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School of Education

The School of Education at the University of North Carolina at Chapel Hill is a community of collaborative researchers, practitioners, students, staff, and engaged alumni. We are dedicated to realizing the transformative power of education: To achieve equity in educational access and outcomes for all learners in a diverse and just society. Our work is guided by four pillars:



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We recognize that learning is dependent on the well-being of children, their families, and their communities. With a focus on underprivileged and underserved communities, we seek work with educators, parents, schools, communities, and beyond, in partnership with other UNC-Chapel Hill units, to empower learners and communities to thrive.



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

From the Dean



Greetings:

We've been challenged by these times.

We're grappling with finding our way through a deadly pandemic. We continue to struggle with the reckoning needed to confront and correct the pervasive and persistent harms of discrimination and inequities.

The work is hard. But we lean into it.

The researchers and scholars who make up the UNC School of Education community see our society's most vexing problems and dig in for solutions.

In our cover story, we profile **Troy D. Sadler's** work in which he leads a team creating engaging science lessons for middle and high school students based on the COVID-19 pandemic. The lessons are designed to align with the Next Generation Science Standards, especially addressing big ideas of science in combination with learning about scientific practices.

Rune J. Simeonsson has for decades helped lead a global effort that has designed a system to more comprehensively characterize the abilities of children and youth with special needs. The "ICF-CY," being adopted and studied around the world, is a tool that can promote greater equity in provision of important developmental services.

Esther O. Ohito studies the beliefs, attitudes and approaches of educators who seek to pursue antiracist education, particularly in the work of preparing teachers for effective careers in increasingly diverse classrooms.

Ellen Peisner-Feinberg has led evaluations of statewide pre-kindergarten programs, with findings that point to ways to improve services for children during their most formative years.

Lauren Sartain has conducted research into teacher evaluation systems, uncovering evidence that low ratings for Black teachers may be explained by the simple fact that they are more likely to teach in high-poverty schools.

And, we have an update to an earlier *Edge* article, with the publication of a new book co-authored by **Constance A. Lindsay**. The book — "Teacher Diversity

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The researchers and scholars who make up the UNC School of Education community see our society's most vexing problems and dig in for solutions.

and Student Success" — offers a deep dive into why it's so important that we do a better job of recruiting and retaining Black educators for our schools, and offers practical policy changes that can help achieve that goal.

The challenges don't stop. We have more hard work ahead of us. We are committed to the effort.

Sincerely,



Fouad Abd-El-Khalick Dean, School of Education University of North Carolina at Chapel Hill

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A language of difference

Establishing a global system for describing the abilities of children with special needs

Researcher: **Rune J. Simeonsson** Article by **Michael Hobbs** very child is entitled to a sound education.

But children have different needs and different abilities, living with varying levels of environmental supports.

How can educators, counselors, clinicians, policymakers, and others ensure equitable educational opportunities for all children while accounting for the wide variation of each child's or youth's needs, especially those with disabilities?

The International Classification of Functioning, Disability, and Health-

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The Edge: The ICF-CY — the International Classification of Functioning, Disability, and Health-Children and Youth Version — provides a system of classifying and describing the abilities, limitations, and environmental factors that may affect the learning and socialization of children and young people. The ICF-CY, adopted by and published by the World Health Organization, was developed by a team of researchers led by Rune J. Simeonsson, professor at the UNC School of Education. Simeonsson and other researchers conduct research into practices around implementing the ICF-CY and how the classification system can aid understandings of clinical and educational practices that help children and youth of all abilities.

Children and Youth Version is designed to answer that question.

The system — also known by its acronym, ICF-CY — was established by a group of clinicians, health advocates, special education researchers, and others, with Rune J. Simeonsson, a professor at the UNC School of Education, frequently in the forefront of the work. The ICF-CY was adopted in 2007 by the World Health Organization, which promotes its use across the globe.

The ICF-CY is designed to provide more information about an individual's abilities than is conveyed simply by a clinical diagnosis. Beyond assisting in the development of individually tailored interventions, use of the ICF-CY also provides standardized data that can be used by researchers across various cultural settings, including on a global scale.

DECADES OF COMMITMENT TO NEEDS OF CHILDREN

Simeonsson has conducted research in developmental disabilities for more than 50 years, with a focus on the study and development of systems that improve the description and classification of children's functioning so that more appropriate interventions can be developed and implemented for each child.

Simeonsson, a professor of school psychology and early childhood education who holds an appointment as a fellow at UNC's Frank Porter Graham Child Development Institute, has devoted his career to teaching and research in child development, special education and public health, particularly the developmental and psychological characteristics of children and youth with chronic conditions and disabilities.

He is the author or a co-author of seven books and more than 200 journal articles. He has made more than 250 national and international presentations across six continents and 45 different countries, with more than half of these presentations being invited papers. Simeonsson's work has attracted more than \$20 million in federal funding from the National Institutes of Health, Centers for Disease Control and Prevention, and the Department of Education.

In 2011, he was honored with the



RUNE J. SIMEONSSON Professor and Senior Fellow, Frank Porter Graham Child Development Institute

Lifetime Achievement Award by the Disability Section of the American Public Health Association.

ROOTS OF THE ICF-CY SYSTEM

Simeonsson chaired the World Health Organization committee that developed the ICF-CY classification system.

Development of the ICF-CY follows a long line of work to classify and better understand human illness and disability.

Efforts to create classifications for causes of death and types of disease began in the mid-1800s. Since then, the International Classification of Diseases, or ICD, has matured into a system that provides, among other things, diagnostic codes for diseases and conditions, allowing for international

The ICF-CY at work

A disability diagnosis does not predict child functioning, nor inform specific areas to target for interventions. A diagnosis also rarely includes environmental factors as part of its criteria. The ICF-CY fills these gaps.

Example 1: A child in a teacher's classroom may have been diagnosed by a pediatrician with attention-deficit hyperactivity disorder. However, the diagnosis provides the teacher little information about the child's specific abilities. Additionally, a classroom may have more than one student diagnosed as having ADHD, each

comparisons in health and wellness statistics. The ICD, which is maintained and published by the WHO, has become part of a family of international classification systems used in health and helping professions.

Another classification system within that family is the International Classification of Functioning, Disability and Health, known as the ICF. The ICF, adopted by the WHO in 2001, is designed to complement other classification systems by going beyond diagnoses and providing detailed descriptions of individuals' actual functioning, activities, and environmental factors that affect the individual.

Simeonsson and other researchers recognized, researched, advocated for, and designed a variation of the ICF that could account for children and youths' rapid and changing development and having problems of varying levels of severity.

For a child with ADHD, impairments might include difficulty with attention or poor control of impulses. Activity limitations might include difficulty focusing attention and carrying out multiple tasks. Restrictions in participation could include being excluded in the past from social activities and receiving poor grades. Environmental factors, such as level of access to health care, underly the other elements.

The ICF-CY offers codes,

aspects of their living and schooling environments that differ from those of adults. The result was the ICF-CY system.

GOING BEYOND DIAGNOSES

While governments typically establish distinct agencies, departments, and programs to manage different aspects of education and health and human services, there is a growing appreciation that separation of these fields can inhibit interventions that serve individuals and groups. A holistic classification system such as the ICF-CY can bridge discipline-specific languages to promote integrated views of the needs of children and youth (Simeonsson, 2017).

Additionally, a disability diagnosis does not predict child functioning, nor inform specific areas to target for interventions (Simeonsson, 2006). Although diagnoses are important for defining accompanied by severity indicators, for each of these sorts of factors (Lollar, 2005).

Example 2: Autism spectrum disorder includes many manifestations, with wide variability across cognitive and intellectual levels, as well as social, emotional, communication, and behavioral factors. Assessments using the ICF-CY capture each child's unique levels of ability, or the severity of his or her limitations, and other factors, allowing clinicians and educators to design individualized interventions.

cause of an illness or impairment and for projecting a prognosis, identifying limitations of function is often the pivotal information needed for planning and implementing individualized interventions (Lollar, 2005).

What is needed, Simeonsson and others advocate, is a system that captures and describes the complexity of child and youth functioning within their environment across various dimensions, including physical, mental, emotional, and social ones.

"What are the demands of the environment and how do we match them with a child's skills?" asks Simeonsson. "That's what any good teacher does."

The ICF-CY is designed to provide a profile of an individual's characteristics, giving information beyond diagnoses, using neutral, nonjudgmental terms to describe children's and youths' abilities and limits, rather than relying upon terms that describe deficits, with special utility for developing interventions for children and youth with special education needs. A key component of the system is that it describes the severity of any of a child's disabilities.

The ICF-CY documentation of functional profiles also can be used to identify school-wide and individual special education needs, determine resource allocation, develop educational goals, and demonstrate intervention outcomes (Ellingsen, 2018).

Because it provides a common language describing individuals' abilities and disabilities, the ICF-CY is applicable and useful globally, including across all socio-cultural contexts, facilitating comparisons by researchers and policymakers.

The ICF-CY provides families, educators, clinicians, and others a holistic approach to individual children's special education needs, considering each child from the point of view of the activities in which they engage, their participation, the environments in which they grow up, in addition to body functions and structures.

Rather than relying simply on the label of a clinical diagnosis, the ICF-CY's approach is that any disability has many factors, with impairment that can occur at many levels. Likewise, development or improvement occurs often at different rates — at biological, psychological, environmental, and social levels.

The ICF-CY uses a comprehensive list of codes that define different aspects of functioning and environmental factors. A questionnaire — which can be filled

Components of the ICF-CY



The ICF-CY characterizes conditions within and interactions among these components:

- Health Condition refers to the individual's clinical signs and symptoms.
- Body Functions and Structures refers to the functional capacity of a person's bodily systems.
- Activities and Participation refer to a person's involvement in various daily activities.
- At the third level, **Environmental Factors** and **Personal Factors** describe contextual factors that can either help or limit an individual.

out by a parent, educator, psychologist, counselor, or as a self-reporting tool when age-appropriate — is used to identify codes that are used to create individualized profiles that serve as the basis for intervention planning and assessment of the efficacy of interventions.

The ICF-CY manual provides a list of 1,685 categories, providing a common language and terminology for recording problems manifested from infancy through adolescence (Riva, 2010).

The ICF-CY's system of codes lies within two overall components.

The first component describes the child's or youth's body function and structures, capturing details about the individual's anatomy and physiology. It also describes such items as the child's activity and participation, capturing details about their communication, mobility, self-care, and interpersonal interactions.

The second overall component includes factors that affect the child; environmental factors — such as family setting, home supports, societal services, and policies.

The ICF-CY uses an alphanumeric

Key contributions

Contributions of the ICF-CY for serving individuals with intellectual and developmental disabilities:

- A unifying framework for interdisciplinary work
- A classification of dimensions and health
- Profiles of functional characteristics and morbidity
- Functional indicators for framing intervention and outcomes
- Identification of environmental

barriers and facilitators

- Continuity of documentation in transitions across services and time
- Common language for data management and health informatics
- Standard reference for defining
 - rights of children and adults with disabilities

(Simeonsson, 2009)

coding system. The letters "b" for Body Function, "s" for Body Structures, "d" for Activities/Participation, and "e" for Environmental Factors. The letter is followed by a numeric code that starts with one digit identifying the domain being described (referred to as "chapter" within the ICF-CY). The following four digits represent categories and subdivisions nested within that domain.

The qualifier code follows a decimal point, with values from 0 meaning "no problem" to 4 indicating "a complete problem."

For an example, the code **b1440.2** identifies moderate difficulty with short-term memory, with the following components of the code:

- **b**=Body Function
 - b1=Mental Functions
 - b144=Memory Functions
 - **b1440**=Short Term Memory
 - b1440.2=Short Term Memory, moderate difficulty

EXTENDING UNDERSTANDING OF THE ICF-CY

Development of the ICF-CY is part of a global initiative to promote early child development, with roots in the 1989 UN Convention on the Rights of the Child, which declared "A mentally or physically disabled child should enjoy a full and decent life in conditions which ensure dignity, promotes self reliance and facilitates the child's active participation in the community."

Simeonsson co-led — with Matilde Leonardi, a neurologist from the Italian National Neurological Institute — an international work group established by the WHO in 2001 to establish the ICF-CY. The first draft in 2003 was field tested in the United States, Europe, and countries in Africa, Asia, and Latin America. Additional input from providers, practitioners, researchers, and policymakers went into development of the final version of the classification system. While the ICF-CY has not yet been widely adopted within the United States, it is being used in other countries and is studied around the globe. Portugal was the first country to mandate use of the ICF-CY in national special education policymaking. Taiwan has adopted legislation to incorporate use of the ICF-CY, and Switzerland uses the system to determine special education services eligibility. The system is also being tested in Italy, Brazil, Sweden, Armenia, Australia, and Thailand (Ellingsen, 2017).

Simeonsson and other researchers continue to study implementation of the ICF-CY, with a growing body of literature on the validity of the system; its utility in planning interventions, including the feasibility of using the system within schools; and of the need for more widespread training to facilitate more widespread adoption of the system.

Researchers have documented that the ICF-CY offers a standard way to describe characteristics of children and youth with disabilities, and to supply qualitative and quantitative data that can be used to assess needs and to evaluate interventions at individual, group, and state, national, or even global levels.

They have documented that the ICF classification system has been implemented in three ways around the world: 1) As a tool to support the work of professionals who work with children with disabilities and special needs, 2) as a theoretical model that helps to rethink disability and special needs, and 3) as a model that can be applied to support policy decision-making about the provision of services for those with disabilities and special needs (Castro, 2017).

Researchers advocate that the ICF-CY can serve as a standard reference for documenting the rights of children, for assessing efforts to meet their needs and to support efforts to reach globally adopted sustainable development goals.

As Schiariti and Simeonsson (2021) put it: "For children to realize their developmental potential, there is a priority to ensure equitable access to appropriate screening, assessment, and intervention. ...

"Continued work is needed globally to support children's developmental trajectories toward positive outcomes. This is especially true as countries adapt assessment and intervention practices in the face of evolving environmental impacts of poverty, natural disasters, pandemics, societal and economic changes to prevent the loss of developmental potential of all children."

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Lessons in antiracist teaching Experiences of educators provide answers, more questions

Researcher: **Esther O. Ohito** Article by **Michael Hobbs**

W

hat does it mean to be antiracist?What does it mean to

pursue antiracist teaching?

People within institutions, including schools and universities, are more deeply engaging with race questions, asking and being asked to scrutinize policies, behaviors, and systems that contribute to discrimination, including racial discrimination and harms.

But the work is fraught, frequently drawing criticism and pushback — from

The Edge: Race matters often perplex educators. Many teachers have learned they need to address the varied ways race plays upon work within classrooms. But many feel ill-equipped to do so. Esther O. Ohito has studied and written about race in education, including a focus on how teacher-educators have worked to uncover their own biases and have sought to engage in antiracist teaching.

parents, elected officials, and others who question the need for examinations of matters of race and whether teachers and other educators should raise these issues with their students.

Esther O. Ohito, until this summer an assistant professor at the UNC School

of Education, grapples with the interplay of questions of race, of discrimination and its harms, of curriculum and teacher preparation, of feminism, and the roles of emotion and lived experience in the lives of students and educators. Among her scholarship, she has studied and written about the role of race, the power of racism, and the effort and practices of educators who are compelled to pursue antiracism work in their classrooms and schools.

Ohito says antiracism is centered around some simple ideas.

"Antiracism is about how you treat other people, how we treat each other as human beings, and how we treat each other as community members," Ohito said. "It's how we understand that ultimately we are sharing this world. We're sharing the Earth.

"What kinds of commitments are we willing to make about how we do that sharing? That's what antiracist work is about."

A RACIAL AFFIRMATION

Ohito began her education career in 2004 as an elementary and secondary public school teacher in Chicago, an experience that sparked her curiosity about curricula and pedagogies that attend to questions of justice and learning among the dilemmas of Blackness, race, and gender.

Ohito's personal journey motivated her to explore matters of race in teacher education.

Ohito grew up in the Midwest in a predominantly White community, attending a predominantly White high school — an experience, as a Black woman, she found often painful. Ohito left for Hampton University, an historically Black university in Hampton, Virginia, where she describes discovering that learning can be a "racialized process."

"At Hampton University, I was comforted by the fact that my favorite

professor was a Black woman who had hair like mine which, when kissed by water, shrunk like a shy teenager," Ohito writes. "The fact that the dark tone and soft texture of yet another cherished Black woman professor's melanin-rich skin matched my own filled me with joy." (Ohito, 2019).

After graduating, she moved to Chicago to teach in a school system where approximately 85% of the children were identified as Black or Latino.

"The racial affirmation that I felt as I learned from my professors at Hampton University shaped how I taught the Black children and youth who moved through my classrooms, and who taught me that like learning, teaching, too, is a racialized process," she writes. "I modeled my teaching after my beloved college professors, and like them, I endeavored to choose curricula and pedagogical practices that accounted for how the racial identities of the children and youth in my classrooms were entangled with their identities as learners."

Ohito worked as a teacher for six years in Chicago while also earning a master's degree in middle grades education. She then entered a doctoral program, earning an Ed.D. degree from Teachers College at Columbia University.

FROM OBSERVATION TO THEORY TO PRACTICE

While in her doctoral program, Ohito writes, she saw that many teacher education students — most of them White — were not grappling with their own racial identities, how those identities affect their work as educators, nor exploring how race and racism influences young people in schools.



Esther O. Ohito

She has since pursued scholarship exploring those topics. As part of her scholarship, Ohito has studied the practices of teachers and teacher educators, particularly ones who describe their work as being in pursuit of antiracist teaching.

Ohito writes that many scholars of education have pointed to the persistence of both racism and Whiteness infused in the culture of teacher education in the United States. In her work, Ohito says she wants to demystify and make visible the pervasiveness of Whiteness in teacher education and how antiracist educators seek to pursue antiracist practices within that environment.

Racism, Ohito writes, has been defined by the combination of values, beliefs, and actions that uphold the norms and needs of Whiteness (Oyler, 2011). She writes that antiracism is the practice of resisting or opposing racism and/ or intervening in ways that subvert its impact and relax its grip on persons, institutions, schools, and other entities in society. Antiracist teaching is the pedagogical application of an antiracist stance (Ohito, 2020).

In other terms, antiracist pedagogy is aimed at counteracting prevailing messages infused throughout our culture that suggest to Black and brown children — including very early in their lives — that they are less than fully human, Ohito said.

"How do we make it so that all children feel like they are human beings?" Ohito said. "How do we create processes and spaces that affirm their humanity, that don't require them to be anything more than who they are? That's really what antiracist work is about."

But what is antiracist teaching in practice? And, how can antiracist pedagogy be taught to future teachers?

Ohito studies these questions. Among her scholarship are in-depth explorations of the work of individual educators pursuing antiracist teaching within the contexts of their own identities and backgrounds — their racial identity, their personal histories, their educations, and other factors they bring to their work.

"I zoom in and try to get an understanding, not just of what they know about antiracism and antiracist teaching and how they enact that antiracist teaching, but also on who they are, and how who they are shapes what they know and what they do," Ohito said.

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REVIEWING THE LITERATURE

In a review of literature on the topic of antiracist teaching, Ohito has found that the majority of the research and other writings has focused on questions around questions of who is being taught — studies that are limited primarily to describing the Black and brown children in many classrooms (Ohito, 2019).

Ohito also summarizes other scholarship examining antiracist teaching in which scholars have explored additional questions around

- How we teach
- What we teach
- Why we teach

How we teach. Studies have shown that teacher educators seeking to prepare students for enacting antiracist pedagogies most frequently: 1) give lectures; 2) assign writing tasks aimed at prompting critical reflection about race and racism; 3) structure discussions; and 4) design experiential learning opportunities.

Lecture is often used to address gaps or misunderstandings in students' knowledge about race, racism, and history. Writing and discussion is typically used to prompt critical reflection. Experiential learning is often used in attempts to build bridges between typically predominantly White universities and communities of color.

What we teach. Ohito cites a study by Kerri Ulluci of Roger Williams University in which she found that teacher education programs depended heavily on novels or other narratively rich texts rather than methods books or textbooks to help students gain deeper understandings of racism. Among the texts were fiction, auto/biographies and nonfiction works such as "White Privilege: Unpacking the Invisible Knapsack" and "We Can't Teach What We Don't Know: White Teachers, Multiracial Schools" (Ulluci, 2010).

Why we teach. Teacher educators have described various goals, including deconstructing Whiteness; fostering White students' introspection of their racial stances; positioning White students as allies to others; framing and re-framing awareness of race, socioeconomic class, and other identities in relationship to educational opportunities made available to racially marginalized children, youth and communities; and ensuring that students' teaching practices are responsive to racial inequity (Case & Hemmings, 2005; Matias & Mackey, 2015; Moss, 2008; Picower, 2009; Solomon et al., 2005).

Ohito has built on examinations of antiracist teaching by giving close attention to the classroom practices of educators who describe themselves as seeking to pursue antiracism in their work. Their experiences hold lessons for others.

She's done a series of studies of individual faculty members who work in teacher-preparation settings and who espouse to pursue antiracist teaching. Ohito's studies seek to illuminate aspects of their work and also aspects of their personal identities and backgrounds that might play a role in how and what they teach.

"There's a relationship between who you are, what you know, and what you do," Ohito said. "What I think folks can do is really struggle a little bit with what that is."

'THE BODY TATTLES'

In one of her studies, Ohito observed the classroom practices of a White teacher educator — identified by the pseudonym "Walker" — who described herself as continuously questioning her own performance as she struggled to enact antiracist pedagogy in her work (Ohito, 2020).

Walker tells Ohito that she has become more open to talking about and examining her own Whiteness.

"Why do White people not talk about their Whiteness?" Walker says to Ohito, adding that she's frustrated that Whites are "colorblind about their own Whiteness."

Walker describes that in her work preparing future teachers she seeks to make visible the privileges and the other "invisible things" from which Whites benefit. But, Ohito writes, Whiteness is difficult to shed.

In many moments, Whites turn away figuratively and literally — when feeling challenged or threatened by discussion or manifestations of racism.

Ohito observes such a moment in Walker's work. The moment included the interaction between Ohito, Walker, and a Black student who had noticed a children's book the teacher planned to use in a classroom exercise. The student, who had learned about the book in another class, told Ohito and the teacher: "Um, it's kinda racist."

Ohito describes Walker's reaction as appearing flushed and talking over the student while trying to explain why she uses the book. Then the teacher turns and walks away.

The brief moment, Ohito writes, offers lessons about how to unlearn Whiteness, including the need to be aware that our bodies tattle and sometimes reveal our feelings, telling tales of our discomfort, shame, fears (Barthes, 1978).

"What is yielded by Walker's unwillingness to listen to bodies speak — or bodyspeak — reinforces the fact that a turn toward the junction of enfleshment and pedagogy is a *sine qua non* if teacher educators are to tackle antiracist pedagogy in ways that meaningfully refine social and racial justice-oriented teacher preparation," Ohito writes. "Ultimately, inattention to embodiment and intercorporeality may undermine the practice of what is theorized as antiracist pedagogy, ironically (re) configuring pedagogies that are rhetorically labeled as antiracist into actual impediments to achieving the aims of antiracism."

SWIMMING IN A RIVER OF KNOWLEDGE

Ohito also has published a study in which she describes the practices of a Black male teacher educator who describes himself as a "pedagogic provocateur" (Ohito, 2021).

"Steve" — a pseudonym — is a Black man who teaches in a teacher education program at a university in the Northeast. His work is grounded in his own experiences as a Black man growing up in Black communities. Ohito uncovered a set of lessons learned from watching Steve.

Provoke and reveal. Steve talks, walks, and dresses as an unapologetically Black man. He says he does so as he intends to reveal what he considers his authentic self to his students — Black and White.

"His embodied and emplaced theorizing directs us to think about how we use language corporeally — that is, how we employ body language — to speak up, about, and against anti-Black racism in antiracist teaching," Ohito writes.

Evoke and engage affect/tion. Steve doesn't hesitate to use Black vernacular terms, such as "sista" when talking with a Black woman student.

"The deliberateness of Steve's oral language use is a demonstration of his care for and care-full consideration of Black women who are students in his classroom," Ohito writes. "It is indicative of his pedagogic embrace of the BIPOC students who motivate his practice of antiracist teaching."

Reclaim the curricular center from

Whiteness. Steve works to explicitly honor and respond to the lived experiences of Black students. He works to make Blackness itself at the center of curriculum.

Steve tells Ohito: "Over the course of my academic career I've gotten to the point where I've been deliberate about forcing those who are not from where I'm from to purposefully feel the discomfort that folks of Color from where I come from feel when they enter into spaces like these. ...

"My owning of my Blackness and my cultural background, and the discourse, and the language, and the attire, and being comfortable in expressing that, is a way to say [to White students]: 'You might have to go do some research, and you might have to second guess yourself and see whether or not this is the place for you.' ... And that pushes them to have to learn about me and others who are like me."

WHERE TO FROM HERE?

As part of her work, Ohito says she hopes to make Whiteness visible. She hopes that by grappling with the fact that White attitudes, expectations and norms have gone unquestioned will help educators begin to shed Whiteness, enabling them to better serve all students.

"Walker and Steve are very different cases," Ohito said. "The place where they come together is that ultimately what they do, their pedagogy, their teaching around antiracism, is very much influenced by who they are, their family histories, their memories, just their lives.

"My work asks people to understand themselves as integrated beings and to always think about the roots of their actions in relation to their histories and their lives and their lived experiences," Ohito said.

Examining practices of educators such as "Walker" and "Steve" create entry points for transforming teacher education, drawing on the knowledges of Black teacher educators and explicitly addressing the needs of Black teacher education students, Ohito says.

That raises questions about how a new curriculum can be created and sustained, both within environments long dominated by Whiteness, Ohito writes, while also meeting the strains of standardization and testing measures used in teacher education programs.

Ohito writes that delving into the experiences of antiracist educators and their attempts at antiracist pedagogy, even when halting with missteps, can help create a world where Black and other students of color can more fully access motivation, affirmation, and a sense of belonging.

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Learning from preschool Statewide evaluations of pre-K programs point to ways to build on early gains

Researcher: Ellen Peisner-Feinberg Article by Michael Hobbs

P reschool works. The experiences of children in early childhood learning settings are among the most-studied aspects in the field of educational research. It's clear: Children who attend high-quality early childhood programs experience academic growth on a variety of measures, compared to children who do not attend prekindergarten programs.

But the studies have also uncovered disparities and have pointed to areas in which educators can improve early childhood programs.

Ellen Peisner-Feinberg, a senior research scientist and research professor at the UNC School of Education, has led many of the studies that have contributed to understandings of the benefits — and the challenges of early childhood programs.

Among the studies she and her teams of researchers — consisting primarily of researchers from the UNC-Chapel Hill-based Frank Porter Graham Child Development Institute, where she had previously been based — have conducted three statewide evaluations of pre-kindergarten programs, among the largest of any studies of the effects of pre-K experiences. Peisner-Feinberg **The Edge:** Researchers consistently find that children benefit from early childhood programs. How can those gains be sustained? What can we learn from effective pre-K programs that can be put to use elsewhere? Ellen Peisner-Feinberg has led evaluations of statewide pre-K programs, revealing some of those answers.

is a developmental psychologist with training in public policy. During more than 30 years of work, her research has focused on the quality of early education experiences and the effects on children, particularly for children from low-income families, duallanguage learners, and children in atrisk circumstances.

Peisner-Feinberg's statewide evaluations of early-childhood programs in North Carolina, Pennsylvania, and Georgia demonstrate that children benefit from attending high-quality pre-kindergarten programs. They also have revealed areas in which policymakers, educational administrators, and educators can work to build on those benefits.

Following are summaries of the evaluations of three state pre-K programs led by Peisner-Feinberg and what can be learned from them.

GEORGIA: PROGRAM AND STUDY OVERVIEW

Georgia's Pre-K Program is a statefunded universal pre-kindergarten program for 4-year-olds, serving



Ellen Peisner-Feinberg Senior Research Scientist, Research Professor

children in a variety of settings, including local school systems, private providers, and blended Head Start/ pre-K classrooms. The no-fee program serves children from all income levels (Peisner-Feinberg, Van Manen, Mokrova, & Burchinal, 2019).

The program operates on a school-year model, with instruction for 6.5 hours a day. Class sizes are limited to 20-22 children with a lead and assistant teacher. Lead teachers are required to have at least a bachelor's degree in early childhood education or a related field. Assistant teachers are required to have at least a Child Development Associate credential.

Program guidelines provide standards for classroom instruction, child assessment, and other services. The Georgia Department of Early Care and Learning oversees the program, and provides consultation, technical assistance, and monitoring.

The evaluation team, led by Peisner-Feinberg, conducted a series of studies of Georgia's Pre-K Program over a decade. In one study, the researchers used a regression discontinuity design (RDD), the strongest type of quasi-experimental research design for examining effects of treatments (Peisner-Feinberg, Schaaf, LaForett, Hildebrandt & Sideris, 2014).

The study compared two groups of children based on the age requirement for the pre-K program: 1) the treated group — children who completed Georgia's Pre-K Program the previous year and were entering kindergarten in the study

year,

and 2) the untreated group — children who were not eligible for the Georgia Pre-K Program the previous year and were entering pre-K in the study year.

The two groups were equivalent on many important characteristics, given that families of both groups chose Georgia's Pre-K program. The only difference was whether children's birth dates fell before or after the cut-off date for eligibility for the pre-K program.

GEORGIA: SUMMARY OF STUDY RESULTS

The RDD study demonstrated that children who participated in Georgia's Pre-K Program had significantly improved school readiness skills.

- Participation had significant effects on most measures, including language and literacy skills, math skills, and general knowledge.
- The positive effects of program participation were found for boys and girls and children from families of different income levels across all significant outcome measures.
- The positive effects were found for children with differing levels of English language proficiency with one exception. Effects were found on phonological awareness skills for children who were fluent in English, with no differences for children with
 - no or limited fluency. The study authors suggest

phonological awareness concepts involve more complex language skills that may require a higher level of language proficiency to learn. Therefore, children at lower proficiency levels may not have been developmentally ready regardless of whether they were attending pre-K.

 There were no program effects on measures of children's vocabulary skills or social skills.

Peisner-Feinberg and her team also followed a sample of more than 1,100 children who participated in Georgia's Pre-K for a longitudinal study, tracking their performance through third grade (Peisner-Feinberg et al, 2019; Soliday Hong, Zadrozny, Walker, Love, Osborne, Owen, Jenkins & Peisner-Feinberg, 2021). Among their findings:

- Overall, the children in the study performed near the mean of national norms on most standardized measures by the end of third grade, with the exception of vocabulary and reading comprehension.
- Participating children displayed a pattern of growth during pre-K and kindergarten on most measures, but that growth was not sustained through third grade.
- Children who were English language learners showed similar patterns of early growth for skills in English, but showed decreases over time for most language and literacy skills in Spanish.
- Some child and classroom factors that predicted differences in growth
 - on these measures over time included language proficiency and classroom quality.
 - The quality of teacherchild instructional interactions varied across different domains, with slightly higher scores in

pre-K than in subsequent grades.

 Comparisons in third grade with children who did not attend Georgia's Pre-K showed higher literacy and executive function skills for pre-K participants, but no differences on other measures.

PENNSYLVANIA: PROGRAM AND STUDY OVERVIEW

Pennsylvania Pre-K Counts (PA PKC) is a state-funded pre-kindergarten program for 3- and 4-year-olds to help them gain school readiness skills. The goal of the program is to help reduce educational disparities by providing high-quality pre-kindergarten for children who otherwise lack educational opportunities or live in environments that place them at risk of school failure (Peisner-Feinberg, 2020).

PA PKC services are offered in school districts, Head Start, privately licensed nursery schools, and high-quality child care settings. Children attend 180 days a year, with either half- or full-day options. The program guidelines include a number of standards, including teacher qualifications, curriculum and instruction, screening and assessment, classroom self-assessments, and family engagement.

Peisner-Feinberg and her team conducted the first statewide evaluation of the PA PKC program. The Impact Study, conducted in kindergarten during the 2018-2019 school year, compared former PA PKC participants to similar children who had no preschool experience (Peisner-Feinberg, Soliday Hong, Yazejian, Zadrozny & Burchinal, 2020). The study sample was drawn from 335 of the 499 school districts that had data for children enrolled in PA PKC programs.

PENNSYLVANIA: SUMMARY OF STUDY RESULTS

The Impact Study sought to determine if children who attended PA PKC had higher levels of academic and social skills in kindergarten than children who did not, whether kindergarten skills were different for children who attended PA PKC for one year or two years, and whether program characteristic differences affected children's outcomes.

Among the findings:

- There were positive effects of PA PKC participation on children's language and math outcomes. The results showed no differences on other literacy, executive function, and social skills measures.
- These effects were not different for children who attended for one year (enrolling at age 4) or for two years (enrolling at age 3).
- The results showed meaningful differences in the months of learning gains for language and math skills.

Overall, Peisner-Feinberg and team reported, there were consistent positive effects of program attendance on children's language and math outcomes, regardless of initial age of enrollment in PA PKC. For children who participated in PA PKC, the differences were equivalent to an increase of approximately 4-5 months of learning, a substantial difference for young children, the researchers said. These findings are especially important as these are the school readiness skills that most strongly predict subsequent academic achievement.

Peisner-Feinberg and her team also conducted an Implementation Study of the Pennsylvania Pre-K Counts program, examining the experiences and challenges associated with conducting pre-K programs (Peisner-Feinberg, Burchinal, Soliday Hong, Yazejian, Shelton-Ormond & Foster, 2020). The findings from the Implementation Study, combined with those from the Impact Study, offered directions for improvement of PA PKC:

- A lack of findings for measures of literacy skills, social skills, and executive function suggested additional areas to examine for potential professional development and quality improvement activities.
- To sustain the gains made in pre-K, it may be important to examine the extent of P-3 alignment across grades, while continuing to base pre-K practices on developmentally appropriate early learning standards.
- There's a need for greater attention to classroom practices that differentiate learning for 3-year-olds and 4-yearolds in these same classrooms.

NORTH CAROLINA: PROGRAM AND STUDY OVERVIEW

North Carolina's pre-kindergarten program - called NC Pre-K - is a state-funded program for eligible 4-yearolds designed to bolster their school readiness skills. Children are eligible primarily based on age and family income. Children must be four years old by Aug. 31 of the program year and gross family income must be at or below 75% of the state's median income. Within a local program, up to 20% of age-eligible children with higher family incomes may be enrolled if the child has at least one of the following factors: limited English proficiency, identified developmental disability, chronic health condition, or educational need based

on developmental screening or an Individualized Education Plan (Peisner-Feinberg, 2014).

NC Pre-K provides funding for programs in a variety of settings, including public schools, Head Start, and private child care centers.

NC Pre-K programs operate on a school day and school calendar basis for 6.5 hours a day and 36 weeks a year. Sites are expected to meet a variety of standards regarding curriculum, screening and assessment, training and education levels for teachers and administrators, class size, adult-to-child ratios, state child care licensing levels, and provision of other services.

Class sizes are restricted to 18 children with a lead and assistant teacher. Lead teachers are required to hold or be working toward a state Birth through Kindergarten license or the equivalent. Assistant teachers are required to hold or be working toward an associate degree in early childhood education or child development, or a Child Development Associate credential.

USING A RANDOMIZED CONTROL TRIAL

Peisner-Feinberg and her research team have conducted multiple studies of NC Pre-K since its inception in 2001.

Earlier evaluations of NC Pre-K generally found a wide range of positive effects of children's participation in the program for measures of school readiness and early elementary academic and social outcomes.

The three most-recent companion studies conducted by Peisner-Feinberg and team included a feasibility study and culminated with a two-

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Peisner-Feinberg and colleagues identified a number of interventions and program enhancements to reduce fadeout of pre-K's benefits.

year evaluation of NC Pre-K using a small-scale randomized control trial (RCT) evaluation (Peisner-Feinberg, Kuhn, Zadrozny, Foster & Burchinal, 2020; Peisner-Feinberg, Van Manen, & Mokrova, 2018; Peisner-Feinberg, Zadrozny, Kuhn & Van Manen, 2019).

The RCT study, conducted from 2017-2019, was designed to follow children from pre-K into elementary school to examine the effects of NC Pre-K participation. Peisner-Feinberg and team were able to use RCT methods by comparing 582 children from two counties who were randomly assigned to either NC Pre-K (473 children in the "treatment" group) with children who were randomly assigned to waitlists for entry into NC Pre-K programs (109 children in the "control" group). Among the study participants were 163 children who were Spanish-speaking dual language learners (DLLs), including 132 in the treatment group and 31 in the control group, allowing for evaluation of NC Pre-K participation among DLLs.

NORTH CAROLINA: SUMMARY OF STUDY RESULTS

The first year of the study found consistent positive effects on language and literacy skills at the end of pre-K, with better performance for children in the treatment group. Differences were found for vocabulary and letter and word recognition skills. For the subsample of Spanish-speaking DLLs, these effects were found for letter and word recognitions skills and math concepts measured in English.

However, the study did not find significant effects for other measures, including other measures of literacy (written comprehension) and math skills (problem solving), executive function, and parent ratings of social skills and problem behaviors during the pre-K year. In addition, the results from the kindergarten year follow-up showed positive effects on vocabulary skills for DLLs, but fadeout of the pre-K effects for the sample in general.

The limited set of positive findings may be partially explained, the researchers said, by North Carolina's history of providing early childhood education and family supports directed toward low-income families. The children in the control group may have benefited from services provided through other initiatives, such as North Carolina's Smart Start program, an effort that supports children from birth through age 5.

Because the study was conducted in two well-resourced counties, families in the control group likely had other opportunities for educational and social supports, Peisner-Feinberg and team said.

CONCLUSIONS, SUGGESTIONS FOR IMPROVEMENT

Researchers studying statewide pre-K programs consistently find that the programs confer benefits to children (Wong et al. 2008; Peisner-Feinberg et al. 2014; Weiland et al., 2013; Gormley Jr et al, 2005).

Those studies, including statewide evaluations led by Peisner-Feinberg, also point to opportunities to improve early childhood educational experiences for children. As in the Peisner-Feinbergled evaluations of the Georgia and NC Pre-K Programs, many studies have documented "fadeout," in which some of the gains children achieve from pre-K experiences disappear during early years of elementary school.

Fadeout was shown in the Georgia evaluation to be particularly strong among DLLs when skills were measured in Spanish. Peisner-Feinberg and her team suggested that because classroom instruction for these children was primarily in English, there may be few resources and little support for children in their home language within learning settings.

Peisner-Feinberg and colleagues, across their statewide evaluations of pre-kindergarten programs, identified a number of interventions and program enhancements aimed at improving children's experiences within pre-K programs and to reduce fadeout of pre-K's benefits:

 Implementation of professional development and quality improvement activities for programs for pre-K administrators, teachers, and assistants to improve instruction in literacy, social and executive function skills.

- For programs that target at-risk children, consideration of tiered or targeted instructional approaches for both literacy and math instruction.
- Examine the alignment of curriculum and instruction from pre-kindergarten through third grade in an effort to sustain the gains children experience in pre-K programs.
- Where pre-K programs include 3-year-olds, give greater attention to differentiation of instruction to account

for the presence of children in varying developmental stages.

 Mindful that in some cases, children's skills may be lower and fadeout stronger among children with lower levels of English language proficiency, seek to provide highquality classroom experiences for dual language learners in both pre-K and elementary school.

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COVER STORY

Coronavirus understandings

Turning the pandemic into learning opportunities

Researcher: **Troy D. Sadler** Article by **Michael Hobbs** roy Sadler knows the problem: It's hard to capture and to hold the attention of middle and high school students.

Sadler, the Thomas James Distinguished Professor of Experiential Learning at the UNC School of Education, taught science to middle and high school students early in his career. It's an experience that helps inform his work finding ways to develop teaching methods and curricula that engage students in science classrooms.

One of the answers: Build science lessons around topics students care about.

Sadler and a team of researchers and teachers have worked for years

The Edge: A movement among science education researchers has sought to develop curricula and teaching methods that teach science in ways that make it more directly relevant to learners' lives. Additionally, the Next Generation Science Standards urges science education that engages students in the work of science to advance attainment of science literacy. One group of science education researchers, including Troy D. Sadler, the Thomas James Distinguished Professor of Experiential Learning at the UNC School of Education, has sought to develop and implement a framework of science education that incorporates "issues-based" learning with curricula and teaching materials centered around science issues about which elementary, middle and high school students inherently care.

developing and refining a framework for creating engaging and effective science lessons. The framework relies upon "issues-based" instruction involving hot topics for students, such as sexually transmitted disease, vaping, fracking, and climate change. The framework also features modeling as a central activity the team has shown to be effective in engaging students in science learning.

A case in point: The coronavirus pandemic.

When the pandemic arose last year, Sadler and his team saw in it a teachable moment.

They applied for and won a \$200,000 National Science Foundation Rapid Response Research program grant with which they produced a set of lessons that have students engage in science concepts centered on the virus, produce models about its behavior, and wrestle with questions around how a society works to slow and eventually contain a pandemic.

PURSUING A VISION OF SCIENTIFIC LITERACY

Sadler has pursued a 20-year research agenda aimed at improving science education in elementary, middle, and high schools. His findings have ranked him among the top 15 most-published researchers in the field of science education with more than 15,000 citations of his work.

In addition to the NSF, his research has attracted funding from the Institute of Education Sciences, the U.S. Department of Education, the Howard Hughes Medical Institute, foundations, and state agencies. He serves as a coeditor-in-chief of the *Journal of Research in Science Teaching*, the leading academic journal in the field of science education.

Sadler is part of a movement within science education that advocates promotion of a type of scientific literacy that can be applied in everyday lives. Dana Zeidler, who served as Sadler's Ph.D. advisor, is largely responsible for developing the concept of science teaching around what he called "socioscientific" issues, in pursuit of a vision of science literacy by engaging students in the science around societal issues that affect their lives (Zeidler, D. L., et al., 2002; Zeidler, D. L., 2003).

Achieving that vision of scientific literacy among middle and high school students requires learning experiences that are very different from having students follow scripted lab exercises and learn scientific vocabulary and concepts.



Troy D. Sadler Thomas James Distinguished Professor of Experiential Learning

DEVELOPING A TEACHING SEQUENCE THAT WORKS

Science education researchers, including Sadler, have worked for the past 15 years to develop, implement, evaluate, and revise methods to incorporate socio-scientific issues, or SSI, into science teaching. Sadler and a team of researchers at the University of Missouri, working with high school science teachers in that state, have developed and continue to revise a sequence of instruction centered around socio-scientific issues, demonstrating that the sequence can be effective in classes from elementary school through college (Sadler, T. D., Foulk, J. A., Friedrichsen, P. J., 2017).

They have worked to align the more recent iterations of the teaching model with the Next Generation Science Standards (NGSS), specifically a focus on the big ideas of science in combination with learning about scientific practices.

Socio-scientific issues teaching shares features with problem-based learning, as it places learning into real-world contexts with which students can more readily engage, giving meaning to the scientific content. Students are asked to confront an issue, explore science ideas involved, but also to examine other perspectives, including economic, political, and ethical ones.

The socio-scientific issue instructional model sequence follows three phases:

Download the lesson plans

The lesson plans developed by Sadler and his team are available here: https://epiclearning.web.unc.edu/covid/

First phase: The sequence presents a complicated, perplexing, and compelling focal societal issue that lacks simple, clear solutions. Students are presented the issue, including developing awareness of the ways in which science ideas, principles, and inquiries bear on the issue and some of the social issues that arise from it. In a sequence centered on antibiotic resistance, students were shown an emotionally charged video of a girl who died from an infection of methicillin resistant Staphylococcus aureus (MRSA). The presentation highlighted bacterial evolution as a component of the problem and shared societal aspects - such as patient rights and health care policies - that make the problem challenging.



The Socio-Scientific Issue (SSI) instructional model.

Second phase: The second phase of the sequence engages students in what the NGSS describes as threedimensional science learning, and with socio-scientific reasoning practices. Three-dimensional science learning engages students in learning about disciplinary core ideas (such as natural selection), crosscutting concepts (such as cause and effect), and science practices (such as modeling). In the sequence, students created models of cellular mechanisms of resistance, the growth of bacterial populations over time, and natural selection.

During the second phase, students are also called to engage in practices that explore the social and scientific intersections of the focal issue practices that have been described by Sadler and colleagues as "socioscientific reasoning" (Sadler, Barab & Scott, 2007). The practices include 1) recognizing the complexity of the focal issue, 2) analyzing issues from multiple perspectives, 3) identifying aspects of the issue that need ongoing inquiry, 4) employing skepticism in analysis of potentially biased information, and 5) exploring how science may contribute to addressing the issue, and also the limitations of science.

In the antibiotic resistance unit, students explored websites that offered a variety of perspectives, including mainstream health information websites, personal blogs of patients suffering from MRSA infections, and

Learning through modeling

powered by NetLogo

Infection Curve Modeling With Distancing

File: New Export: NetLogo HTML

Mode: Interactive Commands and Code: Bottom



A computer-based system model of infection rates developed by the research team.

other sources. Students took part in discussions about their observations of their own laboratory experiments with growing bacteria with varying concentrations of antibiotics, and their models that sought to describe their observations. Students explored social aspects that make antibiotic resistance a difficult issue to address, such as government interference in health care choices and the lack of financial incentives for drug companies to develop new antibiotics. The objective was not simply to identify solutions, but to demonstrate the complexity of the issues and the multiple perspectives that address them.

Third phase: The final phase has students synthesize ideas and practices, giving them opportunities to reflect on their own perspectives and how they interact with science ideas, science practices, and the socio-scientific reasoning practices they developed. Students are asked to write essays that offer policy recommendations, with justifications based on what they had learned during the sequence.

The students are expected to develop

understandings of natural selection through examining the evolution of bacteria. But they are encouraged to take the evidence found throughout the sequence and to rely on their own individual perspectives on the social, political, and economic aspects of the issue to develop their recommendations.

THE ROLE OF MODELING

By working through iterations of the sequence with different groups of teachers, Sadler and his team have continuously identified ways to improve the sequence. One of those improvements is the incorporation of modeling as a science practice. The team identified that teachers had more difficulty using science practices in their classrooms that contributed to sense-making, so the team has chosen to move away from covering multiple types of science practices to focusing specifically on modeling.

Modeling, Sadler and his team have discovered, serves as an anchor practice that supports student learning, while also encouraging student engagement in other science practices. The result was a revised approach to socio-scientific teaching the team calls "Model-Oriented Issue-Based" (MOIB) teaching.

Researchers have determined that engaging students with modeling practices shifts science instruction from learning from models, textbooks, teachers, and lab exercises, to providing students with opportunities to learn *with* models — using their own ideas to construct and evaluate scientific knowledge (Gouvea, Passmore, 2017). Sadler and his team intentionally include exercises in which students develop their own models, using online platforms and mathematical models. Through the sequence, students create, evaluate, and revise their models, coming to see models as dynamic learning tools.

APPLYING LEARNED LESSONS TO COVID-19 CURRICULA

When the COVID-19 pandemic emerged, Sadler convened a team of his colleagues to apply for an NSF Rapid Response Research grant to incorporate lessons learned from developing socio-scientific teaching practices into materials and curricula that could engage students in a topic of high interest to them.

The team, which was also led by co-principal investigators Patricia Friedrichsen and Laura Zangori of the University of Missouri-Columbia, recruited 12 Missouri high school teachers who had worked with the team in the past to develop SSI teaching sequences (Sadler, T. D.; Friedrichsen, P.; Zangori, L.; & Ke, L., 2020).

Some of the teachers expressed



hesitation to address COVID-19-related content out of concern for students who were struggling with the daily realities and traumas associated with the pandemic. The team invited a pediatric neuropsychologist to discuss with the team and teachers their concerns, assuring them that engaging students in inquiry and learning about the disease and pandemic would support students' mental health, allowing them to discover things then can do to protect themselves.

The team used videoconferencing tools to meet and develop teaching materials, a process that worked well, facilitating small-group teams that tackled components of the project. The team found it was helpful to focus on what available communications technology allowed the team members to do, rather than focus on what they might have lost from not being able to meet face-toface.

Within a matter of a few weeks, the team developed activities and supporting instructional materials that focused on the biology of the virus, media literacy, social distancing, and modeling of viral spread and infection curve simulations.

FURTHER RESEARCH

The team plans to conduct case studies of how participating teachers use the materials with their students as well as explore how the collaborative design process impacts teachers' approaches to creating and sing other coronavirusrelated curriculum materials. Also, research is planned to explore how other teachers not involved in the development of the materials are able to use them in their teaching.

New NSF grant Funding will extend team's project

new \$1.9 million grant from the National Science Foundation will extend work led by Troy Sadler that seeks improved ways to teach science concepts to high school students using lessons about the COVID-19 pandemic.

The grant will support work over four years to extend development of lesson plans in which students create scientific models to study complex issues in science, then to study the effectiveness of the modeling on student learning.

The project will include an emphasis on studying how effective the lessons are

in helping Latino students.

With the new funding, Sadler and his fellow researchers will develop lesson plans in which high school students build different types of models mechanistic, computational, and system models — to learn about virus outbreaks and other complex societal issues centered around scientific concepts.

The co-principal investigators on the team are Li Ke, a postdoctoral researcher the UNC School of Education, and Patricia Friedrichsen and Laura Zangori, both of the University of Missouri-Columbia. The project will research three aspects of student learning: 1) conceptual understandings about viral epidemics, 2) epistemic understandings associated with modeling, and 3) model-informed reasoning about viral epidemics and potential solutions.

The team plans to widely share its results and the lessons plans and modules through publications, conference presentations, and professional development opportunities for teachers.

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A Black and White teacher evaluation gap

Study of teacher evaluation system suggests outside-the-classroom factors explain most of why Black teachers get lower ratings

Researcher: Lauren Sartain Article by Michael Hobbs

> re Black teachers being penalized by performance evaluations?

Research co-led by Lauren Sartain, assistant professor of educational leadership at the UNC School of Education, found that lower performance ratings given to Black teachers in a teacher evaluation system used in Chicago Public Schools can be almost entirely explained by the fact that those teachers are more likely to work in higher-poverty schools. The study, first published in December 2020 in *Educational Evaluation and Policy Analysis*, found that most of the difference in performance ratings between Black and White teachers could be explained by the characteristics of the schools in which teachers work. The paper was among a set of policy briefs that won first place as the American Educational Research Association's Division H's (Research, Evaluation, and Assessment in Schools) Outstanding Publication in the category Assessment and Accountability.

The study's results have important implications given the widening

demographic and racial gaps between students and their teachers, the shortage of teachers of color in American school classrooms, and evidence that minority students realize benefits from being exposed to minority teachers.

Under Chicago's evaluation system, the typical Black teacher ranked at the 37th percentile in classroom observation scores, while the typical White teacher ranked at the 55th percentile.

But, by controlling for a variety of school, student, and classroom factors — such as socio-economic status, prior-year test scores, and prior-year behavior

misconduct — Sartain and co-author Matthew Steinberg found that the Black-White gap in performance ratings disappeared.

EXAMINING POLICIES THAT AFFECT SCHOOLING

Sartain has studied a range of topics around policies and practices that affect teaching in schools, with a focus on work related to equitable access to quality public education. She joined Carolina in 2019, coming to Chapel Hill from the University of Chicago Consortium on School Research where she had worked as a researcher since 2008. She has also worked as a researcher at the University of Chicago Chapin Hall Center for Children.

Employing quantitative methods, Sartain has published and presented on a wide range of topics, including teacher quality, school choice and school quality, and discipline reform. Recent work also includes examinations of affirmative action policies aimed at helping diversify student populations within selective high schools and the effects of school closures on the populations of teachers within school districts.

Under a legislative mandate, Chicago Public Schools joined the nationwide movement to bolster teacher performance systems by adopting a program called Recognizing Educators Advancing Chicago's Students — or, REACH. REACH launched in the 2012-2013 school year.

REACH replaced a 45-year-old evaluation system that relied on a once-a-year observation that followed a checklist-based approach that sought to rate teacher practice. But the system **The Edge:** Teacher evaluations are playing increasingly frequent central roles in promotion, retention, tenure and dismissal decisions. But are the evaluations fair? An evaluation of a teacher evaluation system in Chicago Public Schools called Recognizing Educators Advancing Chicago's Students — or, REACH — finds that lower performance ratings given to Black teachers can be almost entirely explained by the fact that those teachers are more likely to work in higher-poverty schools. A study of REACH co-led by Lauren Sartain has important implications given the widening demographic and racial gaps between students and their teachers and the shortage of teachers of color in American school classrooms.

failed to differentiate teachers by their effectiveness, nor did it provide useful feedback that could help teachers improve their practices.

Under REACH, evaluators — principals or assistant principals — use a detailed rubric to observe and rate teacher practice during multiple classroom observations. The frequency of observations varies depending on whether a teacher has earned tenure status — earned at the start of their fourth year — and prior performance ratings.

Observation scores account for 70% of a teacher's summative evaluation score. Summative ratings are Unsatisfactory, Developing, Proficient, or Excellent.

The ratings can have high stakes. Dismissal, remediation, and tenure attainment are tied to the ratings. Nontenured teachers with ratings in the bottom two categories may not have their contracts renewed. Tenured teachers with a Developing rating are placed on Professional Development Plans, which are in effect for one year. Tenured teachers with an Unsatisfactory rating are subject to a 90-day Remediation Plan and subject to



Lauren Sartain Assistant Professor

dismissal if their ratings do not improve. REACH ratings also affect the order in which teachers are laid off.

Sartain previously led a study, published in March 2020 by the University of Chicago Consortium on School Research, that surveyed teachers and administrators regarding their perceptions of the REACH evaluation system. It found that both teachers and administrators agreed that the evaluation system helped identify specific ways to improve practice. Most teachers — more than 80% — felt the observation scores were mostly or highly accurate.

But many teachers disagreed that REACH evaluations should be used to determine dismissal or tenure attainment. Only 15% of administrators disagreed.

DIGGING INTO THE EVALUATIONS

Given that the REACH evaluations can affect the careers of teachers, are they treating all of Chicago's teachers fairly?

To examine the effects of the REACH evaluation system, Sartain and Steinberg, an associate professor of education policy at George Mason University, analyzed data from the 2013-2014 and 2014-2015 school years, the first years of the system. Data analyzed in the study described 5,536 K–5 teachers from 411 Chicago elementary schools.

For each teacher, Sartain and Steinberg observed demographic information (race, gender, age), years of experience, degree attainment, and tenure status. They matched teachers to their evaluators, observing each evaluator's demographic information, experience and formal school role. They also used student-level data to match classes of students to teachers.

The study also examined data that described students. That data included

Watch the authors

The authors discuss their study in a video: https://go.unc.edu/sartain

each student's prior-year achievement on standardized end-of-year exams; social-economic status based on whether they qualified for free- or reduced-price lunch; and behavior, based on the number of prior-year misconduct reports.

The study also included data that described school-level climate and instruction supports.

WHAT THE DATA SHOW

The study found that 89% of the Black-White gap in classroom observation scores was explained by differences between the characteristics of schools where Black and White educators worked. The other 11% of the explained gap was related to classroom-level differences within individual schools, including student poverty, misconduct, and academic achievement.

None of the race gap was explained by differences in teachers' measured effectiveness in improving student achievement, by school culture, or by the race of the teachers' evaluators.

The study also found that White teachers working in high-poverty schools were just as likely to receive lower evaluations in their classroom observations.

Implications of the study should inform consideration of how teacher evaluation systems are implemented, Sartain and Steinberg say.

If high-stakes personnel decisions

rely on observation systems that do not take into account context-specific factors, districts run the risk of making decisions that have the consequence of reducing racial diversity among their teacher labor force.

Sartain and Steinberg say those reductions would likely affect the educational experiences of students, given the benefits that Black and other minority students receive from having same-race teachers.

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Edge update

Race matters New book explores impact of Black teachers

new book co-authored by UNC School of Education faculty member Constance Lindsay examines evidence that a more diverse teacher workforce benefits all students, especially Black males from low-income households.

The book, "Teacher Diversity and Student Success: Why Racial Representation Matters in the Classroom," describes evidence from multiple studies - including ones conducted by the authors - that demonstrate the positive impacts of students having at least one teacher of the same race.

Lindsay's work on race-match research

was the subject of the cover story -

issue of Edge.

"One Black teacher" — in the fall 2020

Other co-authors are Seth Gershenson,

an associate professor in the School of

Public Affairs at American University

and a research fellow of the IZA

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Michael Hansen, a senior fellow at the Brookings Institution and the director of the Brown Center on Education Policy. The book was published by Harvard Education Press. The authors discuss persistent

Institute of Labor Economics, and

on Press. The authors discuss persistent racial achievement and attainment gaps that result from systemic inequalities in public schools. They present evidence that promoting diversity in the K-12 teacher workforce — especially of Black and Latino teachers — can have powerful effects in raising academic achievement among Black and Latino students.

> Using data from North Carolina and Tennessee,

a team that included Lindsay and Gershenson found evidence that having a Black teacher at least once in elementary school increases the likelihood that Black students and Black males from low-income households in particular — will complete high school and aspire to attend college.

The issue is important, Lindsay and



Constance A. Lindsay Assistant Professor

her co-authors say, because the U.S. teaching workforce is vastly mismatched to the public school student population.

The book explores factors that have worked to create representation gaps in the teacher workforce, including how teachers of color are lost at every point along the teacher production pipeline.

The authors discuss policies that could increase teacher diversity and support efforts to allocate teachers of color among schools to benefit students. They also call for improvements in the training of White teachers to make them more effective in teaching diverse student populations.

Notes

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The UNC School of Education is an institution of innate quality and profound impact.

Through curriculum, instruction, research, field experiences and clinical practice, we are preparing students for the leadership roles they will assume in education. From the moment we were founded in 1885 as one of the first professional schools established at the University of North Carolina at Chapel Hill, we have been supporting students and families in our state and across the nation.

Our Promise

Our mission is to ensure that every student has the opportunity to reach his or her maximum potential as an individual.

We recognize the promise of every child, and educate through holistic, strategic methods. We educate the next generation of teachers, administrators and professionals to be leaders at all levels. With our influence on education we can lift every member of society, and that is the mission that motivates us every day.

Edge: Carolina Education Review is also available online: **go.unc.edu/edge**



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