

## CAROLINA EDUCATION REVIEW



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Good principal preparation more important than ever

## Mapping new routes to creating diverse schools

## Teacher evaluation reforms have failed to help students

## Ranking schools diverts needed attention

## What John Dewey tells us about schooling today

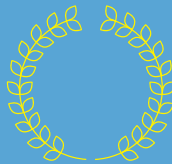
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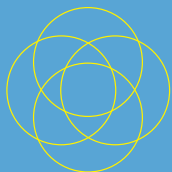
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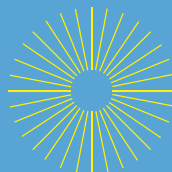
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## **Advancing Knowledge, Driving Innovation**

We produce cutting-edge knowledge, and pursue innovative, research-based solutions to the most pressing problems of educational theory, practice, programs, and policy in North Carolina, the nation, and beyond.

**Edge: Carolina Education Review** is produced by the UNC School of Education.

**Editor:** Fouad Abd-El-Khalick, Dean and Alumni Distinguished Professor

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All stories written by Michael Hobbs unless otherwise noted.

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# From the Dean



## Greetings:

Careful use of data can tell us a lot.

We offer several articles in this issue of *Edge: Carolina Education Review* that demonstrate the power of data — power that can be used to reveal new understandings and power that can misinform when not used with intention.

In our cover story, we take a look at work led by **Matthew Bernacki** that has created new methods of studying self-regulated learning by using the data generated when students use online learning platforms. The new tools offer insight into the power of self-regulated learning, while also contributing to new interventions that help struggling students.

The preparation of school principals is

another focus of this issue of *Edge*. We explore new findings generated by a team including **Constance Lindsay** that demonstrate effective school principals have more impact on their learning environments than earlier understood. Additionally, **Martinette Horner** has written about the importance of partnerships with school districts that can contribute to better preparation for today's demands of principals.

Education policymakers have grappled for years with questions around how to achieve racial diversity in our schools.

**Thurston Domina** is one of the authors of an award-winning paper that examined a key question: Do school reassignments aimed at creating diverse schools cause any harm for students? After diving into a deep well of data, their answer was “no.”

**Matthew Springer** pursues a research agenda that dives into the data that can inform education policy decisions. In a recent study, Springer and colleagues examined the effects of a decade of teacher evaluation reforms, finding that the reforms had little impact on student achievement.

*U.S. News & World Report* has started ranking elementary and middle schools. In a column published by *The Washington Post*, **Ethan Hutt** argued that such rankings often obscure important aspects of schools. In a Q&A,

“Data can reveal new understandings but also misinform when not used with intention.”

Hutt adds that school administrators should take care to share data that can produce a public benefit.

**Lynda Stone**, a longtime philosopher of education, is retiring after a 57-year career. We take a look, in an article by her doctoral advisee **Daniel Gibboney**, at how study of John Dewey has led her to propose that educators do works of “small democracy” to help preserve our form of government.

I hope you enjoy reading this issue of *Edge*!

A handwritten signature in black ink, appearing to read 'Fouad'.

**Fouad Abd-El-Khalick**

Dean and Alumni Distinguished Professor  
UNC School of Education

Sept. 1, 2022



# The importance of principals

## Review identifies practices, behaviors of effective school leaders

**W**hat makes a school principal effective? Practices and behaviors that make some school principals more effective than others are illuminated in a new review of 20 years of research into the impact of school leaders on the academic achievement of their students. The study updates a landmark 2004 literature review that determined the leadership of a school was second only to classroom instruction as the most important school-related factor affecting student learning. The new review

confirms the importance of school principals, but adds that principals' impact on student learning may be even greater than previously thought.

Both reviews were issued by the Wallace Foundation, which commissions and publishes studies aimed at advancing leadership development among school principals and other administrators.

Constance Lindsay, Ph.D., an assistant professor at the UNC School of Education, is a co-author of the latest report, "How Principals Affect Students

and Schools: A Systematic Synthesis of Two Decades of Research." Jason Grissom of Vanderbilt University was lead author, with Anna Egalite of NC State College of Education as an additional co-author.

The report included an extensive literature review, finding 219 high-quality studies published since 2000 that looked at the impacts of school principals. Among the studies reviewed were six that analyzed data from more than 22,000 principals in four states and two urban school districts, taking advantage of longitudinal data that did not exist for the 2004 study. The six studies also used new statistical methods that enable researchers to make causal inferences to evaluate the magnitude of principals' effectiveness.

Among the report's overall findings:

- Principals in the 75th percentile of effectiveness yield an increase in student learning in reading and math of about three months, nearly as much as the four months of increased learning generated by teachers at the 75th



**The Edge:** The impact of effective principals is stronger and broader than previously understood, according to a new review of 20 years of research. Constance A. Lindsay was one of the authors of the new study, which updates a landmark 2004 review of evidence of principal impact.

percentile, but across entire schools.

- Principals' effects are largely indirect, stemming from their work to hire and develop teachers and in creating conditions for sound learning.
- Given the strength and scope of the impacts of effective principals, investments in successful strategies to recruit and retain high-performing principals are likely to have large payoffs.
- Principals need to continue to focus efforts on educational equity.

#### **WHAT MAKES SOME PRINCIPALS EFFECTIVE?**

The wide-ranging review examined changes since 2000 in policies impacting school leadership, changes in the makeup of the principal workforce, the evidence for the effects of principals, the attributes of principals seeming to affect student achievement, and the state of evidence on principals' effectiveness.

The authors also identified skills and behaviors associated with effective principals, saying school leaders need to build skills and expertise in three broad categories:

**Supporting instruction.** Effective instructional leaders have expertise in high-quality instruction, enabling them to evaluate teachers constructively. They must be able to distinguish high-from low-quality pedagogical practices and possess skills to provide effective, structured feedback to teachers. They also need to be able to recognize the characteristics of high-impact

professional development offerings.

#### **Managing and developing people.**

Effective school leaders demonstrate a sense of caring for teachers that contributes to relationship development and to creating safe and nurturing environments. They must be able to communicate effectively, which contributes to building shared expectations, cohesion, and commitment to the school. Effective principals work to cultivate trust, which supports confidence in the school's leader and sets the stage for any collaborative efforts.

**Managing organizations.** Principals must have the skills needed to manage a complex organization. Effective principals must be able to manage budgets and resources, to hire and manage personnel, and to set goals and think strategically about how to meet them.

#### **FOUR AREAS OF SKILL FOCUS**

How do school leaders put those skills to work?

Lindsay and her co-authors identified a set of practices and behaviors of school leaders that integrate the instructional, organizational, and people skills and that were demonstrated to improve school and student outcomes. They organized the practices and behaviors into four interrelated areas:

#### **1. Engage in instructionally focused interactions with teachers.**



**Constance A. Lindsay**  
Assistant Professor

High-performing schools devote resources to learning opportunities for teachers who focus on instruction and building teacher capacity. Student achievement growth is higher in schools where teacher professional learning is considered an integral part of a school-wide instructional program.

A key area of a school leader's effort is in making teacher evaluation systems successful. Effective principals secure buy-in, helping establish perceptions of legitimacy of the evaluation systems. Multiple studies demonstrated students can benefit from sophisticated teacher evaluation systems that combine structured classroom observations with high-quality feedback.

Effective principals do a good job of implementing evaluation systems, especially the teacher evaluation component. But many school leaders must learn the skills needed to give teachers meaningful feedback and authentic coaching support.

One approach shown to be effective is for school leaders to elevate coaching as a strategy for school reform, which then raises teachers' willingness and enthusiasm to participate in coaching activities.

Research also suggests effective principals make use of data to inspire action, such as buy-ins for assessment and improvement efforts and to establish clear goals and expectations.

A suggested tactic: Use "data chats" during which administrators and teachers examine findings regarding their work, informing efforts to identify areas for improvement.

## **2. Build a productive climate.**

A strong school climate is one that allows everyone in the school to spend their time engaging in or supporting effective teaching and learning. Evidence has shown teachers' instructional effectiveness improves more rapidly in schools with strong professional climates. School climates featuring an academic emphasis have shown to be positively associated with students' academic performance.

Elements typical in strong school climates are collaboration, engagement with data, organizational learning, a culture of continuous improvement, and "academic optimism."

Several studies indicated principals can facilitate strong school climates by helping teachers and students feel safe, valued, and emotionally supported, helping them believe their individual effort will lead to achieving academic goals.

In seeking to build and sustain strong school climates, effective principals look beyond their schools, serving as highly visible community leaders and advocates seeking to build

# **The Impact of Principals**

The review of 20 years of studies into the effectiveness of school principals had these overall findings:

- Effective principals are at least as important for student achievement as previous reports have concluded — and in fact, their importance may not have been stated strongly enough.
- Principals have substantively important effects that extend beyond student achievement.
- Effective principals orient their practice toward instructionally focused interactions with teachers, building a productive school climate, facilitating collaboration and professional learning communities, and strategic personnel and resource management processes.
- Principals must develop an equity lens, particularly as they are called on to meet the needs of growing numbers of marginalized students.
- Effective principals are not equitably distributed across schools.
- Principals are becoming more racially and ethnically diverse, but representation gaps with students are growing, which is concerning, given the payoffs of principal diversity.

trust between the school and the surrounding community.

## **3. Facilitate collaboration and professional learning communities.**

Collaboration is a key element of a productive school climate, one that helps drive higher student achievement and additional positive outcomes, including lower teacher turnover.

One method for facilitating collaboration is through leading effective data use for student improvement, with principals creating opportunities for data use and training.

Elementary schools allotting grade-level teams common planning time saw higher achievement growth, particularly in reading.

Effective principals work to establish a culture of learning in which they work with teachers to create a shared sense of responsibility for student learning. One strategy is encouraging

the use of professional learning communities. Evidence shows the success of professional learning communities depends on the quality of the relationship between teachers and school leaders.

## **4. Manage personnel and resources strategically.**

Effective school leadership requires strategic management of resources, optimizing their use to support teaching and learning.

Principals need to recognize the importance of intangible resources, such as time and external social capital. Principals with better time management skills spent more of their time on instruction and in classrooms and were rated more highly by their teachers and assistant principals, according to one study. Other evidence has shown principals who spend more time

interacting with parents, community members, and other stakeholders outside the school see improvement in reading measures.

Evidence also indicates managing tangible resources — primarily in the realm of personnel — predicts positive school outcomes.

A key differentiator between strong and weak hiring practices that researchers have identified is principals' access to and engagement with data about their teacher applicants. More experienced principals may be more likely to base their hiring decisions on applicants' qualifications rather than on commonly used factors such as enthusiasm and expected fit into the school's team.

However, constraints on principals' time often limits their ability to engage with data when making hiring decisions. Principals are more likely to use teacher effectiveness data in school districts that have put structures in place to facilitate that engagement, when principals have the skills and expertise needed to use the data, and when they perceive the measures as being valid.

Teacher assignment and placement is another area where principals exercise personnel strategy. Principals in high-growth schools place teachers more equitably, working to match high-performing teachers to low-achieving students.

Strategic retention is another focus of effective principals, who are more likely to retain high-performing teachers — and less likely to retain their lowest-performing teachers. Principals who are successful in retaining teachers frequently focus on teacher growth, building opportunities for teachers to collaborate.

## LEADING FOR EQUITY

The review examined a growing body of research examining the role of school principals in producing more equitable outcomes among students. Much of that research is based on qualitative data, and the authors pointed out some successful practices highlighted in the studies.

Equity-oriented school leaders consider how their interactions with teachers focused on instruction can affect equity. Those principals may work with teachers to search for alternative instruction approaches to meet the learning needs of marginalized students or engage teachers in professional development around serving the needs of subpopulations of students, such as English learners.

Principals can help educate teachers about marginalized students' circumstances, including training about the challenges faced by students from lower socioeconomic backgrounds. Principals also play a key role in setting and communicating high instructional expectations for marginalized students. Equity-focused principals use data to target instructional resources to students who are identified as falling behind.

A key to establishing inclusive climates is how principals manage discipline with an awareness of racial disciplinary gaps. Equity-oriented principals recognize that they can pursue alternative strategies to close racial discipline gaps, including restorative justice approaches, home visits with parents to discuss discipline, and discussions with teachers about classroom management and treatment of students.

Equity-focused principals also seek to build collaborations among teachers, families, and the community, with the aim


of creating purposeful connections to help schools better serve their students.

## SUGGESTIONS FOR NEEDED RESEARCH

More research is needed to replicate findings of the impacts of school principals and to further examine the nature of the principalship to better understand how to help school leaders be more effective, Lindsay and her co-authors said.

The findings demonstrating effective school principals can drive improvements in student achievement are based on only six studies, conducted in just a few states and districts, and may not be representative, they said. Those studies also focused primarily on elementary and middle schools.

More research is needed on principals' effects on students' academic achievement, especially in high schools.

The authors placed an emphasis on the need for new or refined statistical approaches to isolate and measure principals' impacts on student achievement and other outcomes. Researchers need to design quantitative studies that can rule out alternative explanations for their findings, they said. 

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# Partnering for better training

## University-district partnerships help produce stronger principal impact

**E**xpectations of school principals are rising.

Principals are no longer expected simply to be effective building, resource and personnel managers. Growing evidence shows that the most effective principals are ones who manage those needs while also serving as instructional leaders who build and nurture learning communities.

But many principal preparation programs have been slow to keep up with those rising expectations, with curricula that often feature a heavy focus on theory and little input from the school districts that hire program graduates.

Martinette Horner, Ed.D., the UNC School of Education's Master of School Administration (MSA) program director, writes in an article published in the *Journal of Organizational and Educational Leadership* that partnerships between university-based principal preparation programs and school

districts can bridge the preparation-practice divide that can hamper effective school principal preparation.

Horner co-authored the article with Derrick Jordan, who received his Ed.D. degree from the UNC School of Education and has served at all levels of K-12 education, including at the state level and as a principal and school system superintendent.

In the paper, Horner and Jordan point to research that has found a lack of opportunity in many educator preparation programs to apply theory to practice in schools.

"Our schools face numerous new and continually emerging challenges," Horner said. "To be effective, school principals today must be able to address multifaceted problems, juggling demands from a wide number of constituencies, while also paying deep attention to building a supportive learning environment.

"It's a tough job," she said. "But



**Martinette Horner**  
Clinical Assistant Professor

candidates for principalships can gain important insights and experience in principal preparation programs that have strong ties with school districts," Horner said. "These partnerships also can inform our preparation programs, making them more relevant to the challenges our graduates will face when they take on school leadership positions."

### WRITING FROM EXPERIENCE

Horner, a clinical assistant professor, began her career working as a third- and fourth-grade teacher for eight years, during which she earned distinction as a National Board Certified Teacher. She has worked as a district mentor for beginning teachers and supported students in a Title I school as a literacy tutor. She worked for four years as a school administrator before



**The Edge:** Martinette Horner leads efforts to prepare future principals from across North Carolina. She and Derrick Jordan, N.C. Department of Public Instruction assistant superintendent for agency schools, write that university-district partnerships hold great promise for more effective principal preparation.

joining the UNC School of Education as its first P-12 Distinguished Educator.

At UNC-Chapel Hill, in addition to serving as program director of the School Administration program, Horner serves as regional director of the N.C. New Teacher Support program, which offers services to enhance teachers' skills and to reduce attrition among beginning teachers.

She also leads efforts around the UNC School of Education's participation in the N.C. Principal Fellows Program, which funds preparation of educators to serve as school principals. UNC-Chapel Hill's participation in the program — in an MSA initiative called "UNC LEADS" — features partnerships with five county school districts and a group of charter schools.

UNC LEADS provides a framework for student's preparation that is built on three pillars emphasizing equity and social justice, educational leadership, and continuous improvement. UNC LEADS builds on relationships the School of Education has developed to help districts and schools in underserved areas.

Horner's research and service agenda focuses on school leader preparation with practice. She has worked to build and nurture partnerships that serve schools while also informing continuous improvement efforts of educator

**To be effective, school principals today must be able to address multifaceted problems, juggling demands from a wide number of constituencies, while also paying deep attention to building a supportive learning environment.**

preparation programs.

Jordan now works at the North Carolina Department of Public Instruction as assistant superintendent for agency schools, a position in which he oversees the state's schools for the deaf and the blind, university-affiliated laboratory schools, and alternative schools. His 20-year career as an educator includes service as a middle and high school English teacher, an assistant principal at elementary, middle, and high school levels, a high school principal, and eight years as a school district superintendent.

### **SEEKING EFFECTIVE PARTNERSHIPS**


Horner and Jordan write that effective

university-district partnerships often build on professional development school models (PDS) developed beginning in the 1990s in which K-12 schools and educator preparation programs partnered to renew programming and professional education in the K-12 schools and at the universities. But PDS models often left out the explicit preparation of school principals.

In more recent years, two types of principal preparation partnerships have emerged: organizational partnerships and partnerships for learning.

Organizational partnerships promote collaboration between districts and preparation programs primarily in the realm of recruitment, by seeking to identify educators with leadership potential from within districts and developing leadership pipelines to facilitate their entering into principal preparation programs.

Partnerships for learning work to incorporate opportunities for principal candidates for clinical experiences that are coordinated with the curriculum in their academic preparation. In addition to providing principal candidates with real-world problems, districts can also contribute to program and curriculum design, implementation, and candidate assessment.

Horner and Jordan write that more research is needed to understand how principal preparation programs and K-12 school districts interpret and experience these partnerships. Other questions that researchers need to explore: How do university-district partnerships influence principal decision-making and leadership behaviors? How do specific partnership activities best support candidate learning? 



## COVER STORY

# Tracing online learning

New method created to study  
self-regulated learning;  
widens routes into STEM fields

**M**atthew Bernacki can predict the future. It's a superpower he uses to improve teaching and learning.

Bernacki, Ph.D., the Donald and Justine Tabet Faculty Scholar at the UNC School of Education, is a pioneer in the development of new ways to observe and analyze how students learn.

Working with a team of researchers, Bernacki uses the methods to uncover new understandings of how students think about and regulate their own learning. Additionally, he and his team use those findings to deliver learning support to those students his models predict will struggle in a class. These supports provide students with

additional help and study skill trainings that have been successful in improving their performance.

With funding from the National Science Foundation, Bernacki leads studies that analyze student learning by examining the data generated from college students' use of online and computer-based instructional tools and materials, including course management systems.

Among the team's primary objectives: inventing a new method for investigating self-regulated learning.

"The research is clear that students who can self-regulate their learning typically achieve greater academic success," Bernacki said. "But we need better tools to carry out needed research into which students use self-regulated learning practices, when, and under what conditions. That information can help us understand how their use contributes to greater achievement.

"These tools that we've developed — taking advantage of data that students generate when using online learning platforms — hold a great deal of promise in helping us answer important questions that will contribute to gains in teaching and learning," he said.

## THE IMPORTANCE OF SELF-REGULATION

Over two decades, researchers have documented the central role of self-regulation in learning. How a student thinks about their thinking (or, "metacognition"), their own judgments about their ability to learn new material, their planning for how to approach a learning task and the effects of those choices, have been shown to play a large role in determining a student's success mastering new information.

**The Edge:** Studying self-regulated learning requires knowing how people think. Matthew Bernacki, the Donald and Justine Tarbet Faculty Scholar, has helped lead research that has created new methods for observing self-regulated learning. He and his team have taken the work farther, using the tools to identify struggling students who are then targeted for interventions aimed at improving their academic outcomes.

Theoretical models of self-regulated learning typically describe three phases during learning: a preparatory phase, a performance phase, and an appraisal phase — each of which requires students to monitor their own thinking strategies and make decisions about modifying their strategies based on their own self-evaluation of their success learning new material.

To study self-regulated learning, researchers need to get inside students' heads. Their methods include asking students to report how they work to learn material, such as "think-aloud protocols" in which students are recorded talking about their experiences and choices as they study. But analyzing the resulting data is labor-intensive, requiring transcription of students' comments and extensive coding of those comments. As a result, research into self-regulated learning has slowed.

A few learning scientists, including Bernacki and his team, have worked to develop a new method to study self-regulated learning, one that takes advantage of the data generated by students' use of online resources and course management systems such as Blackboard Learn, Canvas, and Sakai.

By analyzing students' use of online course materials, Bernacki and his team can track, or "trace," the behavior



**Matthew Bernacki**  
Donald & Justine Tarbet  
Faculty Scholar

of students as they interact with the materials. Such trace data include clicking on and reading teachers' study guides, use of and performance in practice quizzes, and review of quiz results. Actions such as clicks on buttons, selection of items in dropdown menus, and entry into text fields can trace a student's work in an online learning environment.

Where Bernacki gets into students' heads: Inferences from students' traced behaviors can be matched



with processes associated with self-regulated learning. A few examples:

- Accessing syllabi and study guides indicates motivation, forethought, and planning to learn.
- Completing practice quizzes indicates use of active-learning strategies, such as self-testing.
- Viewing quiz results indicates self-evaluation of performance, effort that contributes to students planning next steps.

Bernacki described the application of trace data in studying self-regulated learning in the book “Handbook of Self-Regulation of Learning and Performance” in a chapter titled “Examining the Cyclical, Loosely Sequenced, and Contingent Features of Self-Regulated Learning: Trace Data and Their Analysis” (Bernacki, 2018).

Using trace data, students can be grouped by their adherence to the phases of self-regulated learning, allowing for examination of students’ varying outcomes and therefore the efficacy of following self-regulated learning practices. For example, some students may engage with study guides and practice quizzes early in a course, while others skip that preparation. Some students work through online practice problems throughout the course, while others don’t. Some go straight to practice quizzes without accessing study guides first. Still others don’t engage much at all with the rich content their instructors provide.

Researchers can use the data to make comparisons between students who follow the phases of self-regulated learning and those who don’t — all to demonstrate whether power rests in the use of self-regulated learning practices.

## “Students who can self-regulate their learning typically achieve greater academic success.”

To help test the validity of their use of trace data to track self-regulated learning, Bernacki and team — as well as other researchers — have conducted studies that compare the use of trace data to track self-regulated learning with previously established methods, such as think-aloud protocols and video capture.

### HELPING THE STRUGGLERS

Bernacki began exploring the use of trace data to study self-regulated learning during his dissertation research at Temple University, continuing that work while at the University of Nevada, Las Vegas. He joined the faculty at the UNC School of Education in 2018 to further his research and to teach in the Learning Sciences and Psychological Studies concentration of the Ph.D. program.

The team with which he works includes other learning scientists. At the UNC School of Education that includes Jeffrey A. Greene, the McMichael Family Professor. Team members at UNLV include Jonathan Hilpert, MeganClaire Cogliano, Jennifer Utz, Christy Strong, and Lucie Vosicka. Doctoral students and postdoctoral fellows at the UNC School of Education — including Robert Plumley, Nikki Lobczowski, Mladen Rakovic, Michael Berro, and Shelbi Kuhlmann — also contribute, along with researchers from UNC’s Department of Psychology and Neuroscience.

Bernacki, Greene, and others on the team have collaborated on a number of papers documenting their work using trace data to gauge students’ self-regulated learning.

Among their findings in one study: By tracking the trace data of students in a large introductory-level undergraduate science course, they were able to determine that the most successful students engaged more actively with online resources, activity that predicted subsequent exam performance. The findings regarding timing of students’ use of resources aligned with theory and research on self-regulated learning regarding the importance of early task definition activities as well as the importance of metacognition throughout learning — all of which provides more evidence that students’ use of self-regulated learning practices and higher-order thinking is a powerful tool in online learning environments (Greene, et al., 2021).

They’ve also applied what they’ve learned to create interventions aimed at helping students succeed.

### ADDING STRUCTURE TO HELP STUDENTS

Kelly Hogan had a problem.

The way she addressed it created opportunities for Bernacki and his team to study students’ learning and to develop an intervention to help students who might struggle in Hogan’s classes.

Hogan, a biology professor and associate dean of instructional innovation at UNC-Chapel Hill, is one of those college professors who teaches large STEM courses, often with more than 400 students. A dozen years ago she was confronted by data that





showed a disproportionate number of underrepresented students were failing her Biology 101 course.

Knowing, at that time, nationally only about 40% of students — and only 15% of minoritized students — intending to major in the sciences went on to graduate with a science degree, Hogan sought to transform her teaching so that her courses were not experienced as “weed out” barriers, but as onramps for students seeking to enter STEM fields and careers.

She transformed her teaching from a low-structure format — a traditional lecture-based course that relied on optional readings, lectures, and exams — to a high-structure format that included required online exercises and quizzes throughout the semester, in-class polling and discussion, three exams with a self-reflection after the first exam, a pre-test, and a final exam.

Hogan describes the approach as “inclusive teaching,” as the high-structure format provides more guidance for students who otherwise may not have the background and experience to succeed academically when left largely alone to make their way through a demanding introductory STEM course. The high-structure format worked disproportionately well for Black students — cutting the Black-White performance gap in half — and also for first-generation students (Eddy, et al., 2014).

Now, all professors teaching Biology 101 at UNC use the high-structure format. (Hogan describes this work in her new co-authored book “Inclusive Teaching: Strategies for Promoting Equity in the College Classroom.”)

The use of a high-structure format aligns with calls for reforms from bodies such as the President’s Council of Advisors on

Science and Technology that seek wider adoption of active learning practices in early STEM courses as a means to lower barriers to academic success and to reduce disparities within STEM academic programs and fields (Freeman, et al., 2014).

## LEARNING TO LEARN

High-structure, active learning online teaching like that conducted by Hogan and her colleagues requires students to engage strongly in their own learning, using practices described by self-regulated learning models: metacognition, time management, effort regulation, and monitoring and adjusting learning strategies.

Self-regulated learning strategies are especially important in higher education settings as students are expected to learn independently. Research has found that to be especially true in settings where much of a course and

its materials are presented in online formats that students are expected to use independently.

High-structure, active learning online teaching also can generate a lot of data — the kind of data that Bernacki and his team can use not only to refine and validate tracking of self-regulated learning, but also to develop interventions to identify and help struggling students.

In a series of published studies, Bernacki and colleagues have demonstrated that trace data can provide early warning signals, identifying students who need help. Students' patterns of use of a course's online resources, or lack of use of those resources, provide clues as to who will succeed in the course, and who will not.

"As instructors we didn't realize just how much data we had for each student and we certainly didn't know what to do with it," Hogan said.

"Working with Matt and the team, we're excited to apply ways to use these data to identify students that could benefit from help earlier than we've ever identified them."

In one study, Bernacki and colleagues built a model that could by the end of the third week of a course identify 74% of the students who would end up earning a C or worse on the course's final exam (Dominguez, et al., 2016).

In a more recent study, Bernacki and colleagues were able to cut the warning period to the first two weeks of a course (Cogliano, et al., 2022), the achievement level required for many students to advance in a STEM major or to remain competitive for the careers in health care and research to which they aspire.

Working with data generated by students in the UNC Biology 101 courses, Bernacki, Hogan, and colleagues are studying a new equity-focused layer to their prediction process, creating a set of calculations that seeks to avoid biases common in artificial intelligence and machine learning algorithms.

The refined algorithm aims to ensure equitably accurate predictions for those who are under-represented in STEM fields — women, first-generation college students, and Black and Latino students.

Bernacki and colleagues have also built on their findings, developing an intervention that not only provides an early warning to identify students likely to struggle in a course, but also delivers supplemental online resources to help them get on track.

Many universities provide tutoring and other training interventions to assist undergraduate students who lack skills needed to succeed in demanding STEM courses. But these interventions are time-consuming for learners and often rely on face-to-face interaction with facilitators who supply considerable amounts of individualized instruction and feedback. While frequently successful, such personal instruction frequently consumes more time and resources than can be devoted to helping large numbers of students in introductory STEM courses.

To address that problem, Bernacki, among others, has worked to create an online learning skills training program that can be embedded within the context of STEM courses.

An initial version of the program — called "The Science of Learning to Learn" — consists of three modules that introduce students to a set of cognitive

strategies that have been proven effective for acquiring knowledge, ensuring its retrieval, and consolidating knowledge into deeper conceptual understandings. The modules can be completed in a few hours, at a time of each student's choosing, and concurrently with their coursework, thus causing little interruption to students' work toward primary academic tasks.

The second of the three modules introduces students to the self-regulated learning processes of planning how to approach a learning task, choosing a strategy, and monitoring the effectiveness of their learning strategy.

The learning skills covered in the modules are broadly generalizable toward university coursework, but Bernacki and team designed the modules with relevant content and examples from the STEM courses the students were taking.

## **WIDENING PATHWAYS INTO STEM FIELDS**

Bernacki's team conducted randomized control trials to test the effectiveness of "The Science of Learning to Learn" modules. Over the course of three studies, the modules were tested with students taking anatomy and physiology, biology, and algebra. Some students were given the opportunity to use "The Science of Learning to Learn" modules, with others given access to traditional learning supports. (Bernacki, et al., 2020; Bernacki, et al., 2021)

Among the findings:

- First-generation students — who historically perform more poorly in early STEM coursework and exit STEM majors at greater rates —

# ‘Science of Learning to Learn’

## Module 1: Learning strategies

- Retrieval practice (i.e., self-testing or the “testing effect”)
- Spacing practice
- Self-explanation

## Module 2: Self-regulated learning

- Self-regulated learning overview
- Task definition (identifying learning objectives, observing content and depth of knowledge to be mastered)
- Goal-setting
- Planning (based on learning objective features)

- Strategy selection
- Monitoring learning and strategy effectiveness, adaptation

## Module 3: Achieve your goals

- How to form good habits and achieve your goals
- Mental contrasting
- Implementation intention
- A step-by-step guide to mental contrasting and implementation intentions
- Study your best: Maximize focus and minimize distractions

performed better on exams after using the “Science of Learning to Learn” modules than first-generation students in control groups.

- In the algebra course, the “Science of Learning to Learn” students had 8- to 10-point improvement on exams. Because the exam grades were worth 50% of students’ semester grades, the additional points constituted half a letter grade improvement.
- In the physiology and anatomy course, students using the “The Science of Learning to Learn” modules had a cumulative 10-point gain on exam scores during the semester, equating to one-third of a letter grade, a particularly important improvement for health sciences majors who were required to earn at least a B in the course to continue in the major.

The three studies of the effects of “The Science of Learning to Learn” modules confirm that training a broadly recommended set of cognitive strategies and principles for self-regulated learning provided enduring benefits to hundreds of undergraduate students in courses known to frequently

impede students’ progress toward STEM degrees (Bernacki, et al., 2021).

## FROM HOURS TO MINUTES

Bernacki, working with MeganClaire Cogliano and other colleagues at the University of Nevada, Las Vegas, have demonstrated that a shorter version of the “Science of Learning to Learn” training — one that requires only 15 minutes to complete — is effective in helping students (Cogliano, et al., 2022).

That study examined the use of a 15-minute training session covering some basics of self-regulated learning and embedded into the online content of an introductory biology course. Among students who were identified as predicted to fall short of a B in the course, some were given the training session and a control group was not.

The students who received the intervention training had a 12% increase in final exam performance — more than a full letter grade — than the control group. In fact, the performance of the group that had been predicted to fall

short of a B but received the “Science of Learning to Learn” intervention matched that of students who had been predicted at the beginning of the course to achieve a B or better.

As the authors state: “A body of work is forming that suggests that brief, digital interventions can remediate learning skills and that the prediction models that classify students as likely to perform poorly can yield insight on the kinds of learning behaviors that might serve as targets for remediation when they align to learning theory.” (Cogliano, et al., 2022).

“More research is needed to explore the use of trace data to inform development of diagnostic prediction models that identify students likely to be in need of learning supports,” Bernacki said.

Additional research is also needed to replicate these findings and to examine how more succinct training can influence students’ self-regulated learning processes. Also, fuller randomized control trials with the more succinct version of the “Science of

Learning to Learn” training are needed to compare its effects with more substantial training methods to examine the effectiveness of differing intensities and targeting of training, Bernacki and colleagues say.


All the while, Bernacki and colleagues continue to develop the “Science of Learning to Learn” program.

Testing of a more engaging, multimedia version is underway in STEM courses.

Bernacki also is developing two personalized versions of the “Science of Learning to Learn” training materials that adapt to students’ current ability to skillfully learn and adapt the instruction so students can not only learn skills critical for their STEM courses but can be taught by relatable peers with common backgrounds and identities.

Policymakers and educators are seeking to widen paths of opportunity

into STEM fields and careers.

Findings from the work of Bernacki and colleagues demonstrate that while these learning supports provide benefits to all learners, students from populations who typically perform near thresholds that require repeating coursework may be more apt to maintain progress toward STEM degrees when they receive support like that provided by “The Science of Learning to Learn.” 

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# Building diverse schools

## Study finds reassignment program caused no harm for students

**W**e've divided our schools again.

Today — nearly 70 years after the U.S. Supreme Court's *Brown v. Board of Education* ruling declaring "separate but equal" schooling unconstitutional — half of all students attend schools in which three-quarters of their classmates are of the same race.

Does it matter?

Research has shown that yes, it does matter. Students of all races — and especially students of color — benefit academically and socially from learning in classrooms with peers of different racial backgrounds, many studies have shown. Also, students of color typically attend lower-resourced schools and have less-effective teachers, resulting in persistent achievement and opportunity gaps when compared to students attending majority White schools.

Often facing court-ordered mandates, school system administrators and policymakers made attempts to integrate schools, beginning in earnest in the 1970s. They met resistance along the way. Frequently, advantaged families feared "mandatory busing" — and other assignment programs seeking to balance the racial makeup of schools — would harm their children.

Does busing, and other programs to balance student populations, harm students?

**The Edge:** Legal challenges to race-based school integration efforts have led school districts to use other methods for making student assignments while seeking to create diverse student populations within their schools. Does moving students among schools hurt their academic progress? A team led by Thurston Domina, the Robert Wendell Eaves Sr. Professor in Educational Leadership, examined a ten-year-long student assignment program in North Carolina and found students did not suffer academically from being moved to different schools.

Thurston "Thad" Domina, Ph.D., the Robert Wendell Eaves Sr. Professor in Educational Leadership at the UNC School of Education, set out to study that question.

He and his team found evidence that assignment systems aiming to create more diverse school environments can achieve those goals without impeding the educational progress of students, including the children of White families.

### QUESTIONS OF EDUCATION AND INEQUALITY

Domina has pursued a research agenda documenting educational inequalities while also seeking to identify and develop educational policies and strategies that help create more just, equitable, and inclusive learning environments. He has devoted a focus on understanding the relationship between education and social inequality in the U.S.

Domina put together a team that examined data around a school



**Thurston Domina**  
Robert Wendell Eaves Sr.  
Professor in Educational  
Leadership

reassignment program implemented in North Carolina's Wake County, home of the capital city, Raleigh, and surrounding suburbs. The

team — designed to operate as a research-practice partnership with the Wake County Public School System (WCPSS) — included two researchers with experience working within Wake County schools. They set out to study what effects the reassignment program had on students' experiences and their academic achievement.

The team included James Carter III, a Ph.D. candidate at the UNC School of Education who worked as a research analyst for WCPSS during the project, and Matthew Lenard, a Ph.D. candidate at Harvard University who previously worked as director of data strategy and analytics for WCPSS. Additional researchers were Deven Carlson, an associate professor at the University of Oklahoma; Andrew McEachin, director of Collaborative for Student Growth at the Northwest Evaluation Association; and, Rachel Perera, a doctoral fellow at RAND Corporation.

The paper derived from their study — “Kids on the Bus: The Academic Consequences of Diversity-Driven School Reassignments” — received the Raymond Vernon Memorial Award from the Association for Public Policy Analysis and Management. The award recognizes excellence in research by annually selecting a paper published in the *Journal of Policy Analysis and Management*.

## HOW TO REACH DIVERSITY?

North Carolina has served as an epicenter of the legal landscape around efforts to desegregate schools.

In 1969, Judge James McMillan issued a ruling in *Swann v. Charlotte-Mecklenburg Board of Education* that the school system had failed to desegregate, saying it was not enough

## “Prior research is clear: diverse schools are better for kids and better for society. The question is, how do we achieve diverse schools?”

to assign students to neighborhood schools when the neighborhoods had remained segregated. He ordered a system of busing to create racial balance in schools across the county, an order upheld in a landmark ruling by the U.S. Supreme Court in 1971.

But the legal fight continued, culminating in *Capacchione v. Charlotte-Mecklenburg Schools* in 1999 in which Judge Robert Potter ruled schools had met federal desegregation requirements and school officials could not use race as a factor in student assignment plans. Higher courts, including the U.S. Supreme Court, turned down appeals of Potter's order, effectively barring the use of race in making school assignments.

Since then, school systems across the country have worked to establish school assignment plans that create diversity within schools using factors such as socioeconomic status and prior academic achievement.

## MOVING TO ACHIEVE SOCIOECONOMIC DIVERSITY

WCPSS established such a system, putting it in place in 2000 and using it for ten years in an effort to balance the makeup of schools. The program operated during a period in which

Wake County experienced the fourth-fastest population growth in the country. Among large school districts nationwide, Wake County's enrollment growth was the second-fastest.

As part of the reassignment program, WCPSS set goals that no school's enrollment would exceed 40% socioeconomically disadvantaged students, or 25% of below grade-level students.

Components of the assignment program:

- The district was divided into geographic nodes containing roughly 150 students each, who were assigned to a default “base” elementary, middle, or high school.
- Through a “controlled choice” system, parents were allowed to opt out of reassignments to new “base” schools. However, most reassigned students attended their reassigned schools.
- Families could also choose to send their children to magnet or year-round schools rather than remain at their assigned school. To help promote desegregation goals, magnet schools were often located in higher-poverty areas of the county.
- To maintain socioeconomic and achievement balance, each year WCPSS reassigned students within several nodes to different base schools, typically reassigning relatively high-poverty nodes to lower-poverty base schools, or vice versa.

During the decade in which the program operated, approximately 25% of K-12 students experienced one or more reassignments.

Through the program, most district schools saw only modestly changed socioeconomic and racial composition. But some of the district's most segregated schools were more fully integrated.



Wake County's socioeconomically based desegregation program ended after a 2009 election in which voters elected a slate of school board candidates that had campaigned against the reassignment policy.

### **WHAT HAPPENED TO THE KIDS?**

Did any of the children suffer academically or socially?

No, Domina and his team found.

The team examined data describing academic performance, suspensions, and absenteeism among all students in Wake County schools during the period of the assignment program. They were able to examine the experiences of students who never moved from their base schools and students who were reassigned to other schools. They

were also able to compare outcomes of students who were in schools who received reassigned classmates, and those of "left behind" students who saw some of their classmates reassigned to other schools.

In all, the study found modest positive, but compounding over time, effects on reassigned students' math achievement, in the range of 0.02-0.04 standard deviations. Reassigned students' reading scores declined significantly in the year of reassignment but rebounded in subsequent years.

The study found no measurable effects on chronic absenteeism, an effect that counters frequently stated concerns about school reassignment on students' experiences, the authors said.

Reassigned students saw a decline in suspension rates of 0.7 percentage points in the year of reassignment and remained depressed in the subsequent year, the study found. While those effects are small in absolute terms, they represent an approximately 20% decline from the sample's conditional mean suspension rate. Additional analysis by race and ethnicity found this protective effect of reassignment held exclusively for Black and Latino students, an important finding given interest in ameliorating disparities in racial discipline patterns.

The study also found students who did and did not attend their base school had similar outcomes following reassignment, suggesting students benefited from the reassignment

program whether they moved to a new school or stayed at their base school.

The bottom line, Domina said, is the results suggested policymakers and school system leaders who want to pursue programs to achieve racial and socioeconomic balance in their schools can do so without causing harm among students.

"Prior research is clear: diverse schools are better for kids and better for society. The question is, how do we achieve diverse schools?" Domina said.


"Wake County did it in a smart way. It reassigned students from across the district, and used a light touch, using

reassignment and school choice options to give families nudges that helped build more diverse schools," he said.

The "Kids on the Bus" paper concludes this way:

"... [W]e hope our findings provide encouragement for policymakers — in WCPSS and elsewhere — who are interested in finding new ways to pursue diversity in contemporary public schools. In our view, reassignment is a crucial tool for pursuing that worthwhile goal, a view buttressed by our findings that policymakers can reassign students without causing educational harm.

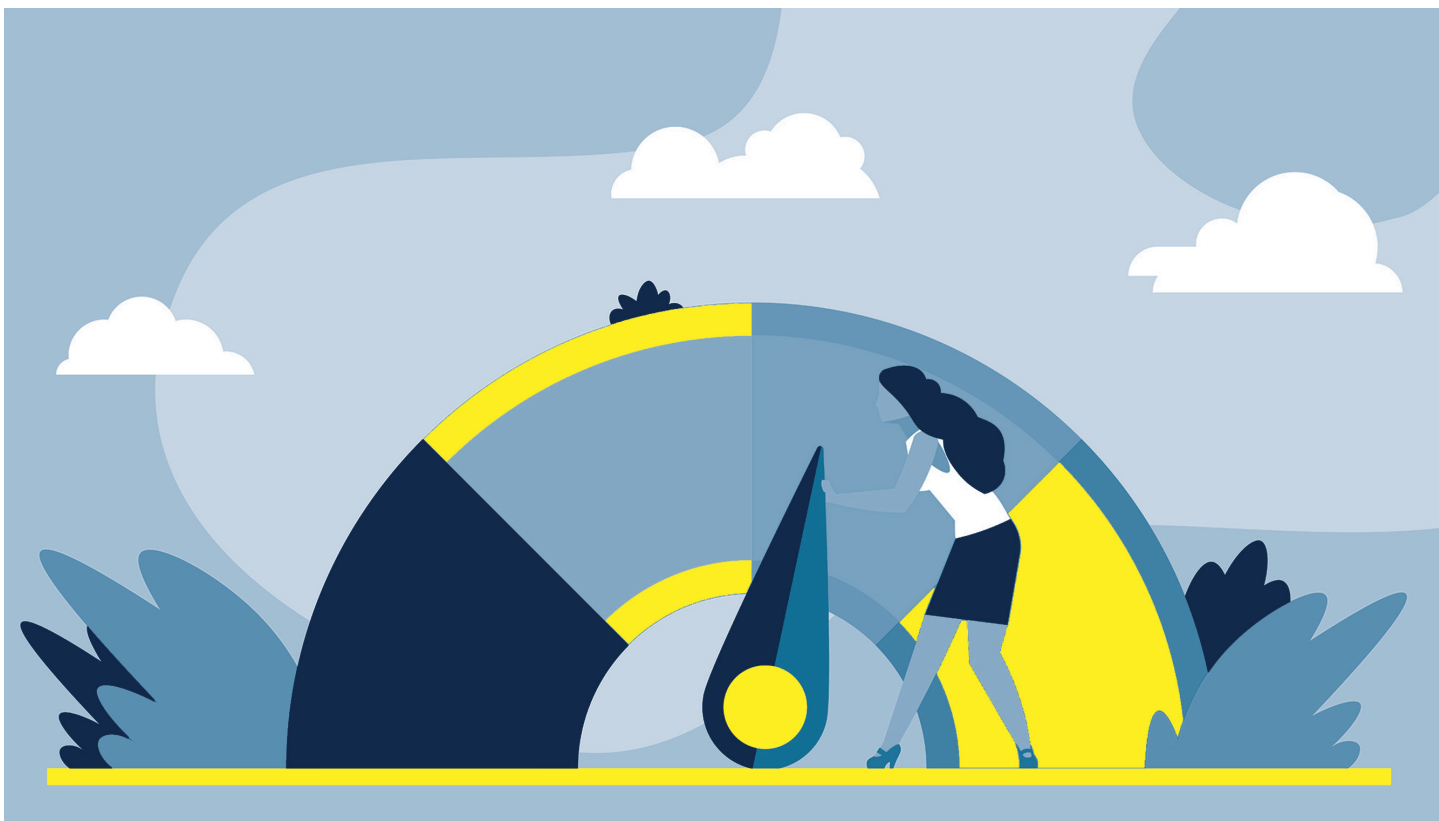
"Furthermore, we believe our findings may understate the social benefits of WCPSS's 2000-2010 reassignment policy since they only begin to capture the wide range of ways in which reassignment — and desegregation more broadly — might influence student experiences. Perhaps most notably, our results do not account for social benefits that all students encounter as they navigate more diverse learning environments.

"As such, we believe that WCPSS's reassignment policy provides an important model for school desegregation efforts in the contemporary context." 

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# Racing to nowhere

## Study: A decade of teacher evaluation reforms failed to improve student outcomes

**R**eforms of teacher evaluation systems across the country during the last dozen years have largely failed their primary goal: To raise student academic performance.

That's one of the findings of a study co-authored by UNC School of Education researcher Matthew Springer, Ph.D., published in December as a working paper by the Annenberg Institute at

Brown University.

The study, which its authors say provides the broadest and most generalizable evidence of the efficacy of teacher evaluation reforms in the U.S., concludes that despite billions of dollars spent reforming teacher evaluation systems, the reforms have had almost zero positive effect on student outcomes.

"These data show that on average across the country, teacher evaluation reforms haven't had their intended effect," said Springer, the Robena and Walter E. Hussman, Jr. Distinguished Professor of Education Reform. "We found that while linking teacher evaluations to student performance has worked in a few places, it has proved to be very difficult for most school districts to establish these systems in ways that contribute to better academic outcomes for students."

### MISSING LINKS

Before the reforms, teacher evaluations relied primarily on observations, had little direct connection to teacher compensation or employment, and saw nearly all teachers receiving satisfactory ratings, leaving no way to differentiate among the teachers' performances.

Reform proponents advocated that teacher evaluation systems that take into account student performance



**Matthew G. Springer**  
Robena & Walter E. Hussman, Jr.  
Distinguished Professor  
of Education Reform

would make it possible for school districts to reward effective teachers, while also identifying lower-performing teachers in need of professional development or to be removed from their jobs.

Incentivized by the federal government's Race to the Top grant competitions between 2009 and 2017, 44 states and the District of Columbia implemented reforms aimed at linking the evaluations of teachers to the academic performance of their students.

A team of researchers — Springer and colleagues from Michigan State University, Brown University, and the University of Connecticut — set out to analyze the effects of the reforms, measuring student performance during the period 2009 to 2018 on

**The Edge:** Reforms intended to incorporate student outcomes into teacher evaluations have failed to raise student performance, according to a study co-authored by Matthew Springer, the Robena and Walter E. Hussman, Jr. Distinguished Professor of Education Reform.

standardized mathematics and English Language Arts exams, augmented with data on the student attainment outcomes of high school graduation and college enrollment.

The bottom line: The reforms had no discernable effect on student achievement in mathematics or English Language Arts and little effect on educational attainment.

The team went on to examine whether differences among teacher evaluation systems produced different results, finding that they did not.

Why didn't the reforms work?

Previous studies have found that teacher evaluation reforms implemented in a few individual school districts and states — such as Washington, D.C., Chicago, Denver, Newark, Dallas, Tennessee, and New Mexico — have shown positive impact on student achievement.

Analysis by Springer and team confirmed those findings, giving the team confidence in the validity of their analytical methods.

But, the team said, while the findings of successful reforms in a few places demonstrate that it is possible to create teacher evaluation systems that take into account student outcomes, the very few examples of success highlight the fact that it is difficult to do so. The experiences in those few districts and states are not generalizable across the nation as a whole, the researchers said.

The actual design and implementation of reformed evaluation systems across the country frequently failed to follow proven best practices for performance management systems, with the result being systems that only vaguely resembled what reformers had envisioned, the team said. As a result, reformed evaluation systems often were not meaningfully different than the status quo, the team said. Additionally, states that did adopt more rigorous features in their evaluation systems typically failed to sustain them over time.

The reform efforts also may have had unintended consequences of driving down job satisfaction among educators and imposing burdensome demands on administrators' time, perhaps displacing other more productive activities, the team said.

#### **ANOTHER WORD WITH MATTHEW SPRINGER**

*Following is a Q&A with Springer regarding the findings of the study:*

#### **Why have teacher evaluation reforms generally failed to lift student achievement?**

**Springer:** My hunch is there are two primary culprits — implementation and design. Successful implementation of top-down policies and programs like the one studied in this paper are highly dependent on a change to the behavior of key actors, namely the principals and teachers responsible for student performance. A large amount of research has documented the failure of

top-down policy reforms, particularly in the education sector where “mandates” filter from federal to state and district levels and eventually reach schools, classrooms, teachers, and students.

More than 45 states and the District of Columbia have invested in so-called next-generation teacher evaluation systems, which include tenure reforms, widespread use of standards-based teacher performance rubrics, and more frequent and structured observations. But at the same time, the federal government has provided design waivers to states, which, as we note in the paper, essentially allowed some districts and states to water down the implementation of these reforms.

**This study looked at the effects of teacher evaluations on students’ academic achievement and attainment. But what about teacher compensation? You’ve done other work studying the use of compensation practices, particularly incentives to reward highly effective teachers, finding that those systems can lead to higher student achievement.**

**What more do we need to learn about how to make effective incentive programs that can more widely support student achievement and educational attainment?**

**Springer:** A growing body of research documents the important role strategic compensation policies can play in retaining highly effective educators and, ultimately, improving educational opportunities for students. My work with Luis Rodriguez of New York University and Walker Swain of the University of Georgia shows that a retention bonus can shift

“**We have to remember that for many teachers, additional pay alone is inadequate to overcome pressures to leave.**”

teachers’ decisions to persist in the challenging work environments of high-accountability, high-poverty, racially isolated schools, and promote higher levels of learning than would have occurred had these teachers left.


However, we have to remember that for many teachers, additional pay alone is inadequate to overcome pressures to leave, and only affects the underlying learning and working conditions to the extent that retained teachers improve the leadership culture in the building. Moving forward, we need to gain a better understanding the role of non-financial incentives, such as the interactions between working conditions and simple salary improvements, as well as how financial incentives can improve teacher supply.

**Should policymakers and administrators shift from pressing for high-stakes teacher evaluation systems? Or, are there workable ways to make these systems more effective?**

**Springer:** A first order concern is how districts and states respond to changes in federal guidance regarding teacher evaluation. Even though places like Cincinnati, Chicago, and Washington, D.C., demonstrate that teacher evaluation reforms can realize their intended

purpose, states are starting to back off on teacher evaluation reforms and related components. If states continue to disinvest in these policies and related infrastructure, then the potential utility will ultimately fade. And, this includes losing one of the most critical components of teacher evaluation systems today — post-observation performance feedback. Unlike other aspects of state evaluation systems, feedback takes an explicitly developmental approach to achieve better outcomes: Teachers develop as professionals and improve their skills in response to direct feedback on their practice.

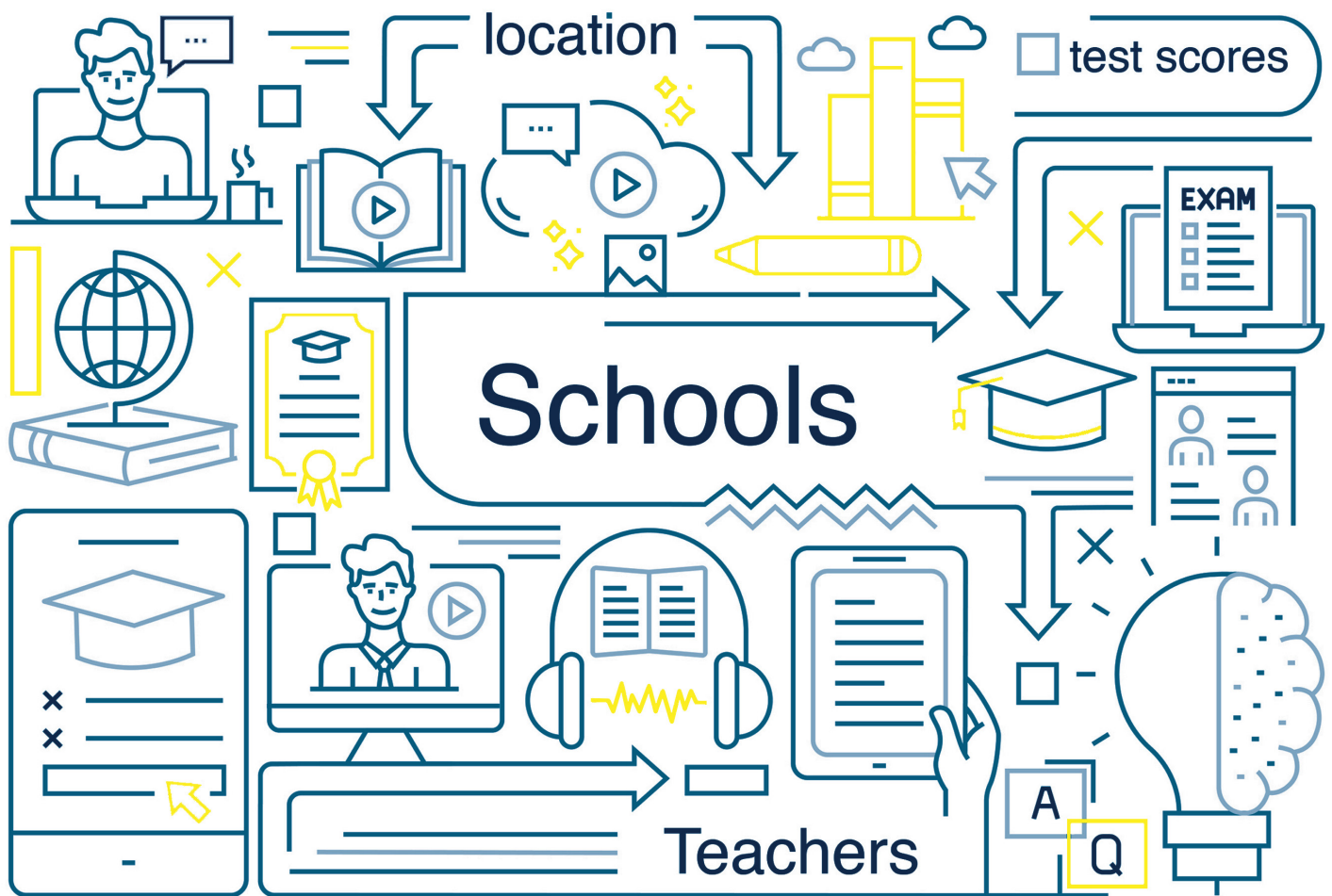
In another related study, with my colleague Seth Hunter of George Mason University, we conducted the first large-scale study of post-observation performance feedback provided to early-career teachers and examine how it relates to measures of teacher human capital. While prior research from outside the education sector shows feedback can be an important driver to improve employee performance, we find that few teachers are receiving the individually tailored and substantive feedback that can help them improve their practice.

The bottom line is that if next-generation teacher evaluation policies are to be successful, we need to pay close attention to proper design and implementation. 

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# Making the grade

## Essay: Rankings of schools take focus from grappling with deeper problems

Article by **Ethan Hutt**  
Q&A by **Michael Hobbs**

**I**n October, *U.S. News & World Report* announced that in addition to its annual rankings of high schools, colleges, and graduate schools, the company was releasing a list ranking the top elementary and middle schools in the country. Immediately, teachers, school officials, scholars, and commentators on both the left and the right overwhelmingly panned the announcement.

*A version of this essay appeared in The Washington Post's "Made By History" series on Oct. 22, 2021.*



**The Edge:** Rankings of elementary and middle schools, such as those by *U.S. News & World Report*, too frequently describe a simplified view of schools that is divorced from reality, says Ethan Hutt, the Gary Stuck Faculty Scholar in Education. In a column published by *The Washington Post*, Hutt says the rankings encourage a chase after statistical trends rather than close examination of actual school needs. In a Q&A, Hutt talks about what kinds of data would be helpful.

Although *U.S. News* has long been criticized for distorting perceptions of schools and the choices of school leaders by ranking schools based on a handful of “performance” variables, Americans have always been concerned with the quality of their schools, a concern that has frequently led them to quantify schooling. In fact, the impulse driving the *U.S. News* rankings, which so many found disturbing, also drives much of contemporary education policy.

Evaluation and comparison have always been ways to assuage anxieties and uncertainties about educating the young. The first standardized tests in American public schools were given in Boston in 1845. The brainchild of Horace Mann and his colleague, Samuel Gridley Howe, the tests were intended to demonstrate the need for serious changes in public schools.

When test score data wasn’t available, school officials sought other information as proxies for school quality. For instance, the percentage of enrolled students attending school on a daily basis and the number of “over-aged” students in a grade were understood as indicators of school efficiency and objective points of comparison across school systems.

Throughout the first decades of the 20th century, school statistics and ranked

lists became common features of annual reports and newspaper coverage as the public sought to understand how well their schools were doing.

But even as these statistics circulated, experts recognized their considerable limitations. Education was an inherently local affair, so information was valuable only in the context of local decision-making. Without standard curriculums, textbooks, funding formulas, teacher licensure, or graduation requirements across states or even districts, how useful could statistical comparisons really be?

Indeed, in 1959, after conducting a nationwide study of high schools, Harvard University President James B. Conant concluded it was “impossible” to discriminate among them. There were “too many high schools of too many different types” to allow for generalizations — one could “make valid judgments about American secondary education, but only school by school.”

Conant’s warning went unheeded. Throughout the 1950s and ‘60s, policymakers and analysts became increasingly convinced that schools, like businesses, were just “systems” that brought various inputs together to produce desired outputs. In this view, the system could be optimized simply by measuring, monitoring, and adjusting the inputs. Such a view was deeply



**Ethan Hutt**  
Gary Stuck Faculty Scholar  
in Education

appealing to federal policymakers who, in the midst of the Cold War, had become interested in maximizing the development of American brainpower.

The problem: It was deeply out of step with the reality of American schooling and required standardized information that simply didn’t exist.

In 1958, researchers with the New York Quality Measurement Project, one of the first federally funded projects to scrutinize the relationships between inputs and outputs, found that even in a state with a relatively centralized school system like New York, there was too much variation in district record-keeping to collect usable information.

The result was an effort that would be repeated regularly over the next half-century: In the absence of a standardized system of schools, researchers produced

standardized data about schools — about the quality of their institutional resources, the character of their communities, the performance of their students — to stand in its place and enable statistical analysis.

The stylized statistical portraits of the U.S. school system created by these data sets provided descriptive insight but imposed an artificial order on an inevitably messy reality. For instance, in the absence of national curriculum, the National Assessment of Educational Progress (NAEP), which was first given in 1969, promised a nationalized picture of student achievement.

But the administered test didn't resemble the curriculum students were exposed to. How could it in a country with no national standards and no national curriculum? As a result, the information produced could not be used to improve school quality. One researcher remarked that even if uniform data about the nation's schools could be produced, little would be gained through its analysis because "Chicago and San Francisco differ on so many dimensions that it is not an interpretable comparison."

Nevertheless, the possibility of collecting and mining mountains of newly available data proved extremely appealing to a new generation of policymakers and analysts trained in quantitative analysis, as well as to reformers coming to terms with the dimming prospects for radical systemic change. In the absence of big budgets or social movements for change, policymakers narrowed their focus to variables — class size, algebra for all, teacher credentials — that required only organizational change and, therefore,

**Schools respond to rankings pressures by goosing the numbers. Whether they do this through single-minded attention or outright fraud, the result is almost never substantive improvement.**

were available irrespective of local context or the prevailing politics.

In 1972, Harvard sociology professor Christopher Jencks's book "Inequality" sought to draw on the newly available school performance data to argue that school systems were fundamentally incapable of addressing social inequality.

Unsatisfied with this "new quantification," a group of Black scholars, including Ronald Edmonds, Andrew Billingsley, and James Comer, pointed out the local realities these generalized statistical accounts ignored but profoundly shaped racial inequality in schools.

"We hasten to point out," they wrote, "that public schools are not now, nor have they ever been committed to the radical notion that they are obliged to teach certain minimum school skills ... to all pupils."

To announce a statistical relationship between schools and inequality without consideration of past and present inequities was, in their view, to absolve society of its obligation to provide

quality education to all children. These scholars worried the statistics would be used to short-circuit the political push for equality.

Those concerns proved well-founded.

Indeed, the foundational premise of the No Child Left Behind Act of 2001 and its successor, the Every Student Succeeds Act of 2015, was that schools can achieve equality in student test scores, irrespective of history or place. Attempts to excuse or explain variation by pointing to historical injustice or contemporary inequality was taken as a sign of what President George W. Bush described in 2000 as the "soft bigotry of low expectations."

Today, the production of quantitative data about schools — the same data used to compute the *U.S. News* rankings — has become the backbone of U.S. school overhauls. Whereas a century ago, these data served as a basis for political debates about schools, their production is now often seen as an end in itself — not to facilitate public debate but to enable private decision-making, often through parent choice.

But numbers narrow attention and shift blame: The data displayed in ranking tables imply that if only the leaders of a particular school would offer more AP classes, improve student-teacher ratios, or raise test scores, then theirs could be among the "best" schools. This simplicity is appealing: It implies a clear silver bullet for school improvement. It also paints a picture of schooling that is divorced from reality.

Regardless of the picture presented in the ranking tables, the performance of schools cannot be understood separated

from place, politics, and history.

Our willingness to accept comparisons at face value, without interrogating the historical and contemporary processes that produced them, has left us chasing statistical trends instead of taking on the political challenges necessary to improve our schools.

## **ANOTHER WORD WITH ETHAN HUTT**

*Following is a Q&A with Ethan Hutt regarding his essay:*

### **Informed by knowledge of the history of the use of data regarding schools, what do you anticipate will be some of the consequences of these rankings?**

**Hutt:** We can reasonably expect two different consequences from these rankings. First, we should expect that the information produced by rankings will exacerbate inequality and economic, if not racial, segregation in our schools. Though the idea of publicly available school information might appear egalitarian in theory, in practice, we have seen time and again that parents with more resources are in a much better position to act on this information.

Wealthier parents are much more likely, for instance, to have the resources to buy into the neighborhood with the more highly ranked schools or, in the context of school choice systems, have the time and access to transportation necessary to drive their children across town to the school of their choice. Because wealth is tied to student and school performance, this becomes a self-fulfilling cycle that exacerbates inequality and segregation in our schools.

The second consequence in part

follows from the first: To the extent the parents respond to the information in the rankings, we should expect schools to try to improve their standing in the rankings. Again, in the abstract this might seem like a positive development: Don't we want schools improving their metrics, maybe even competing with each other to do so?

In practice, this almost always ends badly. That's because school reform is hard, but gaming metrics is easy.

We've seen this at literally every level of schooling from K-12 to colleges and graduate schools: Schools respond to rankings pressures by goosing the numbers. Whether they do this through single-minded attention or outright fraud, the result is almost never substantive improvement.

The rankings don't provide additional resources for schools to improve so the result is schools do what they can to make themselves appear stronger on the metrics that count.

### **In a paper you co-authored in 2020, you described how greater access to information about schools can exacerbate inequality as affluent families are more likely to seek the information and have more ability and resources to act on it. How might that play out with rankings of elementary and middle schools?**

**Hutt:** In that paper, we point out that producing information about schools is a time-honored tradition in American public education going all the way back to the 19th century. But in the last three decades, in particular, it has been a more explicit goal of public policy.

The original ideas of accountability, transparency, and a generally informed

public have been supplanted by a more explicit rhetoric of empowering and facilitating informed choices by parents and, to a lesser degree, a general notion of competition and holding schools accountable for performance.

This latter logic we call "public accountability" (as opposed to high stakes, sanctions-based accountability) — the public through their choices and, perhaps, through political action will hold schools accountable for performance.

It is not surprising that when families make private choices for their children, the benefits of those choices tend to accrue to those families best able to leverage the information and enact their preferences. There is very little evidence that these benefits spill over into a more general public good. In fact, we see the opposite.

School quality gets reflected in home prices and philanthropic giving in a way that exacerbates inequalities along racial and socioeconomic lines. Real estate websites already include general information about school quality in house listings, and I can't imagine these websites won't soon incorporate ranking information as well. Since these are likely just proxies for school demographics, the effects will only push in one direction: toward more stratification.

**In that paper, you proposed a framework for policies around disclosure of information about schools that takes into account how actionable — which is the ability of families to make choices based on that data — and whether benefits from the disclosure are of a public or private nature. Given that, how could school district leaders or other education policymakers respond to these U.S. News rankings? Are there**

### **additional data or other information they could share to help inform families about schools?**

**Hutt:** No one is going to argue in favor of less information or less transparency, and that's probably a good thing. The distinction we were trying to draw in the paper was between actionable information where the benefit was likely to accrue for individual families versus the larger public.

For instance, before you decide to publish in the newspaper the value-added score for every third-grade teacher, you might ask: What is the most likely use of this information?

The answer is almost certainly going to be: Individual parents with a particular disposition — and one might say sense of entitlement — are going to lobby the principal or whoever else to ensure their child gets the best teacher or, at the very least, avoids the worst one.

Does this produce a public benefit? Almost certainly not. The benefit here is to particular children and families.

There is other information a school could produce, however, that is much more likely to produce a public discussion and public benefit. For instance, we've learned a lot about

“**My general advice is always that more metrics are better than fewer metrics because more measures means — hopefully — a more holistic, substantive view of school quality.**”

school discipline policies as a result of the collection and public release of information about school suspensions and referrals, especially as it concerns the racial disparities in school discipline.

The reform of school discipline policies, of course, produces certain private benefits to individuals whose punishments might have been more severe in the absence of reform, but it also establishes greater equity in disciplinary practices, which is a public benefit.

To take another example, if a school or district produced survey information from students, teachers, and parents on school climate or demographic information about honors/Advanced

Placement enrollments, this information is unlikely to trigger a cycle of lobbying resulting in private benefits. It is much more likely to spark a community conversation about what it means to be a good, supportive school or about the barriers to equal educational access.

My general advice is always that more metrics are better than fewer metrics because more measures means — hopefully — a more holistic, substantive view of school quality. If we reduce measures of school quality to test scores in two areas, for instance, that contributes to a pretty narrow view of schooling.

The best way to figure out what information to put out is to engage the local community in conversations about what it means to have a good school and then try to measure those things. I doubt very much that communities would come up with uniform answers to that question and doubt still more that they would produce the answers that are embedded in current rankings.

Quantification is a powerful force, so we need to wield it carefully. We must ensure, to the maximum degree possible, that our measures reflect, rather than degrade, our core commitments about our schools. ○

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# A pragmatist ethic and how to build ‘small democracy’

## Reading Dewey, a philosopher’s response to dangerous times

Article by **Daniel Gibboney**  
Q&A by **Michael Hobbs**

**I**s American democracy — what Alexis de Tocqueville called our “great experiment” — in trouble?

Cooperative attempts to address social concerns increasingly appear fraught. The rise of authoritarian regimes and of “alt-right” nationalism masked as populism, together with deepening cultural and political polarization make these dangerous times for democracy, says Lynda Stone, Ph.D., the UNC School of Education’s Samuel M. Holton Distinguished Professor *emerita*.

But, Stone, a philosopher of education, says dangerous times are when philosophy is most needed.

Considering now the time to get to work, Stone has two proposals for combatting the dangers facing our political moment: pragmatist ethics and small democracy.



**Lynda Stone**  
Samuel M. Holton  
Distinguished Professor Emerita

## RECONSIDERING DEMOCRACY

Central to much of Stone's intellectual project stands the work of pragmatist philosopher John Dewey. A key figure in 20th century American thought, Dewey is known for texts such as "Democracy and Education" (1916), "The School and Society" (1899), and "The Child and the Curriculum" (1902). Generations of educational theorists and practitioners have combed the historical Dewey for solutions to contemporary social and educational problems. However, Stone reasons this might be a problem. More to the point, she thinks a textually literalist or ahistorical reading of Dewey might offer more of a cul-de-sac than a thoroughfare towards new democratic and educational futures.

In Stone's reading, Dewey was constantly "working within and theorizing about context ... democracy

**The Edge:** Lynda Stone is retiring from the UNC School of Education after a 57-year career as a teacher, professor and philosopher of education. With a bachelor's degree from the University of California, Berkeley, and two master's degrees and a Ph.D. from Stanford, Stone has pursued an intellectual career that has included examinations of feminism, curriculum issues, rhetoric, and methodology. Her greatest mark is from her study of the philosopher John Dewey, including active participation and leadership of The John Dewey Society. Daniel Gibboney, Jr., Ph.D., doctoral advisee of Stone, describes what Stone says Dewey can tell us about how we may confront some of today's challenges.

must be theorized in a present and for a present" (Stone, 2016). He was always rethinking his own notions of democracy, education, and any connection between the two. Much of Stone's writing is premised by this and the belief that "Dewey himself would ... welcome new insights about his work pertinent for new times" (Stone, 2008).

Put otherwise, Dewey requires a constant re-thinking if he is going to speak to contemporary issues.

Importantly, reassessment doesn't mean throwing the entire Deweyian baby out with the contemporaneous bathwater. Rather, the pragmatist's intellectual chore is to find what is worth retaining in Dewey's thought and discarding what isn't contextually useful (Stone, 2016). Chief among what Stone wants to preserve in this oeuvre is Dewey's robust notion of democratic life.

Dewey writes that "democracy is more than a form of government; it is primarily a mode of associated living, of conjoint communicated experience. The extension in space of the number of individuals who participate in an interest so that each has to refer his own action to that of others, and to consider the action of others to give point and direction to his own, is equivalent to the breaking down of those barriers of class, race, and

national territory which kept men from perceiving their full import of their activity" (Dewey, 1916).

Dewey offers democratic life as a simultaneously individual and collective venture. Stone agrees. Re-thinking Dewey, as such, to combat contemporary dangers to democracy require both types of projects simultaneously.

## A PRAGMATIST ETHIC

In her article "From ethics to ethics: combatting dangers to democracy," Stone notes how Dewey believed "in what is accomplished without a-priori foundation of what is to count as knowledge ... an understanding that a pragmatist orientation towards life [is] ingrained ... [in] practices" (Stone, 2019). Knowledge without external guarantee presents a litany of knotty considerations. Individual ethical action is near the top of the list.

Snubbing a stock Platonic or neo-Kantian moral pose, Stone offers ethical action as neither objectively evaluable or idealistically warranted. Rather, justification for a particular posture or practical deed lies in the actions social consequence (Stone, 2019). In other words, Stone's notion of a pragmatist ethic claims that moral attention should be drawn towards contextual practice and consequence over and against

transcendent justification.

Take the matter of teaching civility as a democratic virtue as an example. One could hardly contend that conversational tolerance and cooperation are staples of contemporary American life. As such, attempts at civic dialogue and collaboration seem little more than a fool's errand.

Taking up precisely this issue, Stone writes that "lack of respect is a matter of societal care for individuals but, as teachers ... [it is] also a matter of politics ... [it] is imperative ... to envision these political associations as fundamentally interpersonal and ethical" (Stone, 2019).

Directly confronting socio-cultural currents of disrespect and discord, an ethical democratic pedagogy asks teachers to both directly confront and positively demonstrate models of interpersonal democratic association. Practically, Stone urges teachers to undertake with students "actual projects [that] might 'get them out of themselves' ... assuming stronger self-respect in enacting [a] democracy they actually can see" (Stone, 2019).

### **SMALL DEMOCRACY**

Coupling its interpersonal demands, democracy as a form of associated living requires collective enterprise. Stone wants to shift attention away from formal institutions and grand theoretical conjectures to "everyday dilemmas" (Stone, 2016).

To that end, Stone proposes considering democratic association in the lower case. Democracy with a small "d" involves forms of participatory association around a local project or

## **Small democracies**

From her paper "Re-Thinking Dewey's Democracy: Shifting from a Process of Participation to an Institution of Association," Stone's criteria of small democracies include

- Dedication to associations based in ethical commitment.
- Interaction through face-to-face contact (regardless of political ideology).
- Organizing around proximity, shared interest and need.
- Existing through some duration of time (to build respect and local trust).
- Always voluntary membership with right to join and exit.
- Acceptance of and protection of this revitalized domain of civil society.

shared concern "that gets beneath politics" (Stone, 2016).

Given its necessarily hands-on character small democracies can, perhaps, be best elucidated by examples drawn from Stone's own biography. While teaching middle school for more than 15 years, Stone enacted numerous small democratic projects. In a footnote to her recently published essay "Youth power — youth movements: myth, activism, and democracy," Stone describes how "as a young teacher in California, [she] taught on the first Earth Day and advised a middle school club that indeed did plant trees" (Stone, 2021).

More than being an act of green do-goodery, Stone offers this project as an activist, educational, and, most importantly, democratic undertaking wherein students appraised their relationship to the environment. An undertaking only more imperative today given the dangers posed by climate change (Stone, 2021).

Another instance of Stone's enactment of small democracy in her teaching is a stop sign she and her middle school

social studies class lobbied to have installed at a dangerous intersection close to the school. By way of letters to elected politicians, local gatherings, and community organizing, a concern for public safety was directly addressed.

Small democratic associations are local, ethical, and concrete. They begin with an identification of a local problem and progress by way of individuals voluntarily uniting around an everyday concern. Stone's arboreal and traffic examples attest. What's more, small democracies' sums are greater than the addition of their parts. Through the enactment of small "d" democratic practices, individuals both address local concerns and receive an education in self-governance. In other words, small democracies are both practical and pedagogical.

### **SMALL DEMOCRACY AND SCHOOLS**

Democracy, for both Dewey and Stone, is preeminently educational. Here lies one of Stone's central ideas.

To help promote the furthering of our democratic experiment, teachers should adopt the discourse of "citizen





educator.” Teachers need to engage in conversations with students, with families, and with communities, encouraging all to consider themselves “citizen educators.”

She writes in her 2019 paper “From Ethics to Ethics: Combatting dangers to Democracy,” “In American schools, beginning in school-based professional learning communities or common planning times, action groups will explore local needs, taking time to study specifics and with students will explore local needs, will co-plan and implement direct action. In addition to organizing across grades and school subjects, they can extend between school levels or paired groups across diverse districts. Examples include assisting voter registration, locating supplies for food deserts, and teaching immigrants to prepare for citizenship exams.

“Possibilities are unlimited.” 

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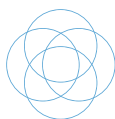
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