

THE BROOKINGS INSTITUTION

WEBINAR

THE CHILDHOOD COST CALCULATOR:
A SIMPLE TOOL FOR COSTING INTERVENTIONS FOR CHILDREN AND YOUTH

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EMILY-GUSTAFSSON-WRIGHT: Good morning, Good evening to you and good afternoon to all of us, those joining us today or viewing the recording of the event. My name is Emily Gustafsson-Wright. I'm a senior fellow at the Center for Universal Education at the Brookings Institution. It is with much excitement that we are sharing with you all the launch of the Childhood Cost Calculator, a project that is dear to our hearts. We hope that its use will have an important impact on the well-being of many children and youth across the globe in the future.

So we have you with us today for about 90 minutes. I'll begin today's event with a presentation of the history of the development of the tool and also describe its characteristics and how it works. I'll then hand it over to three presenters who will share their respective experiences in piloting the cost calculator. And this will be followed by a short moderated panel and an audience Q&A, and then some concluding remarks from myself. Before beginning, I'd like to extend our sincere appreciation to the team at RTI who helped us to build the tool: Carmen Strigel, and Lachko Hristov, and the amazing teams in each of the three pilot countries, as well as all of those who provided feedback on the tool. And last but not least, my team, Elyse Painter, as well as Sarah Osborne and the other previous RAs and interns who have contributed along the way. We're also grateful for the support of the BHP Foundation. And finally, I'd like to note that Brookings recognizes the value it provides in its commitment to quality, independence, and impact and activities supported by our donors reflects this commitment.

So I believe you would all agree that the well-being of today's children and youth will determine the future of the planet. And for young people to develop and thrive, sound investments must be made across multiple sectors, including health, nutrition, social protection and education. The COVID 19 pandemic, as we all know, has hampered progress towards meeting the sustainable development goals related to children and youth, and it's also highlighted the interconnectedness across these sectors. Some of the still growing statistics related to children and youth include that 70% of ten-year-olds in low- and middle-income countries are unable to read and comprehend a basic text. So this is the measure of learning poverty. Before the pandemic, it was at 57%. 22% of children under five around the world are stunted. 25 million children were un- or under-vaccinated in 2021. About a quarter of youth around the world are not in education, employment or training, and up to 10 million additional girls are at risk of early marriage in the ten years after the pandemic.

To address these crises, it will be critical for governments, multi- and bilaterals, other donors and implementers to have a clear understanding of program costs and cost breakdowns to inform financing decisions. Cost data are, of course, not the only type of data or information needed, but they are often neglected. So why are cost data so critical? They are needed for advocacy, for priority setting, for budgeting and planning, for managing program activities, and also for accountability. We need cost data for cost efficiency analysis, for cost benefit analysis and cost effectiveness analysis.

So in 2014, we established a multi-pillared work program at Brookings aimed to address several of the constraints that we identified to high quality and equitable early childhood development programming at scale across the globe. One of the pillars that we identified was a lack of cost data. Our research indicated that there are both demand and supply side constraints that seem to hamper costing. So insufficient underlying data, poor availability or access to tools to collect and analyze data, and also methodological complexities related to collecting and analyzing cost data. On the demand side, a low prioritization of collecting and analyzing cost data and aversion to transparency, perhaps, and also heterogeneous needs, capacity and needs. So in 2015, through the support of a high level working group working on costing, we opted to design our own tool that fulfilled what we identified in the sector as a major gap. So this tool was called the standardized ECD costing tool. So focused on early childhood development. It looked like this an Excel based tool with multiple times and functionalities, including currency conversions, amortization as well as. It allowed us to look at the costs in terms of total costs, in terms of unit cost and distribution across different categories. So between 2016 and 2017, we piloted SECT in partnership with the Strategic Impact Evaluation Fund at the World Bank in five different countries in Mexico, Bangladesh, Mali, Malawi and Mozambique. And across several different types of early childhood programs. And we learned a lot. We learned even more about the supply and demand side constraints to costing. And

we also learned about the potential limitations of the tool in that format. We also, during that time and in the years following, increasingly received requests for the tool for early childhood development and also for education more broadly. Including that work, we published a number of studies that summarized the topics around costing and about the use of the cost calculator. And the biggest takeaway from that from that pilot was that indeed that cost calculator was not particularly user friendly. And the reason why I'm sharing this, the story with you is that I think it's important to share when things don't work the way that we intended them to and how, you know, sometimes we have to go back to the drawing board and figure out, you know, how to do things better.

So enter the second phase of our work of our costing work at Brookings. So in this phase, we started to think a little bit more about some of the demand side constraints. So in particular around the heterogeneous capacity and needs. So we have had a two pillared approach. One, we aimed to build sort of a movement around costing to increase the demand. And we worked to develop a more user friendly and expanded version of the tool that maintained the functionalities that would strengthen the original version. So it took us some time to find the right technical partner to work with. We landed with RTI and felt really confident about building a tool on an existing platform without the need to use an enormous amount of resources to build something from scratch. Also on a platform, the Tangerine platform that's familiar to many in the education sector as they might have used it in assessments such as EGRA and EGMA.

So the first pillar of the tool was the establishment of a partnership with the ECD Action Network. This the goal with this was to try to define and tackle some of the demand side constraints with a focus on the broad challenges around technical and policy barriers to a lack of a quality, consistent data. So together we formed the Global Education and OECD Costing Consortium, or GEEC. So this is a group of academics, donors, implementers and policymakers working across sectors, not just early childhood development, but expanded beyond education and health and social protection sector sectors. Primarily, the activities of the GEECC include doing a survey and landscape analysis of existing costing tools and initiatives to get a sense for what was out there to do a mapping of the functions and purpose and limitations of these different costing tools that do exist, and then create a bank of publicly accessible tools and resources for the global education and ECD communities including. Including teachers, theories of change, etc.. So that was the first pillar.

The second pillar was the improved version of the of the cost calculator, which we renamed the Childhood Cost Calculator. So this is based on and in fact, replaces SECT and is available online in a much more user friendly format with an accompanying user guide.. We expanded beyond early childhood, as I said, to child and youth focused sectors, including integrated programs. It has similar type of built in functionality such as currency conversion and amortization. The idea is that it can be used by anybody, so by policymakers, funders, implementers, researchers. The user friendliness is really its key strength as well as its cross-sectoral nature. And this tool builds a database of child and youth program costs called the Cost Data Explorer, which I'll share a little bit more about.

So this is what the tool looks like. It is, as I said, built on the Tangerine platform. It is structured so that each cost category is a separate form. So the user is walked through a series of questions about costing, and it has some built in skip logic, it also has summary boxes and sort of pop ups to guide the user through and the accompanying guidance document that I mentioned. As I said, it can be used across many different sectors and interventions and this is just to note that these is not limited to these interventions, but these interventions that we have in the tool at the present time can be selected and serve as tags for the interactive database. The idea with the tool is that it's sufficiently broad in that it has different cost categories and resource types, which you'll see in a moment, and can be used across all of these different sectors and these intervention types. So the tool has to has a cost classification that is very similar to the USAID cost classification that they use. And so we, you know, we hope to be consistent with other tools that work a little bit differently, but similar to make it easier for the users out there. So to better understand how resources are allocated, the structure is designed so that program costs are divided into overhead costs and

direct costs. So in the overhead category, program design, indirect program management program evaluation and other overhead costs, and then in the direct category, training and direct delivery direct program management transfers to individuals and families and other direct costs. So there are six possible choices in terms of resource types. The six being: personnel and labor; and then buildings, land and infrastructure; materials, supplies and equipment; the rental of facilities; travel and accommodation or transportation; and other. The definitions of them are clearly described in the guidance document. As you know, they're not necessarily universally agreed upon, but this the guidance document provides these definitions to help in that process. There are also additional cost classifications. So a cost can be defined as either investment or upfront costs or recurrent/ongoing costs and can also be defined as imputed or paid for. So these are the different sort of tags that one can give each of these costs throughout the process of entering the data in in the forms. What's wonderful about Tangerine is that it pops out some lovely data visualization. So this is an automatic visualization that pops out at the end. One, it will give the total cost, the cost per unit, and the average cost per year. Those numbers are popped out and they can be seen by choice of currencies. So there's a dropdown for selection of currency and they can also be seen in terms of real or nominal terms. And then these different charts that look at the different cost drivers by cost category, by resource type, and recurrent and investment, which is very useful. So the tool can answer a variety of questions for a variety of different needs. So each time a costing exercise is done, it's really important to think about, you know, what, what are the key questions you have and for what purpose, and you know why you want to answer these. So there are questions around planning, there are questions around adaptation and changes, and also questions around cost distribution. C3 can also assist in answering questions related to cost effectiveness analysis and cost benefit analysis, but not without impact data or effectiveness data for the cost effectiveness analysis and data on the monetary value of the benefits from the cost benefit analysis.

So today is the official launch. So the tool is actually available online. I hope you won't go to it right now, that you'll wait until after the event. But this is what it looks like. It is whole. It is housed on a website childhoodcostdata.org. So the tool and the cost Data Explorer, which is the interactive database - when we have enough case studies in there, it will be searchable by geography, by intervention, type of sector, also by particular marginalized groups that might be served by the intervention that's being costed. So the aggregate data, those who conduct the cost analysis have a choice on whether or not they want to share the aggregate data. The disaggregated data is housed on a secure website. We don't have access to it. Nobody has access to it except for those who are entering the cost data. So it is secure, our privacy is protected, etc.. And then in terms of the aggregate data, the costing team has the option of including the cost data in the database or not. We hope that you do. Again, it's only the aggregated data and but we are really hoping to build up a database of costs. So what does the costing process look like? I'm sharing this and this is helpful as well. You're about to hear from the the costing pilots. This is the process that they used and that we accompanied them. And so the first part is to form a costing team. And this can include a variety of different individuals. And it depends very much on the program who should or what it should be. We also strongly recommend forming an enabling stakeholders team, and that's optional. But we really see costing as a really important part of a bigger conversation. It shouldn't be done in isolation in, you know, with one person sitting and holed up and entering all of the data. It really should be part of a bigger conversation around quality, around scale, etc.. So we hope that that is something that happens. The third step is to determine the key costing questions and then review the guidance document and then gather the detailed data on costs and then enter into C3. The first part of C3 is completing the program background. So we collect a lot of information around the details of frequency and dosage and the population being served, etc., because that's very helpful. That will be very helpful in the cost database to understand really what the contours of these different programs are and then the completion of the cost entry forms in C3 and then a review of the cost summary and the visualizations. And then there's an option to download the CSV file of the disaggregated data if you so desire, looking at sort of more of the detailed data in the background. But that's also not required if you just want the big picture.

So as I mentioned, we did pilots in three countries in Ghana, which was a program of teacher professional development at scale in Cambodia with an early childhood development program called RAISE, and then in Honduras, also teacher professional development at scale program. So

I'd like to introduce now the three individuals who are representing their teams in each of their countries. We'll first hear from Wendy Smith, who is the director of education programs with Worldreader. She's presenting on Ghana. Sorachana Seng who is the IECD advisor at Save the Children Cambodia, and Erick Nehring who is a consultant with SUMMA, who is presenting on the Honduras project. And just to say again, they are representing their teams. There was lots of work done in-country with many individuals and we're very grateful for all of their work. So I will hand it over now to Wendy.

WENDY SMITH: Hi. Thanks, Emily, and thanks, everyone. My name is Wendy Smith. I'm with Worldreader, the director of education programs. And I'm going to be sharing a bit with all of you today about a research project we had on teacher professional development at scale and the use of the costing tool to help us really better understand the necessary adaptations that were needed to this tool. Just a quick pause. Not seeing the slides. Are they are they being shared? Hi, everyone. Emily I'm not seeing the slides shown for the audience. Just checking in on the.

EMILY-GUSTAFSSON-WRIGHT: I don't see them either, but.

WENDY SMITH: There we go. Great. Less pressure. Wonderful. So. So, yeah. Thanks again, everyone, for joining. And a special thanks to the team that I'm representing in Ghana, which includes Worldreader, the National Teaching Council and the University of Ghana, who are all a part of really trying to better understand the role of ICT in creating quality, cost effective and equitable participation for teachers in Ghana. We were a pilot project. We were both a pilot project of the GPE-KIX initiative and as well as Brookings. So we were learning on all fronts as a team. But our goal for really entering in this costing project was to generate a framework and guidelines for ICT-enabled teacher professional development and to come up with adaptations that were driven by really value for cost and how do we best support teachers through ICT? And we wanted to know a little bit more about cost per teacher, cost per student. And then obviously as an implementing organization with a ten-year history in Ghana, we wanted to know how to better [inaudible] key costing questions that we had as a team and that we were really grateful for the C3 tool because they helped us answer a lot of those questions were around that cost per beneficiary of the intervention. Our intervention was a six-week training course on teaching and learning with digital tools, primarily for grade P1 through P3 teachers in Ghana. We wanted to learn a little bit more about how we distributed our costs across different categories and different intervention models. We wanted to understand how those costs were distributed over resource types and between several different models of delivery. And then finally, you know, how did the costs overall compare around these models. And then finally, at scale, if you were to do this with 500 teachers, 5000 teachers, or 20,000 teachers, you know, how do we change our investments in terms of the program to really equitably meet in a quality way the greatest number of teachers in Ghana with ICT-enabled TPD.

So a little bit about our costing experience, just to kind of give you a flavor for how how it works if you as an organization are interested in using the C3 tool. First, as Emily mentioned, we established a core costing team. And we also had a larger stakeholder-enabling stakeholder team. Our team consisted largely of the National Teaching Council in Ghana, who is responsible for teacher professional development in-country. Ghana Education Services, Worldreader and, and finally the University of Ghana. The costing team itself was largely driven by World Region, the University of Ghana, but we really needed that ecosystem of stakeholders and actors to eventually be able to use this data to [inaudible] promotion of what really are those effective adaptations to teacher professional development. So to be really clear, we compared three models. We sort of started out with the most digitally delivered teacher professional development model in which teachers entered on a teacher education portal that has been designed by the National Teaching Council. We compared that then with -- and that was delivered 100% digitally. We compared that then with accommodations and support that could be delivered at the district level to kind of take what we know about teacher professional development and that is that need to embed it more locally and bring on local actors and local stakeholders who best know the teacher context to really adapt that teacher professional development as well as provide equitable solutions for teachers who have less connectivity, for teachers who have less data, and some of those things that we

know make it difficult for teachers in Ghana, to, to participate. And then finally, the the standard sort of face-to-face teacher training models. We wanted to compare the three of them and begin to really, you know, generate costs around them. Some of the challenges of comparing three models, we could have kept it simpler and just costed our own, but we felt that this was much more richer and obviously useful data if we could compare between the three models. But one was just comparability of models. Each of these, each of these teacher professional development programs sometimes had different sequencing, they had different numbers of stakeholders, so we had to do a lot of fudging and, not fudging, but kind of bringing the data together so that we were in the end kind of trying to look at apples. And we took as a standard base teachers who had completed the course. So we looked at -- even though we had over 1500 teachers in the course -- we looked at 500 and those who competed in all of the different delivery models.

We learned, obviously, the costing, which I'm going to share with you in a bit, but some of the challenges around the costing came around effectiveness. This was a pilot. I think it's really important to say, you know, and this was a pilot that was really rolling itself out. We didn't have a history of, of long-standing implementation. This was in new platform for Ghana. This was a new platform for Worldreader and a new course for us. But -- and this was implemented during COVID conditions, so it really did provide make for some challenges. However, what we did have was a common language that we were able to use through the C3 tool and an actual, you know, excitement around the use of Tangerine, and then real-time data like what I'm showing you here. So unsurprisingly, and I don't want to spend too much time on the numbers because these numbers shift and change, but I think the key takeaway is when we began to do the costing exercise was one that, you know, the numbers you're looking at were around the cost of delivering the TPD only. Virtual delivery was, unsurprisingly, the least expensive. But in parallel to that, our research showed that, you know, despite the fact that many teachers in Ghana are female at the P1 through P3 level, we had a majority of male teachers participating in the course. So we began to learn that, you know, there were some barriers to equitable participation by female teachers in Ghana. So if we went to the last line, that hybrid delivery model, there we began to put accommodations at the district level. It begins to increase in costs, obviously, but with the hope of having more equitable participation. And then finally, unsurprisingly, the most expensive, when you need to travel, you know, move teachers, pay them per-diems, is that face-to-face delivery model. It does cost more, but obviously an effectiveness component is very necessary to this, to see how do teachers then take that training and really embed it in their practice and in their daily lives and in their instructions.

But to go a little bit deeper, these are some of the different data visualizations that the C3 tool enables you to to produce quite easily. And this was really, really useful for the team on the ground in Kenya, as well as our enabling stakeholders and the ecosystem with which we shared this type of data. You know, in the upper left-hand corner we found, not surprisingly, that, you know, a lot of our, our overhead data was quite high. But again, I have to -- and you know, people don't like to say we have really high overhead, but it is transparent. And a lot of the use of the C3 tool is to understand where you're investing. But also we were able to learn how that initial investment in a TPD platform and ICT-enabled TPD platform could be scaled and those would be amortized over time, they would reduce over time. So even though we had really high initial overheads, a lot of that was program design and the startup of this program and through doing simulations, you can see how those costs reduce over time. I'll maybe just call your attention to, you know, the last, the lower right hand of the screen, which was the distribution of costs by investment types. Here we were able to kind of look at recurrent costs versus initial investment costs and really be able to see that opportunity that as we do this program over time, and as more and more teachers at scale are able to participate in Ghana's national teacher portal and this TPD education system, we have a huge chance to continue to reduce those costs.

So if we kind of tick a 360 or a 30,000 feet view of some of our key takeaways, you know, unsurprisingly, the cost of developing both the virtual and the hybrid models was higher than delivering it. We had very high design costs for for the Ghana government. This was the first time they had a national teacher portal and the Commonwealth of Learning had invested in a learning management system. So this was a lot of, you know, initial cost to get an ICT-enabled TPD model

going. And it was a pilot. We didn't cost this at a moment where this had been running for years. But, you know, does that mean we shouldn't have? No, absolutely we should have, because we can, from the get-go, begin to understand where we have opportunities to reduce costs, to come up with the adaptations that are necessary for teachers, successful participation in the course. And then finally how they take that course to their students. The second big finding was that even though the virtual model was the least costly followed by the hybrid model, we did see a lot of gender differences. So we know that we need to have those adaptations, which really, the costing data helped us build this framework that we're, that we are sharing in Ghana to really talk more concretely about the types of adaptations that are needed if we want to reach the really digitally savvy teacher or if we want to reach the very rural female teacher that doesn't necessarily have data on their phone. Surprisingly, though, we did find that a lot of females and males were participating with their cell phones. So they were covering the cost of their own devices. They were covering the cost of their own data. And so this was really exciting for for, I think, both the Ghanaian government and for ourselves to really look, you know, through future iterations of the model, how do we double down on digital delivery through mobile devices, including using other platforms outside of the LMS, such as WhatsApp and Zoom to really, you know, be able to more meaningfully deliver the model. And then finally, we really learn [inaudible] national digital pilot as well as an [inaudible] focus in on three districts. But every district in Ghana as as many of you who've perhaps worked in Ghana know is is very different. And so these findings represent those three districts in the hybrid model, but certainly not all districts in Ghana.

So finally, and just to kind of close up on this pilot, you know, the C3 tool was really, really helpful for us. We were working within what we were calling the magic triangle of of TPD. We were looking at how is it best equitable? How is it best cost effective and and in quality? So we really wanted to stretch and learn. You know, if you invest more in getting more teachers on board, how is that impacting equity and quality? And at what cost? So, you know, we we were really accompanied by the National Teaching Council in this entire process. And this this costing data gave us fuel to begin to sort of say, what are those adaptations to scale ICT-enabled TPD with equity? We also were able to form this costing team, which was useful not only for this research, but I think now we have a fantastic team in-country that is able to apply the learnings to to other education programs. You know, in terms of policy implications, we learned a lot through this that a lot of times professional learning communities which are very localized, in-person teacher professional development circles, they really worked well with ICTs. We found through the research and they were quite cost effective. And that led to actually the embedding of our findings and the cost data in the new guidelines for professional learning communities in Ghana. And then finally, you know, we really came to the conclusion that we want to do more of these costing studies and cost-effectiveness studies as needed to make sure that, you know, ICT-enabled TPD, which we saw a lot of enthusiasm for in Ghana, is able to really, we're able to look at it long term. We're able to look at its implication on student performance as well as teacher delivery of their new knowledge, attitudes and practices. So overall, just a huge thanks to Brookings, for allowing us to be able to pilot the C3 tool. It's been a fantastic process so far. We hope both Worldreader as an implementing organization to use it again in the future, as well as to accompany this costing team in Ghana and to be able to use it again in the future. So happy to take any questions on this at the end of, at the end of the presentation. But for now, I'm going to pass the microphone to my colleague in Cambodia. Thank you very much.

SORACHANA SENG: Thank you, Wendy. Hello. Hello, everyone. Good morning and good evening, and greetings from Cambodia. My name is Sorachana Seng, I am integrated early childcare development program advisor from Save the Children Cambodia. So today I would like to make some presentation about our experience to work with our project with C3 tool, with Brookings's team, and from our existing project. So the first I would like to say what is RAISE project. RAISE project is the one pilot project of Save the Children Cambodia that funded from Save the Children Hong Kong for 24 months. So RAISE project is the pilot project to improve the awareness of the caregivers for zero-to-three program, to improve their knowledge of issues and change their practice to improve children development outcomes. So our pilot had 43 villages in one province in Cambodia, Kampong Cham, to support 3320 direct beneficiaries which include 1040 children in age group zero-to-three program. So the strategy to implement our projects: one

is to improve the material for social and behavioral change. We work very closely with the government system to make sure our material have been developed and tailored to look at local needs. And this material has supported the caregiver to conduct group meeting with a caregiver with three platform, mother, father, and great -- and some family member in the in the village to join the meeting to learn from how to take care of children at home, and also support a community to have a meeting, to have, to discuss, to make a plan to support the caregiver at their own community. And we also have the home visit to make sure that some family who missed the session could understand and could learn more from our project elsewhere.

So, during working with the Brookings, we have four key costing question that we want to see: what's the resources I need to, to implement our project and what is the cost driver? And we want also to see that this project feasible not to, given budget that Save the Children Hong Kong has support us for 24 months. And we want to see this project - it's a role model and how the project can scale up in the future. And so we want to see the how the costs distribute between investment costs and recurrent costs across resource type. The slide, please, yes - with our Brookings experience. Actually, we start with Brookings during the COVID time, a little bit hard to, to meet the team to, to call and we always also the time zone aspect, but learning from our experience, we found that the first thing, that we could do it more, better and better. So the working group is very important that we should, we have identified from multiple teams in Save the Children like operations team, that they know a lot about the project, how to implement, how it looks like in the project site, and one more team is finance and our team that they, they very know and understand better about the project and some people from the tool as well. And another one is a monitoring team and evaluation; they are very good experience on working on research aspect, so they, they are very useful to, to work in the group and could say our, the experience and working together. So another one is our working group, both trained by Brookings, to use the C3 tool, and it is very important that everyone could know the guide on how to use the tool and to see the tool interface and to see the keyword or category of the data group and we can talk and discuss, and asking a lot of things to the Brookings team to make sure everyone understand well and know how to use the tool. And another one, I want everyone to think about, you seeing the financial data with very accurate and, and also work with them to, to, to group the data in the category in C3 to make sure it is in in the group and easy to input this data in the tool. And so the last one is very, very important that we practice a lot, we do a lot and we also meet very regular, regular consultation meeting with the Brookings team that we talk about the process is coming and how about the results are the first time, the second, insert how is changed and how acceptable. So yes, from the cost summary, you can see the, the number here. So the costs, that that cost from our project and the cost per one child. So it's it is the number, this number is, it is a two year programing of the zero to three program. So \$199.8 per one child is support for two year and it is the cost, it's kind of the cost that without Save the Children staff support because we are learning that we were working through the existing system. So we want to see the real practice cost that are very accurate and to see how the partner or NGO or government could use it as the one of the evidence to be planning for the children for the future.

So next slide, please. So here is a finding that you can see: distribution of the cost by classification, by resource type, and by category and recurrent/investment. So you can see, our project, RAISE, is one of the pilot and we are very happy to see that the cost is more higher than overhead that we can see, it's very achievement, one achievement to see other mostly we think about the implementation a lot. And another one by results you can see the labor or personnel is very higher than other. You can see, it is very accurate to the real situation that's true to see program, is very the new one also in Cambodia and maybe another country that varied by multiple sector like nutrition, health, like education, a lot of people, a lot of sectors join, so it is so that requirement from nursery sector is very important to our project implementation. And also the costing by category is also very important. You can see what is the category that they are putting in the plan, very accurate to the costing like to make sure the planning is more accurate. So, next slide please. So we had two costing key takeaway the thing about, can the project expand to another province, should be thinking about other costing it up to the existing costing from the result. And this costing is very important for us in Cambodia, that it is a model that we can develop zero to three more effective in the future because zero to three program is very expensive in here and you know, in

Cambodia, we need to see what is the program that would be more benefit to children and it could be scaled up in the future.

So next slide please, yes, for the policy implications and the step of looking from the Brookings and you can see the results of this exercise is very, very important as I have said before. So improving the investment for a early childhood in zero to three is one of priority in Cambodia and the result is also the one evident that became to host and to share to other stakeholder and NGO partner, or donor agency and also government to use it to be a role model to to scale up and also improve the investment in the integrated ECD as well. And also this data that is also very important to have Save the Children Cambodia to be good planning and programing, to improve budgeting in terms of zero to three program in the future and in the project as well. So thank you so much for Brookings team and to, to introduce us with this tool and we work a lot together and we can learn together as well. So thank you so much for this opportunity. So I would like to hand to our team here, Erick from Honduras, thank you.

ERICK NEHRING: Thank you, colleague. And hello, everyone. My name is Erick and it's great to be here today with you. At SUMMA we are very thankful to the Brookings Institution for the opportunity to participate on the C3 Cost Calculator Project Pilot. This resourceful tool, now that it is a global public good, will greatly benefit education professionals in Honduras and beyond. Thank you for your commitment to support education systems around the world. Next slide, please.

The project is part of the Global Knowledge Innovation Exchange (KIX) initiative, testing, evaluating and improving our Teacher Professional Development at Scale, TPD at Scale, model. Now that it is mediated by technology in different teaching context, the objective of testing the model in five departments of Honduras was to create a framework and guidelines for enhanced TPD with a focus on quality, efficiency, and equity. The TPD at Scale model was tested in the field through a math course, and the project promotes the use of evidence and employs improvement cycles in every process of the project, capacity building within the Ministry of Education and the National Pedagogical University that was also an important part of the implementation. Next slide, please. The scope of functionalities of the tool includes a wide range of analysis that could easily be done thanks to its user-friendly design.

In the process of assessing the interest and needs of Honduras, the following questions were prioritized. First of all, the core team wanted to know what was needed and how much it cost, that is to design and deliver the course. So the question was, what financial resources are needed to undertake the initiative? The team also wanted to know if this initiative was feasible in the Honduran context. So the question was, how and to what extent can ICT-mediated TPD at Scale model can be implemented in Honduras? Another fundamental question for the concept team was how how this course compares to other ways of delivering the course, not only virtually, but also face-to-face, and blended. So how does the cost of TPD delivered by technology compared to other traditional forms of delivery? Another question that arose was if the use of the tool can actually help the authorities with decisionmaking on delivery delivery options. So the question was, can the implementation of the C3 calculator be useful to the authorities in cost analysis? And finally, the lack of communication among the different units that are directly or indirectly related to costing are not articulated. So one priority for them was how can stakeholders be engaged in the costing exercise to assure their support to the TPD?

Next slide, please. So this initiative was a valuable experience in terms of using this innovative costing tool and overall articulating different units within the Ministry of Education. This exercise was very, very meaningful because it brought strong collaboration among the ministry units, the Pedagogical University and the SUMMA KIX Project. The experience was a process that involved a series of milestones that have not only built capacity within the groups, but also strengthened the communication between the units. So some of these milestones were the stakeholder mapping, which is identifying the key actors that were involved in the process of collecting and analyzing costs, also conducting diagnostic surveys to determine the level of involvement of participants with cost and cost data. Also holding two workshops, there were two workshops. The first established the concrete priorities and identified the core group and socialization of the costing methodology.

And the second to train the technical team of the Ministry of Education in the use of the tool. Another one was to collect cost data and supporting documents, also an estimation of the cost for five scenarios of designing and delivering modalities teacher professional development programs was done. Also scaling analysis for each scenario and results dissemination with a wide group of stakeholders. That includes the KIX partners implementing projects. The team was very engaged and by the time the team was analyzing the results, there was a great cohesiveness among the members. Next slide, please. In this chart, you can see that the local currency in Honduras are lempiras, with an exchange rate of approximately 25 lempiras per U.S. dollar. So the first column had the figures in lempiras while the rest of them are in the U.S. dollars for your illustration. Five scenarios were analyzed that overall respond to virtual, face-to-face and blended delivery. It is interesting to point out the strong collaboration with the Ministry of Education, as well as the Pedagogical University in Honduras, providing the data and analyzing the results that were given by the two. Next slide, please. So in order to populate the tool with the proper cost data, a workshop was key in building capacity for the core team on general classification, and the tool is very friendly on presenting the results, as you can see. And you can have the breakdown on overhead versus direct costs. The type of cost, whether it is labor, material, or per diem. The cost of the different programs, while it is the training itself or the design or visualize whether the cost it is an investment or a recurring cost. For the cost category, the distribution of the chart is very helpful and it is very revealing for local authorities on where the cost goes so they can make decisions on resource allocation, for example.

So our conclusions for this exercise is that the tool is simple to navigate and enables quick estimation of cost of teacher training delivery. Also, the tool helped us and allowed us to compare cost of different delivery types, which was very useful. Using the cost calculator also enabled the team to identify specific aspects within the training and design process, also pinpointing the segments that could be more expensive. So for traditional methods like face-to-face, it requires significantly less spending on program design compared to newer methodologies. However, on the other side, face-to-face delivery in a central location requires travel and accommodation. For most participants, this increases cost significantly. Now the next steps and some policy implications are that this exercise using the C3 calculator tool triggered additional actions within the Secretary of Education. This includes organizing costing teams, encouraging collaboration among different units within the same Ministry of Education, fostering capacity-building initiatives, facilitating the dissemination of information with stakeholders, and implementing a well-structured categorization system for the costing data. So this was an exercise that really, really triggered a change within the Ministry of Education. So thank you, Brookings. For everything.

EMILY-GUSTAFSSON-WRIGHT: Thank you so much, Erick, and thank you to all of the teams. It's so exciting to hear about, about the processes that each team went through. I wanted to summarize some of the benefits and lessons learned from these pilots, which were numerous though. So piloting the tool obviously helped us to improve it, seeing it in action. So there were glitches and things that came up that could only be found in the piloting process. And so we were very grateful to be able to do that so we could make those corrections. The tool, also the piloting of the tool, also allowed us to learn more about the potential to catalyze policy dialogue and action, and where it did catalyze policy and dialogue, this benefited the partners and their mission. We observed that the use of the tool improved capacity around costing and cost analysis among the organizations and individuals who were involved. And then finally produced policy-relevant findings on cost drivers as well as unit and total costs for each of the participating programs. So we will be publishing next month a report that is about the tool and about the pilots. So keep an eye out for that. We'll share it with all of those who who have registered.

So at this time, I would like to introduce our panel. I'd like to start with Tamar. Tamar Manuelyan Atinc, she's a nonresident senior fellow here at CUE. She has over 30 years of experience in the analysis and implementation of development policies and programs, most of which was at her World Bank, where in her last position she served as vice president of human development. So Tamar actually began this costing journey with us back in 2014. So it's really a delight to have her back here to moderate this panel discussion. We also have Rachel Hinton, who is the global education research lead at FCDO, the Foreign Commonwealth and Development Office in the UK,

UK AID, and a visiting fellow of practice at the Blavatnik School of Government at Oxford. And her interests include equity in education, intrinsic motivation of teachers, and also early childhood development. And then Alina Lipcan is the impact and innovation director at the Global Schools Forum. And in this role, she is driving forward a new area of work which aims at supporting education entrepreneurs in low- and middle-income countries to scale education and innovations that improve learning for underserved children. So I will hand it over to you Tamar.

TAMAR MANUELYAN ATINC: Thank you, Emily. It is such a pleasure to be here for this event, as you said, having been involved in the genesis of it. And I'm just delighted to see how far it has come. Good morning, good afternoon, and good evening to everybody who's participating in the event. And a special thank you to Rachel and Alina, who have agreed to join me in this panel. And I would like to tell the audience that you can submit questions by emailing events@brookings.edu, or on Twitter at Brookings Global by using the hashtag [childhood cost data](https://twitter.com/childhoodcostdata). I don't think we're going to be able to get to a whole lot of questions, but even if we don't, I think those will be useful for the team to continue to refine the tool. So Rachel, let me start with you, in your role as head of education research at FCDO. You've funded a wild wide portfolio of research in the education sector and your resumé highlights your interest in identifying value for money. Can you discuss the role of cost data in doing that? And if I may add, any thoughts on why we have seen so little investment in cost data collection? Thanks.

RACHEL HINTON: Thank you very much. And then you might just put a thumb up if you can hear me. Okay, please. Good. So, I mean, I think it's not just myself or even those at FCDO who are concerned about value for money. But I think a good indicator of that is that the building evidence in Education Global Group, many of your listeners, many of you will know of that there are 41 member organizations there and they're all really interested and concerned about this issue. One example we came across was in Bangladesh trying to calculate just how much a preschool program would cost per pupil. And so for that the teams are looked at the budget information. But the detailed analysis revealed they were underestimating those costs by actually a factor of five. And if you -- even when looked back at that and they actually saw that the model there, how often some of the activities had nothing to do with the preschool program but they were included in what was being looked at. And at the same time, on the other hand, it was omitting actually key costs that had, were really important, such as overhead costs. We heard from your panelists before on how important those were. And so the four different estimates actually varied from 25K to 142K, depending on whether people had actually understood the complete system or were just looking at specific elements. And this is something that we're seeing time and again in our programs and why it's so, so crucial.

And that's why we're very excited to see the work the team at Brookings and Emily and all of those who've piloted this on why this is just so, so key. Um, another example. We recently had the Education World Forum, 100 ministers of education, one of those meetings with the Kenyan minister and our minister for development and Africa, Andrew Mitchell. They were sharing just how much donors often come and sell interventions to them. You know, do this is the best value for money and actually very few present cost data in those meetings. And so it makes it very hard, particularly now post COVID limited budgets. Interestingly, they said interventions on technology actually are often the worst because there are many, many hidden costs that are often is not just the sort of hardware costs that are those usually presented. So yeah, I think we've really encouraged people to think about for ease when we can use this information from your cost calculator. The first one is economy, that appropriate balance of price and quality. The second is it really helps us understand efficiency. You know, how many outputs then achieve for the cost effectiveness, you know, in terms of the impact. But also, I what I really like about is it can also help us with equity, it can help us understand what additional resources are needed to reach those most marginalized in the system. So, you know, it's really exciting.

So so why don't we do it? You know, you said, you asked, okay, so so what are some of the reasons why we're not doing it? It seems clear it's important. I think there are four challenges that we've seen over the years. The first is very simply there's limited buy-in by stakeholders. So this sort of seminar is so important, but more discussion is needed and it gets lost in tight deadlines. So

Erick's, Erick's example of the workshops they put on, actually, that's often what those sort of things are often missed because there's a push to to implement, to start the project and get going. The second is it's costly to cut costs. You know, actually it demands capturing costs in real time, not retroactively. And that is often a significant human cost that's left out of budgets. You know, Wendy, Wendy was very, you know, showed with the wonderful graphics your tool provides, shows how high admin costs are often, but donors are sometimes really pushing to pull those down. So we've got to be realistic and work together to recognize what this cost. Thirdly, sometimes there's not the expertise. We saw that in our Girls Education Challenge program. And people on the social media with these tools. So they need support. And then I think just the fourth challenge we find is there's so many multiple demands when you're in the field trying to deliver education that often it's felt to be so many different ways of reporting. And I think there's a responsibility on on those designing, costing models. And a big win -- Paul Atherton, who helped us do this for GEECC, you know, talks about needing to integrate the cost analysis we need for this into standard financial reporting and accountancy methods so that programs and suppliers aren't feeling they've got to do twice the work in different systems. So yeah, that's those are the challenges we see and we we hope that they can be overcome.

TAMAR MANUELYAN ATINC: Great. Thank you, Rachel. Excellent points. And I think the tool helps with some of the constraints that you just talked about, in terms of the expertise and availability of a simple tool that can be utilized, but some others clearly are going to require the involvement of the entire stakeholder community. Alina, I'll turn to you. So we heard the presentations from the case studies, which were terrific. Two of them, as you saw, are programs implemented by government and one of them is implemented by a non-state actor. Given your work with non-state actors with the Global Schools Forum, what do you think about the relevance of this tool for these actors?

ALINA LIPCAN: Thanks, Tamar, and thanks to everyone for the wonderful presentations. A lot of the points made really resonated by the experience of our members. Just for context, the Global Schools Forum is a community and innovation accelerator and the Partnership builder, and currently there are 84 organizations within GSF that reach 10 million children across 55 countries. They they're all non-state education organizations, and around 50% of them work in partnership with government to deliver education. And throughout our community, we see really clearly how costing is really important for informing scale decisions and scale pathways. And I think a really good example of this is comes in the context of our impact at Scale labs, where we actually support organizations on their scale during the year. So we're trying to help them diagnose what some of the issues are that are preventing them from scaling and then help them solve them. And as part of that, we look at three key things. One is the desirability of the education model. So is it appropriate as the delivering impact for the beneficiaries? The second piece is around feasibility and that's around does the organization have the right team and leadership and in particular, do they have the right systems in place to measure evidence as well as cost? And then finally, a sustainability and that's around kind of who will pay for this at scale? Are the funders and scale partners in place to support the innovation to reach the next level? And is the innovation at the right price point? And it's in the sustainability piece. That question really comes out very clearly, regardless of whether they envisage scale is through a government or through a market, or if indeed a model is kind of expecting that a philanthropic or bilateral funder would fund this at scale, understanding the cost is kind of really key for supporting organizations on their pathway.

So very specifically in our first lab, we have one organization in India, one in Kenya, and one in Ghana. One of the organizations is pursuing a pathway to scale through the government. So it's a teacher training model that's looking to essentially complement existing systems and really work in partnership with government, existing government officials and district officials, to enhance teacher training. And the other two have established models in the public sector but are looking to scale, to other scale pathways, and that's to kind of see if there are affordable private schools, headteachers or leaders that would be interested in paying for their models. And all of these organizations have seen and engaged with that cost calculator. And we're really excited about the potential it has to really help them answer this question. And it's really about, on the one hand, figuring out your internal financial model and as that's the Worldreader presentation, explained that

visually really, really well and kind of understanding where you can kind of cut costs and how you're how you would plan to cover your revenue in the long term. And then on the other hand, it's about taking that cost price point from your model and seeing if it resonates with the government or if it resonates with the head teachers, because often the willingness to pay and the costs are two different things. And really putting costs at the center of the conversation is crucial from the very beginning to even begin having meaningful scale aspirations.

TAMAR MANUELYAN ATINC: Perfect. Thank you. I have a question to both of you. And in fact, I had written up this question. But I saw that in the questions that the audience did yesterday, this was taken up as well. So I'm going to take their wording. One of the values of the model, says this person, is to build up a database of costed programs, which requires a minimum of people to use it to build up the database. What are your plans for promoting and incentivizing others to use this costing tool? So what needs to happen so that we have more systematic cost data collection and we can build the cost data explorer that Emily talked about so that we go beyond the costing of an individual program, but we're able to actually compare across programs, potentially across countries to see if there's any learning to be had from that exercise. Rachel, would you start us off on that?

RACHEL HINTON: Thank you very much. I think I mean, it's an excellent question and I think it's all of our responsibility to to try and shift the culture, I think to change the culture so that, of course, it becomes something that we're all doing it with and thinking about with donors or academics or or the service provider. I think one example that we've done and which we're committed to is supporting our partners to to really get better at this. I think I'm explaining a bit on the Girls Education Challenge program, for example, where we work with every partner in every NGO who is delivering on that on to help understand how to do this and to use the tools. And we do need to provide that capacity. But, you know, that was really fascinating because an analysis there showed that it ranged from, say, £8 to £87 on an important intervention about Girls Clubs, for example. And so you have this huge range, and as Alina says, knowing whether it is £8, whether it's £87 per intervention is is really key. And what those impacts of this.

The other really exciting moment we have in education is that we actually have a new measure. The introduction of the Learning-Adjusted Years of Schooling – LAYS -- is very exciting because for many years in health they've had the DALY, you know, your daily, daily life years and that's been standard practice for a long time. But we haven't had that in education. And so now we've got a way of combining the quantity and the quality of schooling into that single metric that can help us compare different interventions. And so as your as your question-giver is challenging, you know, it's no good just having one study. We need to build up our studies. And yet we know, for example, that in the report we just did for the GEAP, the Global Education Experts Advisory Panel report, of 200 new studies, only 58 actually had any kind of cost data included. Now that's that's just over 20%. So we've got a long way to go to make sure we're all collecting this really well. And I think the LAYS, the use of LAYS will also help us encourage the collection of that data. And it's, I don't know for those who aren't aware of it, it's calculated by multiplying the country's average number of years of schooling by its average test scores. So it's a really important measure for us. Yeah. So, I mean, there's another World Bank study that showed I think that was in 2019, and it actually suggested that fewer than one in five impact evaluations also estimate costs cost per impact. So it's kind of this is a it's a problem across the sector. So we do need to do more. And we're certainly very committed to supporting all those who want to use this tool to improve on having that data.

TAMAR MANUELYAN ATINC: Thank you, Rachel. I do recall, when I was at the World Bank, we had the Strategic Impact Evaluation Trust Fund, which focused obviously on the impact of the programs, but it had a requirement, of cost data collection. In the end, I don't think we were serious enough about that. So the focus ended up continuing to be on the impact side without the requisite data collection on the cost side to be able to answer those questions about cost effectiveness. I guess my question is, are donors going to get serious about this? Both in terms of the funding to provide for it, but also insisting on it?

RACHEL HINTON: Yeah, I mean, I think it's a really it's really important. I think what's exciting is that building evidence in education group is one of the groups that's also really pushing this forward very, very clearly. USAID have been really leading on this with Elena Walls has been doing some great work on and so has [inaudible] at the Bank and now, both for us and for FCDO, because of all that awareness, actually when we put out calls for work in the terms of reference, we say the costs have to be captured. And I think it is, it's from the very start you need to be thinking about this and recognizing that it's going to cost organizations money and time to do that. Well, and that we need to factor that in in the budgets we're providing. So it's changing. But as we see from the figures, a long way to go yet. And we need to encourage everyone on the path with us.

TAMAR MANUELYAN ATINC: That's heartening. Alina, what are your thoughts?

ALINA LIPCAN: Very much resonates with my thoughts, everything that's been said. I feel like this issue of really highlighting the importance from the very beginning is the most important one. I, I was lucky enough to get a front row seat at two governments insisting on cost data at the beginning of a program and just saw the power that had in really incentivizing providers and the funders, the donors that are supporting the governments to really make sure that they are delivering, designing and delivering interventions that really meet those requirements. And that was one in the context of David Sengeh in Sierra Leone and then also George Werner and Liberia. And I just feel like the combination of political leadership supporting supportive funders and then providers that are really willing to be transparent and try and get to that price point is the really important trio of really making this work. And as well the funding and really making it available and then using it with the right expertise to produce the right data, all of the things that haven't been mentioned. I also think there's something to be said about providers being willing to be transparent and share this cost data more widely, and also about the importance of intermediary organizations that can aggregate it. We're just kind of starting to discover the power of this in an effort that we're currently undertaking with a community census. We're already trying to collect more data from our providers and really see how we can make it, aggregate it and make it publicly available so they can be used as a public good. And I think the work the Brookings have done here also has amazing potential to basically aggregate this data and present it in digestible ways, and that kind of helps put costing high on the agenda.

TAMAR MANUELYAN ATINC: Right. Thank you. We have talked quite a bit during this session about the importance of quality and not compromising that. Obviously, it's important to collect the cost data, but the aim is not to squeeze costs down to the minimum. The idea is to ensure that there is impact. But we want to take a look also to see at what costs we're getting we're getting that impact. We've also had conversations about equity. So I want to bring in a question from the audience. And Emily, I think I'm going to need your help in answering this, but then turn to the panel as well. Question is, can this tool be used to capture additional costs that may fall on groups of marginalized children, such as children with disabilities, those with indigenous groups, etc.? So can the tool be helpful to governments or non-state providers who are in particular looking to scale and expand the reach to marginalized?

EMILY GUSTAFSSON-WRIGHT: Thank you, Tamar. And thank you to the person who asked this question because it's such an important question and absolutely at top of mind for us at Brookings and in the development of the tool. So the tool itself, as I showed you, has a standard set of a cost categories, cost classifications, resource types, etc. Interventions for all individuals could cover any and across all of those different cost categories and types. So you know it's up to the user to be, to ensure that they're taking into consideration what the costs are for different types of individuals or different types of groups. What we have done to ensure that the data can be examined later is that we've included as a tag in the cost calculator the option to select particular a set of marginalized groups that are a preset list. And so that in the cost data explorer that is will be one of the search terms, so that we can look at the different types. So you know absolutely super important and we really look forward to digging into that also more with the data.

TAMAR MANUELYAN ATINC: Great. Underlying that question, I think, is the assumption that delivering to marginalized communities is likely to be more costly. So I guess to Rachel, or to

Rachel and Alina, in your experience, has there been a willingness on the part of governments to have a higher unit cost, if you will, to be able to reach marginalized communities?

RACHEL HINTON: I think it's a really important question Tamar, and I think you just see a variation. I mean, quite honestly, I think that what we've tried to do is find champions, and at FCDO reaching the most marginalized and focusing on those in greatest need is really crucial. And it was a big push in the Girls Education Challenge program, and it remains a priority in our programs. And it takes, it takes work. One of the challenges we found with this is, actually a lot of these programs project big cost reductions when they think about scale. And one of the challenges we're finding is that those are often neglecting the costs of complexity in the system, weaknesses in the system, and particularly weaknesses that impact on the most marginalized. And so I think one of the things, you know, I was very privileged to be part of the Brookings initiative on scaling labs. And I think we all are learning more about how you take things to scale. I suggest people -- there's a really great paper by RISE on Mindspark India, that that talks about costs and an initiative on tech. But actually, if you look there at the projections on a \$4 per month included in hardware cost, that's fine, but we often aren't unpacking them. Well, what does that mean to reach the most marginalized, what it would really cost? And I think that most of the really brilliant pieces work like that, often don't have that data reported, often aren't capturing it. So, yeah, we've got challenges, but people are making an effort.

TAMAR MANUELYAN ATINC: Yeah, the path to scaling up is definitely not linear. Part of it is reduction in costs as you amortize the initial investment. But part of it is as you scale, you're reaching more hard-to-reach groups and the cost might go up. Alina?

ALINA LIPCAN: Without adding too much, I think there's, it really depends on the type of disadvantage that you're trying to measure. Some are costs [inaudible] or some are easier like socioeconomic and some like disabilities are much more difficult. And I think the willingness is there to pay more, for sure from governments as well as funders and also from implementers to really reach those communities. But in some cases, I feel like the expertise hasn't fully caught up with what would be required to really tailor programs to those groups.

TAMAR MANUELYAN ATINC: Well, thank you very much for joining me in this conversation, and I hope we will continue this. Emily, over to you.

EMILY-GUSTAFSSON-WRIGHT: Thanks Tamar and thanks to all of you. That was a fantastic conversation. I wish had we had more time, but we will definitely continue the conversation. So before we close out, I just wanted to mention what sort of the next steps are for us at Brookings. So we see the launch today, even though it to me it feels like the end of one road of a nine, almost decade-long road of working on costing. But really, it's the beginning of a next chapter on this mission to improve the quality and quantity of cost data related to children and youth. So in the in the next phase of this work, you can see here on this slide, we plan to continue to try to tackle this from both the demand and the supply side constraints. The launch of the Childhood Cost Calculator, C3, which happened today, so you can go check it out yourself. We hope in the future to translate this into multiple languages. We are, of course, very grateful to our pilot partners whose native language is not English, who engaged with the tool in English as well as presented today in English. And so that's one next step. In addition, the way that we sort of see that there are various options for engagement: one, anybody can use the tool. It is free, it is available on the website. The guidance documents are there. All of the presenters talked about the training. It's, the training is very simple and it's in the guidance documents. That's one option. The second option is a similar sort of guided use of C3 like we've done with the with the pilot partners. And then the third, our third sort of pillar where we see this going is to really help to establish through the use of the tool this, these locally driven costing hubs, either within universities or think tanks working closely with government, so that this is happening on the ground. This will build up the cost data explorer and will also build up communities of practice. At the same time, we'll continue working with with GEECC, the Global Education ECD Cost Consortium, with the ECD Action Network and all of our partners there on the curation of costing resources. There are other tools around costing

that serve different purposes and and really listening to what the stakeholders around the globe are saying in terms of their needs around costing and really sharing that back.

So as was mentioned, this is no small task and is really going to require the action of many of many different stakeholders. So at this point, I'd like to thank all of the speakers for joining us today and for sharing their important insights and to all of you and the audience for joining and for your excellent questions. If you're interested in speaking with us more about the tool, please send an email to the project. Email childhoodcostdata@brookings.edu. Also check out the new website. There's also a blog post published about the work today and as I mentioned, the final report about the tool and the three case studies will be published next month. So thank you again to everybody. Please take care and stay well.