

Using an evidence-based practice or program

Jonathan Haslam describes types of barriers educators may face in adopting and implementing evidence-based practices, and tips for overcoming them

PREVIOUS ARTICLES IN BETTER HAVE examined some of the challenges in using evidence-based programs and practices. Deciding to go “evidence-based” is not necessarily a straightforward solution for your school or district. The state of evidence-based practice within education is still a work in progress. Using evidence-based approaches presents a variety of challenges, particularly given the limited number of programs and practices with strong evidence of effectiveness that can be easily implemented by educators.

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A number of websites, particularly Johns Hopkins University's Best Evidence Encyclopedia (www.bestevidence.org), aim to help with this, by using rigorous criteria to identify for educators those programs and practices that have evidence of effectiveness. However, just because a program has been proven to be effective, does not mean that it comes complete in a neatly wrapped package that can be easily used by schools and districts. Unfortunately, many good programs do not make it to an implementable product.

There can be many reasons for this. For example, the program developers may not have the resources to develop the supporting materials that educators require for implementation. The U.S. Department of Education's Investing in Innovation fund is a promising first step in addressing this issue. It offers a range of grants at different levels that should enable developers to take their ideas all the way from a promising initiative through to a scalable product that can be implemented nationwide.

An important first step, then, when selecting an evidence-based program, is to be reassured that it has all the support materials that you need for a successful implementation. It is important, too, that

you are sure that it is the right solution for you. Has it been evaluated in a school with a similar profile to yours? For example, programs that have been proven in high-poverty schools may not necessarily deliver the same results in schools with middle-class students. Does it address the issues that are important in your school?

Once you have chosen a program or practice, what steps are necessary to implement it effectively? As much as anything, this is a case of managing change within the organization, so the steps you

will need to take are similar to those for any large change project. Additionally, of course, we know that the program will change practice in the classroom.

Leadership and “buy in”

When introducing evidence-based practices to your school, it is essential to secure support from senior leadership, and to have “buy in” from the staff. Achieving this is in large part a matter of communication. Presenting a plan as a done deal will likely lead to resentment and resistance, so it is crucial to take as many stakeholders as possible with you.

Involve senior staff in the development of your ideas. The selection of a new program should be linked to the outcomes that are desired – such as improved behavior of children, or improved literacy scores. Have staff signed up to this agenda, or do they think that there are other, more important issues? Unless people can see the benefit that will result from these changes, then they may not support them. And that change must be meaningful, not something that is trivial. In all likelihood, then, your focus will be on how this new program can improve achievement for the kids. And here evidence-based practice comes

into its own, because it comes with robust evidence that it does make a difference.

Fidelity

An important aspect of success in many evidence-based programs and practices is implementing them with fidelity. Not doing so can often be the cause of initial enthusiasm leading to disappointment. A poorly implemented program can do more harm than good, because it will put people off from trying new ideas in the future.

It is important that you are clear on what needs to be implemented for a program to be effective, and for this to be reflected in the way the program is implemented. In the article on page 18, for example, Torrance and Fidalgo report how they examined which elements of a program teaching grammar were vital for its success. When implementing programs, it is useful to do this, and understand the elements that must be implemented and implemented faithfully. There can be a temptation for staff to say that they are already doing something similar. This may or not be true, but the reasons for the success of a program may depend on getting the detail right, rather than producing a superficial copy.

Professional development

One of the key elements of a successful program, and certainly key to the introduction of a successful program, is extensive professional development. Most programs are about changing what happens in the classroom, and to do this requires teachers to change their behavior. This is unlikely to occur without proper professional development, probably involving external coaches who have used the program before.

To a motivated staff, this may be one of the most appealing aspects of a new program, since professional development, improving and developing one's practice, can enhance their professional skills. If there is resistance to it, then it is worth reviewing again the reasons for the change, why the change is necessary, and what outcomes are hoped for.

Sustainability

Making sure that the introduction of a new program persists and is sustainable is clearly an important point. A one-off burst



of improvement is rewarding, but the hard work of achieving that is wasted if this improvement is not sustained.

In a recent *Better* article, Peter Ji and Roger Weissberg looked at how to successfully implement a social-emotional learning program. They listed the following as important steps in sustaining the implementation of a program, and these similarly apply to any kind of evidence-based program:

- **Provide ongoing professional development** – initial professional development is important, but it is also important to continue this even once the program has become embedded. In particular, external support for staff once their initial enthusiasm has waned can be invaluable.
- **Evaluate practices and outcomes for improvement** – There are a couple of points here. First, it is important that there is a check in place to make sure that the practice has changed, and that the changes to practice that are identified as key to implementation of the program have been made. Second, there should be a check on the outcomes of children.

When implementing an evidence-based program, you can have reasonable confidence that it will do what it claims, but there are no guarantees. You should have a system in place that checks, as fairly as possible, the improvements that have resulted. If they are not what you were hoping for, then this may prompt you to consider whether the practices and programs are being implemented faithfully, or whether they were the right ones for you.

- **Develop infrastructure to support the program** – As with any school-wide initiative, it is important that knowledge and commitment to the program is distributed throughout the school.
- **Nurture partnerships with families and communities and communicate with stakeholders** – Wider support of the practices and programs used by the school is clearly important. Making parents, the wider school community, and other stakeholders aware of what is going on, and the successes that are resulting, is vital in building ongoing support and encouragement for the school's program.

As with any change management, introducing an evidence-based program may raise other concerns that need to be addressed. For example, dealing with staff that are unwilling or unable to change, or managing the different expectations of diverse parents.

Appreciating that the introduction of an evidence-based program is not a quick fix, but requires planning and perseverance, will set you along the right road. And with an evidence-based intervention, compared with one that is untested, you can have confidence that the effort will result in real improvement for students.

About the author

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Further reading

Best Evidence Encyclopedia,
www.bestevidence.org

Ji P and Weissberg R (2010), Implementing School-wide Social and Emotional Learning, *Better* 2(2) 12–13

K-8 schools vs. middle schools: which is better for adolescent achievement?



WHEN STUDENTS MOVE FROM ELEMENTARY school to a stand-alone middle school, their academic achievement falls substantially relative to their counterparts who attend a K-8 school, according to a Columbia University study.

Included in the study were New York City school children who entered the 3rd grade between the fall of 1998 and the fall of 2002 and were followed for six years, through the 8th grade. The students in the sample attended either a K-5 school or K-6 school and then moved to a separate middle school, or they attended a K-8 school, meaning they never transitioned to a stand-alone middle school to complete the middle grades.

Using standardized test scores in math and English, researchers tracked the performance of individual students over time to see how their performance evolved relative to their peers. What the researchers found suggests that stand-alone middle schools may not be best for student learning.

According to the study, in the year when students move to a middle school

from elementary school, their academic achievement drops in both math and English when compared to their peers who continue in a K-8 school. Further, the researchers found that the students' achievement in the stand-alone middle schools continues to decline throughout the middle grades.

What's to blame for the decline? The researchers were unable to pinpoint a specific reason, although they did find that grade cohort size had a pronounced influence on student achievement during the middle-school years. In the stand-alone middle schools, the average number of students per grade was more than double that of the K-8 schools. While the researchers do speculate on why it may be harder to educate middle school-aged students in large groups, they were unable to validate any one hypothesis with evidence from the study.

Columbia University

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educationnext.org/stuck-in-the-middle

Study evaluates effectiveness of teacher performance pay

PERFORMANCE PAY FOR TEACHERS is a hotly debated topic. While some think that performance pay gives teachers an incentive to improve student outcomes, others argue that it's nearly impossible to measure a teacher's value and that teachers are not the only influence on a child's education. While the debate rages on, a Vanderbilt University study looks at the effectiveness of teacher performance pay in raising student achievement.

The three-year study – named The Project on Incentives in Teaching (POINT) – was conducted in the Metropolitan Nashville School System from 2006-07 through 2008-09. Middle-school mathematics teachers voluntarily participated in the study and were randomly assigned to either a treatment group or control group. In the treatment group, teachers were

eligible for bonuses of up to \$15,000 per year on the basis of student test-score gains on a standardized state test. In the control group, teachers were not eligible for these bonuses. Participating teachers

☞ **Rewarding teachers with bonus pay, in the absence of any other support programs, does not raise student achievement** ☞

had to decide for themselves if and how they would take extra measures to raise student performance (i.e., participate in more professional development, seek coaching, etc.).

According to the study's findings, rewarding teachers with bonus pay, in the

absence of any other support programs, does not raise student achievement. Overall, researchers found no significant differences between the test scores of students taught by the treatment teachers and test scores of students taught by the control teachers.

The researchers note that POINT tested only one particular model of incentive pay and that the findings do not imply that another approach would not be successful (i.e., rewarding teachers in teams or combining incentives with coaching or professional development). Further research is needed to fully understand the effectiveness of compensation reform as a way to improve educational outcomes.

National Center on Performance Incentives

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www.performanceincentives.org

Professional development trends in the United States

A REPORT RELEASED BY THE NATIONAL Staff Development Council offers mixed results about the status of teacher learning opportunities in the United States. According to the report, the U.S. is making progress in providing support and mentoring for new teachers, but has moved backward in providing the vast majority of teachers with the ongoing, intensive professional development that has been found to improve student learning.

The report is part of a multi-year research study on professional development for teachers. For this part of the study, researchers from the Stanford Center for Opportunity Policy in Education analyzed data from the Schools and Staffing Survey, a national survey conducted by the federal government. The researchers reviewed responses from the 2000, 2004, and 2008 surveys so they could evaluate the progress of professional development efforts over the past decade.

Positive findings emerged from the research regarding professional development for beginning teachers. According to the study, 74 percent of beginning teachers

☞ **Overall, the intensity of professional development seems to have declined over the years** ☞

participated in induction programs in 2008, up nearly 6 percent from 2004 and 14 percent from 2000. The percentage of beginning teachers who reported having a mentor also increased, from 62 percent in 2000 to 71 percent in 2004 and 78 percent in 2008.

However, overall, the intensity of professional development – defined by the length of time teachers participate in the professional development – seems to have declined over the years. The study found that in 2008, teachers nationwide had fewer opportunities than they had four years earlier to engage in sustained professional

learning opportunities (i.e., more than eight hours in duration) on topics such as reading instruction, classroom management, and uses of technology for instruction.

The number of professional development hours that teachers experience on a single topic in a given year is insufficient to make a difference in student achievement, the study says. The researchers suggest that states and districts reshape their professional development policies to support teachers' engagement in the kinds of sustained professional development that research has shown to be effective.

National Staff Development Council

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[www.learningforward.org/
stateproflearning.cfm](http://www.learningforward.org/stateproflearning.cfm)

U.S. Department of Education reports on early elementary math curricula

IN AN EFFORT TO IDENTIFY EFFECTIVE approaches to improving math achievement in disadvantaged elementary schools, the U.S. Department of Education's Institute of Education Sciences (IES) is sponsoring a study – conducted by Mathematica Policy Research and SRI International – on the achievement effects of four elementary math curricula. Their most recent report on the study presents findings for first and second grade students, an update to a 2009 IES report that included first graders only.

The four curricula being examined in the study are: (1) Investigations in Number, Data, and Space (Investigations), (2) Math Expressions, (3) Saxon Math, and (4) Scott Foresman-Addison Wesley Mathematics (SFAW). Two cohorts of schools – 39 in cohort one and 71 in cohort two – have participated in the study and were randomly assigned to implement one of the four curricula in their classrooms. In cohort one, curriculum implementation occurred only in the first grade, while in cohort two, curriculum implementation occurred in both the first and second grades (except for one school in which implementation occurred only in the second grade).

To measure the achievement effects of the



four curricula, researchers tested students at the beginning and end of the school year using a nationally normed test. Their findings suggest that, out of the four programs studied, two may have an edge in raising early elementary math achievement: Math Expressions (which blends student-centered and teacher-directed approaches to mathematics) and Saxon Math (a scripted curriculum that blends teacher instruction of new material with daily practices of previously learned concepts and procedures).

According to the study, the average math achievement of first graders in schools using

Math Expressions was higher than in schools using Investigations and SFAW, but not in schools using Saxon. For second graders, the researchers found that the average math test score in schools using Math Expressions and in schools using Saxon was higher than that in schools using SFAW, but not in schools using Investigations.

A third and final report on the study's findings – which will include third grade students – is expected to be released in the summer of 2011.

Institute of Education Sciences

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ies.ed.gov/ncee/pubs/20114001/index.asp

The Latest Research

Report: *Improving reading comprehension in kindergarten through 3rd grade: A practice guide* (NCEE 2010-4038). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. (September 2010)

What? This practice guide recommends five specific steps that teachers, reading coaches, and principals can take to successfully improve reading comprehension for young readers. Each recommendation promotes practices that have shown promise in increasing reading comprehension among students in kindergarten through 3rd grade. The recommendations are as follows:

1. Teach students a variety of reading comprehension strategies that will help them understand and retain what they
2. Teach students to identify and use the text's organizational structure to comprehend, learn, and remember content.
3. Guide students through focused, high-quality discussion on the meaning of text.
4. Select texts purposefully to support comprehension development.
5. Establish an engaging and motivating context in which to teach reading comprehension.

☞ To be successful, the recommendations should be implemented together and viewed as five pieces of a whole ☞

Included in the guide are detailed examples of how to carry out each recommendation. The guide notes that, to be successful, the recommendations should be implemented together and viewed as five pieces of a whole.

The research base for this guide was identified through a comprehensive search for studies that evaluated practices designed to improve reading comprehension for beginning readers. It includes both experimental and quasi-experimental effectiveness studies, as well as qualitative reports of practices and strategies.

Authors: Shanahan et al.

Where? The practice guide can be found at whatworks.ed.gov/publications/practiceguides

Report: *Efficacy of Schoolwide Programs to Promote Social and Character Development and Reduce Problem Behavior in Elementary School Children* (NCER 2011-2001). Washington, DC: National Center for Education Research, Institute of Education Sciences, U.S. Department of Education. (October 2010)

What? This report provides results from an evaluation of seven school-based social and character development (SACD) programs. The purpose of the evaluation was to determine whether the programs improved student social and emotional competence, improved behavior (including reducing negative behavior), improved student achievement, and improved student and teacher perceptions of school climate. The seven programs were chosen for this evaluation because they (a) had either preliminary evidence of success or a history of previous implementation in schools, (b) aimed to influence social development and behavior outcomes, and (c) utilized a universal approach to be implemented in all elementary school classrooms.

A total of 84 schools were included in the study and were randomly assigned to either continue their traditional character development practices (the control group), or implement one of the study's seven SACD programs (the treatment group). The sample included 6,600 students, their primary caregivers, teachers, and principals from

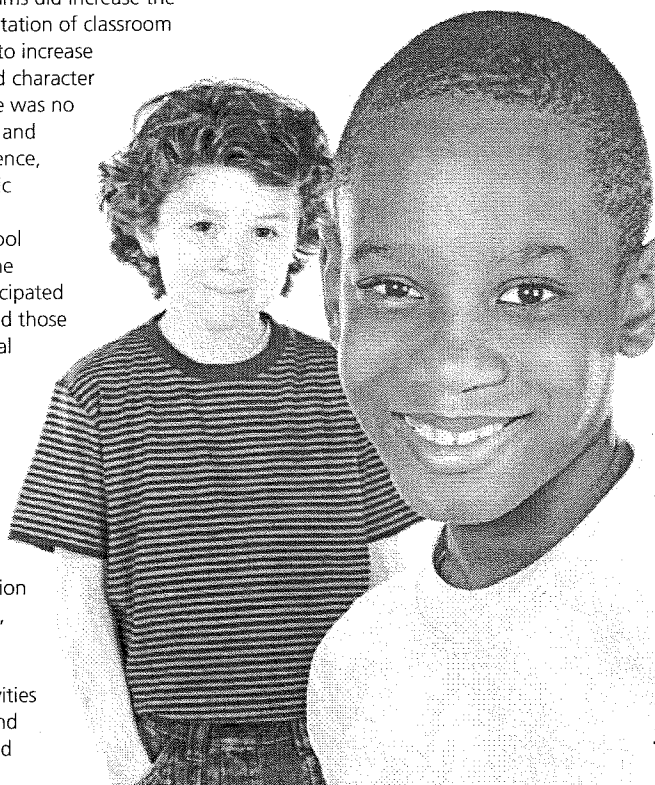
the 84 schools. Using data such as student survey responses and teacher evaluations of student behavior, researchers compared academic and behavioral outcomes of the control and treatment groups over a three-year period.

The researchers found that, while the seven SACD programs did increase the reported implementation of classroom activities intended to increase students' social and character development, there was no difference in social and emotional competence, behaviors, academic performance, or perceptions of school climate between the students who participated in the programs and those that did not. Several explanations for this finding are considered in the report: (1) failure of the conceptualization and design of the intervention, (2) weak implementation of the intervention, (3) nonsubstantial differences in the level of SACD activities in the treatment and control schools, and

(4) methodological limitations of the evaluation.

Authors: Ruby, A., Doolittle, E.

Where? The report can be found at ies.ed.gov/ncer/pubs/20112001/index.asp



The Latest Research

Report: *Longitudinal Study of Classroom Connectivity in Promoting Mathematics and Science Achievement: Years 1-3.* Columbus, OH: The Ohio State University. (May 2010)

What? Classroom connectivity technology (CCT) allows teachers to wirelessly communicate with students' handheld calculators. In this study, researchers examined the effects of a CCT intervention on Algebra I teaching and learning. The CCT utilized in the study was the Texas Instruments Navigator™ (TI-Navigator), a system that connects students' TI graphing calculators to their teacher's computer with the intent to enable shared learning experiences. For example, one function of the TI-Navigator system is that it allows

teachers to capture a screenshot of individual student calculators. The teacher could then use the screenshot to review a student's understanding of a concept, or the screenshot could be displayed for the class to see and discuss.

Algebra I teachers from 28 U.S. states and 2 Canadian provinces and their students participated in the four-year study and were randomly assigned to either a treatment group or control group. In the treatment group, teachers received training on how to use the TI-Navigator system and then implemented the technology in their classrooms. The treatment teachers also participated in ongoing technology-related professional development. In the control group, teachers did not use the TI-Navigator

system or participate in the professional development.

Researchers reviewed data on the students' algebra achievement to evaluate the impact of the technology. Their initial findings show that the students whose teachers used the TI-Navigator system scored higher on a researcher-designed Algebra I test than students whose teachers did not use the technology. The study suggests that the use of the CCT intervention – which includes both the CCT and the professional development – produced the increase in achievement.

Authors: Irving et al.

Where? The report can be found at www.ccms.osu.edu/publications.php

Report: *Learning about Teaching - Initial Findings from the Measures of Effective Teaching Project.* Seattle, WA: Bill and Melinda Gates Foundation. (2010)

What? The Measures of Effective Teaching (MET) project was launched in the fall of 2009 in an effort to improve the quality of information that is available about teacher effectiveness. As part of the project, researchers are testing new ways to identify effective teachers and effective teaching practices. In this report, the researchers analyze two approaches to estimating teacher effectiveness: measuring student achievement gains and measuring student perceptions of the classroom instructional environment.

Three thousand teachers from across the U.S. are voluntarily participating in the

project. For this report, the researchers focused on mathematics and English language arts teachers in grades 4 through 8. The following data were collected from their classrooms and studied by the researchers: students' scores on standardized state tests and students' responses to a survey in which they rated their level of agreement with statements such as, "Our class stays busy and doesn't waste time," and "I like the way we learn in this class."

Several key findings have emerged from the research. First, the researchers found that in every grade and subject they studied, a teacher's past success in raising student achievement on state tests is one of the strongest predictors of his or her ability to do it again. In addition, the study

suggests that student feedback (in this case the student survey responses) is also an indicator of teacher effectiveness. According to preliminary findings, when students report positive classroom experiences, those classrooms tend to achieve greater learning gains.

This report is the first of four to be released from the MET project. Future reports will be completed as findings on other measures of teacher effectiveness – such as classroom observations – become available.

Authors: Prepared by the Bill and Melinda Gates Foundation

Where? The report can be found at www.metproject.org/reading

Report: *The Effectiveness of a Program to Accelerate Vocabulary Development in Kindergarten (VOCAB)* (NCEE 2010-4014). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. (November 2010)

What? This study tested the impact of a kindergarten vocabulary instruction program on students' expressive vocabulary – defined as the words students understand well enough to use in speaking. The program used in the study was Kindergarten PAVED for Success (K-PAVE), a program that was implemented as a supplement to students' regular classroom literacy instruction.

K-PAVE is designed to build children's vocabulary and comprehension skills, oral language skills, and enhance teacher-child relationships.

The study's sample included 128 kindergarten teachers and 1,296 kindergarten students who were randomly assigned to either a treatment group or control group. Teachers in the treatment group received training on the K-PAVE program and then started it in their classrooms as a 24-week supplement to their schools' core language arts program, while teachers in the control group continued their regular literacy instruction without the supplement.

Researchers tested the vocabulary development of the students in the

treatment group and control group using a standardized expressive vocabulary test. They found that kindergarteners who received the K-PAVE intervention were one month further ahead in vocabulary development and academic knowledge at the end of kindergarten compared with their peers who did not receive the intervention. However, the researchers found no statistically significant differences between the two groups on listening comprehension, which was evaluated using a standardized listening comprehension assessment.

Authors: Goodson et al.

Where? The report can be found at ies.ed.gov/ncee/pubs/20104014/index.asp