Calling for an Education Knowledge Bridge

A White Paper to Advance Evidence Use in Education

September 2021

EDUCATION .ORG

Preface

These past 18 months have shown the world the value, and at the same time, the fragility of our education systems. Before COVID-19 hit, the world was not on track to meet UN Sustainable Development Goal 4. But the pandemic has shaken us all to push for progress as it has revealed the power of evidence to help manage a crisis, build resilience, and improve education for every learner.

A former physician and neuroscientist, I turned to education philanthropy and international development to contribute to children's learning and development in a different way. Working in philanthropy opened my eyes to the numerous investments put towards ineffective interventions and institutions, while, all too often, good practices spread slowly or not at all. But it was my life-changing experience as Board Member and Chair of the former Strategy and Impact Committee at the Global Partnership for Education, where the devastating effect of this gap was most evident to me. As part of this committee, I heard repeated concerns from ministers and country teams about their difficulty in accessing and implementing relevant evidence – global and local – to inform policy decisions. They described the blatant contradiction of an ecosystem that advocates for and funds more evaluation and research, yet offers little infrastructure to enable that work to be easily accessed and effectively used, a situation which contrasts starkly against the knowledge maturation pathway for healthcare. They also lamented the damaging incentives that unlock funding for specific interventions, often without reflecting national contexts or considering local experiences.

The consequences are huge. Our education systems are failing millions of children every year. Despite good intentions, responses to the education crisis are poorly coordinated and do not add up to solutions that match the scale of the challenge.

Therefore, with a handful of colleagues and the support of a deeply committed co-investor collective, Education.org studied these challenges, their underlying causes, and potential ways forward. We also galvanised a core and growing group of funders and actors who seek greater impact in reducing this gap. This white paper is the result of this due diligence, based on a review of 45 organisations and 80 interviews with education sector leaders – a process which was protracted and influenced by experiences related to COVID-19.

We found a high degree of alignment about what the problems are, but great variability emerged about their root causes, and therefore a wide range of views surfaced about potential solutions. Some believe that growing the volume of high quality research will go far in bridging the gap, while others would dramatically elevate support for capacity strengthening and implementation support. Effective approaches are likely to reflect a combination of measures and, as described within, there are solid and successful individual examples to build from.
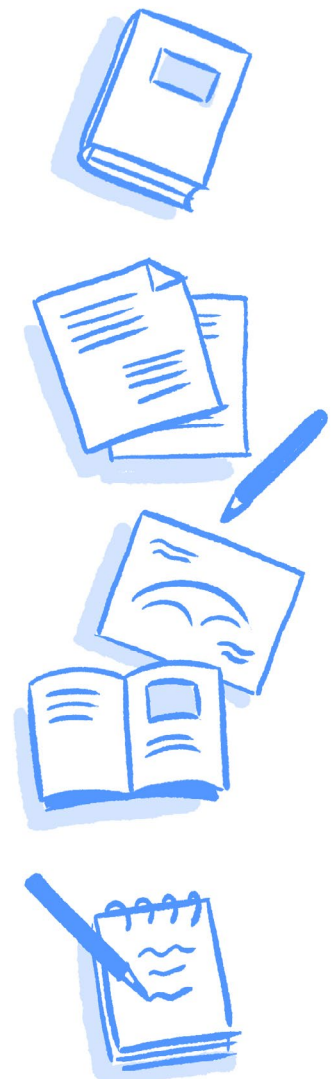
The world does not have to be like this. Forty years ago, the health sector began a process of radical change to ensure that it could consistently deliver evidence-based policy and practice. It is far from perfect, but health offers a case study in bridge building that can inspire other sectors, including education.

This white paper urges collective action to establish and embed an "Education Knowledge Bridge". It is based on extensive analyses of what it will take to enable education systems and leaders worldwide to adopt evidence-based policy and practice. This bridge is necessary to close the knowing-doing gap in education. It will lift millions of students out of the water, into school – and learning.

This is only the beginning, not the end, of our journey. This white paper marks a starting point of collective accountability. Progress on the key features of evidence accessibility, inclusivity and use will be regularly monitored and reported by our team. If you would like to play a role in this journey, please make contact, so that we can build the Education Knowledge Bridge faster and better together.

Dr Randa Grob-Zakhary, CEO and Founder

Acknowledgements

We are deeply thankful to the following individuals for their participation in interviews and/or informal discussions, as well as to those who preferred their names to be kept confidential.

- ▶ Elyas Abdi Jillaow, Director General for Basic Education, Ministry of Education, Kenya

- ▶ Tariq Al Gurg, Chief Executive Officer, Dubai Cares

- ▶ Nadeen Alalami, Program Manager, Dubai Cares

- ▶ Manos Antoninis, Director, UNESCO Global Education Monitoring Report (GEM Report)

- ▶ Girin Beeharry, Senior Advisor, Global Education, Bill & Melinda Gates Foundation

- ▶ Luis Benveniste, Human Development Regional Director for Latin America and the Caribbean, World Bank

- ▶ Anna Bertmar Khan, Head of Programs, Hand in Hand Sweden

- ▶ Rhadika Bhula, Policy Manager, J-PAL

- ▶ Lisa Blonder, Senior Advisor for Private Sector Engagement, United States Agency for International Development (USAID)

- ▶ Jo Bourne, Chief Technical Officer, Global Partnership for Education (GPE)

- ▶ Mathieu Brossard, Chief of Education, UNICEF Office of Research – Innocenti

- ▶ Tony Bryk, President, Carnegie Foundation for the Advancement of Teaching

- ▶ Kevan Collins, Chief Executive, Education Endowment Foundation (EEF)

- ▶ Larry Cooley, Non-resident Senior Fellow, Center for Universal Education, The Brookings Institution

- ▶ Julie Cram, Deputy Assistant Administrator, Bureau for Economic Growth, Education and Environment, United States Agency for International Development (USAID)

- ▶ Luis Crouch, Senior Economist, International Development Group, RTI International

- ▶ Beau Crowder, Independent Consultant

- ▶ Andrew Cunningham, Global Lead Education, Aga Khan Foundation (AKF)

- ▶ Suzanne Donovan, Executive Director, SERP Institute

- ▶ Hendrina Doroba, Manager - Education Human Capital and Employment Division at the African Development Bank

- ▶ David Edwards, General Secretary, Education International (EI)

- ▶ Charles Fadel, Founder and Chairman, Centre for Curriculum Redesign (CCR)

- ▶ Steven Farr, Co-Lead Global Learning Lab, Teach for All

- ▶ Claudio Feser, Senior Advisor, McKinsey & Company

- ▶ John Floretta, Global Deputy Executive Director, J-PAL

- ▶ Stephen Fraser, Deputy Chief Executive, Education Endowment Foundation (EEF)

- ▶ Erin Ganju, Managing Director, Echidna Giving

- ▶ Julia Gillard, Chair of the Board, Global Partnership for Education (GPE)

- ▶ Sandro Giuliani, Executive Director, Impact Fund/Forum, Geneva Science and Diplomacy Anticipator

- ▶ Javier Gonzalez, Director, SUMMA

- ▶ Heather Graham, Director, Learning Differences, Oak Foundation

- ▶ Suzanne Grant Lewis, Director, IIEP-UNESCO

- ▶ Megan Haggerty, Executive Director, International Education Funders Group (IEFG)

- ▶ Olaf Hahn, Founding Director and Senior Adviser, Education Sub-Saharan Africa

- ▶ Alicia Herbert, Director, Education, Gender, Equality and Special Envoy on Gender Equality, the Foreign and Commonwealth Development Office (FCDO)

- ▶ Haldis Host, Deputy Secretary, Education International (EI)

- ▶ Robert Jenkins, Chief, Education and Associate Director, UNICEF

- ▶ Ulrik Juul Christensen, Chief Executive Officer, Area9 Lyceum

- ▶ Sarah Kabay, Education Program Director, Innovations for Poverty Action (IPA)

- ▶ Nathan Koblintz, Portfolio Manager, Early Childhood Development, Porticus

- ▶ Wendy Kopp, Chief Executive Officer and Co-Founder, Teach For All

- ▶ Gina Lagomarsino, President and Chief Executive Officer, Results for Development (R4D)

- ▶ Cynthia Leck, Partner, Transcend Education

- ▶ Ruth Levine, Chair, Board of Commissioners, International Initiative for Impact Evaluation (3ie)

- ▶ Ian MacPherson, Lead – Knowledge and Innovation Exchange (KIX), Global Partnership for Education (GPE)

- ▶ Nesmy Manigat, former Minister of National Education and Professional Training, Haiti

- ▶ Emmanuel Manyasa, Executive Director, Usawa Agenda

- ▶ LeAnna Marr, Acting Deputy Assistant Administrator, United States Agency for International Development (USAID)

- ▶ Hugh McLean, Senior Programme Advisor to Education Programme, Open Society Foundations

- ▶ Silvia Montoya, Director, UNESCO Institute for Statistics (UIS)

- ▶ Silvester Ohene Mulambe, Director Policy, Partnerships and East African Community Affairs, Ministry of Education, Kenya

- ▶ Shireen Nawal Chaya, Technical Advisor, Dubai Cares

- ▶ Evangeline N. Nderu, Program Manager, Porticus Africa

- ▶ Samuel Ngaruiya, Assistant Director Education, Department of Policy, Partnerships and East African Community Affairs, Ministry of Education, Kenya

- ▶ Kerubo Okioga, Regional Director, Porticus Africa

- ▶ David Osher, Vice President and Institute Fellow, American Institutes for Research (AIR)

- ▶ Jenny Perlman Robinson, Senior Fellow, Center for Universal Education, The Brookings Institution

- ▶ Lisa Petrides, Founder and Chief Executive Officer, The Institute for the Study of Knowledge Management in Education (ISKME)

- ▶ Ben Piper, Senior Director, Africa Education, RTI International

- ▶ Gerhard Pulfer, Portfolio Manager, Education in Displacement, Porticus

- ▶ Atif Rafique, Senior Advisor, Education, UNICEF

- ▶ Rakesh Rajani, Vice President of Programs, Co-Impact

- ▶ Fernando Reimers, Director of the Global Education Innovation Initiative and of the International Education Policy Masters Program, Harvard University

- ▶ Alexandra Resch, Director of Learning and Strategy, Human Services Research, Mathematica

- ▶ Rebecca Rhodes, Education Officer, United States Agency for International Development (USAID)

- ▶ Sara Ruto, Chief Executive, PAL Network and Chairperson, Kenyan Institute of Curriculum Design

- ▶ Bror Saxberg, Vice President, Learning Science, Chan Zuckerberg Initiative (CZI)

- ▶ Andreas Schleicher, Director for the Directorate of Education and Skills, OECD

- ▶ Mark Schneider, Director, Institute for Education Sciences (IES)

- ▶ Fabio Segura, Co-Chief Executive Officer, Jacobs Foundation

- ▶ David Moinina Sengeh, Minister of Basic and Senior Secondary Education, Sierra Leone

Executive Summary

The gap between what we know… and what we do in education lies at the heart of a global learning crisis. This Education.org white paper argues that it is not the lack of new research that is the greatest obstacle to progress, but the failure to use what we already know.

It draws upon a critical comparison of the education and health sectors' use of evidence for decision-making, building on interviews with leaders of education knowledge organisations. It identifies what can be done to accelerate improvements in education by making more effective use of the evidence that should be driving education policy and practice.

In the past forty years, the health sector has turbocharged the **quantity and quality of research** available, but its success is a result of much more than volume alone. Sector-wide capacity exists to create **comprehensive and systematic syntheses of evidence** developed through trust-building processes that strive for **independence and transparency**. These syntheses are the foundation for **actionable guidance** that is **user-centred, reflecting actual challenges of policymakers and practitioners**. Results are communicated by **dedicated translation specialists** so that evidence is shared beyond a narrow group of experts. Over time, the process has become more **inclusive** with greater awareness of gender and ethnic diversity. Underpinning this approach is effective coordination and **alignment of incentives and culture** across the health sector communities of research, policy and practice.

The result is that doctors don't need to "try and guess what the evidence says about particular forms of care".[1]

In the education sector, despite huge progress and many important initiatives, critical parts of this knowledge infrastructure are still either missing or nascent. The communities of research, policy and practice are often independent islands of activity making **worthy, but uncoordinated, attempts to bridge the gaps**. According to our analysis, the health sector undertakes 26 times more synthesis work than education: for every synthesis developed in education, health produces 26 times more syntheses. In addition to this volume gap, education syntheses, in comparison to the health sector, are sporadic, incomplete, and less likely to be connected to the challenges of policy and practice. This means that existing education research is **rarely translated** into actionable guidance and **used** by policymakers and practitioners. Teachers and education policymakers, unlike doctors, are often left to guess at what the evidence says.

This white paper calls for an "Education Knowledge Bridge" to enable the capacity for comprehensive and up-to-date syntheses, leading to clear policy guidance that can be implemented at scale.

To be effective, this new Education Knowledge Bridge must:

Be user-centred

Reflecting actual challenges of policy and practice.

Leverage networks

To support implementation.

Reinforce core education systems

Instead of encouraging more parallel pilots of "silver bullets".
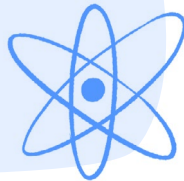
Prioritise equity

To ensure that evidence reaches those in greatest need.

Be trusted

Ensuring independence and transparency at every stage.

Through the good work of many organisations, critical building blocks for this knowledge bridge already exist.

This white paper is a call to work together to transform these building blocks into a fully functioning Education Knowledge Bridge that tackles the global learning crisis by making more use of the evidence that we already have.

KEY FACTS

- **US$ 4.7 trillion**: Annual global education expenditure (source: GEM Report, 2019)
- **US$ 8.3 trillion**: Annual global health expenditure (source: WHO, 2020)
- **1.75x**: Health to education expenditure ratio
- **860** syntheses produced annually in the education sector (source: Education.org analysis)
- **22,000** syntheses produced annually in the health sector (source: Education.org analysis)
- **26x**: Health to Education synthesis ratio

See appendix E for a Methodological note of this analysis

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Appendices

1

A School Report Card for "Our World"

At the end of term, in a ritual passed down over centuries, teachers have written school report cards for each student. They have ranged from the plainly wrong: *"He will never amount to anything"* of Albert Einstein, to underestimation: *"He will either go to prison or become a millionaire"* of the billionaire Sir Richard Branson, to the underhanded: *"The improvement in handwriting has revealed an inability to spell"* of an unknown victim of the teacher's pen!

So, today, what would a school report card for the education systems of "Our World" look like?

REPORT

Trying harder

"Our World has been trying harder … there's been significantly increased investment in education and much more focus on quality, evidence and learning."[2,3]

Improved attendance, but…

"Our World is attending school much more often than ever before, but 258 million learners were still out of school before the pandemic."[4]

Struggling with the basics

Our World hasn't consistently mastered the basics – failed to reach a minimum proficiency in reading and maths 617 million times."[5]

Extended illness

"It wasn't Our World's fault, but COVID-19 meant that nearly 200 billion days of school were missed last year (over 100 million children will fall below the minimum proficiency level in reading as a result)."[6]

Off-track for the 2030 test

"Our World is badly off-track for meeting Sustainable Development Goal 4 'ensure inclusive and equitable quality education … for all' by 2030."[7]

While we've made huge progress in educating Our World, we can't possibly be satisfied with this report card yet. This situation has been described as a learning crisis. The life-long loss of human potential for millions is unimaginable.

Fortunately, there's plenty of good advice on ways to help Our World do better at school:

Use evidence to guide policy.

"The international sector invests heavily in research, yet we must do a better job of understanding and using the data", says Julie Cram, Deputy Assistant Administrator for Economic Growth, Education and Environment, USAID.

"Unfortunately, too little of this knowledge makes it into education policy and subsequent implementation. Some of the most proven approaches remain overlooked and underfunded, while money continues to be spent on other, much less effective, practices and interventions", says the International Commission on Financing Global Education Opportunity (the "Education Commission").[3]

Move from evaluation for accountability to evaluation for impact.

"Development actors spend upwards of US$2.5 billion annually performing program monitoring and evaluation, yet staff in donor and government agencies report little to no utilization of this data for decision-making", says Development Gateway.[8]

Focus more on equity and meeting student needs.

"School systems are not adapting to the culture, territory, identity and characteristics of students", according to Javier Gonzalez, Director, SUMMA.

Improved learning and more effective use of resources require drastic improvements in education system performance.

"A major leadership push is needed", according to an essay by Nick Burnett, a senior fellow at Results for Development.[9]

Put bluntly, we need to bridge the gap between what we know, or could know from the research that is available, and what happens in schools as a result.

While the gap is widest for vulnerable and marginalised children - especially girls, minorities, those in poverty, and children with learning differences and special needs - this is not just a challenge for a handful of countries. Across the world, children are sitting in schools and other non-formal learning environments, disengaged or struggling. Our education systems are usually designed for the "average" student, so they often fail to meet the needs of the majority who need to go faster, slower, further or somewhere a little different.

These 617 million children (that is 60% of all children and adolescents globally, as estimated by UNESCO) can be found in every part of the world.[5] At times of crisis, as with a pandemic, the ability of systems to use evidence to adapt resiliently becomes even more important.

This gap is not new and there are many calls for change. Leaders at global and country level are clear about the role that evidence could have on accelerating improvement:

Global leaders are calling for investment in public goods and sharing.

"By developing the infrastructure needed to share knowledge across borders, best practices and effective innovations can spread to new geographies, and local, national, and regional actors with similar experiences can collaborate in a way that propels everyone forward", according to the International Commission on Financing Global Education Opportunity.[10]

Decision-makers want relevant guidance, not conflicting pieces of the puzzle.

"Research studies on a single education intervention contribute to our knowledge, but single studies alone are not enough to learn what works, where and for whom", according to the leader of a global knowledge organisation.

Country leaders are calling for a more inclusive and contextualised understanding of evidence.

"It is quite common for people to make policies based on gut feeling or history or their perception ... We want to use evidence to inform our policy. Evidence can come from other countries and from local experience. We actively test innovations and their potential to scale. Also, citizen engagement in building and testing innovations is a principle we care about", according to Dr David Moinina Sengeh, Minister of Basic and Senior Secondary Education in Sierra Leone.[11]

Country and local leaders are asking for evidence to be generated for their use.

"We have many groups producing and interested in evidence, but we lack coordination of their work, and often it is not reflecting national priorities. What parties are generating should be informing our critical gaps", according to a senior policy official at a government ministry.

Leaders are calling for help in curating evidence.

"We need to move beyond the situation today where too much evidence is not visible or understandable, not relevant, not actionable, siloed, driven by donor agendas or interventions, often duplicative", says Suzanne Grant Lewis, Director of IIEP-UNESCO.

These calls to action have not gone unheard. Growing sums of money are flowing into bilateral and pooled funds with innovation, knowledge and learning as rallying calls. But, as Larry Summers, former Chief Economist of the World Bank, observes in his foreword to Investing in Knowledge Sharing to Advance SDG 4: *"too often, increased investment serves only to support methods and existing institutions that have been ineffective"*[10]. So, while more research is necessary, welcome and overdue, *"the use of research evidence has not kept up… leading to wasted opportunities and even harm for the education system and its users"*, according to Professor Stephen Gorard of Durham University.[12]

This is a moment to reflect. With COVID-19 throwing SDG 4 even further off track, simply repeating more vigorously the same old recipe is not an effective solution to an entrenched challenge. New approaches are needed to address the learning crisis without depending on new funding alone.
By more comprehensively and systematically marshalling the world's knowledge and evidence, scarce resources can be put to more effective use to advance equity, access, and outcomes for students everywhere.

This white paper asks what we must do to bridge the knowing-doing gap so that we can improve Our World's school report card. It is a direct response to multiple calls from system leaders across governments and civil society, at global and national levels, to use evidence more effectively to address the learning crisis. It is written with the belief that this crisis is profound, touches all corners of the globe, and that all children should have access to a good quality education.

Methodology

This white paper draws upon:

► a critical comparison of the education and health sectors conducted by Education.org;

► 80 interviews and informal discussions with leading global knowledge actors (organisations that focus on the production, analysis, synthesis and/or dissemination of knowledge), supplemented by a small number of major regional players;

► case studies to understand the role and contribution of organisations currently working in issues relating to this white paper;

► a review of more than 45 organisations, 80 major reports and 8 collaborative knowledge initiatives in education.

2

Knowledge to Policy and Practice: Comparing Health and Education

In education, we often look towards the health sector for inspiration.

Education.org undertook this exploration to discover important differences between the ways that the health and education sectors work with evidence. Our goal was not to find a "copy and paste" solution, nor to underplay many challenges in the health sector, but to stimulate critical thinking about how to accelerate progress in education.

Other sectors have also made dramatic changes in their use of data and evidence, for example, in aviation safety and climate change.[13] However, health stands out as a comparative reference for education because both fields are people focused, represent major parts of government budgets, and have outcomes affected by stakeholders and context, such as the role of parents.

There are substantial differences, of course. Education does not have diseases, pills, or cures. A quick blood test can reveal COVID-19 antibodies, but it cannot tell us if a child understands calculus. Yet, there are also many similarities. Patients and students are people. Two patients/students can respond very differently to the same intervention, and doctors/teachers often need the skills of a social worker to understand what is most likely to work.

Health is far from a perfect parallel and many health experts are quick to point out significant deficiencies, particularly in its focus on treating disease rather than prevention and well-being, for example. Nevertheless, health offers inspiration to inform our thinking.[14]

So, how does the health sector work to bridge the knowing-doing gap?

Our analysis reveals five characteristics of the health sector knowledge bridge which we judge to be absent or nascent in education. Yet, positively, we also see many of the building blocks needed to create a comparable Education Knowledge Bridge for education.

1. Research generation

While this white paper focuses on the use of research rather than its generation, it is inevitable that the volume and focus of research will have a significant impact on the likelihood of its future utilisation. In comparing health and education, three important differences stand out:

a. The health sector invests heavily in quality research.

Health research is often commissioned by public bodies. For example, the National Institutes of Health (NIH) in the US invests US$32 billion annually in medical research.[15] Research is commissioned through private sector investment by the pharmaceutical industry with research and development activity estimated at US$165 billion in 2018 for which there are significant commercial incentives.[16] It is also funded by large health focused foundations such as the UK's Wellcome Trust with an endowment of £26 billion (US$36 billion). The consequence is a vast body of evidence that is estimated to be growing at the rate of "75 trials and 11 systematic reviews per day".[17] It is difficult to identify comparable statistics for education research spending or outputs like those of health. There are certainly fewer incentives to encourage private sector investment. Education spending represents a significant part of national government spending around the world (5% of GDP is not untypical) and public funds account for the majority of education spending in many countries.[2,18] However, this commitment rarely prioritises research about what works and under what conditions, and therefore how this money is best used. The Education Commission report addressing education financing stated: *"to keep investment focused on the reforms and practices that work best requires building systems that continuously seek out and act upon the best new information on what delivers results, including by increasing the share of funding that goes towards research, development, and evaluation … Today, most countries spend very little of their education budgets on research and development, and it accounts for just 3 percent of international aid in education. Education lags behind other sectors in the funding and institutions to support research and data."*[3]
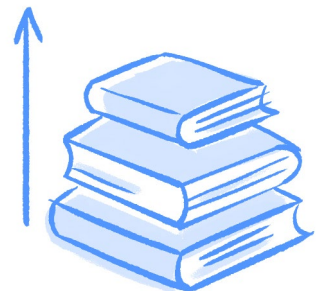
Encouragingly, building blocks for a future Education Knowledge Bridge are evident, if still on a much smaller scale than in health. With a budget of US$75 million, the **Knowledge and Innovation Exchange (KIX)** has been established to meet global public good gaps in education. KIX brings together 68 low- and middle-income countries that are partners of the **Global Partnership for Education** to identify common policy challenges and facilitate knowledge sharing and evidence building.[19] Meanwhile, **Dubai Cares 'E-Cubed'** US$10m partnership with the **Inter-agency Network for Education in Emergencies** aims to strengthen the evidence base for education in emergencies by supporting contextually relevant and usable research and disseminating global public goods, fostering collaboration, and building community engagement.[20]

b. Health research is likely to be applied and user-centred.

When budgets are limited, it becomes even more important to ensure that the research that is commissioned is relevant. Health research is more likely to be applied, user-centred, and designed so that outputs can be directly linked to existing clinical pathways and protocols. New health research is likely to start with an understanding of a specific challenge or obstacle in the treatment of a condition, it is likely to be focused on filling gaps in current knowledge, and envisions application in an existing treatment pathway.

In contrast, education research is less likely to be focused on current problems of practice and policy and more likely to be *"decided by researchers identifying questions of interest to them"* [21,22], or that they deem relevant.The education system rewards academics for publication in a journal, so this can be seen as the culmination of the journey. Where academics go further to engage practitioners in research, this usually happens at the end of the research process with the dissemination of findings, not at the start.

Again, there are encouraging initiatives in place. For example, Evidence and Gap Maps (EGMs), as championed by the **International Initiative for Impact Evaluation (3ie)**, are a *"systematic evidence synthesis product which display the available evidence relevant to a specific research question"*.[23] By identifying gaps where little or no evidence from impact evaluations and systematic reviews is available, it is possible to support a more strategic approach to building the evidence base for a sector.

EGMs have been combined to create mega-maps such as the recent *Mega-map of systematic reviews and evidence and gap maps on the interventions to improve child well-being in low- and middle-income countries* published by the **Campbell Collaboration**. This mega-map covered 333 systematic reviews and 23 EGMs.[24] Such initiatives offer funders and academics greater insight into research needs and gaps, potentially also reducing the risk of wasting scarce resources through duplication and repetition of what has already been researched.

c. Health research is increasingly likely to reflect the needs of minority groups.

Over time, the health research community has recognised its inherent biases towards patients of a particular gender, age or condition – realising that equity can only be achieved when data is collected from, and reflects the differing needs of, all relevant groups and contexts.[25]

The question of "what works?" has steadily been replaced with "what works for whom, when, where and why?" with greater effort to increase diversity and meaningful participation in clinical trials.[26,27]

The vast majority of education research is conducted in contexts that are unrepresentative of most of the global population, limiting the likelihood of its findings supporting a meaningful equity agenda.[28–30] Much like health has learned to investigate why some patients do not respond to a course of treatment, education also needs to disaggregate data for those with learning differences. The needs of marginalised or forgotten groups will remain poorly understood while research excludes them in the first place, or if they are lost in a mountain of data and described with an average.

There are encouraging innovations in the education sector. For example, the **People's Action for Learning** (PAL) Network is a south-south partnership of organisations working across three continents. Member organisations conduct citizen-led assessments aimed at improving learning outcomes by, among other activities, generating data through oral one-on-one assessments conducted in households.

The **Regional Education Learning Initiative** (RELI) is another example, composed of 70 members in East Africa, promoting cross-organisational learning and exchange to improve education access and quality.

2. Synthesis

"Evidence synthesis refers to the process of bringing together information from a range of sources and disciplines to inform debates and decisions on specific issues. Decision-making and public debate are best served if policymakers have access to the best current evidence on an issue."[31]

Without systematic and routine synthesis, practitioners and policymakers are faced with an overwhelming number of journals, papers, and reports, which in practical terms makes it impossible to be guided by evidence in any coordinated and balanced way. In comparing health and education synthesis, three important differences stand out:

a. The health sector has a comprehensive, sector-wide synthesis process.

In health, a sector-wide synthesis process means that doctors and policymakers rarely need to read, rate, and evaluate individual studies. Instead, they can draw on robust and comprehensive syntheses of evidence around specific, practice-focused themes, or have confidence that established treatment pathways will reflect best-in-class evidence.

These syntheses come from specialist organisations which conduct synthesis at scale. For example, Cochrane (see callout) provides 8,500 systematic reviews in its publicly available and searchable library at www.cochranelibrary.com.

The Cochrane Library is the largest source of systematic reviews in health. Epistemonikos acts as a library of libraries, regularly drawing evidence from ten different organisations, including Cochrane, so as to *"identify all of the systematic reviews relevant for health decision-making"* in one place.[32]

The education sector has no systematic sector-wide process for synthesis at scale, or a central library of the results. According to Stephen Fraser, Deputy Chief Executive of the Education Endowment Foundation, *"we lack a central convenor of systematically developed syntheses"*. Most educational research remains isolated in individual journal articles, which are often one-off intervention studies, hidden behind paywalls. As Larry Cooley, Non-resident Senior Fellow, Center for Universal Education at Brookings explained: *"In education, ensuring that the best available evidence is consolidated and acted upon is nobody's job."*

While there is no systematic sector-wide process, there is smaller scale and high-quality synthesis work underway in the education sector. For example, the **Education Endowment Foundation's (EEF) online Teaching and Learning Toolkit** has synthesised and continues to update evidence about 35 school-based interventions.[33] This highly accessible and intuitive resource has encouraged 64% of UK school leaders to use evidence to inform decisions about allocating special government funding for disadvantaged students, up from 36% who used research in 2012.[34] EEF has been working with partners in other countries to create comparable toolkits internationally. For example, **SUMMA** has translated the toolkit into Spanish and Portuguese, and synthesised the evidence base for teachers in Latin America and Caribbean countries.[35]

There are other important building blocks in the education sector:

▶ **The Campbell Collaboration**, a sister organisation of Cochrane, produces syntheses and policy briefs across a wide range of social science topics, including education. It has produced an average of three internationally focused K-12 education syntheses each year over the past five years and has been working in partnership with 3ie on Evidence Gap Maps.[36]

▶ **The EPPI-Centre** at the UCL Institute of Education in London has several decades of synthesis experience across many areas of social policy including education. However, in recent years its output has focused on broader social issues and it has not published any specific K-12 education syntheses.[37]

▶ **The Institute of Education Sciences** and the What Works Clearinghouse conduct "what works" reviews of specific interventions (packaged programmes) in a US cultural context.[38]

▶ **The Harvard Center on the Developing Child** and the annual **GEM Report** from UNESCO both focus on synthesising knowledge around very specific themes (e.g., toxic stress and executive functioning, in the case of Harvard; inclusion, in the case of the 2021 GEM Report). They have excellent outreach capabilities to engage wider networks in disseminating their materials.[39,40]

These examples are important building blocks, but they are not sufficient to bridge the knowing-doing gap. Even when their results are combined, they confirm the small scale of synthesis work in the education sector, relative to the need. Furthermore, there is no single place where the work from these different organisations comes together in a form that is easy for policymakers and practitioners to find and engage.

b. Health sector syntheses are timely and regularly updated as new evidence becomes available.

In health, a systematic review is a living document.

Old reviews are routinely updated as new evidence becomes available. Cochrane produced 560 new or updated reviews in 2019, stating, *"Cochrane Reviews are updated to reflect the findings of new evidence when it becomes available because the results of new studies can change the conclusions of a review. Cochrane Reviews are therefore valuable sources of information for those receiving and providing care, as well as for decision-makers and researchers."*[41]

Handling the volume of new research in health is a significant challenge. Cochrane uses a network of 21,000 "citizen scientists" to identify the research that may be relevant for future synthesis, which it catalogues in a central register.[42] Artificial intelligence techniques have further potential for improving the reliability of tracking new and emerging evidence with the potential to be included in systematic reviews.

In education, it is rare to find important synthesis routinely updated. For example, *What Works Best in Education for Development: A Super Synthesis of the Evidence* produced by **Australia's Department of Foreign Affairs and Trade** draws together research up to 2016, but has not been updated since then.[43] **3ie**'s systematic review of Interventions for improving learning outcomes and access to education in low- and middle-income countries has not been updated since 2015.[44] Notable exceptions include the EEF, which ensures *"repeated systematic searches … for systematic reviews with quantitative data"* in its toolkit,[45] and the Harvard Center on the Developing Child, which routinely updates material on its core topics.

c. The health sector has developed sophisticated synthesis methodologies and is increasingly incorporating broader types of evidence.

Synthesis is a complex undertaking, fraught with methodological issues and potential bias. A systematic review *"should follow standardised processes to ensure that all practically available relevant evidence is identified, considered, rigorously assessed, and thoughtfully synthesised"*.[46] The health sector has championed more rigorous approaches to the process of synthesis:
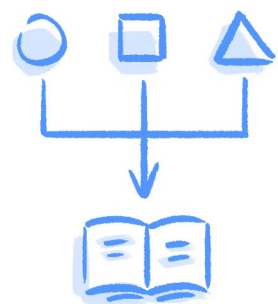
▶ **GRADE** (Grading of Recommendations, Assessment, Development and Evaluations) is a *"transparent framework for developing and presenting summaries of evidence and provides a systematic approach for making clinical practice recommendations"*.[47] Used by more than 100 organisations worldwide, GRADE allows the quality of evidence and the confidence in recommendations to be assessed on a consistent scale. The padlock symbol used in the EEF's Teaching and Learning Toolkit is an example of a confidence scale being used by one organisation working in education.[33]

▶ **PRISMA** (Preferred Reporting Items for Systematic reviews and Meta-Analyses) is a quality assurance tool for systematic reviews designed to promote transparent reporting. It includes a 27-item checklist addressing the introduction, methods, results, and discussion sections of a systematic review report.[48]

Due to the greater volume of health sector research, it is inevitable that systematic reviews find a greater volume of eligible research. However, in other fields such as education, where research can be sparse, alternative methodologies such as "subject-wide evidence synthesis" are gaining interest.[49,50] Approaches that embrace a wider range of methodologies and sources are likely to have growing relevance. For example, **GRADE-CERQual** (Confidence in the Evidence from Reviews of Qualitative Research) addresses the need to assess confidence in qualitative research.[51]

"People need to make a decision even if we don't have an RCT. We need to help them make the best decisions based on all available information."

— *Alexandra Resch, Director of Learning and Strategy, Human Services Research, Mathematica*

"It is critical for investments in research to illuminate what works, what does not work, what may be harmful, and the core ingredients of effective approaches and interventions."

— *David Osher, Vice President and Institute Fellow, AIR*

One type of evidence that is underrepresented in both health and education synthesis is research about what does not work. To avoid repeating history's mistakes and to learn from experience, more transparency is required in all sectors.

3. Guidance

With comprehensive and timely synthesis available, it becomes possible to turn synthesis conclusions into evidence-informed guidance, written in ways that are accessible and relevant to policymakers and practitioners. In comparing health and education guidance, two important differences stand out:

a. The health sector has infrastructure and well-established processes to create and disseminate guidance.

Health syntheses routinely include "implications for practice" in their conclusions. The health sector systematically embeds the conclusions of synthesis into treatment recommendations (known as critical pathways), prescribing guidance, purchasing decisions and regulations.[52] This can be found at all levels. For example:

▶ the World Health Organisation issues *"global guidelines ensuring the appropriate use of evidence in health policies and clinical interventions"*[53];

▶ national policy institutes, such as the UK's National Institute for Health and Care Excellence, make *"evidence-based recommendations developed by independent committees, including professionals and lay members, and consulted on by stakeholders"*, which guide the work of health practitioners across a country.[54]

Many professional bodies at national and international levels focus on specific health conditions or themes and provide specialist expertise in the review of emerging evidence, scientific leadership and workforce development.[55,56]
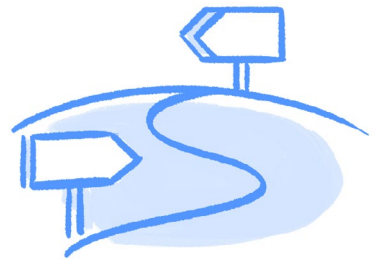
"Evidence is necessary but not sufficient — we are not equipped [in education] to support the practice shifts and uptake.

— David Osher, Vice President and Institute Fellow, AIR

With less research to draw upon and without a systematic synthesis process to shape conclusions from the research that does exist, educational policy development is often a far less predictable and rigorous process.

Education systems (that is, everything that goes into educating school students, including laws, policies, funding and regulations) are more likely to oscillate between stagnation and dramatic change in direction as they fall victim to political interventions rather than continuous improvement. According to the Organisation for Economic Co-operation and Development (OECD), looking at some of the best resourced countries in the world, *"many OECD countries lack effective mechanisms to strategically integrate data and educational research into the process of evidence-based resource planning"* and demonstrate *"systematic weaknesses in the ability to use data and research evidence can appear at every level of governance"*.[57]

Yet, building blocks are emerging. The **Global Education Evidence Advisory Panel (GEEAP)** co-hosted by the UK Foreign, Commonwealth & Development Office and the World Bank is composed of economists, educationalists, psychologists, and policymakers, and has released its first recommendations on "smart buys" in education for low- and middle-income countries.[58,59]

b. Health sector guidance seeks to strengthen the current system and practice.

In health, new evidence is constantly used to improve the current system. The sector evolves over time through tweaks to strengthen current practice rather than by adding entirely new or parallel systems. If a doctor wants to test a new idea or potential treatment, then there are clearly defined mechanisms to ensure transparency, patient safety, ethical approval, trial delivery, and results publication, all within the mainstream system.

In education, teachers usually lack any similar support for innovation. While they sometimes enjoy greater autonomy in the classroom, the likelihood of innovation by any single teacher causing improvements in the overall system is too low. Education organisations such as **ISKME** – a non-profit whose mission is to improve the practice of continuous learning, collaboration, and change in the education sector – are doing important work to help schools collect and share information, particularly through open educational resources (OERs).[60]

Meanwhile, the search for silver bullets in education sometimes causes pilots to be established, running alongside or parallel to the formal education system. An increasing body of scaling experience argues that these "parallel pilots", that do not engage with the reality of the mainstream system, are likely to drain resources and create unsustainable results.[61]

4. Implementation support

With evidence-informed guidance in place, it becomes possible to focus on the challenges of implementing changes within a system. In comparing the capacity of the health and education sectors to do this, two important differences stand out:

a. The health sector invests funds in technical assistance and capacity building to implement research findings at the country level.

Research in the health sector has established that "*passive approaches for disseminating [evidence] are largely ineffective because dissemination does not happen spontaneously*" and "*too often, capacity-building efforts have been built around pushing out research-based evidence without accounting for the pull of practitioners, policy makers, or community members or accounting for key contextual variables (e.g., resources, needs, culture, capacity)*".[62]

The health sector creates demand in a number of ways. For example, through the pre-service training of practitioners, through standards for professional accreditation and through the obligations of continuous professional development.

The **Building Capacity to Use Research Evidence (BCURE)** programme was a £16 million initiative funded by the UK Department for International Development (former DFID, now FCDO) to build capacity for health evidence use across 12 low- and middle-income countries in Africa and Asia. It concluded that "*individual capacity (in terms of knowledge, skills, confidence and commitment) is the bedrock of effective evidence use, but programmes also need to harness organisational processes, management support and wider incentives for people to change ways of working*".[63]

In the education sector, the building blocks are once again evident:

► The **UNESCO International Institute for Education Planning (IIEP)** holds the UN mandate to support educational policy, planning and management. IIEP is "*committed to creating and sharing knowledge to support context-relevant analyses to improve educational policy formulation and planning. Training, technical cooperation, applied research and knowledge sharing are the four main activities through which IIEP accomplishes its mission*".[64]

▶ The **UNICEF Data Must Speak initiative (DMS)** helps countries *"unlock existing data to expand access to education and improve learning for all. DMS provides direct technical assistance in Chad, Madagascar, Namibia, Nepal, Niger, the Philippines, Togo and Zambia"*.[65]

▶ In a strong example of private philanthropy and government stakeholders collaborating to improve policy delivery, **UBS Optimus Foundation** provided funding to the **Ministry of Basic and Senior Secondary Education (MBSSE) in Sierra Leone** to undertake a systems-level analysis of education service delivery, with an emphasis on identifying the disconnects between policy design and implementation.[66] The report supported the development of Sierra Leone's Education Sector Analysis preceding the new Education Sector Plan (2020-2025), a proposed restructure of the MBSSE, and the establishment of a delivery unit.

b. The health sector invests in learning networks so that implementers can systematically learn about how to implement evidence in practice.

For example, the **Joint Learning Network for Universal Health Coverage (JLN)** is *"an innovative, country-driven network of practitioners and policymakers from around the globe who co-develop global knowledge products that help bridge the gap between theory and practice to extend health coverage to more than 3 billion people"* in 34 countries.[67]

Such networks are not unique to health, although perhaps it is difficult to point to activities at the scale of the JLN (yet). Strong building blocks in education include:

▶ the **Millions Learning Real-time Scaling Labs**, initiated by Brookings, which aim to "strengthen scaling efforts through a forum for peer-to-peer learning in which lab participants discuss lessons learned and develop strategies to address challenges faced during their education interventions' scaling journey"[68];

▶ the four **ECD Regional Networks** (AfECN, ARNEC, ANECD and ISSA), which are membership associations that act as regional learning communities, bridging the policy and practice domains to *"challenge existing knowledge and practice, and co-construct new approaches and models"*[69];

▶ the **Saving Brains Learning Platform**, which is a learning community of more than 100 NGOs using evidence-based approaches to scale early childhood development, supported by a number of private foundations who understand the value of peer-based learning and networks to support change and scaling.[70]

In both the health and education sectors, implementation research is a growing area of study which is fundamental to understanding evidence use.

Implementation research seeks to better understand the real-life challenges of *"implementation—the act of carrying an intention into effect"*. Embracing real world challenges and complex contextual issues, it is an approach that focuses on the users of research rather than the producers. Methodologically, it can utilise a wide variety of qualitative, quantitative, and mixed methods techniques that seek to better understand issues including acceptability, adoption, appropriateness, feasibility, fidelity, implementation cost, coverage, and sustainability.[71,72]
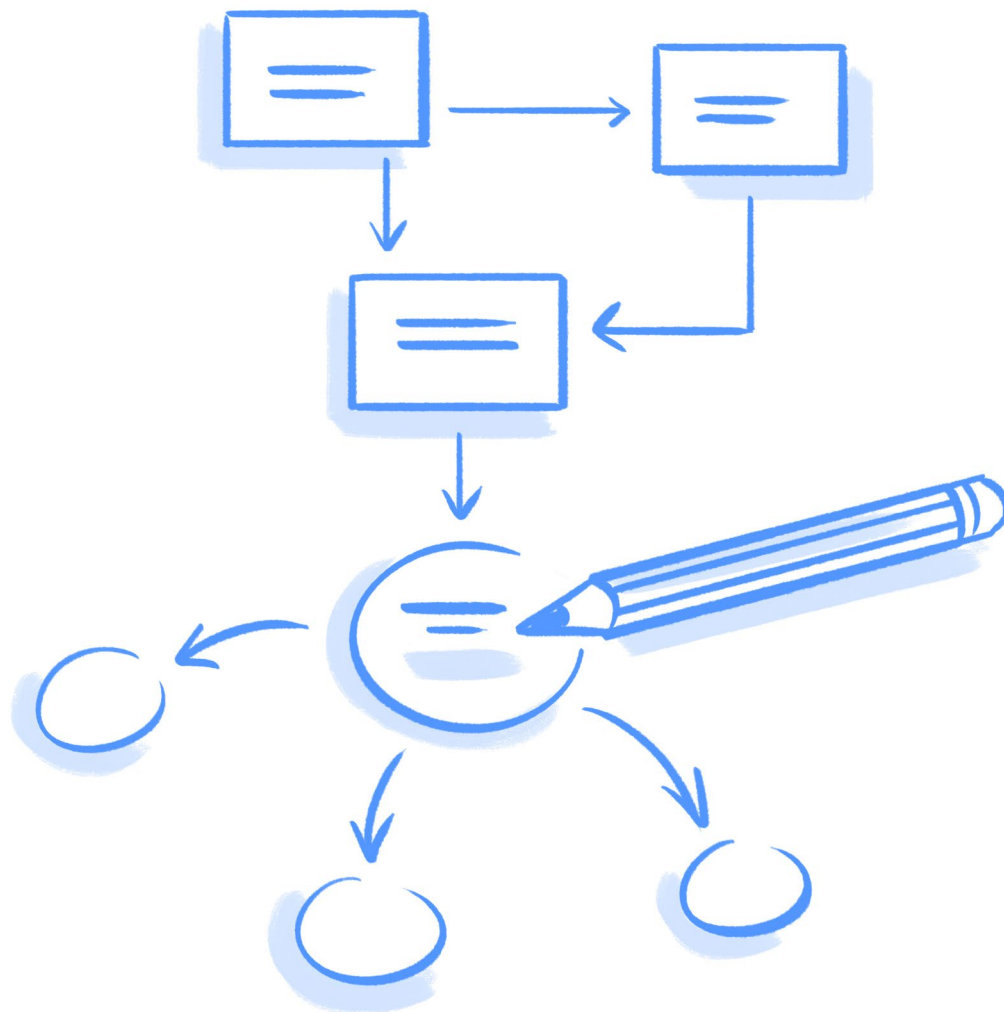
5. Enabling environment

In reflecting on the health knowledge bridge, it becomes clear that its strengths are explained by something greater than just institutions and processes. The health sector has created an enabling environment – a culture of evidence use – that pervades its work. In comparing the health and education environments, three important differences stand out:

a. The health sector strives for independence and transparency in research and synthesis.

In sectors with high levels of commercial and other stakeholder self-interest, a key aspect of building trust in evidence relates to the independence and transparency of research and syntheses. Where independence is potentially compromised (as in a pharmaceutical company sponsoring research into its own product), then transparency becomes even more important. For these reasons, and with no lack of recent controversy to spur greater efforts, the health sector has created high expectations for managing conflicts of interest in research and for syntheses processes that seek to be open and transparent at every stage.[73]

Central to health syntheses process is the engagement of large numbers of health professionals from numerous organisations acting in a volunteer or supporter role. This helps with transparency, creates higher levels of buy-in, and distributes costs across and around the sector, so that central financing is not an over influential factor in determining what gets synthesised and when.

In education too, it is possible to see certain stakeholders exhibiting a significant influence on what gets researched and when. For example, research is sometimes commissioned by donors around specific agendas, which are linked to individual interventions also funded by the same donors. Synthesis, when it happens, is often commissioned as a one-off study from a university department, think tank, or private research institution, with little transparency. The education sector has not yet matured the same level of expectations in regard to independence and transparency that are evident in health. Both sectors, no doubt, have further to travel.
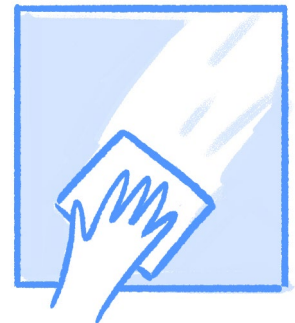
"Donors often influence the evaluations of the interventions they have funded and may promote costly proprietary tools or one organisational view."

— *Manos Antoninis, Director, UNESCO GEM Report*

b. The health sector works to align incentives and culture between evidence creators (researchers) and evidence consumers (health practitioners).

Doctors are immersed in a culture of research from very early stages in their medical training. Many hospitals have specialist facilities for conducting research and trials, and contributing to clinical trials is understood to be a shared responsibility and opportunity for all who work in the sector. Ethics committees and other research infrastructure routinely exists to support this happening.
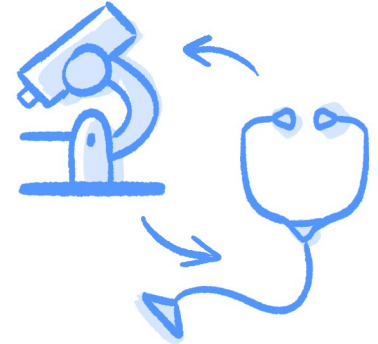
"For public health practitioners to apply the latest scientific evidence, they need to be connected all along the research production-to-application pipeline and not just to the end of it".[62]

The division between hospitals and universities is much less stark than between schools and universities. Teaching hospitals and the work of academic practitioners mean that professionals routinely cross between these worlds, sometimes several times in a day. Various incentives also encourage engagement in research. For example, hospitals can earn additional income by hosting and facilitating clinical trials for pharmaceutical companies, so that many have specialist research and development departments making this an everyday and mutually beneficial part of their work.[74]

Schools and teachers, on the other hand, have fewer opportunities to learn about evidence in their training, conduct research less frequently, and usually lack the facilities and/or resources to do so. Among other issues, this means that mountains of data held by schools and teachers (e.g., relating to student assessment) remain siloed in schools and are rarely analysed to help improve practice and performance in the wider system.

c.The health sector has dedicated translation specialists.

Allied to the health sector are professions that focus on the translation of science into practice. For example, medical writers specialise in writing regulatory and research-related documents, disease or drug-related educational and promotional literature, publication articles such as journal manuscripts and abstracts, and content for healthcare websites,

health-related magazines and news articles. To do so, they need an understanding of key medical concepts and the ability to communicate scientific information to suit the different levels of understanding of specialist and lay audiences.[75]

In the education sector, it is common to find education journalists who write about the sector, but an education sector equivalent role of the medical writer is difficult to find. Without it, too much valuable evidence remains hidden.

Individually, these differences between the health and education sectors are important but not necessarily dramatic. Yet, by ensuring capacity and good practice at every stage of the process (from knowledge generation through to implementation support, facilitated by an enabling culture), the health sector ensures that the knowing-doing gap is bridged.

The health sector knowledge bridge has taken decades to develop, and it continues to evolve. An equivalent Education Knowledge Bridge will inevitably look and function differently, but this analysis shows that many building blocks already exist. Urgent action and greater persistence are required to strengthen and connect these building blocks into a functioning Education Knowledge Bridge.
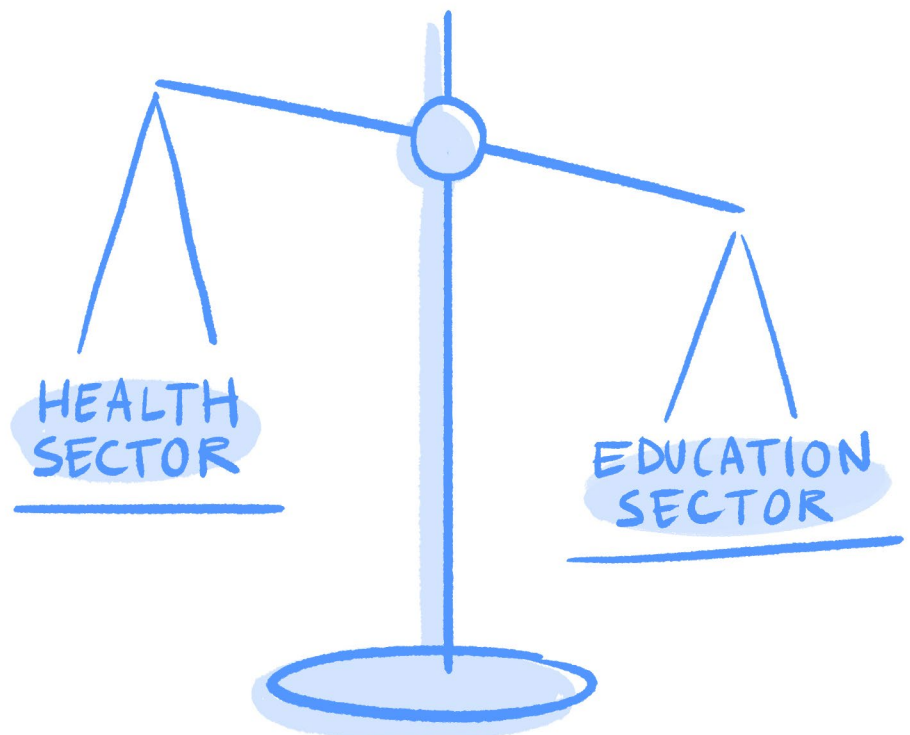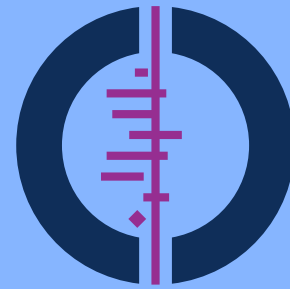
Cochrane

www.cochrane.org

"It is surely a great criticism of our profession that we have not organised a critical summary, by specialty or subspecialty, adapted periodically, of all relevant randomized controlled trials."[76]
— *Archie Cochrane*

These words were written not today, but in 1979. The profession being critiqued was not education, but health. It is a reminder that, in the last 40 years, the health sector has taken huge steps to bridge the knowing-doing gap.

Archie Cochrane's quote was the inspiration that led to the medical profession building a database of systematic reviews of research. The impact on policy and practice has been transformative. Doctors and policymakers no longer need to read countless individual studies and reports, but instead can refer to guidance based on authoritative, independent synthesis of multiple studies which give clear advice about the effects of clinical options on prevention, treatment and rehabilitation. The result is that the prescription of drugs or surgical interventions no longer need to be a lottery dependent on the personal experience of an individual doctor.

Yet, the quote reminds us that it was not always so. It was in 1993 that the Cochrane Collaboration was established as a public good, supported with a grant from the Department for Health in England, 14 years after Archie Cochrane's call. The initiative took many more years to develop, starting with less than a hundred reviews in 1995, scaling to more than 8,600 today. The global collaboration now has over 100,000 supporters and members in more than 130 countries who tackle the constant challenge of producing, analysing and synthesising new research, then translating it into health evidence and high-quality trusted information that can be used by policymakers, practitioners, researchers and consumers, patients and the public to inform health decision-making.[77] This is a community-driven effort: Cochrane produced 560 new or updated reviews

in 2019 with a central budget of only £9.1m (US$12.5m).[25]
These reviews help to shape sector policy.[78] For example, it is estimated that 90% of 2016 WHO guidelines contain Cochrane evidence.[79] Trust in the process is critical and not without some controversy. Cochrane itself *"does not accept commercial sponsorship or conflicted funding"* and implements a conflict of interest policy that has been described as *"stricter than most journals"*.[73,80] In addition, there is continual methodological innovation in the process of synthesis itself.[48,50]

The logo of the centre is a powerful reminder that evidence, only when used, transforms lives. It shows the results of seven randomised control trials (RCTs) for the use of an inexpensive drug given to women about to give birth too early. Had the studies been systematically reviewed, then it would have been clear by about 1982 that a simple steroid injection matures the baby's lung to improve their survival outside of the womb, reducing the odds of death by 30–50%. As no systematic review was published until 1990, most doctors had not realised that the treatment was so effective, and many premature babies probably suffered or died unnecessarily.

Cochrane goes further than the production of synthesis for medical specialists. It (and many others in the sector) seeks to communicate its work to make it truly accessible, recognising the interests of policymakers, journalists and patients, plus the need to counter out of date or inaccurate information. For example, since 2014, Cochrane and Wikipedia have partnered to help medical editors transform the quality and content of health evidence available online, using new and updated Cochrane Systematic Reviews.[81]

HEALTH SECTOR

EDUCATION KNOWLEDGE BRIDGE

3

Mind the Gap: The Challenge for Education

Inspired by the idea of a knowledge bridge and the examples from health, Education.org explored opportunities and challenges by studying leading initiatives and actors from the most influential knowledge organisations in the global education sector.

Analysis and interviews consistently confirm the absence of a functioning knowledge bridge in education.

"There is a tremendous amount of data and research that is not accessible and heavily under-utilised. We would all benefit from efforts to routinely surface this information and to make it more accessible and useful for leaders influencing education decisions."

— *Andreas Schleicher, Director for the Directorate of Education and Skills, OECD*

"The sector is driven mostly by supply, not demand. Many researchers are not thinking about how their research will be used, and there is little accountability for that."

— *Leader of a global knowledge organisation*

"After two years of rigorous work for a systematic review, we discovered by accident a similar effort underway by a fellow actor in the field."

— *Birte Snilstveit, Director Synthesis & Reviews and Head of London Office, International Initiative for Impact Evaluation (3ie)*

"We often say that we know what works, but we don't know. We know what might."

— *David Osher, Vice President and Institute Fellow, AIR*

"No program evaluation my team has completed has been applied to a next project."

— *Lisa Petrides, Founder and Chief Executive Officer, ISKME*

"There is a massive amount of (country level) data not being used, mainly due to a lack of time and resources."

— *LeAnna Marr, Acting Deputy Assistant Administrator, USAID*

"Unrestricted funding is increasingly limited in the development sector. So, the questions that are being addressed are often driven by donor interests, rather than governments in low- and middle-income countries."

— *Senior leader in a global research organisation*

"Major agencies and donors dominate the agenda; the voice of countries is clearly not represented adequately."

— *Manos Antoninis, Director, UNESCO GEM Report*

"Too often, we extract information from non-profits and communities for evaluative purposes, only to keep the learning to ourselves, or perhaps share it with a few like-minded peers… When we choose not to share what we are learning from evaluation, we not only impede the efficiency and effectiveness of the sector, but also fall short of our responsibility to the communities we serve."

— *Funder and evaluator for the Affinity Network (FEAN)[82]*

"The extra step of synthesis is needed for the institutionalisation of evidence."

— *Howard White, Chief Executive Officer, Campbell Collaboration*

Why is this? These quotes and our wider interviews point towards three important communities in the education sector, enabled by supportive donors, who lack the infrastructure and processes to collaborate effectively:

The academics, researchers and thinkers

who help the education sector to understand what is happening and why.

The practitioners and doers

– the teachers, headteachers, assistants, community workers, parents, civil society organisations, NGOs, and others – who make education and learning happen in schools, communities and homes.
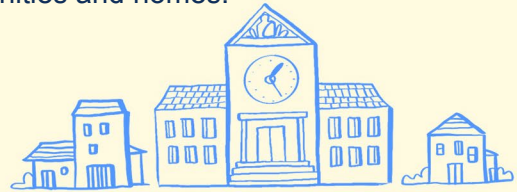
The policymakers and system managers

who determine direction, set policy and allocate resources.

Given that all three communities are full of professionals who are talented and passionate about their work, why does evidence not flow more effectively between them? Specifically:

- ▶ How do these three communities **communicate**? For example, how do they share evidence, agree priorities and ask questions of each other?

- ▶ What are the **incentives and cultures** that encourage or inhibit collaboration?

43

PRACTITIONERS and DOERS

POLICYMAKERS and SYSTEM MANAGERS

ACADEMICS and RESEARCHERS

ACADEMICS and RESEARCHERS

KNOWLEDGE INCENTIVES

TO CREATE NEW KNOWLEDGE

UNIVERSITIES, PRIVATE RESEARCH INSTITUTES and THINK TANKS

METHODOLOGY

GOLD STANDARD: RCTs THEORETICAL

PERFORMANCE

PUBLICATION in HIGH-RANKING JOURNALS and CITATION by COLLEAGUES

TIME FRAME

LONG-TERM: RESEARCH PROJECTS, GRANT CYCLES, PUBLISHING and TENURE

OUTPUTS

JOURNAL ARTICLES and BOOK CHAPTERS

CONFERENCE PRESENTATIONS

POLICYMAKERS and SYSTEM MANAGERS

KNOWLEDGE INCENTIVES
TO JUSTIFY POLICY DECISIONS

TIME FRAME
MEDIUM-TERM: ELECTION and BUDGET CYCLES

GOVERNMENT DEPARTMENTS

METHODOLOGY
POLICY PAPERS, DRAFTING LEGISLATION and POLITICS

OUTPUTS
POLICIES, IMPLEMENTATION PLANS and BUDGETS

PERFORMANCE
RE-ELECTION or PROMOTION PUBLIC SUPPORT

PRACTITIONERS and DOERS

KNOWLEDGE INCENTIVES
TO APPLY IN THE CLASSROOM

PERFORMANCE
☑
CHILD EXAMS and ASSESSMENT

TIME FRAME
SHORT-TERM: SCHOOL YEAR

OUTPUTS
LESSONS and TESTS

METHODOLOGY
PRACTICAL! DOES IT WORK HERE?

SCHOOLS and COMMUNITIES

There are certainly worthy exceptions to this broader picture, but generally these three communities are divided by different cultures and incentives.

Each works in isolation, but when these communities need to collaborate, they lack the infrastructure, incentives and culture to bridge the gap.

For example, when researchers communicate evidence through journal articles, policymakers struggle to ingest and digest the volume of diverse and sometimes conflicting information and to translate the evidence into policy. Practitioners find it challenging to relate the relevance to their classroom context.

What does this mean? How could the sector change?

Our interviews with sector leaders suggest what might help.

"Research papers often start with reviewing the current state of evidence. Of course, context and needs are critical too. There is scope for much more co-creation at the design stage that is rooted in context and can be guided by evidence."

— *John Floretta, Global Deputy Executive Director, J-PAL*

"Much synthesis work today is ad-hoc and uncoordinated. The good news is that there is increasing demand for synthesised evidence. But it needs brokering and coordination, to be effective … We need coordinated curation and translation of research, not just another archive."

— *Birte Snilstveit, Director Synthesis & Reviews and Head of London Office, 3ie*

"We need to be able to better access and use the data we have and reduce the duplication of research efforts."

— *Luis Benveniste, Human Development Regional Director for Latin America and the Caribbean, World Bank*

"It is rare to put country needs first when donor-commissioned studies are being formed, despite good intentions. Even rarer are efforts to identify and acknowledge national and local research and experiences. It would be most welcome if our sector were to re-prosecute what we mean by "evidence", and to strengthen our mechanisms for routinely listening to and elevating the voices of communities."

— *Sara Ruto, Chief Executive Officer, PAL Network and Chairperson, Kenyan Institute of Curriculum Design*

"We need do more to get reviews commissioned with a clear intention to inform decision making. Doing that means producing reviews which shift beyond the general first-generation question of if an intervention works or not."[21]

— *Howard White, Chief Executive Officer, Campbell Collaboration*

"We need to broaden our view of stakeholders to include both power-holders – those who make decisions about policies and programs – and those who are likely to be affected by the decisions."[83]

— *Ruth Levine, Chair, Board of Commissioners, 3ie*

"Researchers have insufficient incentives to do research on the most important education challenges facing the world's poorest people. Funders could be highly successful in generating a different process."

— *Manos Antoninis, Director, UNESCO-GEM Report*

"A big difference with medicine is that this evidence is part of your identity. Literature has been embedded in you since starting practice."

— *Gina Lagomarsino, President and Chief Executive Officer, R4D*

"While we have been effective in making the case for curriculum reform and formative assessment, the approved new curriculum lacks targeted focus on enhancing equity and implementation is not smooth. There is very little feedback or learning during the implementation process."

— *Emmanuel Manyasa, Executive Director, Usawa Agenda*

On discovering the extent of the knowing-doing gap, it might be tempting to assume that we need much more research to fill it. Indeed, it is rare to find an academic paper that does not say as much.

But this investigation suggests that it is not the lack of research that is the greatest obstacle to progress, but the failure to use what we already have.

"If more time were spent figuring out how to apply what we've already learned, and less time on conducting nuanced research around the edges, many millions of children around the world could benefit and no harm would be done."

— Jack Shonkoff, Director of the Center on the Developing Child, Harvard University

We need an Education Knowledge Bridge to span the knowing-doing gap.

4

Building a Bridge to Span the Knowing-Doing Gap

Our investigation suggests that a new Education Knowledge Bridge requires **five capabilities**:

1. Research generation: promoting use and user orientation from the outset

The core argument of this white paper is to make better use of the research that we have. But research generation also remains a challenge, especially in the education sector where quantity, quality and relevance all need to be strengthened if an Education Knowledge Bridge is to have the inputs needed to support change. Indeed, the availability of comprehensive synthesis would enable researchers to focus towards filling genuine evidence gaps, and stronger involvement of policymakers and practitioners in the early stages of research would increase the likelihood that scarce resources are used to tackle the most important challenges.

2. Synthesis: building a big picture with the jigsaw pieces

Extending the focus of policymakers and practitioners from individual studies to comprehensive syntheses is essential. Shifting the frequency of syntheses from one-off to routinely updated is equally important.

The education sector needs a Cochrane-like capacity so that future generations will find it hard to believe that we ever lived without the capacity for comprehensive, up-to-date, contextually sensitive synthesis of research in education.
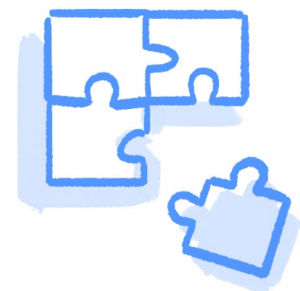
"We all have this as our interest, but none of us has it as our mandate. This initiative would be a rising tide that could lift all boats."

— Rebecca Winthrop, Co-director, Center for Universal Education and Senior Fellow, Global Economy and Development, Brookings

3. Guidance: answering the "so what?" of every synthesis

Synthesis is essential but not sufficient. The third part of the bridge is the capacity to develop evidence-informed guidance and recommendations derived from the synthesis. The process for developing guidance needs to be as robust as that for developing synthesis. The guidance and recommendations must be relevant and clear for the target audiences, concrete and realistic for the context in which they are targeted, and aware that cost is a policy reality that must also be considered.

4. Implementation: engaging for and supporting change at scale

Turning guidance into policy and practice requires improvement in the capacity to implement change. It needs coordinated support from global players and local actors, bottom-up as much as top-down. Implementation plans must engage stakeholders with clear messages and effective communication. They must be designed with opportunities for rapid learning and adjustment in mind, firmly aware that every new context has huge implications for even the most established model. It is essential to resist the trend of implementing interventions without a critical assessment of their appropriateness and adaptation for the specific context.[84]

"A perfectly designed policy does not exist. For instance, a policymaker may use top-notch economic knowledge or international best practices to bring about a new incentive mechanism that improves teacher effectiveness. However, critical adjustments that take account of country-specific institutional and managerial contexts can only be made during implementation. That is why a good design must be paired with a mechanism to assess if implementation is following the right course, identify and measure impact, and improve the policy over time. That capacity to learn and adapt comes with time, but it is absolutely critical."

— Dr Elyas Abdi Jillaow, OGW, Director General for Basic Education, Ministry of Education, Kenya

5. Enabling environment: building a culture of evidence use

Interviews and analysis suggest that adopting new tools and processes is not enough. How we do it matters too, especially in education where the culture and approach is distinctive.

The interviews identified five principles to be embedded in the design of the bridge, essential to creating the enabling environment:

a. Being user-centred – rather than focusing on theory

A critique made of research in our interviews is that, despite best intentions, it is often driven by the interests of academics and the agendas of donors, rather than the needs of practitioners and policymakers. Being user-centred would involve **bringing those who will utilise evidence in their decision-making into the design process from the start**, prioritising issues of most relevance to their current problems of practice and policy, making sure that recommendations are context-specific, and using a communication style that is simple and actionable. Engaging a wider range of voices and recognising the importance of elevating data and experiences from varying contexts are also important elements of prioritising the needs of users over theoretical considerations alone.

"We need to balance incentives between creation and use of knowledge."

— Director of a national education research organisation

"The current model of education knowledge is centred on evidence generation, not use. Users should not be passive recipients but active co-producers of knowledge, as we have learned from health. We need much, much more listening, and we need to adopt tools for synthesis and for transfer of evidence."

— Gina Lagomarsino, President and Chief Executive Officer, R4D

b. Reinforcing the core education system – instead of establishing parallel tracks

An observation regularly made, especially by policymakers, is that too many innovations seek to bypass or sit parallel to the mainstream education system and planning processes. This limits their scalability and sustainability. It can mean that resources are diverted. Several knowledge actors interviewed for this paper further stressed that the trend towards research on silver bullets, or "what works", is misleading and creates false narratives. Instead, it must be a principle to **use evidence to build permanent infrastructure and continuous improvement of the mainstream education system rather than adding ad-hoc, one-off efforts**.
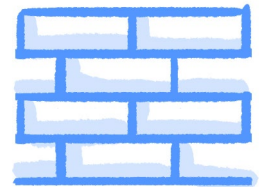
"We often create interventions that sit on top of (not part of) what is already happening. It's impractical, costly and therefore fails often."

— *Leader in a national research-based advocacy organisation*

"We don't motivate continuous improvement. When new research is generated, it should be directly embedded within an existing policy or practice."

— *Alexandra Resch, Director of Learning and Strategy, Human Services Research, Mathematica*

c. Safeguarding independence – instead of being driven by funding biases

To make a difference, synthesis and recommendations must be trustworthy. Credibility derives from a process that is independent, transparent and non-partisan at every stage. If synthesis processes are tied to proving the effectiveness of specific interventions, projects or themes, especially through the enthusiasm of a donor utilising restricted grants, then credibility and trust in the entire process is placed at risk.

d. Leveraging networks – instead of reinforcing silos

Ultimately, change depends on many actors coming together. Much of the synthesis process in health is led by Cochrane, made feasible by 82,000 volunteer members who are typically medical professionals drawn from numerous organisations and networks. Their engagement in the Cochrane synthesis process is mutually beneficial and gives further amplification and credibility to the results. The same principle is true when delivering change programmes. Success is supported and reinforced when networks of collaborators span academia, policy, practice, business, philanthropy, social entrepreneurs, unions and civil society sectors. As we are reminded by SDG 17 ("Revitalize the global partnership for sustainable development"), we need stronger, interconnected broader networks and new alliances to make this bridge possible.
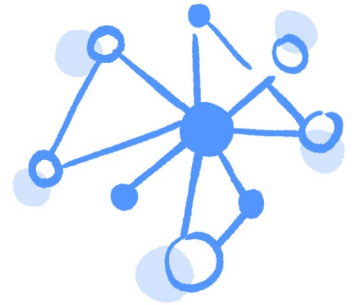
e. Prioritising equity – avoiding averages

The greatest risk of failure in Our World's school report relates to marginalised children such as girls, minorities, those in poverty, and children with learning differences and special needs. **We have an even greater responsibility to use evidence to support children at greatest risk**. This starts with the way in which we frame research questions, collect data and synthesise evidence. Only by collecting data that is representative of the diversity in our communities, that avoids unintentional biases in its design and methodologies, that disaggregates results recognising that "no one is average",[85] and that constantly places an emphasis on understanding what is working for whom and in what context, will it be possible for school systems to improve outcomes for those who need quality education the most.[86]

"There is increasing evidence that in order to increase research use, we need to do research differently: by involving the beneficiaries of the research from the onset, through co-creation and co-implementation design."

— Mathieu Brossard, Chief of Education, UNICEF Office of Research – Innocenti

5

An Open Invitation to Engage in Bridge Building

During the research leading to this white paper, COVID-19 swept across the globe.

The health sector responded quickly on multiple fronts, testing, collecting data, utilising existing R&D protocols to develop vaccines, refining treatment guidance, and increasing system capacity rapidly. While there have been numerous failures and policy mistakes, rapid improvements in treatment protocols and survival rates were achieved globally in only a few months as the health sector used its well-established knowledge bridge to learn and adapt, while simultaneously treating patients.

In contrast, education systems experienced the largest closure of schools in history, an absence of data on educational impact for children in the context of growing inequity, ad-hoc distance learning provided to a minority with little evaluation of quality, and policy confusion over good practice for reopening with serious implications for the most marginalised.

During a crisis, the stark differences between health and education have become even more evident.

As Ian Chambers of Cochrane observed when reflecting on the progress made in health over four decades: *"The most important thing to keep in mind is that it is no longer acceptable to try and guess what the evidence says about particular forms of care."*[1]

How long before we can say this about education too?

If we are to improve Our World's education performance, then we should seize the opportunity to connect and build on existing examples and current initiatives to create the kind of knowledge bridge that has transformed the health sector over the past forty years.

This is not a quick fix, but a systemic change in incentives, investments, infrastructure, culture and capacity to create an Education Knowledge Bridge to span the knowing-doing gap.

PRACTITIONERS and DOERS

IMPLEMENTATION

GUIDANCE

SYNTHESIS

PRIORITISE EQUITY

LEVERAGE NETWORKS

SAFEGUARD INDEPENDENCE

REINFORCE THE CORE

FOCUS ON USERS

POLICYMAKERS and SYSTEM MANAGERS

ACADEMICS and RESEARCHERS
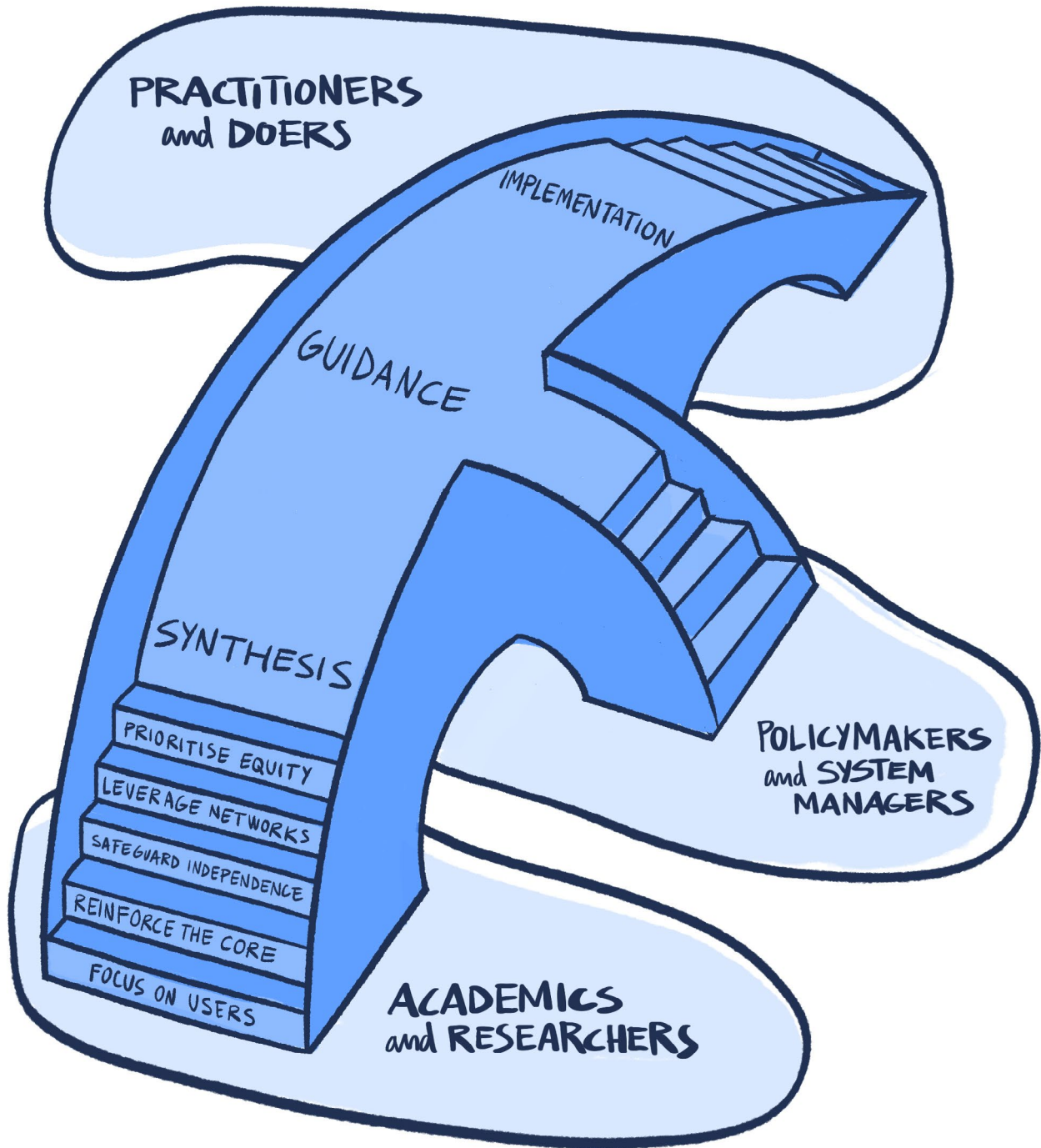
An effective Education Knowledge Bridge will:

Enable better utilisation of the evidence and resources

that have already been paid for, but sit largely unused.

Contribute towards the goal of creating stronger, more equitable education systems,

better supporting learning outcomes at scale, especially for marginalised groups (girls, minorities, those in poverty, children with learning differences or special needs).
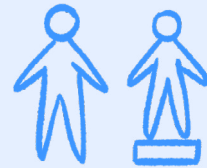
Make smarter use of scarce funding,

particularly by identifying the greatest needs and most significant gaps, so as to avoid duplication.

Allow us to move faster and respond better,

especially in times of crisis.
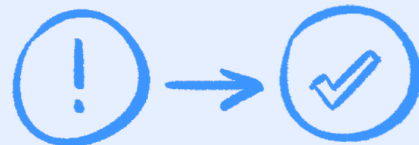
Encourage a democratisation of the culture around evidence and front-line voices,

which are often missing in decision-making today.

How can we collaborate to build the Education Knowledge Bridge faster?

We call upon **national and local education leaders** to invest resources in the capacity, culture and cultivation of political will that is required to use the growing volumes of evidence in decision-making. Developing effective national research centres that are tightly linked to education planning cycles and long-term national policy agend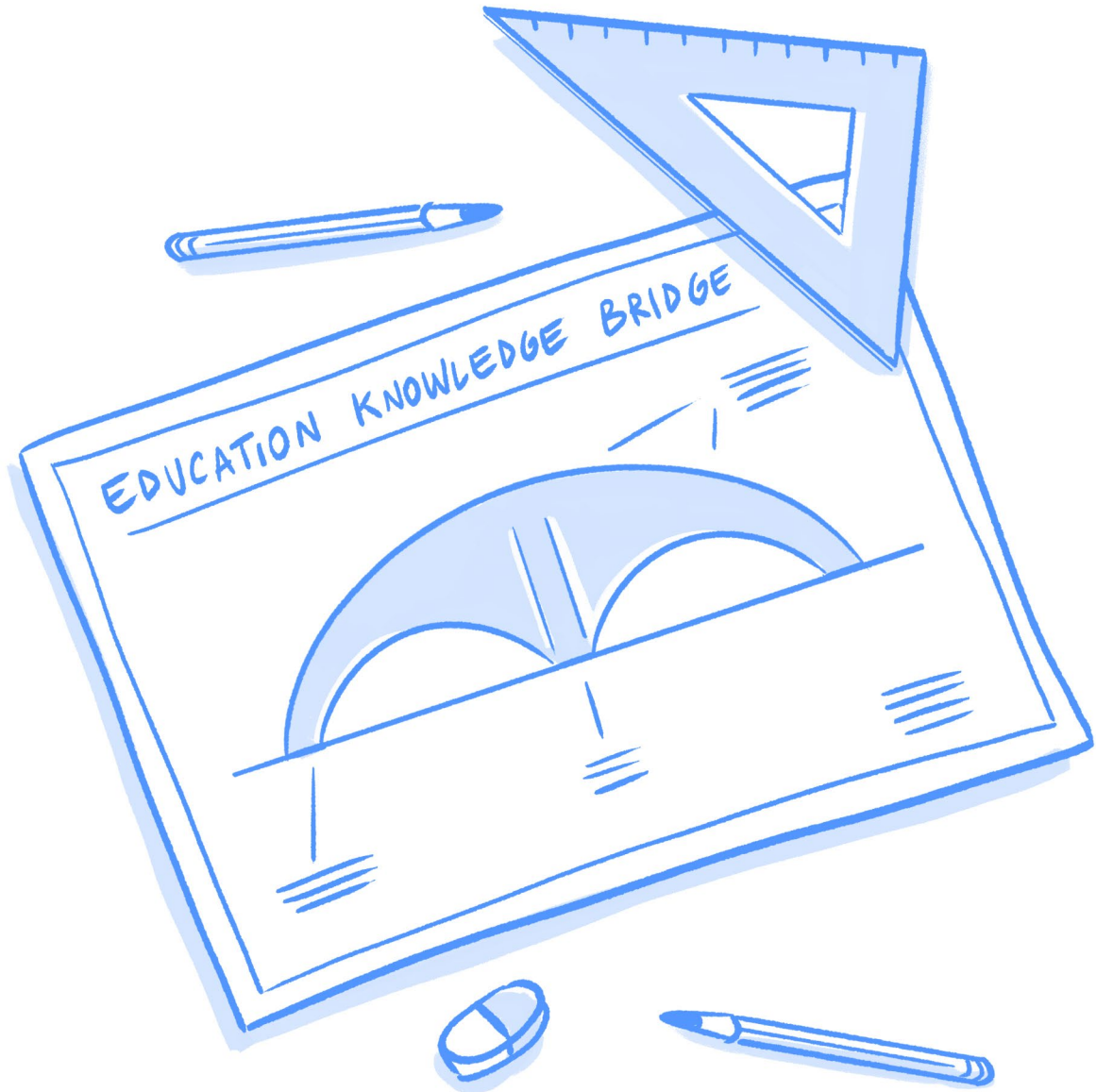as is essential if evidence use is to become routine and systematic. National commitments in this area will enable governments to make stronger demands on the global community for context sensitive investments in research and processes that enhance the accessibility and use of evidence for decision-making.

We call upon **donors and research commissioners**, including private foundations, multilaterals, bilaterals and businesses:

▶ to address the significant contradiction between what research is funded and what research is used, by advancing incentives across the sector to focus more on evidence use. In particular, to address challenges of utility from the outset by modifying processes for commissioning new research to respond to the calls and ideas captured in this white paper; and

▶ to contribute expertise and facilitate connections with their networks to enhance capacity for evidence use. These ideas have enormous potential for boosting impact but depend upon insightful donors to take risks and stimulate more innovation.

We call upon existing **institutional knowledge actors** in the education sector to take actions to increase the accessibility and use of knowledge products for policy and implementation. This collective action will lift everyone's work. The building blocks of the Education Knowledge Bridge already exist, but it is only through collaboration that we can connect the pieces and work effectively as an education sector.

We call upon **individual academics and researchers** to start every new research study not just with a literature review, but with an investigation of the challenges and issues faced by policymakers and practitioners. Routinely engaging policymakers and practitioners as partners is much more likely to lead to research that is relevant, valuable and used.

We call upon **teacher organisations and teacher training colleges** to help teachers strengthen their evidence literacy, that is, becoming skilled in the practical application of the findings of the best available current research in everyday practice. This is a change that will not only boost outcomes for students, but will help to lift professional standing for the teaching community.

We call upon **teachers and school leaders** to make frontline experience visible and contribute insights from every classroom to help set the research agenda and break down the academic-practitioner divide.

We call upon **community voices and NGOs** to advocate for high quality, evidence-informed decision-making that reflects local needs, especially those of the most marginalised groups. It is essential that community voices and NGOs speak out to ensure that invisible groups and ignored data are better reflected in decision-making processes and the commissioning of research.

We call upon the **media** to use its skills in translating complex ideas to help ensure that the most important information reaches those who need it the most in forms that are easily understood.

We call upon everyone - parents, families, learners and citizens, to support and participate in the revolution to make education a science-based sector, so that all children have access to a good quality education.

6

Education.org's Contribution

Education.org is an independent non-profit foundation, working to advance evidence and improve education for every learner.

Education.org is committed to a world where the best evidence guides education leaders to improve education for every learner. **Our mission is to build resources for education leaders worldwide, by synthesising and translating an inclusive range of evidence.** We build bridges between knowledge actors, policymakers and practitioners in support of those who make education happen, from pre-primary through to secondary school. We differ from existing initiatives as we focus on the use rather than the creation of evidence.

We are a young foundation with a bold vision, eager to make a unique and positive contribution. By calling out the challenges and ideas in this white paper, we seek to build on existing initiatives and broker new relationships to **accelerate change in the way that education systems use knowledge to boost quality and equity for all**. Our voice is not one of an external critic, but of an active partner – a benevolent disruptor and eager bridge-builder working across education systems.

Education.org is supported by an early-stage visionary co-investor collective and partner network. In collaboration with governments, agencies, NGOs, universities, think tanks, media, businesses, and foundations, we are working towards three overarching goals:

Create accessible and actionable knowledge to support decision-makers.

Heighten the relevance of evidence, by being inclusive in the range of sources and voices that are typically left out.

Improve the capacity, infrastructure and culture for evidence-informed policy and practice at global and country levels.

We are inspired by the strength of the health sector knowledge bridge and motivated to accelerate a similar revolution in education.

Education.org's Contribution to the Education Knowledge Bridge.

While the knowledge bridge in health has taken nearly forty years to develop, we see ways to leapfrog steps in this process. By learning from proven models in health and building on what we already have in education, we have the potential to create a fully functioning Education Knowledge Bridge in the next ten years.

This ten-year mission starts now – with our first three contributions to this sector journey:

Culture and Capacity Strengthening:
with the support of the Education.org Global Council, improving the sector's incentives and infrastructure to use evidence for problem-solving.

Education.org:
an open-access and inclusive synthesis resource for the sector

This white paper:
an open invitation to engage in bridge building.
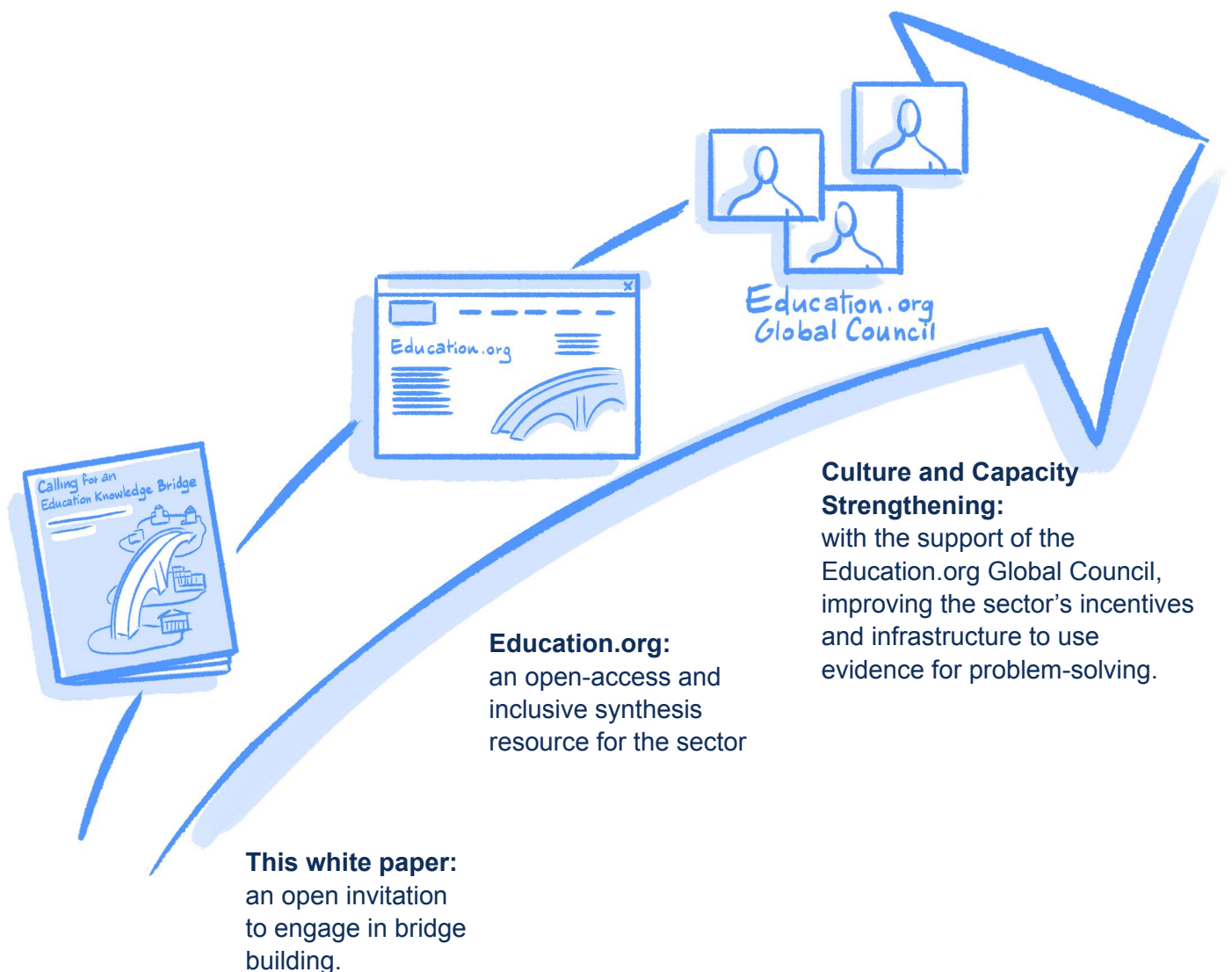
1. This white paper: an open invitation to engage in bridge building

There is a tremendous amount of evidence that is unused, which could increase education access and outcomes. In this white paper, we raise the challenges of bridging the knowing-doing gap, and invite collective and coordinated improvements across education system actors and influencers. We are ready to support, to connect and to help align activities, but sustainable change can only be achieved through the concerted actions of individuals and organisations moving towards this shared goal through their own ongoing work and mission.

2. Education.org: an open-access and inclusive synthesis resource for the sector

To support evidence-informed decision-making and implementation in education, we are launching Education.org, a global public resource of synthesis for the education sector.

These syntheses will incorporate evidence that includes, but goes beyond, classic journal-based research, such as unpublished reports, program evaluations, agency briefs, policy papers, conference reports and materials in multiple languages, for selected education topics. To do this, we need a quantum leap in the way we think about and robustly use evidence in education. We will therefore convene an **international working group** comprised of leading education actors and innovative voices that are not typically represented within the education knowledge space. The group will construct a framework to categorise a wide range of published and unpublished sources (highly cognisant of both quality and inclusivity issues) and an approach to guide this nascent movement to dramatically enhance the range of participants and evidence involved in education dialogues, so that evidence becomes more relevant and timely.
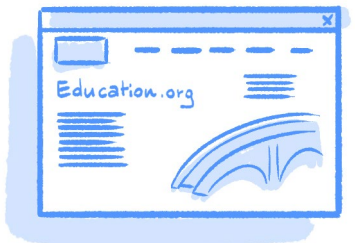
In time, with an expanding network of Education.org supporters, volunteers and partners, we aim to dramatically increase the number of quality and actionable education syntheses, and the frequency with which they are updated.

To get us started, we propose that the initial synthesis investigations will focus on three critically important framing questions raised by sector leaders:

How can we ensure that the best available evidence around **accelerated and catch-up learning** guides the development of post-pandemic learning recovery policies and practices?

For the 260 million out of school children, and those now further displaced due to COVID-19, what are the most relevant global lessons for **improving access and learning outcomes**?

For the six out of ten children **in school but not effectively learning**, what can we learn from the most relevant advances in neuroscience, human development and learning sciences to reverse this trend and accelerate progress towards SDG 4?

In conducting this work, we will put policy and practice priorities and challenges first, focusing on the needs and questions of country-level decision-makers that are accountable for progress in the sector. See Appendix D for our initial hypothesis on these framing questions.

3. Culture and Capacity Strengthening: With the support of the Education.org Global Council, improving the sector's incentives and infrastructure to use evidence for problem-solving

In our drive to ensure that knowledge is used, syntheses are essential, but not sufficient. The education sector lacks a dedicated problem-solving group that draws on the best available evidence and experience to accelerate progress for the most pressing education challenges globally. Therefore, **we propose the formation of the Education.org Global Council**: an assembly of deeply experienced global and national actors with a concrete track record of bridge building to address the knowing-doing gap, and with a broad range of expertise not often surfaced in traditional forums, including former education ministers and individuals from different industries and sectors such as implementation and improvement science, communications, media, and government learning experts. We will host and facilitate this council of seasoned problem-solvers.

To strengthen the capacity and culture around evidence-informed decision-making in education, we will also, in partnership with government and civil society leaders, invest in training, coaching, and facilitation. We will nurture a pipeline of talent through competitive grants and fellowships complemented by mentoring, specifically targeting areas of greatest need in the accessibility and use of evidence in national policy processes and implementation.

Join us!

As we build these efforts and forge greater synergy among existing actors, we will be **rapidly iterating, evaluating and learning**, so that this model and infrastructure can best meet the needs of decision-makers at all levels in the shortest feasible timeframe. The more that this model matures, the faster the global knowledge base will grow, so that synthesis and guidance can be shared more quickly, to truly support decision-making.

Ultimately, we seek **to sustainably strengthen the use of evidence in education**, so that all children have the opportunity to realise their full potential. If this mission and the ideas in this white paper inspire you, please make contact, so that we can achieve our goals faster and better together.

Contact details

info@education.org

Appendices

Appendix A: References

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Appendix B:
Knowledge Actors and Initiatives Explored

▶ Abdul Latif Jameel Poverty Action Lab (J-PAL)
J-PAL conducts research, policy, and training to achieve its mission to utilise scientific evidence to reduce poverty. It seeks to improve access to and delivery of high-quality schooling at the primary and post-primary levels, and supports policymakers to apply evidence from randomised evaluations. JPAL produces syntheses of lessons emerging from research and condenses results in policy publications and evaluation summaries.

▶ American Institutes for Research (AIR)
AIR provides rigorous research and evaluation that delivers reliable evidence for use by education policymakers and practitioners to guide decisions. The organisation supports leaders to address education challenges and design solutions based on evidence-based practices. AIR's Research on International Studies in Education (RISE) webinar series highlights the research and promotes sharing and dialogue on how data-based evidence can be used to improve educational outcomes.

▶ ASER
ASER Centre seeks to use simple yet rigorous methods to generate evidence on scale on the outcomes of social sector programs. It also aims to strengthen the link between evidence and action by building the capacity of individuals and institutions to design, conduct, and understand assessments that focus on key outcome indicators. The ASER Centre approach has its roots in Pratham's work across urban and rural India to help children acquire basic skills in reading and arithmetic. ASER Centre was established as an autonomous unit within the Pratham network in 2008.

▶ Australian Council for Education Research (ACER)
ACER creates and promotes research-based knowledge, products and services that can be used to improve learning across the lifespan. It is a not-for-profit research organisation established in Australia, working globally. It has built a strong reputation as a provider of reliable support and expertise to education policymakers and professional practitioners

▶ Brown Center on Education Policy, Brookings Institution
The Brown Center seeks to bring the best tools from quantitative social sciences to bear on education policy discussions and produces independent research that improves the efficiency of schools. The Center promotes the application of research to improve student outcomes, particularly for marginalised communities. Its Brown Center Chalkboard is a space for researchers to present evidence-based reflections on pressing challenges (in the US education system).

- **Building Evidence in Education (BE2)**
  BE2 is a working group of bilateral and multilateral donors convened to strengthen donor research, collaboration and coordination, encourage higher standards of commissioned research, and promote the availability and access to rigorous research.

- **Campbell Collaboration**
  The Campbell Collaboration is an international social science research network that produces high quality, open and policy-relevant evidence syntheses, plain language summaries and policy briefs. It provides resources for researchers, including the Campbell Systematic Reviews Journal and interactive Evidence and Gap Maps (EGM) that consolidate what we know and do not know about what works and the quality of the available research. There is a coordinating group for the education sector that includes scholars, policymakers, practitioners, and funders interested in evidence-based practice and systematic reviews.

- **Carnegie Foundation for the Advancement of Teaching (CFAT)**
  CFAT is a US-based education policy and research centre. It promotes the use of improvement science and a user-centred and problem-centred approach to address challenges and improve teaching and learning.

- **Center for Global Development (CGD)**
  CGD promotes innovative economic research to improve policy and practice. For the education sector, CGD examines the mechanisms through which education can provide children with equal life opportunities and build the human capital needed for nations to prosper.

- **Center for Universal Education, Brookings Institution (CUE)**
  CUE develops and disseminates solutions for quality education and skills development. Its priorities include improving learning and skills, addressing inequality, achieving learning at scale, and supporting equitable and effective education financing. CUE is currently advancing strategies for parent and family engagement to accelerate progress in the sector, with 30 project collaborators across 11 countries. CUE also collaborates with local institutions in a number of countries to establish Real Time Scaling Labs, to general evidence and provide practical recommendations for scaling innovations and impact in education.

- **Centre of Excellence for Development Impact and Learning (CEDIL)**
  CEDIL was established in 2017 by the UK Government (FCDO) to advance work in three thematic areas: the evaluation of complex interventions to understand how and why various combinations of activities work; enhancing evidence transferability, through middle-range theories to understand how programmes work across multiple contexts and how they can be adapted for novel contexts, and; increasing evidence use by developing guidelines for policymakers through stakeholder engagement, making sense of evidence, and strategic communications.

▶ Cochrane
Cochrane promotes evidence-informed decision-making in health by producing high quality, relevant, and accessible systematic reviews, and other synthesised research evidence. It is a volunteer network made up of researchers and practitioners from 130 countries. In addition to producing evidence, the collaboration also promotes its accessibility for decision-makers and advocates for evidence-informed healthcare.

▶ Department for International Development (DFID)/Foreign Commonwealth & Development Office (FCDO)
One of FCDO's core initiatives in the education sector is the Girls' Education Challenge (GEC), the largest global fund committed to girls' education. It aims to ensure quality education for one million of the world's most marginalised girls. To help the sector address this significant challenge, the GEC promotes regular thematic reviews and elevates practitioner experiences through quarterly documentation of lessons from the field.

▶ Department of Foreign Affairs and Trade – Government of Australia (DFAT)
In 2017 DFAT released, *What Works Best in Education and Development: A Super Synthesis of the Evidence*. It translates evidence from 18 systematic reviews, meta-analyses and comparative reviews of what works in education into guidance for decision-makers.

▶ EdTech Hub
The EdTech Hub is a global, non-profit research partnership that provides research and advisory support for decision-making related to technology solutions. It also entails a network of geographic and subject-matter experts available to support decision-makers in low- and middle-income countries.

▶ Education Endowment Foundation (EEF)
EEF is a grant making and research organisation that supports teachers and senior leaders in education to respond to challenges based on the best available evidence. It summarises the evidence to develop Teaching and Learning Toolkits, generates new evidence on what works through independent evaluations of promising initiatives, and works in partnership with 37 schools across the UK to support the use of evidence for decision-making. Together with the Sutton Trust, EEF was designated by the UK Government as a What Works Centre for Education, one of nine centres in the What Works Network.

▶ Education Sub Saharan Africa (ESSA)
ESSA's mission is to ensure data and evidence drive the necessary improvements needed to enhance access and quality of higher education for young people across Africa. One of its four priorities is to build the knowledge ecosystem for education in a way that turns evidence into action and improves policy and delivery.

▶ Epistemonikos

Epistemonikos is a collaborative, multilingual database of research evidence and knowledge translation. As a non-profit organisation, Epistemonikos creates tools that accelerate the search for and selection of evidence, and coordinates the efforts of one thousand global collaborators.

▶ FHI 360

FHI 360 partners with governments and civil society organisations around the world to advance quality education, with an emphasis on the use of data for decision-making, fostering student-centred learning, and promoting education in fragile and conflict-affected contexts.

▶ Girl Innovation, Research, and Learning (GIRL) Center - Population Council

The GIRL Center is a global research center that generates, synthesises, and translates evidence to transform the lives of adolescent girls. Through rigorous research about what works — and what doesn't — we can better direct limited resources to support evidence-based solutions that improve girls' lives. GIRL leads the Evidence for Gender and Education Resource (EGER), the first freely available resource to help the global gender and education community make informed decisions about their programming, investments, and policy and research priorities.

▶ Global Education Evidence Advisory Panel (GEEAP)

Inspired by advisory panels in the health sector, GEEAP is positioned to influence policymaking and consists of leading researchers and practitioners who have contributed to the existing evidence base for the education sector. The panel's first set of recommendations, *Smart Buys in Education for low- and middle- income countries*, seeks to guide country level decisions on cost effective reforms based on an assessment of the evidence base for various reforms.

▶ Global Education Monitoring Report (GEM Report), UNESCO

The GEM Report is a global public good to support the achievement of SDG 4 by providing sound evidence and analysis to support policymaking, facilitating the sharing of good practice, and holding those responsible to account for fulfilling their commitments. The 2020 Report focused on inclusion, and the forthcoming reports will focus on non-state actors and technology.

▶ Global Partnership for Education (GPE)

The GPE is a global fund and multistakeholder partnership that supports lower-income countries to develop resilient education systems that provide quality learning opportunities for even the most marginalised learner. It promotes evidence-based policy dialogue. It supports countries and their partners to generate and utilise evidence to help the partnership learn, improve and be accountable.

The GPE Knowledge and Innovation Exchange (KIX) seeks to connect the expertise, innovation and knowledge among GPE

partners to strengthen education systems in low-income countries. KIX enhances national policymakers access to evidence-based solutions and ensures that they feed into policy dialogue and planning processes. The initiative also aims to build capacity to produce, integrate and scale knowledge and innovation in partner countries.

▶ Global Science of Learning and Education Network (GSoLEN)
GSoLEN advances science-based strategies to meet learning needs and overcome the impact of poverty on learning. It is preparing for a focus on the science of learning to develop best practices and policy resources that provide guidance on how to promote learning at each developmental stage, under what conditions, and in what context.

▶ Innovations for Poverty Action (IPA)
IPA has two priorities: to create high quality evidence and to help turn that evidence into better programs and policies for the poor. At the country level, IPA works closely with decision-makers to identify key research questions, disseminates key research findings, provides capacity building for local organisations and government entities to understand, utilise and apply evidence, and promotes and facilitates the adoption of the most effective solutions.

▶ Institute of Education Sciences (IES)
IES is a US-based institute that produces rigorous, independent education research, evaluation and statistics. IES includes the What Works Clearinghouse, which reviews existing high-quality research on programs, products, practices and policies to support educators and leaders to make evidence-based decisions.

▶ Institute for the Study of Knowledge Management in Education (ISKME)
ISKME is a global non-profit that conducts social science research and develops evidence-based innovations that improve knowledge sharing in education. It promotes open access resources and initiatives to support student-centred teaching and learning globally and enables leaders to make continuous improvements to education policies, programmes and practice.

▶ International Initiative for Impact Evaluation (3ie)
3ie promotes rigorous, efficient, and ethical use of innovative data sources for impact evaluation. Its resources include impact summaries that illustrate how its evidence has improved decision-making and an evidence portal with systematic reviews on a range of education topics.

▶ Mathematica
Mathematica is considered a pioneer of social policy research in the US and promotes the use of evidence to drive decisions in public policy and programmes. For example, in response to the COVID-19 pandemic, Mathematica provided evidence-based, scalable solutions for school reopening and response planning, with an emphasis on equitable outcomes.

▶ Organisation for Economic Co-operation and Development (OECD)
The OECD Education Directorate leads initiatives in five priority areas: measuring outcomes, teaching and learning, developing and using skills, innovation and the future of education, and policy development and implementation. This last priority area entails initiatives that create resources for decision-makers (i.e., policy toolkits, resources to support implementation, and thematic reviews).

▶ PAL Network
The People's Action for Learning (PAL) Network is a south-south partnership of organisations working across three continents. Member organisations conduct citizen-led assessments and/or citizen-led actions aimed at improving learning outcomes.

▶ Regional Education Learning Initiative (RELI)
RELI is a partnership of 70 organisations across East Africa (Kenya, Tanzania, and Uganda) connected to ensure inclusive learning for all children in the region.

▶ Research on Improving Systems of Education (RISE)
RISE is an international research programme focused on understanding how education systems in developing countries can address the learning crisis, especially as it relates to foundational skills. The initiative seeks to bridge the divide between policy and research and catalyses reforms that improve learning outcomes through new, rigorous scholarship.

▶ Results for Development (R4D)
R4D supports local change agents — government officials, civil society leaders and social innovators — to drive reforms and engage in continuous improvement. It works to help these change agents untangle how to mobilise and focus resources to better protect mothers and children from malnutrition so they are able to grow and thrive, how to introduce play-based learning into national early education programs so that young minds can thrive, and how to ensure that affordable, high-quality care reaches people living at the furthest edges of the health system.

▶ RTI International
RTI supports education systems around the world to achieve measurable improvements in education quality and learning outcomes through evidence-based approaches to strengthen policy, management, and practice at every level – from the classroom to the central ministry.

▶ Schools2030
Schools2030 is a ten-year action research and learning improvement initiative working with one thousand schools across ten countries to identify what works to improve holistic quality learning for all. This unique initiative engages and equips school leaders, teachers, and learners to uncover valuable insight into how to operationalise SDG 4 in classroom practice.

▶ Strategic Education Research Partnership (SERP) Institute
SERP is an education research partnership, initially incubated within the National Academy of Sciences, that generates innovative, scalable solutions to pressing education challenges. It aims to bridge the gaps between research, policy and design and facilitates sustained collaborations between these groups of stakeholders. The goal is to increase equity, improve student learning, and give teachers and students greater agency.

▶ SUMMA, Laboratory of Education Research and Innovation for Latin America and the Caribbean
SUMMA develops and promotes the use of cutting-edge research to address pressing education challenges in Latin America and the Caribbean. The laboratory promotes shared research agendas, fosters innovation in policy and practice and advances collaborative networks to enable exchanges between policymakers, researchers, innovators, and school communities.

▶ UNESCO Institute for Statistics (UIS)
UIS is the official statistical agency of UNESCO and a trusted global source for internationally comparable data on education. It has the mandate to develop the methodologies, standards and indicators needed to achieve SDG 4. UIS experts work closely with national statistical offices, line ministries and technical partners to lead the global initiative to measure achievement towards SDG 4.

▶ UNESCO International Institute for Education Planning (UNESCO-IIEP)
IIEP provides training, technical assistance and resources to help countries plan and manage their education systems. Its most recent report assesses the use of learning assessment data in six countries in Sub-Saharan Africa. This report explores how learning assessment data, from large scale reviews and citizen-led assessment, is used and the extent to which it influences policymaking and planning.

▶ UNICEF – Data Must Speak
The Data Must Speak initiative seeks to effectively communicate evidence for use in decision-making to ensure that reliable data is used to guide resource allocation and manage education systems, communities are empowered to hold leaders accountable, and research is used to improve school performance.

▶ UNICEF Innocenti Center
Innocenti is UNICEF's dedicated research centre, with a mandate to carry out cutting-edge and policy-relevant research that equips UNICEF and the global community to deliver results for children. The Center utilises strategic communications and research engagement activities to ensure dissemination and translation of results into policies.

▶ United States Agency for International Development (USAID)
The primary purpose of programming in education by USAID is to
achieve sustained, measurable improvements in learning outcomes
and skills development. Its current sector priorities include country
focus and ownership, measurable and sustainable improvements
in learning outcomes, strengthened systems and improved capacity
of local institutions, partnerships to leverage resources, evidence
and data-driven decision-making and investments, and equity and
inclusion.

▶ Usawa Agenda
This civil society organisation was formerly Uwezo. In addition to
conducting household surveys to assess learning, Usawa Agenda
engages with government and partners across Kenya to improve
the use of evidence in decision-making and to improve learning
outcomes.

▶ Uwezo
Uwezo was a five-year initiative that aimed to improve
competencies in literacy and numeracy among children (aged 6-16)
across Kenya, Tanzania, and Uganda. It utilised an innovative,
citizen-led approach to measure literacy and numeracy and
enhance public accountability.

▶ World Bank
The World Bank is the largest global funder of education and a
source for data and policy advice. Its education strategy advances
learning for all, with teachers, learning technologies and early
childhood development as three of its five focus areas.

▶ Zizi Afrique
Zizi Afrique generates, consolidates, and shares evidence to inform
policy and practice. They conduct studies and assessments of
learning to generate evidence to address the learning crisis as
well as anticipate the future. Additionally, they package, share and
communicate evidence to influence learning practices and policies.

Appendix C: Glossary

- **categorisation framework** – a framework adaptable to group data and research so that it is analysable at scale. It is typically developed through a consensus-building process around a common theme and allows for multiple levels of specificity.

- **data** – actual information (such as measurements or quotes) used as a basis for reasoning, discussion, or calculation. Data differs from evidence in that data needs to be analysed and summarised before it becomes evidence.

- **education system** – a group of institutions (ministries of education, local educational authorities, teacher training institutions, schools, universities, etc.) whose primary purpose is to provide education to children and young people. It involves a wide range of people including curriculum developers, inspectors, school principals, teachers, school nurses, and students.

- **evidence** – one or more verifiable reasons for believing something is true or not true (or simply unproven). Evidence is often derived from data through the process of research.

- **evidence synthesis** – also sometimes called "systematic review" – is a way of combining findings from multiple research studies that have investigated the same theme to draw an overall understanding of what they found. The process of synthesis usually utilises a categorisation framework and creates a more solid basis for deriving evidence than is possible from individual research studies alone.

- **evidence summaries** – an evidence summary is a short summary of the best available evidence on a defined question (derived from a synthesis), with consideration of gaps and implications for further research. It aims to help policymakers, using clear language, use the best available evidence in their decision-making.

- **inclusion** – providing equal access to opportunities and resources for people who might otherwise be excluded or marginalised. Such groups vary by context, and frequently include girls, rural populations, refugees, individuals marginalised because of their sexual orientation, individuals with disabilities, indigenous peoples, and children and youth from poor households. In this white paper, we stress the importance of data and evidence reflecting the distinct needs of these groups.

- **knowledge** – our best, contextualised understanding of the evidence available.

▶ **meta-analysis** – a statistical analysis that combines the results of multiple research studies, often used as part of evidence synthesis.

▶ **research** – the systematic investigation into and study of data and sources to establish findings. Research is often conducted by academics according to rigorous methodologies and the formal results are published as papers in peer-reviewed journals.

▶ **sector plan** – a sector plan is a medium-term plan, often five to seven years, that outlines a government's education strategy and provides a coordinating framework. It is typically developed through an inclusive process and entails: a sector analysis, identification of policy priorities and strategies, programme design, costing and financing, an action plan, an implementation strategy, and a monitoring and evaluation strategy.

▶ **user-centred design** – an iterative process that begins with an understanding of user needs (including their environment) and remains focused on them through implementation and evaluation, resulting in tailored solutions.

Appendix D:
Initial Hypothesis to Guide Synthesis Work

How can we ensure that the best available evidence around accelerated and catch-up learning (ALP) guides the development of post-pandemic learning recovery policies and practices?

Current State and Gaps to Build on

▶ High international focus on learning access and recovery during and after the pandemic, yet emphasising status over recovery strategies

▶ Significant recent ALP development pre-pandemic, not yet synthesised, translated and accessible

▶ Education.org's COVID-19 school tracking and syntheses, not yet extending to recovery strategies and progress

What Education.org Will Add?

▶ Surface decision-maker priorities as leaders consider how to make best use of scarce resources for recovery

▶ Mobilise, consolidate, and synthesise effective and less effective ALP strategies to accelerate and enhance learning recovery

▶ Translate into context-specific guidance

▶ In specific countries, by invitation, provide facilitation for implementation into existing sector policy and budgets

For the six out of ten children in school but not effectively learning, what can we learn from the most relevant advances in neuroscience, human development and learning sciences to reverse this trend and accelerate progress towards SDG 4?

Current State and Gaps to Build on

▸ Tremendous advances in understanding not adequately reflected in policy and practice, especially for hardest to reach

▸ Specific advances around early childhood, adolescence development and learning in adversity hold unrealised potential for strengthening learning

▸ A long and growing list of evidence-backed individual interventions, rather than holistic and coherent guidance for sector policy. Few reports on ineffective practices

▸ The "usual actors" are well-mapped and understood, yet the interfaces and synergies between are less well-examined

What Education.org Will Add?

▸ Synthesise basic science and field evidence, especially for most fragile transitions from pre-primary to primary, and primary to secondary; and including national and local evidence currently out of view

▸ Expand stakeholder maps to focus on decision-makers and influencers

▸ Conduct diagnostic assessment and enable capacity-strengthening for national sector policy reform plans and for heightening evidence influence on sector review processes, with Kenya as a first country partner

For the 260 million out of school children, and those now further displaced due to COVID-19, what are the most relevant global lessons for improving access and learning outcomes?

Current State and Gaps to Build on

▶ Heightened national and global commitments, especially post-COVID-19

▶ Robust and growing field experience, but inadequately captured, codified, or translated

▶ Deeper understanding of the influence of political and economic challenges inhibiting change, yet few incentives to achieve change despite good examples and case studies

▶ Greater reliance on informal education which is less well represented in published work

What Education.org Will Add?

▶ Surface major unpublished work from the philanthropic and NGO community

▶ Broker and support a sector-wide diagnostic/improvement agenda for linking evidence to policy and practice, including under-represented informal sector

▶ Forge context-specific guidance for low resource situations, starting with a first country project in Kenya

Appendix E:
The synthesis volume gap
– Health vs. Education

Health and education are two of the largest items of government expenditure. It has been estimated that annual education expenditure is US$ 4.7 trillion[87] worldwide, while annual health expenditure is US$ 8.3 trillion[88].

With such vast sums of money at stake, it surely makes sense to use a small proportion of this budget on systematic reviews to ensure that spending can be focused on practices that are proven to be effective.

There is a lack of comparative budget data on synthesis spending (input) in either sector. So, instead, we looked at the numbers of new systematic reviews published (outputs) to create a sense of the comparative rate of research synthesis between the two sectors. Of nearly 1,000 reviews we analysed, 86% were health/nutrition related, while just 3.3% were education focused. This snapshot suggests that while having 1.75 times the budget of education, the health sector produces 26 times more systematic reviews to help guide its spending and practice more effectively.

If we extrapolated these findings over 12 months, this suggests that the health sector produces in excess of 22,000 systematic reviews per year, compared to 860 in education.

Methodological note

▶ We used Google Scholar to identify the most recent journal articles containing "systematic review" in their title, as on July 18th, 2021, irrespective of sector. This identified 986 reviews covering a 14 day period. The sample was determined by a constraint of Google Scholar which will not return more than 1,000 results.

▶ We categorised each article according to its main thematic focus (e.g. health, education, business/social, IT, environment, etc.).

▶ We excluded 10 articles where the article was not itself a systematic review or systematic review protocol (e.g. a critique of methodology in an existing systematic review).

▶ Limitations: this is a time specific snapshot based on new reviews containing "systematic review" in their title as catalogued by Google Scholar. It is likely that other systematic reviews exist that are not captured by this approach. We judged and recorded the primary thematic focus only, whereas some articles spanned sectors (e.g. *school based interventions for preventing smoking*). Another limitation is that this captures systematic reviews of any kind (intervention reviews and thematic reviews).

About Education.org

Education.org is an independent non-profit foundation working to advance evidence and improve education for every learner. Its mission is to build resources for education leaders by synthesising and translating an inclusive range of evidence, and to enable these resources to be used by those who make education happen by building bridges between knowledge actors, policymakers and practitioners. Established in 2019 and registered in Zurich, Switzerland, the foundation is supported by a visionary co-investor collective and is growing partnerships across governments, agencies, NGOs, universities, businesses and foundations in Africa, Middle East, Europe, and North America.

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