaders across the country interested in pursuing major performance improvements. Her publications on central office leadership and change have appeared in various publications including the *American Educational Research Journal and The School Administrator*.

**Lydia R. Rainey** is a research director at the District Leadership Design Lab (DL2) at the University of Washington, Seattle where she leads DL2's knowledge-building efforts related to district central office performance improvement. For over ten years, Lydia has participated in numerous studies of how school systems, including school districts and charter management organizations, design and implement policies to improve their performance. She holds a PhD in Education Policy and Leadership, an MPA in Social Policy and Education, and a BA in Political Economy, all from the University of Washington.



HOW SCHOOL DISTRICTS CAN SUPPORT DEEPER LEARNING: THE NEED FOR PERFORMANCE ALIGNMENT Meredith I. Honig & Lydia R. Rainey

School district leaders nationwide aspire to help their schools become vibrant places for learning-where students have meaningful academic opportunities *and* develop critical thinking and problem-solving skills. Historically, though, school district central offices have been ill-equipped to support such ambitious goals. A new wave of research suggests that central offices have a key role to play in creating the conditions that make deeper learning possible, and they can do so by making deliberate efforts to align the work of each and every part of the school system to a set of common priorities.

To download the full paper, go to <u>www.jff.org/deeperlearning</u>



## THE WHY, WHAT, WHERE, AND HOW OF DEEPER LEARNING IN AMERICAN SECONDARY SCHOOLS

By Jal Mehta & Sarah Fine

#### **EXECUTIVE SUMMARY**

Calls to improve the nation's middle and high schools are nothing new. However, in recent years they have grown louder than ever before, and they have taken on a distinct new timbre, as well. For growing numbers of advocates, the imperative is not just to help much greater numbers of students to succeed but to help them learn in *deeper*, more sophisticated ways than in the past.

A large body of evidence suggests that the existing education system falls short of preparing most students to successfully navigate the demands of contemporary life. Today's adults require far more than the basic academic knowledge and skills that have dominated classroom instruction for decades. They must be able to tackle openended problems in critical, creative, and collaborative ways and to quickly learn new skills as job markets change. But high schools, in particular, tend to ask only the most capable students to engage in ambitious thinking; students in lower tracks and in high-poverty schools are the least challenged.

This paper argues that the current determination to move beyond the basics is more than just another swing of the ideological pendulum. It is fueled by discontent with the No Child Left Behind accountability movement and its emphasis on low-level reading and math tests; the recognition that students from all backgrounds are capable of engaging in critical and creative thinking; and the widespread adoption of the Common Core State Standards, which, despite some controversy, places an unprecedented emphasis on higherorder skills. Most of all, though, the movement to promote deeper learning is borne out of the understanding that there is simply no going back to the 20<sup>th</sup> century. Given today's economic, technological, and cultural realities, it is no longer an option to provide most–or any–students with low-level instruction in reading, 'riting, and 'rithmetic.

#### **IDENTIFYING DEEPER LEARNING**

There is no consensus on exactly how to define deeper learning. For example, it has often been described as the integration of academic, inter-, and intrapersonal skills and knowledge. Recent research findings strongly suggest that in order to succeed in college, careers, and all aspects of adult life, young people require more than just a command of academic content. They also need to be able to solve complex real-world problems, collaborate, communicate effectively, monitor and direct their own learning, and develop an academic mindset.

Among many cognitive psychologists, however, deep learning-or what they might call *learning for understanding*-refers to the ability to *transfer* knowledge The idea is that knowledge becomes deeper when one can use it not only to address a problem in the context in which it has been taught, but also to understand or explain something in a different but related context. Rather than seeing isolated facts, deep learners see patterns and connections because they understand the underlying structures of what they're exploring.

The authors of this paper suggest that deeper learning requires the ability to transfer knowledge, and more. It often emerges at the intersection of mastery (knowledge of substantive content, including the ability to transfer), *identity* (driven by relevance to the learner), and *creativity* (the ability to act or make something from the knowledge).

The existing education system falls short of preparing most students to successfully navigate the demands of contemporary life. Deeper learning will require a major increase in the cognitive demand of the tasks that most students, particularly in highpoverty schools, are asked to complete.

However one defines it, though, deeper learning poses a multipronged challenge to current classroom practice and educational systems. It will require a major increase in the cognitive demand of the tasks that most students, particularly in high-poverty schools, are asked to complete.

## FINDINGS FROM A STUDY OF AMBITIOUS SCHOOLS

Four years ago, the authors began to "map the landscape" of non-élite public high schools that explicitly embrace the goals of deeper learning for all of their students. In their visits to and observations at such schools, they found little evidence that deeper learning opportunities are being offered at the whole-school level, as yet. At school after school, there were startling gaps between aspirations and realities. In most classrooms, students still sat passively and listened. Most academic work involved tasks that asked students to recall or minimally apply what they'd been told.

However, they also noted that deeper learning is happening somewhere in virtually every school they visited. Whatever the level of implementation school-wide, *individual classrooms* were joyful, engaging, and/or intellectually rich places to teach and learn. In a few schools, entire departments and programs consistently embodied some or all of these qualities, and a few were moving toward consistent depth.

A key challenge, the authors found, is that few schools have the mechanisms to translate their values into practice. Engaging students in sustained, authentic, high-cognitivedemand tasks requires structures and supports that many high school teachers simply do not have. Compared to their elementary school counterparts, they teach many more students and see each student for fewer hours each day, making it difficult to build relationships and to create opportunities for sustained inquiry. Another major constraint-the one most frequently cited by teachers-is the pressure to cover the content measured by state tests, SAT Subject Tests and some AP exams. The study revealed that these schools are making some progress in breaking down the isolation that historically has plagued teaching, but the authors saw little evidence that professional learning communities and other forms of teacher collaboration focused on increasing rigor or depth of instruction. If teachers yearn to infuse their classrooms with greater depth (and many teachers said they do), they appeared to lack rich models for doing so.

In some of the schools visited, teams of teachers were able to arrive at clear, shared agreements about the kind of teaching and learning they wanted to provide. Further, they were able to make strategic choices about how to use space, time, and personnel; to begin developing the kinds of materials and processes that would support teachers in learning and growing; to curate examples of excellent work that helped students and parents to understand the school's vision and standards; and to develop a new organizational culture. If these steps were adopted by entire systems of schools, they would go a long way toward creating the conditions under which deeper learning might become the norm.

#### BUILDING A SYSTEM TO SUPPORT DEEPER LEARNING

The paper concludes with suggestions for re-envisioning the industrial model of public schooling inherited from the early 20<sup>th</sup> century in order to build an educational system that supports and sustains deeper learning. Priorities include:

- Rethink curricula-Many deeper learning advocates are calling for reformers to rethink academic curricula, particularly high school curricula, with the goal of moving away from disciplinary silos to more integrated problem-based investigations.
- Rethink the credit system-Problem- and project-based work generally require longer blocks of time, but "block scheduling" is only a partial fix. State policies could support this shift by revising requirements for a certain number of instructional hours in disciplinary subjects,

and by developing a more flexible way of offering credit for integrated problem- or project-based work.

- Rethink real-world connections-Schools interested in authentic problems should connect better with the outside world, both by bringing in outside experts and placing students in well-supervised internships. Policy could support this shift by creating a more formal way of providing credit for these "extended learning opportunities."
- Rethink educator learning-The most important priority is to develop teachers and leaders who themselves have experienced some version of deep learning, and to provide opportunities to continue to grow and to collaborate with colleagues. Principals also need deeper learning experiences to guide them.
- Rethink accountability systems A more sensible accountability system might emulate those in other

nations, in which schools are periodically visited by an expert team of educators, who rely on a range of data– from interviews, student and parent surveys, and test scores–to suggest improvements.

Rethink student assessment-The U.S. could follow the lead of the International Baccalaureate program and develop systems of district or state-level assessments that measure deeper learning competencies. For example, the IB usually features a culminating exam that entails a series of essays or other open-ended problems, or a portfolio of work or longer scientific investigation.

#### **ABOUT THE AUTHORS**

**Jal Mehta** is an associate professor of education at Harvard Graduate School of Education. His primary research interest is in understanding what it would take to create high quality schooling at scale, with a particular interest in the professionalization of teaching. He is the author of *The Allure of Order: High Hopes, Dashed Expectations and the Troubled Quest to Remake American Schooling* and coeditor of *The Futures of School Reform*. He is currently working on two projects: *The Chastened Dream*, a history of the effort to link social science with social policy to achieve social progress; and *In Search of Deeper Learning*, a contemporary study of schools, systems, and nations that are seeking to produce ambitious instruction. Mehta received his Ph.D. in Sociology and Social Policy from Harvard University.

**Sarah Fine** is an advanced doctoral candidate at the Harvard Graduate School of Education, where she collaborates with Associate Professor, Jal Mehta on a long-term ethnographic study of secondary schools that are striving to enact deeper learning for all of their students. Prior to starting her doctoral studies, she worked as a teacher, department chair, and instructional coach at an urban charter high school in the District of Columbia, and as a freelance education journalist. Her work has appeared in a diverse array of publications, including the *Washington Post, Education Week*, and academic journals such as the *Harvard Educational Review*.



October 2015

#### THE WHY, WHAT, WHERE, AND HOW OF DEEPER LEARNING IN AMERICAN SECONDARY SCHOOLS Jal Mehta & Sarah Fine

For growing numbers of education advocates, the imperative is not just to help much greater numbers of students to succeed but to help them learn in deeper, more sophisticated ways than in the past. Jal Mehta and Sarah Fine put the deeper learning movement in historical context and describe their research into schools that are attempting to embrace the goals of deeper learning for all of their students. The paper concludes with suggestions for re-envisioning the industrial model of public schooling inherited from the early 20<sup>th</sup> century in order to build an educational system that supports and sustains deeper learning.

To download the full paper, go to <u>www.jff.org/deeperlearning</u>



### THE IMPLICATIONS OF DEEPER LEARNING FOR ADOLESCENT IMMIGRANTS AND ENGLISH LANGUAGE LEARNERS

By Patricia Gándara

#### **EXECUTIVE SUMMARY**

For nearly half a century–ever since the passage of the Bilingual Education Act of 1968–the federal government has made a commitment to provide dedicated academic support services to students who are recent immigrants and/or non-native speakers of English. However, when it comes to deciding which *kinds* of services to provide, or precisely *who* should receive them, or whether students' bilingualism should be encouraged, policymakers have not managed to agree.

This report argues that students who are immigrants and/or "English language learners" (ELLs) often exhibit strengths that monolingual, non-immigrant children may not have, and that policymakers should view as important assets for individual learners and their communities. Further, the strengths that ELLs and immigrants bring with them to school tend to be well aligned with the goals of deeper learning–not only mastering high-level academic content and skills but also learning to work collaboratively, think critically, communicate effectively, and monitor and direct one's own learning. Finally, this report offers recommendations for federal and state policymaking that could help educate ELLs to their full potential.

#### UNDERSTANDING, LABELING, AND TESTING ENGLISH LANGUAGE LEARNERS

#### Who Are English Language Learners?

The United States has always been, and continues to be, a nation of immigrants. Though immigration patterns and trends are complex and always in flux, it is possible to get a general understanding of immigrant students and students for whom English is not the primary language spoken at home.

First, it is important to note that English language learners and immigrant students are not one and the same. Most

(though certainly not all) immigrant children spend a period of time as ELLs, but 90 percent of ELLs were born in the U.S. In the 2012-13 school year, nearly 5 million students across the U.S. were designated as ELLs–almost 10 percent of the total school age population. Today, the vast majority of these students speak Spanish, and the next largest group speaks Chinese.

#### **Deficient or Different?**

When students arrive at school with limited English, educators often focus on the ways in which they are "deficient,"-i.e., lacking in English fluency-rather than focusing on the strengths they bring with them, which might include advanced academic preparation in their first language, unusual drive and motivation, a sophisticated understanding of cultural differences, and so on-not to mention fluency in another language.

When schools adopt a deficit-based view-often reinforced by district and state policies-they tend to focus exclusively on ELLs' language needs, assigning them to English immersion classes without also giving them opportunities to study the regular academic curriculum. Researchers have found that in many schools and districts, ELLs tend to languish in such classes for years (even though their developing English skills might have enabled them to perform perfectly well in math, history, science, and other

Students who are immigrants and/or ELLs often exhibit strengths that monolingual, non-immigrant children may not have, and policymakers should view these as important assets for individual learners and their communities.

#### Many schools neglect to conduct thorough assessments of new ELLs, in order to see what they know and can do in their primary language.

subjects) before reaching what the school considers to be a "proficient" level. Further, many schools neglect to conduct thorough assessments of new ELLs, in order to see what they know and can do in their primary language. Thus, they often mistakenly assign perfectly capable, even highachieving, students to remedial courses they do not need.

#### The Catch-22 of Testing

At first glance, ELLs' performance on standardized tests seems to support the theory that a limited facility with English translates into a limited academic ability overall. For example, on the 2013 National Assessment of Educational Progress (NAEP), 69 percent of ELLs scored below basic proficiency in eighth-grade mathematics, compared to just 25 percent of non-English language learners, and their eighth-grade reading scores were similarly low.

However, these statistics are inherently misleading, since the highest-performing ELLs are redefined as "proficient" and are moved out of the ELL category—in other words, as soon as students begin to perform well, they lose the ELL label. By definition, then, "English language learners" will have low scores. In addition, nearly all states require all students to take achievement tests in English, even if they do not yet understand the language. Thus, while the tests ostensibly measure their skills and knowledge of the subject matter, it would be more accurate to see them as partial (and flawed) measures of students' understanding of English.

#### BARRIERS TO ACADEMIC ACHIEVEMENT

#### **Poverty and Migration Trauma**

Many ELLs and immigrant students are, in fact, significantly disadvantaged educationally, but not necessarily for reasons having to do with language. Poverty is perhaps the greatest threat to any student's academic progress, as the effects can be wide ranging and long lasting. Inadequate nutrition, poor health care, and mental health challenges can all affect a child's cognitive development and cause high absenteeism from school. While most ELLs are U.S.-born, their parents are usually immigrants, and many of these families have experienced great trauma, having left their home countries to escape war, gang activity, deep poverty, natural disasters, and other crises that take an enormous psychological toll. The stress of the migration experience can weigh heavily on children as they try to adapt to a new country, new language, and new expectations, with few if any support services.

#### ELLS AND IMMIGRANT STUDENTS: ASSETS AND OPPORTUNITIES

In spite of the many challenges that they face (and perhaps *because* of them), these students might also be viewed as *advantaged* in certain ways, possessing some important skills and dispositions that monolingual and mono-cultural students may not.

**Multilingualism:** The most obvious asset is the ability to speak another language (in most cases a major world language that is highly valued in the labor market).

**Multiculturalism:** Having an insider's knowledge of another country, and having learned to navigate everyday life in more than one culture, may also help students to be more cognitively flexible–i.e., able to understand that problems can be assessed and solved in more than one way. Immigrant students can also be particularly welcoming of differences, skilled at intercultural communication, and comfortable working on diverse teams–characteristics that employers often describe as highly valuable.

**Immigrant Optimism:** According to researchers Carola and Marcelo Suárez-Orozco, the "immigrant optimism" of parents-the belief that opportunities are greater in the new country-often propels children to work harder to achieve the American Dream, even in the face of daunting obstacles.

**Resilience:** In spite of often traumatic uprooting from their homes, harrowing migration passages, and hostile receptions in their new country, students often arrive in the U.S. full of hope for the future and with a drive to succeed in school.

Having developed resilience, many immigrant students would seem to be well suited to the kind of engaged, critical, challenging school experiences that the deeper learning movement heralds. However, to the extent that these students are framed as deficient and in need of remediation, these strengths tend to be overlooked.

#### **Toward Deeper Learning**

When assessing English language learning programs, it is important to understand that the data can mean different things, depending on one's goals. If the only goal is for students to achieve rapid transition to oral English in the early grades, then it might indeed be preferable to provide an English-only instructional program. As Fred Genesee and his colleagues found in a review of research on the education of ELLs, "Evaluations conducted in the early years of a program (grades K-3) typically reveal that students in bilingual education scored below grade level," outperformed by students in English immersion programs.

But if one takes a longer view-defining the goal as helping students to achieve at high levels over the course of their schooling, as well as becoming reclassified as English proficient-then bilingual and dual language instruction show the strongest outcomes.

#### CONCLUSION: MEETING THE NEEDS OF ELLS AND IMMIGRANT STUDENTS

Ironically, as the research has converged on the many benefits of bilingualism, both for academic and other deeper learning outcomes, education policy appears to have moved in the opposite direction.

The advent of the Common Core State Standards, currently being implemented in some form across 43 states, could

be the last straw. While holding great potential for moving instruction toward the goals of deeper learning and placing a greater emphasis on language use and conceptual learning, there are indications that teachers in general are not sufficiently prepared to undertake the kind of instruction required. Preparation and training for teachers of ELLs and immigrant students, whether in bilingual or English-only settings, remains a major policy issue that has received inadequate attention.

#### **Recommendations include:**

- If students are to be tested, then provide more time for students to acquire English before testing them in that language; or reduce the high stakes associated with such tests; or provide bilingual testing for those students straddling two languages; or offer alternative assessments for students who are still learning English.
- Reorient federal policy to define immigrant children as a net asset to the nation and to highlight and celebrate their strengths. One way to do this is to create a national Seal of Biliteracy, an award given to all students who can demonstrate high levels of proficiency in two or more languages upon high school or college graduation.
- Provide federal support to help regions that have seen recent influxes of ELLs but which have no existing infrastructure to meet the needs of ELLs or immigrant students, either culturally or linguistically.

With these fundamentals in place, ELLs and immigrant students could take full advantage of the assets they bring to school and could share these assets with their native English-speaking peers. These students could even be a leading force in the movement for deeper learning.

#### ABOUT THE AUTHOR

**Patricia Gándara** is a research professor and co-director of the Civil Rights Project at the University of California, Los Angeles (UCLA). She is also a member of the National Academy of Education and a fellow of the American Educational Research Association (AERA), the Rockefeller Foundation Bellagio Center in Italy, the French-American Association at Sciences Po Graduate Institute, Paris, and an Educational Testing Service (ETS) fellow at Princeton, New Jersey. In 2011 she was appointed to President Obama's Commission on Educational Excellence for Hispanics and continues to serve in that capacity. Her most recent books include *Forbidden Language: English Learners and Restrictive Language Policies* (2010) with Megan Hopkins, from Teachers College Press, and *The Bilingual Advantage: Language, Literacy, and the U.S. Labor Market* (2014) with Rebecca Callahan, from Multilingual Matters Press.



#### THE IMPLICATIONS OF DEEPER LEARNING FOR ADOLESCENT IMMIGRANTS AND ENGLISH LANGUAGE LEARNERS Patricia Gándara

For roughly fifty years, the federal government has been committed to supporting students who are recent immigrants and/or nonnative English speakers. However, policymakers have not managed to agree on the *types* of services needed and how best to deliver them. In this report, Patricia Gándara argues that students who are immigrants and/or English language learners often exhibit strengths that monolingual, non-immigrant children may not have, and which policymakers should view as important assets to be cultivated. Moreover, the strengths that ELLs and immigrants bring with them to school tend to be well aligned with the goals of deeper learning.

To download the full paper, go to <u>www.jff.org/deeperlearning</u>

60 DEEPER LEARNING RESEARCH SERIES | DEEPER TEACHING

**DEEPER TEACHING** 

By Magdalene Lampert

#### **EXECUTIVE SUMMARY**

Most high school students are accustomed to learning in two ways: by listening to the teacher and by reading books and other texts. And in a sense, these familiar ways of learning work for them, so long as their teachers demand only that they grasp and remember the given content. However, if the goal is to help students learn in more intellectually sophisticated ways, then teaching and learning will have to look quite different.

This paper describes what the author calls "deeper teaching," referring to the kinds of instructional strategies that teachers will need to adopt in order to help students learn deeply.

What does it *look like* to teach to deeper learning competencies? What can one do in a classroom to give students opportunities not only to understand the academic content but also to identify themselves as strong learners, contribute meaningfully to discussions, succeed at working through difficult assignments, set ambitious academic goals, monitor their own progress through school, and so on?

#### WHAT DOES DEEPER TEACHING LOOK LIKE? A COMPARISON

The author examines how one piece of "core content"widely understood to be central to the secondary school curriculum-is taught in two very different classrooms. The first of these two lessons typifies the sort of instruction that is most common in secondary schools across the United States. The second features a teacher who is at the same point in the curriculum, introducing the same content, but who makes a deliberate effort to support students' deeper learning. The examples focus on algebra, specifically the concept of slope, which is usually treated as a distinct subject area sometime between eighth and tenth grade. Studying algebra can be an exercise in memorizing formulas and rules, as is the case in much of U.S. education. By the time students arrive at high school, most have come to believe they are not "cut out" to do much more than basic arithmetic. Or, algebra can be an introduction to a powerful mathematical language that people can use to describe patterns and make predictions, as well as an opportunity to learn how to learn in new ways.

## Teacher A: Providing a conventional introduction to slope

The paper offers a close description, based on the author's own observations, of a typical lesson in Ms. A's classroom. She begins by introducing two formulas and demonstrating how to plug values into one of them to find the slope of a line. She asks students to write those formulas in their notebooks and gives them a textbook definition of the new academic term "slope." She builds her introduction on terms that students have heard before: quadrant, horizontal, vertical, axis, and origin, and on their

What does it *look like* to teach deeper learning competencies?

## Deeper teaching is enormously complicated, and it is and always has been rare in U.S. classrooms.

representations in graphical form, which students should have learned to make. She is quite animated-speaking, drawing, and showing slides she has prepared-and students appear to be "on task," actively listening, watching, and copying material into notebooks.

These interactions between teacher and students will seem entirely familiar to most readers: the teacher talks, and the class sits facing the teacher, usually taking notes. And if students talk at all, it is to give answers to the teacher's questions, which the teacher judges to be correct or incorrect. This form of teaching has persisted in the U.S. for more than a century. Teachers do it because it is what they have experienced themselves, it is the way they were taught, and it is what many students and parents expect them to do. But while Ms. A's teaching could be considered satisfactory, it does not fully engage students, and it does not support deeper learning.

#### Teacher B: Teaching the same content deeply

In the second lesson, Ms. B engages her students in a very different way of "doing school," involving much less teacher-talk, more discussion among students, and more time spent working through interesting problems and sharing solutions. As the author describes in detail, Ms. B makes a number of very deliberate choices about how best to introduce her students to the material, and she opts not to use some familiar classroom techniques that Ms. A appears to take for granted.

For example, instead of presenting an abstract mathematical formula and then assigning students to use it to solve practice problems–a familiar pattern in most classrooms–she starts by giving her students a set of graphs and some written narratives describing real-world scenarios (in this case, having to do with driving a car from Boston to New York City). In each, the distance from Boston is related to how much time has passed since the beginning of the trip. (Formally, one might say that the distance from Boston is a *function* of time, and the *rate* at which the distance *changes* in relation to time is what determines the steepness of the lines.) The students' task is to figure out which narrative goes with which graph, which means having to make sense of the concept of *rate of change*, which, in turn, gives them a reason to know the term "slope" and how and why one would calculate it.

In short, Ms. B's goal is to build a foundation for understanding the meaning for terms and formulas that students will learn in subsequent lessons. By starting with familiar scenarios, she provides a conceptual anchor that will secure them as they go on to work with abstract symbols, reminding them how their calculations relate to real-world situations and problems.

At the same time, Ms. B also wants to help her students feel secure about their *ability* to move into unfamiliar academic and professional territory in the future. Thus, she gives them a task-matching graphs to narratives-that allows them to learn an important and interesting new concept in a single class period. And rather than faulting students for not knowing this concept already, Ms. B repeatedly seizes on opportunities to build on what they do know, encouraging them to explain how the graph shows that the car is headed toward or away from Boston, or that it has speeded up or slowed down, or stopped or turned around. Also, she familiarizes them with a classroom routine-explaining that it will become a regular feature of the class-that involves collaboration, student-to-student communication, and oral presentation. Moment by moment, she is careful to anticipate students' concerns about how they come across in public, and she invites them to participate in ways that minimize the social risks involved in speaking up in class (which researchers have found to be a serious impediment to active participation in classroom discussion) and in working with peers to solve challenging problems.

## CONCLUSION: MOVING TOWARD DEEPER TEACHING

In order to enact deeper teaching, the teacher needs to make a myriad of decisions-some while planning a class and others on the spot, while teaching that class-about what content to teach, how to build on students' current understanding of it, how to engage them in talking about that content in public, how to show them that there's no shame in getting the wrong answer, how to convince them that they can and will learn material that now seems to lie beyond their abilities, how to design activities that will get pairs and groups of students to work together productively, and so on. Deeper teaching is enormously complicated, and it is and always has been rare in U.S. classrooms. So, then, how can large numbers of teachers learn to manage this kind of complexity and provide this sort of instruction on a regular basis?

One option is to provide the sort of structured support and tools that Ms. B has received as a new teacher. The lesson described here was developed through a process of repeated observing, planning, teaching, and analyzing her own use of specific teaching routines, known as "Instructional Activities." These are, in effect, well-designed templates for organizing classroom instruction, outlining activities that feature problem solving, communication, collaboration, and support for students' learning to learn and to develop academic mindsets. When the use of Instructional Activities is woven into teacher preparation and professional development, the cognitive load of ambitious teaching is reduced, so that the teacher can pay close attention to students, their understanding of the given content, and their participation in the classroom.

#### How can deeper teaching happen more broadly?

The question inevitably asked about any ambitious instructional reform is whether it can improve the quality of teaching beyond a single classroom, school, or district. Researchers find that it is when educational resources are coordinated systematically, that large-scale change can be initiated and sustained. Indeed, Ms. B is part of a coherent, though small, system of instructional improvement. She is working in a group of teachers who use the same set of Instructional Activities, which in this case are aligned with the Boston Public Schools' academic goals and targets, and the Massachusetts Curriculum Frameworks. These are, in turn, aligned with one another and with the Common Core State Standards. Similar systematic instructional approaches to deepening teaching and learning are occurring in several places around the country.

All of these systems disrupt the conventional relationships among teacher, students, and content with deliberate, practice-sensitive designs for instruction. Each design is based on answers to a set of fundamental and closely related questions.

- > First, what do we think students need to learn?
- > Then, what do we know or believe about how those things are learned?
- And finally, how should the classroom be organized to make learning possible?

It is only in the particular interactions between a teacher and a class that an instructional design can be implemented in a way that utilizes its power to achieve the learning goals that its designers embrace.

#### ABOUT THE AUTHOR

**Magdalene Lampert** advises the Boston Plan for Excellence on adult learning systems in its Teaching Academies and on the design and development of the Boston Teacher Residency's clinical teacher education/induction program. She also consults with New Visions for Public Schools in New York City to design teacher development that supports students' achievement of the learning goals in the Common Core State Standards. From 2007 until 2011, she coordinated *Learning Teaching in, from, and for Practice,* a project for developing teacher education pedagogy across the University of Washington, the University of Michigan, and the University of California, Los Angeles (UCLA). Dr. Lampert has taught elementary and high school mathematics, pre-service and in-service teacher education, and doctoral courses for aspiring teacher educators. She has written extensively about teaching practice, including the book *Teaching Problems and the Problems of Teaching.* Dr. Lampert is Professor Emerita in the University of Michigan School of Education, where she held the George Herbert Mead Chair in Education. She received the 2014 Outstanding Contribution to Education Award from the Harvard Graduate School of Education and the 2014 AACTE Outstanding Journal of Teacher Education Article Award from the American Association of Colleges for Teacher Education.



#### **DEEPER TEACHING** Magdalene Lampert

Most high school students are accustomed to learning in two ways: by listening to the teacher and by reading books and other texts. These familiar ways of learning work for them so long as their teachers demand only that they grasp and remember the given content. However, if the goal is to help students learn in more intellectually sophisticated ways, then teaching and learning will have to look quite different. In this paper, Magdalene Lampert provides a close, detailed description of "deeper teaching," referring to the kinds of instructional strategies and moment-by-moment teaching decisions that enable students to learn deeply. She concludes by describing the kinds of early-career guidance and supports that teachers will need in order to understand what deeper teaching entails and put it into practice.

To download the full paper, go to <u>www.jff.org/deeperlearning</u>



EFFECTIVE SCHOOLS FOR DEEPER LEARNING: AN EXPLORATORY STUDY

By Rafael Heller & Rebecca E. Wolfe

#### **EXECUTIVE SUMMARY**

To become truly well prepared for college, careers, and adult life writ large, adolescents need far more than just academic content knowledge and skills. A wealth of evidence-from psychology, education, economics, and other fields-suggests that they also need to be able to solve complex and unscripted problems, to be persistent in the face of challenges, to be adept at monitoring their own learning and regulating their own behavior, to be able to communicate and collaborate with diverse peers and colleagues, and more. That is, they need to develop the full range of skills that have been grouped together under the umbrella term "deeper learning."

But while recent studies have provided powerful insights into what it means for individuals to be "college and career ready," researchers have only just begun to focus on what it would mean for schools and districts to use deeper learning as a guiding framework for policy and practice. Most important, can inter- and intrapersonal skills be *assessed* reliably and *taught* effectively, at scale?

This paper proposes one strategy by which to strengthen the nascent research base on deeper learning's implications for secondary school improvement. Specifically, it describes an exploratory study designed to test the idea that a particular kind of whole-school assessment, involving site visits by teams of trained observers, can provide useful data about students' opportunities for deeper learning. Further, it argues that this sort of assessment makes it possible to identify schools that–while unremarkable according to test-based measures of school performance–are particularly effective at teaching certain inter- and intrapersonal skills. In turn, this suggests a myriad of new opportunities to study and replicate best practices in teaching for deeper learning.

#### BUILDING A RESEARCH AGENDA: EARLY STEPS

In 2014, the American Institutes for Research (AIR) concluded a three-year study that followed the progress of a random set of students attending high schools that

explicitly pursue deeper learning, and comparing their outcomes to those of similar students at a matched set of "non-deeper learning" schools.

As AIR describes in its trio of reports on the study, the results were encouraging: relative to the comparison group, students who attended the self-identified "deeper learning" schools were more likely to finish high school on time, went on to four-year colleges in greater numbers, got higher scores on state achievement tests, did better on assessments of problem solving, and rated themselves higher on measures of engagement, motivation, and self-efficacy.

However, AIR also took pains to note that this was an early "proof of concept" study, meant in large part to see whether the personal and social aspects of deeper learning that have been proposed by the Hewlett Foundation and others (including *critical thinking skills, collaboration skills, communication skills, and independent learning skills*) are clear and specific enough to be used as the basis for rigorous empirical analysis and, by extension, policymaking and practice. Indeed, AIR found them to be distinct, stable, and robust indicators, suggesting that is in fact possible to conduct reliable research into the extent to which individual schools influence their students' development of these inter- and intrapersonal capacities.

#### Researchers have only just begun to focus on what it would mean for schools and districts to use deeper learning as a guiding framework for policy and practice.

According to the study's directors, this methodological finding is likely to be of greater consequence, in the long run, than any immediate findings about student outcomes. Because this was the first significant, sizable, empirical study of deeper learning practices and outcomes, the positive results garnered considerable attention in the field. But the real value of schools' efforts to promote deeper learning will become clearer over time, through the accumulation of evidence. Looking forward, then, the real import of the AIR study is to pave the way for future research.

#### FROM SELF-IDENTIFIED TO FOUND: LOOKING FOR DEEPER LEARNING SCHOOLS

The AIR study was designed to measure the outcomes of students attending well-regarded schools that identify themselves as belonging to a larger movement to promote and pursue deeper learning. In educational research, there is a long tradition of studying such exemplary schools, in order to identify best practices, assess their impact, and distill lessons for others to consider.

However, and looking back to the Effective Schools research of the 1970s and 80s, we reasoned that it would also be useful to start from the other direction: Instead of studying schools believed to exemplify deeper learning, we asked, could we comb through existing data to find schools that belong to no movement, have no special resources, and are not widely regarded as exemplars but which, nonetheless, show evidence that they are providing their students with strong opportunities for deeper learning?

If so, then a host of follow-up research questions will present themselves. For example, and like the Effective Schools researchers, we might ask whether those schools share any distinguishing characteristics (a particular kind of mission statement, for example, or a particular sort of community involvement), and whether those features overlap with the so-called "correlates of effective schooling" (such as strong leadership and a safe and orderly environment) identified by previous studies.

The Effective Schools researchers began by looking for schools that that posted high scores on reading and math achievement tests despite serving children from low-income backgrounds. However, to identify schools providing deeper learning opportunities, we require data that will allow us to go beyond tests scores to include richer information about a wider range of classroom practices.

Our solution was to contract with AdvancED, the nation's largest school accrediting agency, to perform a retrospective analysis of the more than 750 public high schools (excluding overseas Defense Department schools and new charter schools) it had assessed during its 2013-2014 accreditation cycle. From this data, we asked, would it be possible to identify regular, comprehensive, non-selective high schools that show particularly strong evidence of teaching the inter- and intrapersonal dimensions of deeper learning?

AdvancED's accreditation process features multi-day site visits by teams of veteran educators, who review school materials, interview stakeholders, and conduct structured observations of classroom practice, following well-tested assessment protocols. We reasoned that this data would include significant amounts of reliable information about students' opportunities to engage in collaborative work, classroom discussion and oral presentation, systematic reflection on their own learning, engagement in solving complex, unscripted problems, and other aspects of deeper learning.

While the indicators included in AdvancED's assessment protocol do not line up perfectly with the deeper learning dimensions used in the AIR study and elsewhere, a crosswalk analysis found that 10 (out of 33) the organization's performance indicators, and 23 (out of 30) of its observational items, were directly relevant to specific deeper learning competencies. Using these proxy measures, AdvancED was able to rate each school on the extent to which it provides opportunities for each six aspects of deeper learning (see table 1), as well as calculating a combined score, indicating the strength of the school's overall emphasis on deeper learning.

#### FINDINGS AND FOLLOW-UP QUESTIONS

Like the AIR researchers, AdvancED found that deeper learning's component parts-to be more specific, the proxy measures that AdvancED was able to construct from its existing indicators-were clear and consistent enough to allow for statistically reliable (though not necessarily valid) ratings of performance. Presumably, the results would be even more reliable, and valid, if site visits and observational protocols were specifically designed to elicit evidence of inter- and intrapersonal learning, rather than having to be retrofit for this purpose. In short, this study leaves us optimistic about the use of trained observers-whether involved in accreditation, school inspections, school quality reviews, or another sort of structured observation-to assess schools on the six dimensions of deeper learning. We see no reason why observational data cannot provide reliable evidence of students' opportunities to develop these skills.

> Of the inter- and intrapersonal competencies included in this study, the mean Deeper Learning Index score was highest for "Work Collaboratively" and "Develop an Academic Mindset," and it was lowest for "Communicate Effectively" (see Table 1). In turn, these findings suggest some fruitful lines of follow-up research. One might ask, for example, which of the personal and relational aspects of deeper learning are most prevalent in typical American high schools? Why might opportunities to learn to communicate effectively be so much less in evidence than, say, opportunities to collaborate? And which aspects of deeper learning are likely to be easiest, or hardest, for schools to pursue?

#### Table 1: Deeper Learning Characteristics of Final Sample (n=753)

	MEAN	STD. DEV.
Master Core Academic Content	2.7122	.33447
Think Critically & Solve Complex Problems	2.5263	.35704
Work Collaboratively	3.0698	.31493
Communicate Effectively	2.4026	.35468
Learn How to Learn	2.5528	.32678
Develop and Academic Mindset	2.9176	.30696
DEEPER LEARNING INDEX	2.7297	.28218

- Of the schools whose overall Deeper Learning Index > score ranked in the top 10 percent, most were selective high schools (e.g., science-themed schools with admissions tests), early college high schools, and small charter schools. On one hand, this may be nothing more than an example of selection bias, having to do mainly with the kinds of students and teachers who tend to be found in such schools. Then again, it may also suggest that when it comes to the teaching of personal and relational skills, certain kinds of schools are doing something right. It is conceivable, for example, that a study of early college high schools would find that enrolling 11<sup>th</sup> and 12<sup>th</sup> graders in college classes tends to have a positive effect on their academic mindsets, or perhaps the prospect of earning college credit promotes greater academic persistence. In short, further research in this area may lead to valuable insights about particular school designs and curricula and their association with certain deeper learning outcomes.
- Perhaps most important, AdvancED was able to identify a handful of regular comprehensive high schools, serving lower-income populations, that scored in the top 10 percent on the overall Deeper Learning Index. (We describe two of those schools in the full report.) These schools, we argue, are particularly ripe for further analysis: What explains their unusual degree of focus on teaching skills such as collaboration, problem solving, and self-directed learning? Have they made an explicit decision to emphasize these deeper learning skills, or are there other explanatory factors at work,

such as students' cultural backgrounds, parental involvement in the school, district-level policies, or highquality professional development? Further, it may be particularly interesting to study those schools that score relatively high on the personal and social dimensions of deeper learning while performing at a middling or low level on traditional indicators such as test scores and graduation rates. How, we wonder, should the "quality" of such schools be assessed? Could they invite useful discussion of what it means to be a "good" school, and whether, in some cases, teachers and administrators should be lauded for their focus on personal and social development, even if students continue to struggle academically?

In sum, this exploratory study was designed not to show whether certain teaching practices lead to deeper learning outcomes, nor to show how students fare at "deeper learning schools." Rather, our aim was to build on the methodological groundwork begun by AIR, specifically to test the idea that data from systematic, on-the-ground observations of local classroom practice can be used to identify schools-as yet unrecognized and unheraldedthat are providing students with strong and consistent opportunities to develop academic mindsets, monitor and direct their own progress, work in teams to solve complex problems, and otherwise learn deeply. The results leave us cautiously optimistic that they can. And we suspect that further study of those schools will lead to important lessons for secondary education in general.

#### **ABOUT THE AUTHORS**

**Rafael Heller** is the principal policy analyst at Jobs for the Future, where he leads efforts to synthesize new ideas and research in secondary education and explore their implications for policy and practice. Prior to joining JFF in 2014, Dr. Heller was an independent consultant for many years, serving as a writer, editor, and strategic counsel to numerous education advocacy groups, foundations, associations, and other organizations. Previously, he was a senior policy associate at the Alliance for Excellent Education, directing a range of projects focused on improving literacy instruction in the nation's middle and high schools. Earlier in his career, he spent several years teaching writing, rhetoric, and English language, including a stint as professor and English department chair at the Universidad San Francisco de Quito, Ecuador. Dr. Heller holds a Bachelor's degree in English from Oberlin College, a Master's in Education from the Harvard Graduate School of Education, and a Ph.D. in English & Education from the University of Michigan.

**Rebecca E. Wolfe** directs Students at the Center, a Jobs for the Future initiative that synthesizes and adapts for practice current research on key components of student-centered approaches to learning that lead to deeper learning outcomes. Dr. Wolfe has authored or co-authored numerous publications on student-centered learning, recent selections including *The Past and the Promise: Today's Competency Education Movement* and *Anytime, Anywhere: Student-centered learning for schools and teachers*. Prior to JFF, Dr. Wolfe was a Program Director at the Fairfield County Community Foundation and a middle school site coordinator for GEAR UP. Dr. Wolfe holds a B.A. in sociology with a focus in urban education from Harvard University, and a Ph.D. in education policy and administration from Stanford University, advised by Milbrey McLaughlin.



#### EFFECTIVE SCHOOLS FOR DEEPER LEARNING: AN EXPLORATORY STUDY Rafael Heller & Rebecca E. Wolfe

This report, by Rafael Heller and Rebecca E. Wolfe of Jobs for the Future, proposes one strategy by which to strengthen the nascent research base on deeper learning's implications for secondary school improvement. Specifically, it describes an exploratory study designed to test the idea that a particular kind of whole-school assessment, involving site visits by teams of trained observers, can provide useful data about students' opportunities for deeper learning. Further, it argues that this sort of assessment makes it possible to identify schools that–while unremarkable according to test-based measures of school performance–are particularly effective at teaching certain inter- and intrapersonal skills. In turn, this suggests a myriad of new opportunities to study and replicate best practices in teaching for deeper learning.

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AN INTRODUCTION TO THE DEEPER LEARNING RESEARCH SERIES

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