Building an Education Renaissance during the COVID-19 Pandemic Fernando M. Reimers Harvard University, Graduate School of Education

Keynote Lecture at the Conference on Education and Social Justice Faculty of Law, Stellenbosch University, South Africa Thursday 3 June 2021, 9.30am

My name is Fernando Reimers and I am a Professor of International Education at The Graduate School of Education at Harvard University. I am delighted and grateful for the privilege of addressing you at this conference on education and social justice, a project of the Law Trust Chair in Social Justice at the Faculty of Law at Stellenbosch University in South Africa.

In these remarks I will address the risks that the COVID-19 education crisis represents for educational opportunity around the world and about how in response to those risks, we should attempt not just to mitigate the enormous learning loss that has taken place, but actually attempt to build back better, to embrace the sustainable development goals as the driver of efforts of education reforms that can help us build a Renaissance out of the ashes created by this pandemic.

About 15 months ago, when the World Health Organization declared covid-19 a pandemic, the world experienced a shock unlike no other in multiple domains of life. Most directly this shock infected millions of people, over 171 million, taking the lives of many of them, more than 3.6 million to date, and likely more than 7.5 million if we include the number of excess fatalities relative to the year before the pandemic. For each person infected many more suffered, as a result of the trauma of experiencing the fear of the loss of a close relative, and as a result of the economic burden of the disease. And, of course, this pandemic as we know is not over. More people will be infected, more will die, more will be impacted.

The mental health burden of this prolonged crisis, in which we have all lived in fear of losing our lives, or endured the effects of the loss of jobs, income and security, is one that will not be fully appreciated until this crisis is over, but we can expect that it will be considerable.

Furthermore, even though in some countries in fact there are already vaccines available that are being distributed gives some hope that there is light at the end of this tunnel, this is not going to happen quickly, as there are three kinds of challenges involved in hopefully containing this pandemic through herd immunity which would result if we could vaccinate the majority of the world population. The first one is to produce and distribute enough vaccines for at least 70 to 80% of the world population. We are very far from reaching that target because at the moment, all the expected distribution production of vaccines has already been purchased by the 10 wealthiest countries in the world. So there's a considerable challenge in inequity and access to the vaccines. This is a challenge that COVAX is designed to address, but this is still a work in progress.

Secondly, effective containment of the pandemic requires that people will agree to be vaccinated in percentages, close to 70 to 80% of the population. We're still very far from that condition even in nations where vaccines are available.

And lastly, the success in mitigating the pandemic requires that no new strands of the virus develop that are immune to the vaccine. So, that is to say that at least until the end of 2022 the world will be coping with the effects of this pandemic in one way or another. Besides the most obvious health impact of this calamity there has been a tremendous economic impact because economic activity has been depressed throughout the world and that recession has impacted disproportionately poor, and low-income individuals, increasing inequality, poverty, food insecurity and social fragmentation.

And then we have been impacts in other areas of life, including education.

Even if schools had continued to function and had been able to do what they were doing prior to the pandemic, this year public health and the economic impact in the conditions of the households in which students live would have presented a challenge to educational opportunity.

But, as we know, educational institutions as part of efforts to mitigate the spread of the virus interrupted in-person instruction and put in place a variety of arrangements to try to sustain educational opportunities, which we now know have been very deficient in their ability to sustain opportunity to learn and in particular their ability to preserve equality of opportunity to learn. So it is no exaggeration to say that it's quite possible that at the end of this pandemic, the result of decades of progress in educational progress, in educational access to school and learning, would have been wiped out.

These challenges in sustaining educational opportunity will have multiplier effects on poverty and inequality, and on other pre-existing challenges such as social fragmentation, democratic governance, economic competitiveness or climate change.

It is in this context that we are facing in which I want to propose that our task should be not to accept as inevitable the enormous learning loss that this pandemic has caused in particular, the enormous consequences of these pandemic for inequality for social justice, but quite the contrary, that in this context, we seek to embrace with even more vigour, the UN Sustainable Development Goals as a North-Star for efforts to transform education and that we seek to build back better, leading to an education Renaissance.

I have been studying the educational effects of the pandemic since March 2020. A few weeks before the pandemic was declared I had been alerted by colleagues at the school of Public Health that the pandemic was coming, and it was then that I'd realized that this could potentially have a very negative impact on educational Systems. As a result, I began collaborations with colleagues in other institutions, as well as colleagues in the Global Education Innovation Initiative that I lead at Harvard University, which is a Consortium with the goal of advancing knowledge to strengthen public education systems so that they can more effectively provide all students with opportunities to develop the skills that they need to participate, civically and economically in the 21st century.

We have conducted two large comparative studies, which will be published by Springer publishers in the last quarter of this year. One of them is a comparative study of the impact of the pandemic on Educational Opportunity and of the strategies that were advanced by governments to mitigate that impact and of the implications of course of this pandemic for education opportunity going forward. The second one, is a study of the way in which a number of universities around the world partnered with education systems for the purpose of promoting innovation, at the pre-collegiate level, to sustain education opportunity.

In addition to those two large studies, I have conducted other studies. Beginning in March of 2020 I began a collaboration with colleagues at the Organization for Economic Cooperation and Development (OECD) with the goal of understanding and mitigating the educational impact of the pandemic. We conducted a <u>survey</u> which we administered to education authorities in about a hundred countries around the world asking them, what were the plans that they had in place to continue teaching during the pandemic and asking them to anticipate the greatest challenges in sustaining educational opportunity. The report of that study, titled "A framework to guide education response to the covid-19 pandemic", concluded that most educational authorities actually had no strategies in place and anticipated tremendous increase in educational inequalities. So, what that report advanced was a protocol to develop a strategy at every educational level, national, provincial, local, even at the school and at the institution level.

In May of 2020 we conducted another follow-up survey to see what had happened in the previous months. The result of that survey showed us that there had been tremendous Innovation that one way or another governments had created on very short notice, alternative means to sustain education. Of course, given the time when we conducted the study, in the first few months of the pandemic, we could not say anything about the effectiveness of the alternative arrangements. But frankly I was surprised to see how quickly governments had put in place these alternative means, many of them with in partnership with organizations of Civil Society with a variety of actors.

We also began in April of last year to document a series of <u>short case-studies</u>, documenting these efforts and Innovations. To date, we have produced about a hundred short case studies, which had the purpose of not only of capturing what these efforts to create alternative ways of educational opportunity look like but also had the purpose of spreading that knowledge with the intention of animating and supporting continuous efforts to support opportunity.

Those case studies helped me realize how important education leadership was in creating those opportunities. I began to develop a sense that there was a particular form of leadership that made it more likely that innovations would emerge.

So for example, the case study which I conducted of how the State Secretary of Education in São Paulo had responded to the pandemic showed very important contrast with the national response where the Ministry of Education in Brazil, essentially went missing in action, resulting in making Brazil one of the countries in which the national authorities managed the health aspects of the pandemic very badly because they were in denial, as were the federal authorities of the United States for example. And as a result of that, the number of people and the number of fatalities relative to the population was much greater in Brazil and the United States that it was in countries at comparable levels of income per capita.

In addition to the poor management of the health aspects of the pandemic in Brazil, the federal minister of Education, essentially went missing in action refusing to take any actions to sustain Educational Opportunity during the pandemic. Given that void, State and Municipal Secretaries of Education, stepped up and basically realized that there was no one but them, and that the national government was absent in this crisis. For example, in the State of São Paulo, the very first thing the secretary of education did was to convene a meeting with some of the most important business and civic leaders of the state. And he said to them, "we are on our own. It would be a tragedy if our children went without education for the duration of this crisis, I need your help. I don't know what to do but I need your help."

And in very short notice, they created a multimedia platform that included television, radio, printed materials, and mechanisms to distribute food to students as a replacement of the school feeding programs that are normally delivered in schools.

The reason the secretary was able to do that is because he had exercised a particularly effective form of adaptive leadership that was inclusive and humble and invitational, that basically created a context for people, for different stakeholders to come together and to understand that they were facing a challenge for which there was no script, and for which there was no recipe and that no one alone could address that. And that created the context in which they were able to act.

I observed similar leadership both in organizations of civil society, as well as in government in different countries and that caused me to write several additional books on the role of Education leadership, which basically were compilations of reflective essays from leaders in government and Civil Society organizations during the pandemic, sharing that leadership challenges the pandemic had created for them and how they had addressed them.

https://www.amazon.com/Leading-Education-Through-COVID-19-Upholding-ebook/dp/B08K4SJM5Z/ref=sr 1 1?dchild=1&keywords=fernando+reimers+leading&qid=1 608735256&sr=8-1

https://www.amazon.com/Liderando-sistemas-educativos-Pandemia-COVID-19-ebook/dp/B08HVCT8CS/ref=sr 1 1?dchild=1&keywords=fernando+reimers+liderando&qid=1608735280&sr=8-1

https://www.amazon.com/Leading-Educational-Change-During-Pandemic/dp/B08T6PBHKZ/ref=sr_1_2?dchild=1&keywords=fernando+reimers+leading&qid=1617376359&sr=8-2

More recently, I engaged my graduate students at Harvard in a course that I teach on education policy, in working hand in hand with education authorities at the municipal, state and federal level in a variety of countries around the world during the entire semester in which they were studying my course in education policy for the purpose of trying to be helpful, in documenting better understanding the educational effect of the pandemic on the basis of the analysis of evidence, the examining a range of options to mitigate educated learning loss and to advise governments.

We published that book <u>An educational calamity</u>, back in April of this year. And we published it with three intents.

One, with the intent of inspiring other universities, to do similar things. There are about 30,000 institutions of higher education around the world. Collectively, they have much greater capacity that all the international development organizations together and than all of the Ministries of Education together. And my hope is that more universities can intentionally engage their faculty and other students with school systems, for the purpose of assisting them in preventing a complete collapse of educational opportunity and that complete loss of two decades of educational progress.

The second reason we published it is because we realized that we are in a context in which there is a tremendous dearth or absence of evidence-based knowledge on how this pandemic is impacting education. Since publication just a little over a month ago, thousands of copies of the

book have been downloaded. The book has already been translated into Spanish, from the original English, and is currently being translated in French by UNESCO.

Third reason we published that book is because I thought to the governments that worked with us, it would be valuable to see what was learned about the education effects of COVID-19 in their jurisdiction and options to mitigate the loss published so that they could engage more people in their own efforts of collective leadership in their own jurisdictions around developing a shared understanding of the problems and of the options forward, and in this way inspire other education authorities to do similar things.

Based on this work I have been doing over the last 15 months on the educational effects of COVID-19, these are the stylized facts of how covid-19 has impacted education and is likely to continue impacting education not only in what remains of this pandemic but in the immediate aftermath.

The main impact is through austerity, through reduced resources both for families and for governments which even if we didn't have any of the other impacts would make the task of educating more challenging because there is already a growth in poverty and in economic inequality, happening as a result of the economic impact of the pandemic and that has made a number of families, particularly the poor, more vulnerable and unable to support the education of their children. So there is growing food insecurity and there is growing stress. The result of poverty, the opportunity costs of sending a child to school have increased all of a sudden that poverty has also created other stressors in households in which now some students have to negotiate space and access to online resources, if they are lucky to have them, with their family members. Having transferred the site of education from the school to the home, has augmented the way in which home advantages and disadvantages influence education opportunity.

Of course, this is not new. We know since public schools were created that how much each student learns and where they end up educationally is only in part a function of the school and to great extent is a function of the social class of a family as every family does everything in their power to pass on their advantages to their kids. Those who have more, can give more. But this pandemic and the period of remote instruction has made visible, how much harder it is to compensate for those social differences, when education does not take place in the school but takes place now in the home.

So to a great extent, this is the largest experiment in online learning at scale globally. And what it has shown us is how good the in-person school was to mitigate some of those differences and to level some of that field.

Of course, there have been differences because some schools have been able to provide more support to their students because they had more resources to begin with, because they have better trained teachers, because they have teachers with better skills in using online modalities, because some students have more access to devices and the time and the conditions to study than others.

A consequence of this pandemic is that educational inequality is increasing withing countries, and this inequality is being amplified in some countries, as illustrated by contrasting two cases, for example, Brazil and Finland.

In Finland, the Ministry of Education had for years now developed the capacity of teachers to teach remotely, to teach online and students had some experience with that when schools were

closed to contain the spread of the pandemic in 2020. As a result their transition to online learning was relatively seamless, Even so, in that context there were some students who were left behind in this context that were not able to engage as much with learning in a remote environment than they were in person. A recent study conducted by a colleague for this recent book that I have edited on education and COVID-19, shows that for example in the sciences there were much more limited opportunities for optimal learning for highly, engaging learning in the sciences online than there were in person. So, even in the context of considerable resources and readiness and where the duration of the learning at home period was much shorter, there were increases in inequality.

What to say about a context like Brazil, where there wasn't the same level of readiness to teach online or access to devices, and where the country has experienced one of the longest periods of remote instruction.

So I think it's fair to conclude that the two most important predictors of how the pandemic reduced educational opportunity when this is over, will turn out to be social class of the student, and the country they were in.

So those are the mechanisms that have to do with austerity for individuals, and for governments, which of course in having to foot the bill of the Health crisis, and of the economic consequences of the crisis, have had less resources to invest in education and will foreseeably, have less resources.

There have also been the health and economic impact on the relatives of those who lost their lives. For the child who lost a parent, the person who lost his spouse, for the child who lost a sibling, we have only begun to understand the trauma that this pandemic, the grief that this pandemic has created, and of course in that state of affairs, the opportunities for people to have the concentration and the focus to study when they have lived under such toxic stress for 15 months is much more challenging.

There has also been the interruption of schools, which I mentioned that most governments around the world have created alternative ways to deliver education. There is much to be commended in that initiative, in that effort in part because we have witnessed an unprecedented effort of collaboration across levels of governments, between government and civil society and so on. But we're beginning to understand that those efforts have had very different levels of success in particular with different children.

And then finally COVID will continue to impact education because it'll have a multiplier effect on other pre-existing challenges. What are some of those pre-existing challenges?

Some of these were educational challenges; schools were not serving every child equally well. In particular they were doing a worse job serving poor children, those otherwise marginalized.

But there were other social challenges that formed the context of educational institutions, challenges of social inclusion, challenges of economic competitiveness, challenges of violence, fragmentation, democratic governance and challenges of climate change. None of these challenges is going away. If anything, they've been amplified by this pandemic and they will form the context in which we will have to continue to educate.

So the context is very complicated for the decade ahead, the Secretary General of the UN has appropriately said that this is much more than a health crisis. It is an economic, humanitarian,

security and human rights crisis that has affected everyone, disproportionally the more vulnerable. And that coming out of this crisis is going to require the whole of society, the whole of government and a whole of the world approach, driven by compassion and solidarity.

University communities, those of you convened at this conference, have a very special role to play in exercising leadership to advance these whole of government, whole of the world approach directed by compassion and solidarity.

It is in that context that I want to bring us back to the 14th century in Italy where after a devastating pandemic, wiped out a third of Italy's population, a decade later in the small City of Florence, the rulers of the city decided to do something quite extraordinary in response to the devastation that this city was experiencing. They decided to invest in the arts and the sciences. And so that is how individuals like Leonardo Davinci, Raphael, Michelangelo, Machiavelli converge in that small city. And out of that convergence and that investment in creativity came an extraordinary return to humanism and eventually the Italian Renaissance.

We need a similar Renaissance in education in this tragic moment of educational loss. We need to figure out a way to create a context that will bring about such an education Renaissance. One way to do that is to first recognize what are the innovation dividends that this pandemic in spite of all the loss, in spite of all the calamity, that it has represented, where is the goodness, where are the silver linings?

There are seven innovation dividends that could be mobilized quite successfully to support an education Renaissance.

The first one is that this pandemic has made transparent that no one learns very much when they are in fear. That the emotional development and the Social Development of children str just as important as their cognitive development. We now understand with greater clarity that we can only educate students as whole human beings. This is a very important realization and dividend of this pandemic.

The second one is that this pandemic has augmented our appreciation for the power of science and of technology. The fact that we now have these vaccines that give us some hope of eventually containing this pandemic which were developed over a relatively short period of is because of the remarkable scientific infrastructure that has made that possible. And so, I hope that looking forward our schools are going to prioritize the development of understanding in the sciences, as it will equip students so that they can function in a world in which scientific knowledge and understanding is fundamental to thrive.

A third dividend is that there is going to be more appreciation of the enormous digital inequalities, which make it frankly impossible for people to participate civically and economically in the 21st century. We have now seen the bare inequities in sheer access to the internet and in the capacity to use it. I hope that going forward, we're going to do everything in our power not to replace the in-person school with the online school but to blend the use of digital means with in-person education for the purpose of ensuring the development of digital literacy.

A fourth dividend, we may have understood in this pandemic how important communication between schools and homes is.

A fifth dividend is that societies perhaps now understand more than ever, that schools are fundamental, not only to ensure the basic human right of education but for societies to be able to function.

A sixth dividend is that we have recognized the tremendous power of collaboration among teachers, within schools and across schools, in order to support innovation.

A seventh dividend is that we have understood the value of partnerships, between civil society and government, between parents and teachers, where good things have happened and where these innovations have taken place it is because collaboration has brought about the creativity, the inventiveness that has made it possible to create alternative ways to educate. And so, I think we're going to see a greater appreciation of the importance of partnerships.

In addition to these seven innovation dividends of this pandemic, there are eleven ideas that are going to be with us for the foreseeable future, if we can build on these innovation dividends.

One is the idea that educational institutions should be cultivating a breadth of skills.

The second that education should help students develop a sense of purpose.

The third that students should gain in school an ethical foundation that makes societies viable.

The fourth, that education has to prepare students for the unknown, the capacity to deal with ambiguity, with flexibility, with the skills for adaptation and survival.

The fifth, that we will seek I think opportunities for students to engage with deeper learning and to develop skills for lifelong learning.

The sixth, is that we have understood that no two students are alike, that education needs to meet every person where they are and to personalize in order to be effective.

The seventh, we have seen the power of problem and project-based education, and the necessity to have high-quality curriculum and pedagogy.

The eigth, we have seen the need to transform the teaching profession, so that it is capable of meeting the demand of a volatile world and the power of teams and working in teams.

The ninth, the need to engage schools in collaboratives of larger scales as part of networks with other schools, augmented their power, augmented their capacity and augmented their partnerships with universities or organizations or civil societies.

The tenth, we have seen the importance of getting schools to have the capacity to learn to innovate.

The eleventh, the idea that we need more connections and collaborations between schools and other institutions.

If we stay focused on these eleven ideas, we will be able to overcome some of the challenges that predated education challenges the pandemic. Some of the challenges had to do with how teachers taught; a lot more focus on transmitting content than in helping students develop capacities to create and collaborate.

We know from comparative studies, for instance, surveys to teachers administered by the OECD, that most teachers when they taught, they did good things like summarize recent learnings, setting clear goals at the beginning of instruction, explaining to students what they are expected to learn, explaining how all the topics are related. But very seldom did teachers offer students tasks for which there was no obvious solution. There was tremendous variation across teachers and the extent to which they asked their students to think critically. Very few students had the opportunity to work in small groups to solve a problem or to decide on their own, how to solve problems, or to engage with a problem for over a week.

The opportunity in front of us as we face the devastation caused by COVID-19 is to transform education systems in ways that are aligned with those eleven ideas, and continue to build on the silver linings, the education dividends, of the pandemic.

In a recent book, <u>Educating Students to Improve the World</u>, I argue that one of the ways to do that is to take the sustainable development goals and to align curriculum and pedagogy with the development of capacities that are connected to those goals. Over the last decade I have developed curriculum aligned with the SDGs and worked with schools and school systems using these resources.

The very first of these, the book "Empowering Global Citizens" did something very simple. It used the Millennium Development Goals and the Universal Declaration of Human Rights to develop a framework of capacities that high school students should have, the things that they should care about, be able to do and understand, in order to advance a world without poverty and without hunger and so on. Notice, this was not a curriculum to tell the student what these goals were. Of course, we did that too, but it was essentially a curriculum to help students develop the capacities that made it possible to achieve those goals.

In this book we offer a framework of capacities around the following organizing principles. Think clearly about the outcomes. Use project-based pedagogy that emphasizes learning from doing. Develop breadth of skills. Have clear and engaging capstones throughout the year. Coherent themes that make it possible for students to connect with their learning in different disciplines with an emphasis in fostering the agency of students. Helping them learn from what works. Developing innovative and entrepreneurial spirit. Develop multiple connections between parents and communities and schools. Develop a range of higher order skills, where the focus are the sustainable development goals and human rights. Help students see the connections between Global and local, engage them with complex issues. Make a curriculum that is age-appropriate, but that is not infantilizing and that take students from the personal and mediate to more advanced and conceptual understanding.

Based on those principles, we then developed a framework that was organized in three broad categories: Intercultural competencies, Knowledge and Skills, and then work and mind habits.

And for each one of them, we deconstructed them in a total of about a hundred and eighty specific learning outcomes, such as the student's ability to recognize and weigh diverse perspectives, can understand their own identity and identities of others.

It is that kind of granular understanding of the operational definition of learning outcomes that makes it possible for the staff in the entire school to come together, and then discern, what is the best way to teach these things? What kind of learning opportunities and learning trajectories do we need to create to make it possible for students to achieve these learning outcomes?

Since that book was published, it has been translated into Arabic, Portuguese, Spanish, and Turkish and adopted in many different schools around the world. There was, however, an important limitation of The World Course. It was a very challenging curriculum for most teachers to teach. I think the main contribution of that curriculum, was that it made it possible for educators to test in a visible way the two hypotheses on which any curriculum is based. If we teach "A" our students will learn "B", and if students learn "B" the consequences for themselves and their communities will be C, D and E.

So we then develop a simpler way to do that, much more accessible, <u>Empowering Students to Improve the World in Sixty Lessons</u>, five per grade. And in that book, we offer three tools. What is the protocol that can help design and adapt to global citizenship curriculum that can go from the SDGs to learning outcomes, and from learning outcomes to lessons.

But we also offer a simple protocol of change management in the school, to create space for global education as well as a curriculum prototype. This 13 step protocol basically is a guide to a process of continuous Improvement, so that schools can become progressively better at developing curriculum and teaching in a way that empower students to achieve the SDGs. In making visible the change management process to do that, we also made it possible for several schools to collaborate and to in following the same process have the benefit of a community of peers that would accelerate the process of innovation. So, for example, in a network of six schools, as they are all trying to do essentially the same thing, each school can gain in one year, six years' worth of experience.

In addition to high quality curriculum and change management, what we most need is a way to see the process of educational change so that we can communicate with the very many stakeholders who have to develop shared vision for the purpose of aligning education systems with ambitious goals. And those change frameworks are the focus of Educating Students to Improve the World.

Johann Wolfgang von Goethe, The poet and treat writer of the Enlightenment said "the person who speaks only one language sees the world with only one eye." Implying that what a second language gives us is the possibility of seeing perspective and of seeing depth.

This idea is illustrated by this image. This image was published with a research paper reporting a study in 2015. The study compared three groups of people – those whose native language was German, those whose native language was English, and people who were fully bilingual in both languages. Each of these groups were asked to explain what they saw in the image. The answers given by each of the three groups were vastly different, with the group of bilingual speakers showing a more rounded and complex understanding of the picture and what it portrayed. The responses of the german speakers alluded to the destination of the woman, the English speakers alluded to her journey, the responses of those who were bilingual focused on both the journey and the destination. This study provides a vivid illustration of the enhanced capacity to see the world that speaking different languages gives us.

What I've tried to do in the book is to offer essentially five perspectives, five languages, to see the process of educational change. Those are a cultural, psychological, a professional, an institution, and a political perspective.

My hope is that as these languages, this Kaleidoscope of frames to understand the process of educational change, becomes common parlance and becomes generalized and democratized, we

will all be able to understand each other much better in the shared enterprise and for the shared purpose of transforming education systems.

A cultural perspective is simply about understanding that schools are what one educational social institution that interacts with many others and that it is incumbent on education reformers to make sure there is good communication so that the process of change actually meets the needs of communities and activates the support that is essential.

A psychological perspective is about drawing on all the knowledge that has been generated in the learning sciences over the last several decades, about how students and how teachers learn.

A professional perspective is about creating the norms, the institutions, and the roles that make it possible for educational practice to be deeply anchored in expertise and expert knowledge.

An institutional perspective is about understanding that an education system consists of a series of processes that need to be in alignment with one another. It is of no use to change the curriculum if we don't build the capacities of teachers to teach that curriculum. And if we don't transform the assessment system so that they're aligned with the goals of the new curriculum. And if we don't create the processes of school governance and management that are supportive of that curriculum.

Finally, a political perspective is about understanding that the educational enterprise touches the greatest number of people in any society and that each one of them has a view on what a good society is. And it is essential to make it possible for people to recognize one another, to recognize those perspectives for the purpose of building coalitions that can provide the widest possible support to education so that educational change can not only have the necessary support but the duration to produce results.

In conclusion, COVID-19 has created an enormous gap in educational opportunity, within nations and across nations. These are real challenges for social justice around the world. The best way in which we could face this calamity is by seizing the innovation dividends demonstrated by many as they sought to continue to educate throughout this pandemic and on that basis, and on the basis of powerful ideas that have gained salience during the pandemic, build an education Renaissance.

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He has written or edited forty books, of which the most recent include: <u>An Educational Calamity:</u> Learning and teaching during the Covid-19 pandemic, Leading Education Through COVID-19, Education and Climate Change: the Role of Universities, Implementing Deeper Learning and 21st Century Reforms: Building an education Renaissance after a Global Pandemic, Educating Students to Improve the World, Audacious Education Purposes. How governments transform the goals of education systems, Empowering teachers to build a better world. How six nations support teachers for 21st century education. He has recently completed a large comparative study of how 20 universities around the world have partnered with elementary and secondary schools to sustain educational opportunity during the Pandemic and a study of the impact of

COVID in thirteen countries. The results of these studies will be published in two forthcoming books in the fall of 2021.

With his graduate students, he has developed three curriculum resources aligned with the UN Sustainable Development Goals, which are translated into multiple languages and widely used by schools and school systems around the world: <u>Empowering Global Citizens</u>, <u>Empowering Students to Improve the World in Sixty Lessons</u> and <u>Learning to Collaborate for the Global Common Good</u>.

More information about his work is available here https://fernando-reimers.gse.harvard.edu/