Students at the Center

JOBS FOR THE FUTURE

DEEPER LEARNING RESEARCH SERIES

EFFECTIVE SCHOOLS FOR DEEPER LEARNING:
AN EXPLORATORY STUDY

By Rafael Heller & Rebecca E. Wolfe

December 2015

EDITORS' INTRODUCTION TO THE DEEPER LEARNING RESEARCH SERIES

In 2010, Jobs for the Future—with support from the Nellie Mae Education Foundation—launched the Students at the Center initiative, an effort to identify, synthesize, and share research findings on effective approaches to teaching and learning at the high school level.

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 compelling 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:

- Participate in ambitious and rigorous instruction tailored to their individual needs and interests
- Advance to the next level, course, or grade based on demonstrations of their skills and content knowledge
- Learn outside of the school and the typical school day
- 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 developed—and have made available at www.studentsatthecenterhub.org—a wealth of free, high-quality tools and resources designed to help educators implement student-centered practices in their classrooms, schools, and districts.

Further, and thanks to the generous support of The William and Flora Hewlett Foundation, Students at the Center has expanded its portfolio to include an additional and complementary strand of work.

The present paper is part of our new series of commissioned reports—the Deeper Learning Research Series—which aim not only to describe best practices in the nation's high schools but also to provoke much-needed debate about those schools' purposes and priorities.

In education circles, it is fast becoming commonplace to argue that in 21st-century America, each and every student must aim for "college, career, and civic readiness." However, and as David T. Conley described in the first paper in this series, a large and growing body of empirical research shows that we are only just beginning to understand what "readiness" really means. Students' command of academic skills and content certainly matters, but so too does their ability to communicate effectively, to work well in teams, 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."

What does all of this mean for the future of secondary education? If "readiness" requires such ambitious and multi-dimensional kinds of teaching and learning, then what will it take to help students become genuinely prepared for life after high school, and what are the implications for policy and practice?

We are delighted to share this installment in the Deeper Learning Research Series, and we look forward to the conversations that all of these papers will provoke.

To download the papers, executive summaries, and additional resources, please visit the project website: www.jff.org/deeperlearning.

Rafael Heller, Rebecca E. Wolfe, Adria Steinberg

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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. We work to achieve the promise of education and economic mobility in America for everyone, ensuring that all low-income, underprepared young people and workers have the skills and credentials needed to succeed in our economy. Our innovative, scalable approaches and models catalyze change in education and workforce delivery systems.

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Students at the Center
JOBS FOR THE FUTURE

Students at the Center—a Jobs for the Future initiative—synthesizes and adapts for practice current research on key components of student-centered approaches to learning that lead to 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 project is supported generously by funds from the Nellie Mae Education Foundation and The William and Flora Hewlett Foundation.

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INTRODUCTION

Over the last few decades, and especially since the 2002 enactment of No Child Left Behind (NCLB), the overriding goal of educational policymaking in the U.S. has been to boost students' academic achievement—mainly as defined by their performance on multiple-choice tests—and, as a result, to prepare greater numbers of young people to earn postsecondary degrees and thrive in the postindustrial economy. It is becoming increasingly clear, however, that policymakers have underestimated what it takes to succeed in higher education and the 21st-century workforce.

To be sure, young people must build a strong foundation in math, science, language arts, and other academic subject areas so that they can handle the material that will be assigned to them in college and job-training programs. However—according to a wealth of research findings from psychology, economics, and other fields—their likelihood of earning a degree and building a career will depend on far more than just their mastery of core academic content knowledge and skills (Farrington et al. 2012; Conley 2010; Heckman et al. 2006; Autor et al. 2003; Murnane & Levy 1996).

To become truly well prepared for life after high school, students must develop a *combination* of intellectual, interpersonal, and intrapersonal capacities (National Research Council 2012), including some that are not readily measured by multiple choice achievement tests. For example, they must learn to monitor and direct their own learning, regulate their own behavior, persevere in the face of challenging assignments, communicate and collaborate effectively with diverse peers and colleagues, solve complex and unscripted problems, and more. That is, they need to develop the full set of skills and dispositions that have been grouped together under the umbrella term "deeper learning."[1]

What then are the implications for secondary education? If college and career readiness requires far more sophisticated intellectual skills than NCLB was designed to promote, as well as inter- and intrapersonal skills and dispositions that NCLB neglected, then how must the nation's middle and high schools change?

This paper proposes a strategy by which to strengthen the nascent research base on deeper learning, so that it can better inform efforts to improve secondary education. Specifically, it describes a means by which to locate ordinary high schools—i.e., regular, comprehensive, non-selective schools, having no special resources—that provide their students with strong opportunities to learn deeply. Recalling the Effective Schools movement of the 1970s and 80s, it occurs to us that if we can identify such schools, then researchers should be able to learn from their success.

Open Questions

The previous papers in this series approached deeper learning from a number of angles. For example, Jal Mehta and Sarah Fine (2015) put the deeper learning movement into historical context, arguing that it represents a new chapter in secondary education and not just another swing of the school reform pendulum. Magdalene Lampert (2015) described the particular kinds of content knowledge, preparation, and interpersonal awareness needed to teach for deeper learning. Nancy Hoffman (2014) examined how work-based learning, apprenticeships, and other kinds of career-related education offer powerful opportunities to learn a combination of academic, inter-, and intrapersonal skills. And other papers examine deeper learning and its implications for student assessment (Conley 2014), educational technology (Dede 2014), civic education (Levine & Kawashima-Ginsberg 2014), the education of students with disabilities (Vaughn et al. 2014), the teaching of English language learners and students from immigrant backgrounds (Gándara 2015), school district-level reform (Honig & Rainey 2015), and the equitable distribution of educational resources (Noguera et al. 2015).

However, much remains for researchers to explore. While these papers map out the current state of knowledge about deeper learning and its implications for middle and high school policy and practice, they also raise many

additional questions, such as: *who* should be responsible for teaching inter- and intrapersonal skills, such as teamwork, self-regulation, perseverance, and self-directed learning? Should secondary schools hire counselors, social workers, and other specialists to support students in these areas? Is it the job of classroom teachers to weave these kinds of supports into regular academic instruction? Are these things best learned through participation in the arts, athletics, community service, work-based learning, and other activities that lie outside of the core curriculum?

Whoever teaches them, do the elements of deeper learning *transfer* from one domain to another? That is, if students learn to collaborate with each other while rehearsing a play, does that give them the ability to collaborate effectively in the chemistry lab? If they learn to persevere in solving difficult algebra problems or in training for track meets, does this lead them to persevere when faced with challenging assignments in biology or U.S. History?

For that matter, which aspects of deeper learning can be assessed in valid and reliable ways, and which ones are so tricky to assess that educators cannot be sure that they are teaching them effectively—or whether students are learning them at all?

Over the last several years, for example, the personal quality known as "grit" has attracted a great deal of attention both in the popular press (Tough 2012) and from researchers, who have found that it—along with the related capacity of self-control—has a major influence on success in school, college, and work (Duckworth & Gross 2014). However, that does not necessarily mean that schools should rush to incorporate the teaching of grittiness into the curriculum, or that they should hold teachers accountable for their students' progress in becoming gritty. As Angela Duckworth and David Yeager (2015) caution, the available measures of grit (i.e., surveys and questionnaires) are useful for research purposes. But, since students and teachers can easily "fake" their responses on such assessments, and since grittiness means different things in different school contexts, it would be a mistake for educators to use them as the basis for high-stakes decisions. For now, they argue, policymakers and practitioners should proceed carefully, waiting for the development of better and more reliable measures before deciding whether or how schools should teach for grittiness.

Similarly, a recent RAND Corporation report (Stecher & Hamilton 2014) outlining a research and development plan for improving the measurement of inter- and intrapersonal dimensions of deeper learning, concludes with a call for patience: "Policymakers, funders, practitioners, and others… understandably are looking for quick-turnaround studies and for tools they can use right away" (p. 63). However, the authors caution that it will likely take several years to create the sorts of high-quality assessments needed to support school improvement in these areas.

In short, while a great deal of empirical evidence shows that young people's success in college and the workforce depends on a combination of intellectual, personal, and social competencies, and while existing research suggests a number of ways in which secondary schools can promote deeper learning (as described in the previous papers in the Deeper Learning Research Series), numerous research questions remain.

The study described in this paper was designed to explore one way in which those research questions might be pursued. We asked whether 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. If so, then this sort of assessment should make it possible to identify schools that are particularly adept at teaching certain inter- and intrapersonal skills. And in turn, this should lead to a myriad of new opportunities to study and replicate best practices in teaching for deeper learning.

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STUDYING EFFECTIVE SCHOOLS FOR DEEPER LEARNING: EARLY STEPS

In 2014, the American Institutes for Research (AIR) concluded a three-year study that examined teaching practices, support structures, and student outcomes at 19 high schools (representing 10 school networks[2]) that have "a mature and at least moderately well-implemented approach to promoting deeper learning" (Huberman et al. 2014, p. 3-4), meaning that they have made explicit and concrete efforts to give students regular opportunities to work in teams, solve complex and unscripted problems, reflect on and make choices about their own learning, and so on (Bitter et al. 2014).

When schools explicitly set out to teach sophisticated intellectual content along with inter- and intrapersonal skills, asked the researchers, how do students perform? As AIR describes in its trio of reports on the study (Zeiser et al. 2014; Huberman et al. 2014; Bitter et al. 2014), the results are encouraging. Relative to similar students at a matched set of "non-deeper learning" schools, students who attended the 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 adds, 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 William and Flora Hewlett Foundation and others 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 it is in fact possible to conduct reliable research into the extent to which individual schools influence their students' development of these capacities.

According to the study's directors, this methodological finding is likely to be of greater consequence in the long run than the immediate findings about student outcomes. Because this was the first significant, sizable, empirical study of deeper learning practices and outcomes, the positive results have garnered considerable interest in the field. While the lasting value of schools' efforts to promote deeper learning can only be determined over time, through the accumulation of more evidence, the AIR study will undoubtedly 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 particularly 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 cutting-edge, purpose-built schools in order to assess their impact and distill lessons for others to consider.

However, looking back to the Effective Schools research, we reasoned that it would also be useful to start from the other direction: Instead of studying schools that have set out to promote deeper learning, we asked, could we comb through existing data to find ordinary schools that show evidence that they provide their students with strong opportunities to learn deeply?

If such schools could be found, then a host of follow-up research opportunities should present themselves. We can ask what makes these schools stand out, and do they share any distinguishing characteristics that might explain their particular strengths? Do these schools tend to have a certain kind of mission statement, for example? Do they tend to give priority to parent and community involvement? Have they made extraordinary investments in professional development? Is there something unusual about their

student enrollments, or the expertise of their teachers and administrators, or their curricula?

The Effective Schools movement began in response to earlier research, particularly the landmark Coleman Report of 1966, a massive, federally commissioned study that appeared to suggest that poor students' low levels of academic achievement have far more to do with out-of-school factors (such as family income, parents' education, and neighborhood characteristics) than anything that goes on during the school day (Coleman et al. 1966). That is, the negative effects of poverty and segregation appeared to dwarf the positive influences of local teachers and school administrators, leading many researchers to conclude that efforts to improve school quality, absent major investments in other social and economic programs, will have little impact on students' long-term outcomes.

That may be true in the aggregate, acknowledged critics of Coleman's research, but surely there exist schools that buck the trend, helping large numbers of poor children to achieve at high levels. And perhaps those unusually "effective schools" have lessons to share with the rest of the school system. Indeed, beginning in the 1970s, researchers began to identify several "correlates" of effective schools, noting that those that produce the greatest outcomes for poor children tend to have a number of specific characteristics, such as strong instructional leadership, a safe and orderly environment, and the ability to monitor student progress on a frequent basis (e.g., Edmonds 1979; Purkey & Smith 1983; Lezotte 1991).

For the Effective Schools researchers, however, it was a relatively straightforward task to identify such schools—they had only to search for those that served children from low-income backgrounds and that posted high scores on reading and math achievement tests. By contrast, in order to identify schools providing deeper learning opportunities, we would require much richer information about a much wider range of classroom practices. Test scores alone would not be sufficient; we would also need to collect data that show that particular schools are in fact teaching students to collaborate, reflect on their learning, and so on.

Our solution was to ask AdvancED, the nation's largest school accrediting agency,[3] to conduct a study using already collected observational data from on-site school and classroom visits, as well as familiar performance data such as student test scores, attendance records, and graduation rates. Specifically, we asked AdvancED to perform a retrospective analysis of the more than 750 public high schools across 14 states (and excluding overseas Defense Department schools and new charter schools) that it had assessed during its 2013-14 accreditation cycle, in order to identify regular, comprehensive, nonselective schools that show particularly strong evidence of teaching the cognitive, interpersonal, and intrapersonal dimensions of deeper learning.

Design of the Exploratory Study

AdvancED's accreditation process features multiday site visits by teams of three or more External Reviewers (current or retired educators who work on a volunteer basis, though they can opt to take their required AdvancED training as a graduate-level course). The reviewers examine school materials (such as self-assessment data, stakeholder surveys, descriptions of the curriculum, and other artifacts), interview school staff, and conduct structured observations of classroom practice using an assessment protocol—the Effective Learning Environments Observation Tool, or eleot™—that AdvancED has created for this purpose.[4] Finally, they combine their observations and then rate the school on 33 specific indicators, addressing the school's coherence of mission, leadership, instruction, student support systems, and use of assessment results for continuous improvement.

We reasoned that the data from classroom observations, especially, would include significant amounts of reliable information about students' opportunities to engage in collaborative work, discussion and written 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) of the organization's performance indicators, and 23 (out of 30) of the *eleot* observational items, were directly relevant to specific deeper learning competencies. By grouping these into six proxy measures, one for each of the deeper learning competencies, AdvancED was able to rate each school on the extent to which it provides opportunities for students to engage in the individual components of deeper learning. Further, AdvancED calculated a composite Deeper Learning Index (DLI) score for each school, 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 ratings of performance. However, AdvancED also cautioned that while the DLI shows face validity, it does not show sufficient levels of construct validity to be used for more than exploratory purposes. In other words, the measure would need further testing for researchers to feel confident they were in fact measuring and comparing the specific deeper learning constructs at hand.

Still, AdvancED was able to identify a large number of "Deeper Learning Schools." This early exploratory work 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 identify schools that are particularly effective in providing opportunities for deeper learning. Further, and looking toward future studies, we presume that the results would be even more reliable, and would show stronger levels of validity, if site visits and observational protocols were specifically designed to elicit evidence of deeper learning's elements, rather than having to be converted into proxy measures.

Again, we caution that these results are suggestive, meant to test out a promising strategy for further research. That said, findings include: 1) Some aspects of deeper learning appear to be more common than others; 2) The highest deeper learning scores belong to selective, charter, and early college high schools; and 3) This method does permit us to identify ordinary high schools that show evidence of deeper teaching and learning

Some Aspects of Deeper Learning Appear to be More Common than Others

Among the randomly chosen 753 high schools[5], the mean scores were highest for "Work Collaboratively " and "Develop an Academic Mindset," and lowest for "Think Critically & Solve Complex Problems," "Learn How to Learn," and, especially, "Communicate Effectively" (*see Table 1*).

Table 1. Deeper Learning Characteristics of Schools Reviewed (n=753)

	Mean (Mean scores on a scale from 0–4)	**Standard Deviation**
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 an Academic Mindset	2.9176	.30696
DEEPER LEARNING INDEX	**2.7297**	**.28218**

In turn, these findings suggest some fruitful lines of follow-up research. First and foremost would be to replicate this study using specially designed observational tools, rather than proxy measures. (Presumably, the sample size would not have to be as large as 753 schools.) To date, advocates for deeper learning have tended to group together five of the six elements, arguing that policymakers and practitioners have neglected all five in favor of a single-minded emphasis on academic achievement ("Master Core Academic Content"). However, if researchers were able to generate more precise and valid data as to which of the deeper learning elements are taught most and least often in the nation's schools, this should allow for much more nuanced debates about priorities for school improvement.

If it is true, for example, that students tend to have relatively more opportunities to collaborate and develop an academic mindset than to learn deeply in other ways, then why is that the case? Is it somehow *easier* to assign collaborative projects and group work than to engage students in thinking about their own learning, or in solving complex problems, or in writing papers and participating in discussions and debates? Could the popular and education trade media's recent focus on issues related to academic mindset—particularly the popularity of Carol Dweck's research—be having a broad impact on classroom instruction? And do these findings suggest that reformers can afford to focus less attention on these two deeper learning competencies, while they devote more effort to promoting opportunities to gain the others?

Further, it should be valuable to drill down deeper to see how prevalent the differing elements of deeper learning are depending on the size and location of the school, the student population, grade level, subject area, and so on. For example, previous survey-based studies have suggested that few middle and high school students have significant opportunities to learn about and practice effective communication—writing instruction, in particular, appears to be neglected, even by English language arts teachers (Applebee & Langer 2011; Graham et al. 2014). Does observational data bear that out, or does it suggest that survey data could be missing part of the picture? And how does the prevalence of this and the other deeper learning elements vary between urban, suburban, and rural schools? As Gándara (2015) theorizes in her recent report for the Deeper Learning Research Series, is there evidence of a greater focus on collaboration and academic mindset in schools that enroll large numbers of English language learners and students from immigrant backgrounds? And in which mathematics classes (Algebra I? Geometry? AP Statistics?) are teachers most and least likely to assign the kinds of complex, open-ended problems that Lampert (2015) describes in her paper?

In short, we see great potential for this kind of research—structured classroom observations in large numbers of schools, using instruments designed to capture evidence of deeper teaching and learning—to enrich discussions about how best to proceed with policy initiatives and school improvement efforts.

The Highest Deeper Learning Scores belong to Selective, Charter, and Early College High Schools

Of the schools whose overall DLI 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.

Research such as structured classroom observations in large numbers of schools, and using instruments designed to capture evidence of deeper teaching and learning can enrich discussions about how best to proceed with policy initiatives and school improvement efforts.

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 eleventh and twelfth 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.

We can Identify Ordinary High Schools that Show Evidence of Deeper Teaching and Learning

Most important, AdvancED was able to identify a handful of regular comprehensive high schools, serving students from lower-income backgrounds, that scored in the top 10 percent on the DLI. These schools, we argue, are particularly ripe for further analysis: What explains their unusual degree of focus on student-centered teaching of 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 high-quality professional development? And, what lessons could they have for other schools?

It is possible to envision how future studies might tackle such research questions by considering two of those high-scoring schools: Albertville High School (AHS) and El Tesoro High School (ETHS).[6] Neither explicitly frames its mission around deeper learning. In addition, neither school serves a wealthy population, has a selective or small enrollment, belongs to a national network, or has received special funding or public attention. Both schools met our initial selection criteria of serving a high percentage of low-income students, a diverse population, scoring high (top 10 percent) on the DLI, and having relatively high levels of performance across graduation rates, English Language Arts, and Mathematics.

ALBERTVILLE HIGH SCHOOL, OHIO

AHS serves 663 students in grades 7-12. Located in a major suburb close to a populous city, AHS is the only high school in town and is considered a large school for the surrounding towns. Its current student population is 46 percent black, 45 percent white, 5 percent multiracial, 3 percent Asian, and 1 percent Latino/a. Close to 45 percent of those students receive free or reduced-price lunch, which is high for the area. Despite a large special-needs population, AHS slightly outperforms the state averages in reading and math proficiency and was rated "excellent" by the state of Ohio for the 2010-11 and 2011-12 school years (though the new format of the 2012-13 state report revealed areas that need to be addressed, particularly due to the performance of students with disabilities on standardized tests).

The school has undergone significant shifts in recent years as a result of changes in its surrounding community. The student population of AHS dropped from an enrollment of well over 1,000 to under 700 students over the course of approximately five years. The percentage of African-American families nearly doubled during this time and

» What explains the schools' unusual degree of focus on student-centered teaching of skills such as collaboration, problem solving, and self-directed learning?

many of these new students are from lower socioeconomic backgrounds. Few of the newer families are directly involved with the school. In addition, the reduction in students meant that numerous teachers were let go as well, causing significant unrest and low morale throughout the system.

Despite a challenging and changing context, the AdvancED report finds that AHS maintains an outstanding emphasis on meeting all learners where they are and providing individualized resources and extra supports. The atmosphere in the school conveys a sense of calm and trust across students and teachers and a pervasive caring attitude that includes student and parents. The reviewers observed "effective learning and student engagement… in most of the classrooms." Student, parent, and teacher surveys and classroom observations found an overall sense of satisfaction and respect for the school and community. Taking these factors together, reviewers deem AHS to offer a strong learning environment.

In addition, AHS places significant weight on collecting data and availability of technology. However, these positives were not uniformly strong. The emphasis on data collection was not matched by strength in data interpretation and use. And the technology was too often underutilized.

Despite the overall sense of satisfaction from parents, the AdvancED reviewers want to see AHS doing more to involve the newer families and "meeting them where they are." And in general, AHS does not go far enough in encouraging broader participation in school leadership and decision-making from teachers, students, parents, and members of the community. Reviewers found that AHS needed to beef up its professional development areas to cover issues such as:

- Training and guidance on how to use data to guide decision-making and instructional improvement;
- Making higher-order questions more ubiquitous throughout every classroom; and
- Implementing a better technology strategy to have students engage in more thoughtful ways with their devices.

Finally, AdvancED recommended that AHS leadership could do more to involve staff in decision-making and collaboration, in the hope that this will offset staff retention and morale issues from the loss of colleagues and changing demographics.

EL TESORO HIGH SCHOOL, TEXAS

ETHS serves 2,843 students in grades 10-12 and is one of seven high schools in an urban district in Texas. At ETHS, 87 percent of the students are Hispanic, 6 percent Anglo, 4 percent African-American, and 3 percent Asian. The surrounding area is a mix of low-income and higher-income homes and a few apartments, and 68 percent of the population receives free or reduced lunch.

The school has seen recent rapid growth due to increased enrollment of military and immigrant families, as well as out-of-district transfers. In 2013, end of course exams resulted in a "distinction" designation for the school, placing it in the top quartile of high schools in the state.

Numerous elements appear to be contributing to the strength of the school, starting with the role of the school leader in nurturing a cohesive vision and "exceptionally strong communications." All decisions and financial matters are aligned with the Campus Improvement Plan, which involved/s a significant amount of outreach and contributions of all school stakeholders. Many of the positive cultural elements throughout the school are reinforced by use of "continuous improvement processes embedded as daily practice [and] the protection of instructional time." All teachers follow required instructional processes that create coherence across the building. At the same time, numerous offerings enable students to find their niche, including: International Baccalaureate curriculum, Advanced Placement, dual credit, gifted and talented curriculum, the Advancement Via Individual Determination (AVID), and multiple career and technology education pathways that allow students to obtain professional certifications.

Similar to Albertville High, El Tesoro provides broad access to technology, but is challenged in assisting teachers in using it in student-centered ways. As a result, students are underutilizing the technology available.

Although school leaders place great emphasis on parent and community outreach, AdvancED found the school could still improve its work with monolingual, Spanish-only parents. The large class size (35+), high counselor to student ratios, and frustrating School Management System used for official record keeping were all found to be especially problematic. The reviewers recommended that ETHS:

- Place even more emphasis on professional development to use multiple forms of data more effectively and more consistently across the school (as some teachers already do).
- Investigate and implement a new School Management System.
- Implement a better technology professional development strategy.

Finally, AdvancED would like to see more time devoted to enable teachers to act as an even more effective learning community.

WHERE MIGHT WE GO WITH FURTHER ANALYSIS?

These quick snapshots are designed not to explain what makes these two schools effective but to highlight interesting areas for further investigation. For instance, while AHS and ETSH exhibit very different strengths, both have top deeper learning scores. In turn, this leads us to wonder whether each school has taken its own path to reach the same destination, or whether, say, AHS's strength with special needs students and ETHS's emphasis on collaborative decision-making lead to *different* deeper learning outcomes (e.g., AHS students excel in developing academic mindsets, while ETHS produces great collaborators)? In this scenario, we might want to examine more closely the hypothesis that certain school orientations are better suited to certain deeper learning competencies.

The one place they converge is that neither school did particularly well on effective and student-centered use of technology. If the schools heed AdvancED recommendations and improve in this area by the time of their next accreditation visit, further investigation could unpack whether these schools have a correlational improvement on their DLI (and other traditional academic markers); or conversely, whether improving technology use does not significantly impact their DLI scores.

Overall, the differences in these two schools' areas of strengths and weaknesses (and yet, their relatively high DLI scores) appear to reinforce the idea that there exists no silver bullet or single, one best high school model. It may be the case that focused and sustained efforts in any number of directions combine to produce deeper learning outcomes. Then again, if researchers were to add several more schools to the analysis, they might begin to see patterns in the data, suggesting that particular school models, practices, and pedagogies tend to be correlated with particular deeper learning opportunities. For example, perhaps the schools with a strong bent toward collaborative decision making also tend to emphasize collaborative work in the classroom. Or perhaps school size and student-to-teacher ratios are linked to the frequency with which students learn to communicate effectively. Or perhaps students' development of academic mindsets is closely related to teachers' opportunities for professional development focusing on this topic.

Once these key school focus areas are cataloged and tested further, they could then be compared with other Effective Schools' research to highlight where some approaches—or some combination of approaches—result in schools with higher DLIs, while others may result in success along more traditional lines (i.e., math and reading score success, four year college placements), but do not get at the additional deeper learning skills and dispositions. In other words, are the key elements behind the high DLI schools just the markers of any "good school" or is there something that differentiates their ability to provide for a broader range of competencies and skills?

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CONCLUSION

This exploratory study was designed to break new ground, showing researchers a promising place to dig for insights into deeper teaching and learning. Our goal was 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, we wanted 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 unheralded—that 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 additional study of those schools will lead to important lessons for secondary education in general.

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?

Given the limitations of this first-out exploratory approach, we did not delve into correlated and specific outcome data for the schools. One important next step to both build on the early AIR evidence and this methodological approach would need be to see whether observable opportunities for deeper learning in fact lead to deeper learning outcomes (though, as noted earlier, results must be interpreted with caution, given the challenges involved in assessing inter- and intrapersonal skills).

We conclude this final paper in the Deeper Learning Research Series by noting that while the field is still young, deeper learning has a significant theoretical base beneath it, and early evidence suggests that its six elements are useful constructs that lend themselves to ongoing empirical investigation. As the movement continues to grow, we look forward to seeing where the research takes us.

» While the field is still young, deeper learning has a significant theoretical base beneath it.

ENDNOTES

[1] While we use the term "deeper learning," others have described some or all of these capacities as "soft skills," "cognitive and non-cognitive skills," "social and emotional intelligence," "success skills," "21st-century skills," "personal qualities," and so on. Duckworth and Yeager (2015) have argued that while the language may differ, and while none of the available words (such as "skills," "capacities," "qualities," and "dispositions") perfectly describes the matter at hand, these various terms refer to essentially the same underlying set of issues. It is more important for researchers to focus on the particulars, they believe, than to argue about what to call the buckets into which they sort those particulars.

Insofar as the goal is to conduct basic research into how people learn, we agree. However, and perhaps because we take our audience to be policymakers and practitioners as well as researchers, we place somewhat more importance on the choice of terminology. Thinking ahead to the creation of assessment tools, classroom interventions, policies, and such, we anticipate the need for consistent terms and categories. Thus, we have chosen to be consistent in our own use of the deeper learning framework proposed by the Hewlett Foundation, which focuses on six key elements: mastery of core academic content, critical thinking and problem solving, collaboration, effective communication, learning how to learn, and academic mindset.

[2] The ten school networks include: the Asia Society, Big Picture Learning, ConnectEd, EdVisions Schools, Envision Schools, Expeditionary Learning, High Tech High, Internationals Network for Public Schools, New Tech Network, and New Visions for Public Schools. In 2011, all were selected to participate in the Hewlett Foundation's *Deeper Learning Community of Practice*, which provides opportunities for them to share best practices, resources, and lessons learned from their work.

[3] Created in 2006, AdvancED includes the K-12 divisions of three of the six regional accrediting associations: the North Central Association of Colleges and Schools, the Southern Association of Colleges and Schools, and the Northwest Accreditation Commission.

[4] Reports on the design, testing, and validation of eleot™ is proprietary information, and we cannot share it here. For more information on the assessment tool and the research that supports it, we urge readers to contact AdvancED directly. In brief, though, the tool is designed to be used during 20-minute classroom observations. It asks reviewers to rate (using a 4-point scale) students' level of engagement on 30 items (e.g., "the student is provided exemplars of high-quality work"), touching on 7 aspects of the classroom environment (e.g., High Expectations, Supportive Learning, Active Learning).

[5] Randomly chosen in the sense that they were the schools that happened to be scheduled for AdvancED's accreditation visits in the Southern, North Central, and Northwest regions during the 2013-14 school year.

[6] School names and towns have been changed.

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