

Yidan Prize
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2019 Yidan Prize Conference Series
THE AMERICAS

The Future of Evidence and
Innovation in Education

Executive Summary

Northwestern

OVERVIEW

On May 23 and 24, experts and thought leaders on education convened in the Kellogg Global Hub at Northwestern University in Evanston, Illinois, for the 2019 Yidan Prize Conference: The Americas. The prize, established in 2016 by Charles Chen Yidan, honors innovators in education research and development whose work addresses twenty-first century problems related to education. The 2018 Yidan Prize Laureates are Anant Agarwal of the Massachusetts Institute of Technology, recognized for developing the innovative online learning platform edX, and Larry V. Hedges of Northwestern University, cited for foundational research in the establishment of meta-analytic methods used to synthesize diverse independent studies. Each Yidan Prize includes an award of \$3.9 million, a portion of which Hedges and his colleagues at Northwestern will use to establish the new Statistics for Evidence-Based Policy and Practice Center (STEPP Center).

WELCOME

Morton Schapiro, *President & Professor, Northwestern University* Charles Chen, *Yidan Prize Founder*

Northwestern University President Morton Schapiro opened the conference by providing some background on the academic path of Larry Hedges, an individual who was first in his family to attend college, on a Regents Scholarship at the University of California-San Diego, and who decided in graduate school at Stanford to begin a career-long focus on the development of research synthesis methods that facilitate the evaluation of educational interventions.



President Schapiro then turned to Charles Chen Yidan, whom he praised for his conviction to change the world through education and for his “visionary philanthropy” supporting the work of education research and development.

Mr. Chen spoke about the Yidan Prize Foundation’s mission: honoring those whose work in education is “future-oriented, innovative, transformative, and sustainable.”

In his opening remarks, Mr. Chen emphasized the need for educators to learn from each other and spread innovative ideas in a global collaborative effort. His hope is that “the work of the few”, represented by the Yidan Prize Laureates, “will become the resource of all.”



Mr. Chen recognized Larry Hedges for his groundbreaking contributions on evaluating educational effectiveness and for advancing a scientific approach to improving education and Anant Agarwal for his leadership in developing edX, an online platform through which people around the world may access low-cost, high-quality education from the world’s most prestigious universities. He praised the opportunity provided by edX to overcome barriers to access, including distance and cost, to make education more widely available. Mr. Chen noted that the Yidan Prize Conference serves as a platform for stakeholders in education to draw inspiration from each other, collaborate, and engage in dialogue about the most pressing challenges to education.

OPENING ADDRESS

THE ESSENTIAL ROLE OF RESEARCH EVIDENCE IN EDUCATION

Larry Hedges

Yidan Prize for Research Laureate 2018

In the Opening Address, Larry Hedges argued that the complex challenges facing education in the twenty-first century call for a revolution analogous to what occurred in medicine and public health in the twentieth, resulting in “evidence-based medicine.” This profound transformation required both a robust research infrastructure and mechanisms for integrating research findings into the work of practitioners. He advocated for a similar transformation in education to counter the influence of tradition and personal intuition.

This vision of evidence-based education entails the multi-directional flow of knowledge among researchers, policymakers, practitioners, and other stakeholders in a research and development “ecosystem”. The goal of such an ecosystem is to guide practice based on the best available evidence. This requires the cultivation of new roles and expertise to help evaluate a myriad of educational interventions and products, now advertised as scientific, though often lacking the rigor of evidence-based research.

Primary research and meta-analytic syntheses of multiple studies may provide findings useful for practice but are often presented in publications or formats inaccessible to non-specialists. To address this problem, research clearinghouses have been created to evaluate and synthesize research, providing publicly available summaries to diverse stakeholders who may lack direct access to primary research.

Influential clearinghouses in education and child development include the What Works Clearinghouse of the Institute of Education Sciences (IES) and Blueprints for Healthy Youth Development.

While clearinghouses serve an important function within this ecosystem, they struggle to translate research findings. Hedges argued that one of the most urgent challenges facing education is the need to develop a multidisciplinary science of translating research. Inherent in effective translation is clear explanation of the findings of scientific studies, including the uncertainty of impacts, the heterogeneity of results, and the context specificity of research outcomes.

The challenge of translating research requires the knowledge and insights of researchers *and* practitioners. Critical to the success of this collaboration is comprehension of the needs of practitioners, how practitioners interpret research findings, and how changes in practice may be facilitated through further research. The development of a science of translation is a multidisciplinary endeavor that requires the establishment of spaces in which researchers, practitioners, and others convey their goals, measures of effectiveness, and challenges to implementation. To this end, Hedges introduced the establishment of Northwestern University’s new Statistics for Evidence-Based Policy and Practice Center (STEPP Center).

INTRODUCING THE STEPP CENTER AT NORTHWESTERN

Elizabeth Tipton

Co-Director

Elizabeth Tipton provided details on the origins of the STEPP Center, which will be housed in the university's Institute for Policy Research and co-directed by Tipton and Hedges with "affiliates within Northwestern and beyond." The center will have three primary areas of focus: (1) generating evidence, including the design and analysis of individual studies, (2) synthesizing evidence, including large and small scale meta-analyses and replication studies, and (3) translating evidence. While recent work has established rigorous scientific methods for generating and synthesizing evidence, researchers still struggle to translate research for non-specialist audiences. There is therefore a pressing need to develop a science of translation.

The STEPP Center's approach entails placing translation at the forefront of its mission, working closely with practitioners who are too often excluded from deliberations about how research is communicated.

By bringing together practitioners, policymakers, and researchers at the earliest stages of research and development, the Center will strive to ensure that the research it undertakes is relevant to diverse audiences and designed to facilitate translation into policy and practice.

Among the Center's strategies for fostering this kind of collaboration are its plans to host a series of research salons where practitioners, researchers, methodologists, and statisticians will come together to exchange questions, knowledge, and insights, and form robust partnerships to address pressing problems in education. Later this year, one such salon will focus on ways for research clearinghouses to better translate research syntheses for practitioners and other non-specialist audiences.

The STEPP Center and its associated website (stepp.center) will serve as a central hub for information about "best practices, tutorials, online tools, training opportunities, and state-of-the-art methodologies," with an emphasis on making this information "accessible and digestible" for diverse audiences.



PANEL 1

SYNTHESIZING RESEARCH EVIDENCE

The first panel centered on synthesizing research evidence and was moderated by Elizabeth Tipton, who was joined by Emily Tanner-Smith (University of Oregon), Jeffrey Valentine (University of Louisville), and Pamela Buckley (University of Colorado). The panelists concurred that there has been significant and encouraging progress in recent years throughout the evidence pipeline: research methods have become more sophisticated, randomized controlled trials have become much more common, and techniques such as meta-analysis have enabled the synthesis of research evidence. However, several challenges still remain, including how to: (1) encourage larger scale, longer-term studies that produce more robust and reliable findings, (2) promote greater standardization among researchers and clearinghouses, (3) synthesize conflicting evidence, and (4) translate syntheses for non-specialist audiences.



The panelists identified several strategies for promoting greater standardization and facilitating evidence synthesis. These include providing incentives for researchers to report details about study design and sample characteristics; encouraging data sharing

among researchers, clearinghouses, and other entities; and establishing a set of common measures for education research. These strategies are crucial for determining which interventions work, for whom, and in what context.

To achieve these goals, Valentine argued that the clearinghouses need “longer term, larger studies of impacts on valued outcomes.” Buckley highlighted the importance of determining which interventions produce sustained effects that are replicable and using methods such as meta-analysis to define the “preponderance of evidence.” Tanner-Smith provided an example from juvenile justice of direct and continuing linkage between research and practice. This employed the use of meta-analytic syntheses to inform the development of guidelines to manage practice, the implementation of which were

then evaluated in randomized controlled trials or quasi-experimental studies to evaluate the effects of these best practices, providing insight into an evidence chain, or what may be better described as an “evidence cycle”.

PANEL 2

INCREASING DEMAND FOR RESEARCH EVIDENCE

Moderator Jon Baron (Arnold Ventures), John Easton (University of Chicago), David Myers (American Institutes for Research), and Ruth Neild (Mathematica Policy Research) addressed questions about current demand for, and implementation of, research evidence. Baron and Myers posited that while demand for evidence has increased in recent years, policymakers are often poorly equipped to evaluate evidence. Furthermore, policymakers tend to cherry-pick evidence that supports their own agendas. In contrast, Neild and Easton maintained that a strong appetite for evidence exists among practitioners, with Neild suggesting that the missing element is often the presence of individuals with the capacity to guide the implementation of evidence into policy and practice.

The panelists converged on three major objectives for advancing the wider application of research findings by policymakers and practitioners: (1) bridging the gap between education research and implementation, (2) fostering greater practitioner involvement in research and development, and (3) translating research more effectively. Easton pointed to the planned research salons conducted by the STEPP Center as a way to bring researchers, practitioners, and other stakeholders together

to foster collaboration. Panelists emphasized that such collaboration may make research more relevant and accessible. A consensus emerged on the need to reframe education research as a means to empower educators. Panelists explored several ways to achieve these goals, including establishing incentive structures to encourage more rigorous research and creating and supporting intermediary roles that straddle the worlds of research and practice.



KEYNOTE ADDRESS

DEVELOPING THE LEADERSHIP ESSENTIAL TO ENSURE ALL CHILDREN CAN FULFILL THEIR POTENTIAL

Wendy Kopp

CEO and Co-Founder of Teach for All

In the Keynote Address, Wendy Kopp, CEO and Co-Founder of Teach for All (TFA) and Founder of Teach for America, made a passionate call to view education as a global, rather than a national or local issue. She described the challenges of scaling successful interventions across contexts, including the lessons learned in building Teach for All's global network: partners in 50 countries confronting the systemic and complex problem of unequal access to education.

One important lesson from Teach for All has been that cultivating leadership in local communities is essential to achieve systemic change. Kopp noted that after completing their initial two-year commitment, many TFA alumni continue to work in educational systems, often outside of classrooms, to improve outcomes for children. When compared with nonparticipants, Teach For America alumni exhibit reduced race- and class-based prejudice and greater recognition of injustice, while Teach for India alumni are more likely to continue to work in marginalized communities.



Following expansion of the TFA network, the organization took time to rearticulate its mission for the next several decades: to engage whole communities in helping children to fulfill their potential. To achieve this, TFA's partner organizations will continue to galvanize leaders in local communities to address the educational needs of the most marginalized. Looking forward, TFA plans to continue cultivating leaders throughout the world, support network partners to fulfill a broad set of outcomes for children, and promote learning and sharing across borders. To these ends, TFA is launching a global learning lab to develop insights drawn from local classrooms and communities.

LAUREATE LECTURE

REIMAGINING EDUCATION

Anant Agarwal

Yidan Prize for Education Development Laureate 2018, edX

Anant Agarwal, 2018 Yidan Prize Laureate for Education Development and CEO of the online learning platform edX, began his lecture by calling for a radical synthesis of education, science, and technology to promote education as a human right around the world. edX, by applying platform technology to bring together educators and learners, overcomes constraints of cost and distance that make access to education so uneven globally. The platform has reached more than 20 million learners, from every country, in collaboration with 142 global partners, in 2600 courses with more than 71 million course enrollments.



Agarwal identified three trends enabled by platform technology that edX deploys to provide greater access to quality education: modular education, omnichannel education, and lifelong education. edX facilitates modular education through its professional certificate programs, MicroMasters programs, and fully-online master's degrees in fields such as computer science, artificial intelligence, data science, and business management. Modular content meets the unique needs of individual learners by being affordable, accessible, shareable, and stackable. Omnichannel education allows online and in-person learning to come together before, during, and after campus learning to provide learners greater flexibility. Finally, edX facilitates lifelong education, catering to students seeking additional skills and credentials to meet the enduring demands of a continually changing society. edX's innovative approach has produced remarkable educational and career outcomes for its participants, including high rates of job placement and career advancement.

PANEL 3

EXPANDING ACCESS TO EDUCATION



Moderator Judith Scott-Clayton (Columbia University) was joined by Kirabo Jackson (Northwestern University), Barbara Schneider (Michigan State University), and Neal Finkelstein (WestEd). The panelists explored challenges to increasing access to education, particularly for minority and low-income students.

Finkelstein identified specific barriers to post-secondary education for community college students, including past difficulty in school and constraints on time due to greater responsibilities at home and work. The panel explored the tremendous cost of post-secondary education, in terms of both resources and time, and cited inadequate preparation as another major barrier to tertiary success.

Schneider described how student preparation is dependent on high school course availability and the information students receive about college from peers and teachers. Given that preparation is crucial to academic success, Jackson emphasized the importance of addressing issues of access as early as possible, including the effects of geography, income, and ethnicity.

Scott-Clayton recommended adopting the frame of inclusion/exclusion instead of access/no access. The panel discussed the importance of role models and social support from individuals from similar backgrounds, arguing that these may make post-secondary education more attainable, manageable, and meaningful for students typically excluded from such opportunities.

PANEL 4

EVALUATING TECHNOLOGICAL INNOVATION

The fourth and final panel, moderated by Nichole Pinkard (Northwestern University), brought together researchers and organization leaders to discuss how technological innovation may address major problems in education. Panelists were Jim Flanagan (International Society for Technology in Education [ISTE]), Krista Marks (Woot Math), and Herbert P. Ginsburg (Columbia University).

These challenges are necessarily context-dependent and require different approaches dependent on which populations use the technology, the specific needs of individual parents and teachers, and the setting. Ginsburg emphasized the importance of understanding how learning occurs both in school and at home, and how to reconcile differences between these settings.



Pinkard asked each of the panelists to explain how they use technology to facilitate innovation in education. Flanagan explained that ISTE's approach is to ensure that pedagogy informs the use of technology, while Marks noted that technology should serve "to amplify teacher practice." The panel explored how technology could enhance existing pedagogical practices and meet ongoing pedagogical challenges. These challenges include combatting inequity, developing less time-consuming and costly measures, teaching difficult concepts, and increasing student engagement and socialization.

The panelists agreed that educators desire evidence-based products, with Krista Marks pointing to the challenge of effectively communicating research to stakeholders. Reiterating a common theme of the conference, panelists emphasized the importance of third parties in bridging the information gap between researchers and educators. The panel concluded with a call for greater collaboration and stronger partnerships between researchers and educational developers to leverage the resources of both parties.

CLOSING STATEMENT

Jonathan Holloway

Provost, Northwestern University

Jonathan Holloway concluded the conference by thanking Charles Chen “for his vision and philanthropy” and the conference organizers for bringing together influential thinkers from an array of institutions and countries. Holloway congratulated the Yidan Prize Laureates whose “hard work and vision elevates us all”, and lauded conference attendees, teachers, scholars, and innovators from diverse backgrounds for coming together to address education’s most difficult challenges. He cautioned against comfortable appeals to tradition, which could perpetuate a long history of institutional discrimination in education, the devastating effects of which are still widely experienced today. Holloway closed by calling for a significant commitment of time and resources as well as collaboration across



disciplines, methodologies, and interests for the sake of our “human rights, health, safety, environmental sustainability, economic opportunities, our humanity.”

Weber Arch, depicted on the back cover, serves as the gateway to the Evanston campus. The artist is Anastasia Mak. Her work may be seen at AnastasiaMak.com.

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Diane Whitmore Schanzenbach, *Director*

For 50 years, faculty researchers from Northwestern University's Institute for Policy Research (IPR) have applied rigorous methods to vital social issues in many disciplines, including anthropology, education, economics, human development, political science, psychology, sociology, and statistics. IPR is an interdisciplinary home for scholars to collaborate and innovate. Their scholarly findings are disseminated widely to impact policy and improve our world.

Among the first university-based policy research institutes in the country, IPR fosters a unique intellectual community that pushes its scholars toward creative, original, and broad thinking about current—and future—social policy challenges and opportunities.



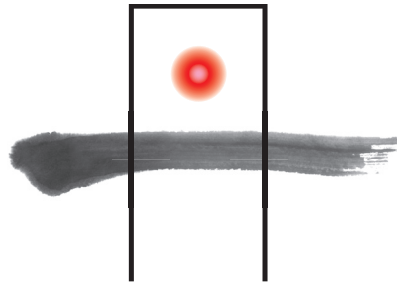
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David Figlio, *Dean*

Northwestern University's School of Education and Social Policy (SESP) is a catalyst for positive change. We prepare leaders who advance human development at all ages, in all contexts, in an era of ubiquitous computing, in a globally networked world.

We believe that research and education are better when informed by community partners, and that our research and education make our partners' work better as well. We work to make life better in Evanston, Chicago and around the world. In that spirit, we have launched, in partnership with the Chinese University of Hong Kong (CUHK), a first-of-its-type dual master's degree program where students will earn a Northwestern degree in social and economic policy and a CUHK degree in applied economics.





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