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SOFT SKILLS FOR WORKFORCE SUCCESS: FROM RESEARCH TO ACTION

"THE FIELD OF SOFT SKILLS: FRAMING THE DEBATES"

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P R O C E E D I N G S

MS. WINTHROP: Thank you all so much for coming. I'm Rebecca Winthrop. I'm the director of the Center for Universal Education here at the Brookings Institution. It is a real pleasure to have all of you here. I want to say a special thank you to all of our speakers. We have an incredible line up of deeply thoughtful, insightful, provocative, I'm counting on, speakers. I'm looking at you, Rich, for the day. But we also have an incredible room of participants. We'll start off with a lot of talking from the podium and the front of the room, but quickly move into discussion amongst all of you, because you all are great minds on this topic.

So welcome to the Soft Skills for Workforce Success symposium. The focus here is really on moving from research to action. I want to say a big thank you to our co-hosts, USAID and FHI360, and especially a shout out to Clare from MCC who has had this idea for many years.

Just in terms of what we're going to do for

the day, we're going to kick off the day for the first session from now until about 10:30. Really looking at, asking the question about, you know, is there a -- how do we move from what we know as a research community caring about child development into getting policy traction and action. What are some steps we need to think about collectively? And then move to a wonderful set of speakers and panel. Really thinking about, you know, what do we know about soft skills? Why do we care? What can we do about them?

And to note for all of you, this morning session, before the coffee break is going to be videoed, will be posted on the website, is on the record. After that we're going to segue into -- and the morning session is looking at soft skills across the board, across the child and youth development spectrum, from early childhood throughout. After the coffee break we're going to really hone in on one piece of that conversation which is really around youth development and preparing youth for the workforce, particularly in developing countries.

We're going to hear some findings from a new report that Child Trends is releasing along with USAID and FHI360. We are going to be off the record at that point, so you can be totally free in whatever you want to say. Then we'll be moving into discussion with all of you around how can we move from, sort of, research and discussion as a research and practitioner community into getting policy traction and uptake.

A couple of housekeeping notes. The coffee breaks and the lunch will just be right out there in the hallway throughout the day and restrooms are at the back. So with that, I want to start out just by, you know, posing a question. I certainly have noticed, I'm sure all of you have noticed, although if you haven't, you know, you should feel free to say so, that there is in -- over the last several years there is increasing interest in this idea of soft skills. Lots of people seem to care about it, the media is covering it more, different groups are beginning to incorporate it into their work. I think that's a very, very exciting moment. This idea of soft skills

is certainly not new in the research, certainly not new in different programming pieces around the world, but it seems to me there's a momentum.

The question really to pose are we, as a community, a child and youth development community who cares quite a bit about education and learning, and preparing young people for successful lives and livelihoods ready to move forward and get some big scalable change in the policy arena? I would say from, certainly a policy perspective, that there are three things, at least three things. There's many three things. But at least these three things are particularly important if you want to move into policy uptake.

It's really important to have clear coherent messaging, the first one. It's very difficult for a policymaker, for people who are not experts in this particular field to try to figure out what they should do if they are being approached by different groups with slightly different frameworks, slightly different terms, slightly different ways of talking about

things. And I think, as you'll see in a minute, and all of you would agree, that there is a proliferation of, sort of, frameworks and terms. There isn't, sort of, one coherent consistent message. I don't think we need to all absolutely agree on, you know, the same exact framework, but we need some sort of coherent messaging to people who are external to this room, external to our community.

The second thing that policymakers often need is some sense that whatever they're being asked to do can be measured and tracked. It's very difficult to convince a policymaker to really invest in something if they aren't able to track it over time to see progress. They need to be able to learn from what's happening and make course corrections, as we all do, but they also need to be able to justify ongoing investments, and they need to justify to their constituencies why they're doing this. And so they need to show some way, shape, or form what's happening and what progress is made.

A third thing that I think is, sort of,

central. I would put these are sort of central. Three things policymakers need along with, probably, many other things is they need to feel confident that there are things that can be done to improve what they're trying to tackle. Even if they're not proven in a way that we would consider to be proven, at least some good sense that there are interventions that can help change what they're trying to tackle, what they're trying to do, and that policy levers can help make a difference in what they're trying to change.

So with those three in mind I'd like to just give a brief snapshot of where we, from the perspective where we sit, see, sort of, this field of soft skills. And I should note that we're only choosing the term soft skills because we almost sort of drew a term out of the hat. It's sort of -- we did have a rational, which it seems to be less divisive then some terms, like non-cognitive or various other things. No offense, Professor Heckman. And it's sort of fuzzy, and you can have a lot of different people thinking that they fit into this term of soft skills.

And, in general, people outside of our community have a sense of what you mean.

Although, I have to say we don't love it. It makes it seem like these sets of competency skills are less important, secondary, etcetera which is, I think, the wrong message to be sending. So, you know, snapshot of where we are at today.

So this is really looking across the early childhood, sort of, K through 12 youth development spectrum. So in the early childhood realm, you know, you have lots of different frameworks. You see the six Cs, there's Kathy Hirsh-Pasek at the back, you know, with collaboration and critical thinking. You have the PATH's curriculum which has been around for a long time. You have people focused on executive function and Head Start, and then you have this little arrow coming up here which it moves from early childhood from primary where you have, you know, looking at global citizenship which looks at conflict resolution and all sorts of things.

You also then have, sort of, a set of people

who are really working the K through 12 space. Where you have a whole bunch of different frameworks. You know, Ashoka's really big into one thing. They're very clear empathy. You have growth mindset with Harold Weck. You have the four C's with the P-21. We have Stephan here who's going to talk about that. You have a whole bunch of things. And you'll see similar things coming through. You see creativity, and self-management, and critical thinking, and perseverance.

Here is a list of countries, and Koji, we got this from your report, the OACD compiled this. Where these are curriculum frameworks from countries around the world. And you see they also extensively include these things: social skills, critical thinking, creativity, teamwork, collaboration. Then you have, sort of, the youth workforce development arena, which there is quite a number. You have the step skills. I'm looking at people associated with the bank. You have ONUT and transversal skills and problem-based learning. All sorts of things, and you can also begin to see that there's themes: problem

solving, critical thinking, conscientiousness, self-control, etcetera.

So, you know, what are the messages? Oh, I forgot one. There's also a set of frameworks that are really trying to look across the spectrum from sort of early childhood K through 12 youth development. You have the big 5, Deseco, of course, OACD's famous one a long time ago, Concepts of Metacognition: The Learning Metrics Task Force which us and UNESCO have been involved with and have involved many people around the world.

And so to me what the big sort of takeaways here are one, I don't think we're in a space of clear coherent messaging, yet. And I should say this is a very preliminary mapping. We have mapped about 80 different frameworks, terms, initiatives, many more terms, but 80 different frameworks, terms and initiatives, and we know that there's more out there that probably all of you know about that we should probably put on here. It's useful, I think, to just get a lay of the land, what's happened. And we

certainly will share this with you, and we're going to ask you guys in the afternoon session to please add to it. If you are working on something that's not up here or that your colleagues are working on that's no on here please do add to it. We will circulate it with everybody who's participating in the symposium afterwards. So you have that, at least initial, map.

The other takeaway for me is that I worry a little bit about how siloed I think this discussion might be. There is a large group of people in the early childhood community who's working heavily on this, rightfully so. There's a large group of people working the youth workforce community working heavily on this, rightfully so. There's people working in K-12. There weren't that many folks that we found who are really bridging across. And I do think it's important for us as a community, certainly if we go externally and talk about translating research to action and policy uptake that we are able to present, sort of, a coherent vision of what it means to move from competencies we think are important in early

childhood right the way through to youth development.

It's enough of a challenge how governments are organized in terms of ministerial functions or departments already without us adding to it. You know, early childhood in many countries is split between five or six different government departments. You might have youth be in the ministry of labor, and then you have education in the ministry of education. So already it's a challenge at a policy level to make those connections. So I think it behooves us to try to, you know, lay out a vision on how to do it.

The other thing that I think is hopeful is that there's actually quite a bit of similarities. If you were to lay down and see, you know, the number of times certain things were repeated throughout: creativity, collaboration, teamwork, self-control, tolerance, etcetera, communication. I do think there's quite a bit of, sort of, agreement on a set of things that seem to be important throughout. So to me that's a hopeful sign on being able to get to a place where we as a community can really breakthrough on the

policy arena.

Lastly, I just wanted to end up, because some people have asked me in the hallways at the beginning of this meeting, you know, what are you guys doing on this at Brookings? So this is an issue, this idea of soft skills, is an idea we've been looking at for some time not as a standalone initiative, but with our learning metric's task force work that have involved many countries around the world, particularly thinking about shared measures of learning that could go into the sustainable development goals. So we're interfacing a lot with the UN, and soft skill, particularly social-emotional learning and learning approaches were big features that came out from that task force initiative.

We're also looking at these around how do you scale up in our millions of learning initiatives. So we've been looking at it, but we're now entering -- and I see our Lego Foundation colleagues, entering a partnership with the Lego Foundation to really try to tackle this in a much more concerted way. It's

something that we're just beginning. We would love to talk to all of you about, and see if there's areas to work together. The partnership will really focus on thinking about making an impact at the policy level, looking at skills for a changing world, particularly, looking at two things. Education systems, right the way through, sort of K through 12, although, with a heavy emphasis on early childhood and primary. And secondly, looking at parenting and informal learning, with a particular emphasis on parenting. So we invite all of you to reach out to us.

With that, I want to introduce our next speaker who, I think, everybody knows and probably, Jim, everybody has read your work and you've been, probably, incredibly influential to everyone in this room, so it's a real pleasure and honor to have you. We're going to hear a keynote address from Professor Jim Heckman who, I think everybody knows, is a well-known Nobel Laureate and is the Henry Schultz Distinguished Service Professor of Economics at the University of Chicago.

Then we're going to invite a discussion on the stage with Jim and with Koji Miyamoto who's the project lead of Education and Social Progress at OECD's Center for Educational Research and Innovation, and is leading quite a bit of their social-emotional learning work. And then, Stephan, you'd have the one with three titles. Not last, but certainly not least, we're also going to be joined in a discussion with Stephan Turnipseed who is the present of Emeritus and Executive Director of Strategic Partnerships for LEGO Education, and is the chair of the Strategic Council of the Partnership for 21st Century Skills as well as the co-chair for Biz for ECD taskforce related to the Global Business Coalition for Education.

So that's our plan before coffee break. So, Jim, please do come up.

MR. HECKMAN: Thank you very much for having me here today. I'm looking forward to the discussion and I'm very pleased to be able to participate in it. I want to talk very briefly about skills, and that's what we're really talking about. I've been asked to

give somewhat of an overview, and this is -- I work with Tim Kautz, from whom you'll hear a little bit later in the second panel, but let me just make a few main points to summarize and maybe help frame the discussion.

When Tim and I and others were using the word non-cognitive skills we realize that's a term that's inflammatory in some circles. But I think it's very important in another sense. And that is that there are many important life skills not captured by scores on achievement tests. I think we just look at the reality of what has happened in the last 30 years or 40 years. There's been an obsession, almost, with this. I think a solid focus on achievements tests such as No Child Left Behind, PSA, the Iowa test give a very incomplete picture of what schools, families, and communities do. So whatever we call them we know that there's a lot of other word out there.

I think at one point speaking before the first meeting of the Society of Personality Psychologists I gave it the term dark matter. It's

the part that's unexplored. I think that's still relatively true. In fact, one of the psychologists then later said, we are now the society of dark matter. But that doesn't suggest anything sinister. I'm really suggesting that we have a much broader array, and it's great that we're moving forward.

So social-emotional skills, character, grit, and a lot of these things are very important. Here we are in Washington, more than 100 years now Teddy Roosevelt was president. I think he used the word grit more than anybody as president. You know, we go back to Aesop's Fables. I think the amazing thing is not that we're suddenly discussing this. The amazing thing is that we didn't discuss it all along, and, in fact, we got so obsessed with IQ tests and achievement tests. This is a case where the technology really took over and kind of dominate thinking. I think it's good that we're kind of veering back, and the fact that we have some disagreements now does not mean that these more broad characteristics are not quite important.

So what do we know about the social-emotional skills character? There are a lot of synonyms. I won't go through the definition of the right term today, but I think we know that these skills can be measured, we have measurement systems. We know that they're malleable, and there's a lot of evidence on that, and that they're effective interventions to promote them.

So the term soft skills has been used. Tim and I wrote a paper called Hard Evidence on Soft Skills. I think there really is a lot of hard evidence. I don't think the term soft skills and the like will fade out. Something having to do with personality and character probably will fade in, but that's not my point.

But I think what we really want to also understand is even though we want to try and get some convergence, and I understand that's the purpose of today's meeting, that we want to think more broadly about what these skills are. And I'm not making an attack so much as a suggestion of a broader agenda of

how we might go forward. There are a lot of different measurement systems out there, and I think older measurement systems, which sometimes receive exclusive focus, such as the big 5, do not capture the range of behaviors that exhibit.

I don't know if people know the history of how these personality traits got assembled, but I think back when Murray was first writing these in the 1930s, a psychologist at Harvard. He was using the Webster's Dictionary as a measure. Took all of the various descriptions of what individual characters were. There were, like, 20,000. So the big five represented some great consolidation. But I think we don't want to stop with what was in the past. I think we want to move forward and sort of look at where we stand.

So I think we need comprehensive measures of traits. And I want to try to just remind you of some of the history of educational testing that relying exclusively on self-reported measures or particular measurement systems, I think, really misses great

opportunities. We know that there are teacher reports and assessments as encoded in school system records in interviews. We also know, from a variety of work in behavioral economics and game theory, and other fields, that eliciting preference parameters, observe choices in the field, and in control of choice experiments such as risk aversion, time preference, ambiguity aversion, trust, reciprocity all of these things are empirically important. They help predict behavior, and they're not quite measured by some traditional systems. And I think we need to understand exactly what these measures are all about. I would be more concerned, rather than the name of a topic or a particular skill that we actually be very careful about how construct the measurements.

So I'm drawing on this paper which is a post-it, I think, we've had access to it. It's reference in the larger OECD report that was circulated. So I'll just make a quote here, appeal to authority, and there's Horace Mann who's the man who founded -- many, many people view as the father of the

common school in America. Here we can see, if you read this quote, that Mann was saying there's a lot more to life, a lot more to school than just reading, writing, and arithmetic. In other words, No Child Left Behind was not a good idea. My suggestion is if Horace had been around in 2006 he would have suggested that there was a better way or at least we should think more broadly about what schools do.

But we know of in the modern history of testing, starting with IQ tests, and then moving onto the achievement test that there was a technology that got in place, and we became fixated on these measures of achievement test scores, on measures of what schools do. And so there was a notion that somehow because we wanted broader notions of achievement, things that were not unfair, that didn't depend on grades, that were, somehow, more objective the achievement test came into its own.

But the father, one of the fathers -- two fathers, Lindquist and Ralph Tyler actually back in 1940, this is way back when the achievement test got

going, basically pointed out something that I think has relevance today. If you read this quote he's really suggesting that we should think of much broader inventories other than just the achievement test. This is the person who invested the IOWA test. Who invented the test that became the GED. Who invented a lot of what we think of as modern testing. He and Lindquist.

But a lot of other records are here and, in fact, what's happened is if anything it's become easier to implement these ideas. And Tim, I hope, will talk a little bit about his own work Chicago Public Schools, but, in fact, we know that with the available technology there are much broader ways. And interestingly enough, in the 1960s, when Tyler was asked to make the first test on the National Educational Assessment he actually suggest exactly, suggesting a broader inventory of skills. I think many data sets, many different ways to calibrate and measure what skills are of individuals.

But I think when you look at tests we should

ask the main question, and that's true of every measure that's given. Not, you know, how many factors does it come, and what's the kind of notion of it of, kind of, an internal validity study, but how well do the test scores predict later life outcomes that matter? That's what were really interested in. And prediction, I think, is the hallmark of any success.

So here's a picture I'll give you. It's from work that Tim and I did with John Eric Humphries and we can look, for example, if we look at males you get a similar pattern, not identical for females. That basically, if you look at IQ, IQ explains very little of earnings, maybe 7%. If you ask people who aren't in this room, people who are less informed about these things they're shocked. Many people think IQ is 50% of variability. It's not. Even the test school, and I'll call AFQT, the test scorers, explaining about 17% of earnings. Grade point average is actually explaining more than IQ. We can do similar patterns for hourly wage, hours worked. So we can see that other factors matter.

But what's also important to note is that a lot is not explained. There's a lot of variability that's not captured by any of the measures, including all the measures you put up, Rebecca, earlier today. So what I think we really understand is there's lots of room for improvement. I would argue, I'll use character skills, I'll throw another name in the hopper for you. People don't like character. It sounds very Victoria. David Brooks likes it. But I think -- whatever he is.

So let me just talk very briefly about a couple of programs and then go through. So early childhood programs are, I think, the most well studied. Many of them are quite effective. I think they show the importance of non-cognitive skills. At the risk of boring you, I'll just go through the Perry Preschool Study. Most of you know about the Perry study. It was an early childhood intervention. It began about 50 years ago. Literally, as we are here today early next month we will actually have data on the Perry children at age 50, so we're collecting

data, much richer data by the way, guided by that. I went from being an observer to now an analyst at age 50 in the Perry study.

But one major finding, and this is something that rocked the profession, there were versions of this in Head Start that basically if you look at the treatment group and the control group in the early year. It started at age 3 in entry. The treatment group had a huge surge in IQ, which was the purpose for those programs. Remember, IQ was the be all and end all of Head Start. What happened by age 10 was that the treatment group and the control group more or less caught up. And so that's what led Arthur Jenson to say, you know, that compensatory programs couldn't possibly be effective. There was a whole discussion that was launched 40 years ago. It's all died out, I think.

But I think what we really understood is there were other dimensions. Fortunately, we saw when we followed these people into adult life. These people are getting very high rates of return for both

boys and girls adjusting for all of the standard adjustments, a deadweight loss of taxation and so forth and so on. You get a very high economic benefit. The main mechanism was through non-cognitive character, soft skills, whatever you want to call them, and it reduced problem behavior in children and reduced unhealthy behavior in adulthood.

Fortunately, and I think it was an accident, that we actually got records from the Perry Preschool program on teachers observing the children in the early elementary school years. Very much what Tyler was suggesting. And you can look at things, these are translated terms, the teachers didn't use this, but methods of things like externalizing behavior. How aggressive? There was an improvement example in the treatment group. The scale is in reverse, so a higher number is a better score and also in terms of academic motivation.

But what surprised people, and I think is important to really understand, is that even if you goal is achievement tests that this program, which did

not boost IQ, did boost achievement test. Why? Because it made children more motivated. And so this, kind of, was the tip off. We had a very early tip off that these were important. So the teacher reports on social-emotional skills came in the early grade school years, and it turned out using the Perry data that self-reports and parental reports were far less accurate predictors of what later life outcomes were.

Here, just a completely extraneous comment, but nonetheless an interesting comment, a closely related project on the ABC project with which I'm also engaged now. We found dramatic effects on things that were never thought of 50, 40 years ago. Namely in terms of health. You find dramatic improvements in terms of health among children who actually got treatment who were in the early childhood programs and were subject to these interventions.

I'll just talk briefly about the GED as a case study of the power of character skill. This is a book I wrote with Tim Kautz and John Eric Humphries. Everybody knows the GED test. It's very widely used.

At one point 18% of all high school credentials issued in the United States were actually the GEDs. It's still around 12%. It's a very high number. And what we found when you looked at measures of character skills, the GED is a perfect test in the sense that it's psychometrically valid. It actually turns out that high school graduates and GEDs get about the same score. It correlates with other tests. That's how most tests are calibrated, how it predicts other tests, and here high school students are doing pretty well and so are GEDs.

If you look at measures of character skills, behaviors, and so forth you find that the GEDs are actually much more like high school dropouts. And what turns out is that if you looked at -- I would notice that the measures the character skills were using are based on behaviors in early teenage years. And if you look at what the GEDs do, they're dropping out of everything. They drop out of high school. They drop out of college. They drop out of marriage. So GEDs try college. You can see if you look at these

graphs many of them are attempting college. Very few obtain a four year degree, and that's true for males and for females. And the fact that GEDs are another wage of dropouts. So this is another piece of evidence that these character skills elicited from behaviors, sorted out from early behaviors, in this case, early adolescent behaviors were very strongly predictive of life outcomes and so forth.

So I would just talk about since people have been focusing on -- how much time do I have? Great, okay. So what's the traditional approach to measure? I see many reports, Tom is going to talk more about that, the big 5. In work with Angela Duckworth and some of the work that I've done with Tim and also Almond and Borgons we certainly focused on the Big 5 which is called the longitude and latitude of personality. It's one important development. I don't have to summarize what the Big 5 are here, and this is really an important measurement system.

But I really want to suggest also, from the purpose of today, and maybe this is a kind of discord

you don't want to sow here, but I think we really do have established systems that go on and supplement what we get from Big 5 measurements. And I want to talk about some of the new measurement systems to measuring character and cognitive skills that go well beyond Big 5 and help us fill some of the gap about predicting the behaviors that I think ultimately we all are really interested in predicting.

But let me just remind you of something that Brent Roberts, a very leading personality psychologist with whom we worked -- he's at the University of Illinois, but he's worked with us, with Angela, and Tim, and a group of us at the University of Chicago. And what is personality? I like this definition. We really think about what it is and we apply it systematically. Personality traits are relatively enduring patterns of thoughts, feelings, and behaviors that reflect the tendency to respond in certain ways under certain circumstances. So you're looking for certain patterns. I think the modern finding is that these are not frozen. They evolve over time. They

can be affected by interventions, but nonetheless, that's a pattern.

But I want to make a distinction that may be a little controversial. And that is that I think we're all interested in behavior and behaviors are the best way to talk about predicting future behaviors. The distinction that is sometimes made in the literature is the distinction that comes, like, in this division of knowledge. A distinction between tests and tasks. All tests are tasks. If I take an IQ test I'm doing a certain task. I'm going through and looking at certain relationships among abstract objects. If I take a word test I'm going to be some kind of verbal test I'm asking how much vocabulary do I know and how well can I put sentences together?

And so what I'd suggest you -- and this is important, I think, for not only framing the discussion, but also framing the way we might go forward. When we think about any test or any measurement it's always the measure on a task. So, for example, I find that somebody does predictably

well or poorly on an IQ test and that's the task performance. We know from a lot of studies in psychology that the effort that children put into IQ tests, or any test, matters greatly in what the scores actually are. We can incentivize that. The famous experiments were kids were given M&Ms and IQ tests where gaps between various ethnic groups were essentially eliminated or virtually eliminated.

So we understand that basically in any standardized measurement system it's more than just a matter of coming up with a common name. We really want to think about standardizing for effort, and also adjusting for all the skills that go into the test. What causes successful performance on the task? And so, for example, the IQ test is a great example. I mention the M&Ms where kids were given M&Ms. The kids who got M&Ms for each successful answer on an IQ test did much better on that performance of that particular test than kids that didn't get M&Ms, and it closed the black/white gap in IQ in that particular test performance.

But it also turns out that those kids who are more conscientious and more highly motivated were less incentivized by getting M&Ms. This is a fundamental problem with measurement that has to be addressed. I think it's more important, actually, than putting down the name. And we know that kids walk into a test -- so we need to standardize much more than in the past. I think we need to really come up with measurement systems that actually allow us to essentially adapt the structure and to understand that all tasks involve multiple talents. That's why there's no such thing as a purely non-cognitive skill. Everything that we measure is basically, okay, is basically a combination of these character skills and we need to sort these out, and there are ways for doing so. I hope we get a chance to talk about that.

So what I would say is there are broader notions of personality that actually have been tried out. It's not just a matter of aesthetic appreciation here. These are things that actually help predict labor market behavior, performance and so forth.

Things like risk aversion, trust, empathy, ambiguity aversion, time preference, positive and negative reciprocity, and these are predictive of numerous live outcomes. And what's interesting, is the correlations between these and some conventionally systems like the Big 5 are really pretty week.

There's work by Armin Falk, I'm not going to get a chance to get over it, but basically suggesting, not to say the Big 5 is bad, but to suggest these other traits are also giving broader notions of what are giving as successful predictors of human behavior. So I think there are better and more easily implemented way to measure personality. For example, we know that grade point average, which was the enemy back 70 years ago when people were talking about achievement tests. Turns out to be a much better predictive of success in college than SAT scores. Bill Bowen and Jingos and MacPhearson have shown that.

And we see that grades capture personality. Here I'll just show you a study very briefly. But if you look at the measure of grades we gave some tests

to some children in a Dutch elementary school. If you look under grades you'll see basically that IQ is an important -- there's basically IQ, Big 5, and grit together are very important predictors of grades. QI is a fairly week predictor, and you can see that the Big 5 and grit are much more predictive.

In fact, I think that grades are actually a pretty good measure of how serious and conscientious people work and they're available from schools just in records. And so COUTS, I hope you'll talk about this Tim, I'm shorting your work here. But basically, if you look at predictive validities of who graduates from high school in Chicago the things like IQ or things like some of the cognitive measures aren't so strong, but you can look at the R squares, and these are pretty high predictive measures. Much higher, by the way, than anything that had to do with the earnings that I was showing you earlier. They're basically showing the grade point average, things measured early on in the school career are very good predictors of who finishes later on. These are

important indicators.

That's a task. Showing up on time is a task. The famous Woody Allen line about, you know, 80% of success is showing up. I think that's captured, in fact, by the success of looking at these measures early on. And they're other counter parts and other data as well. So I'd say the early behaviors are predictors of later behaviors.

Here, since I'm running out of time, there's a large body of work that suggests if we start looking early in life, like in early adolescent years, 13, 14, 15 looking at behaviors. A recent paper, that I find a little bit proactive, is who became a successful entrepreneur? So if you ask who's a successful adult entrepreneur it turned out that the kids who at 13 and 14 were the ones who bent the rules, they didn't go to prison, but they kind of thought outside the box. They didn't completely conform. The ones who didn't quite fit in turned out to be the ones who successful entrepreneurs. So I think we can look at these behaviors, and this is just an important source of

inventory. I'll skip over this.

So character can be fostered. We have this OACD report and the other reports that you've seen. I would just say, since I was asked to talk about early programs or talk about what can be measured. We know that early programs can be effective. There are adolescent mentoring programs that are effective. Adolescent programs are less well-studied, and the evidence is somewhat mixed, but I would argue that when we look at mentoring I would just say instead of talking about individual programs we should relook at basic principles underlying all of these programs. We should really understand what does an early childhood program have with what parents do, with what mentors do. And it's what people in early childhood, we call scaffolding, what people in the later adolescent call mentoring is this process of one to one interaction. That is the common theme.

I think when you look at what successful programs are they should be measured in that success metric. I think it's a huge mistake in the

literature, especially in early childhood programs for reasons that many of you know where people are advocating this program or that and saying unless we have an RCT of the specific program, you know, it's worthless. We can't proceed. I think we extract general principles. And I think the principles are parenting, scaffolding, mentoring. And those are the common principles that lead to successful programs. If I were to summarize the literature, I realize this is a very broad brush. Rebecca, if you want a more detailed summary I'll give you another hour's worth of lecture, but I'll stop.

So what I think that's important to know though is that, and Tim and I in this paper that I showed you. It's available from OECD. Essentially look at a variety of programs, hundreds of programs, actually, and we show that if you just look at them in terms of what their success is, a lot of short term evaluations. Not many long term follow ups. And there are a lot of lessons that can be extracted, so let me just summarize since I've run out of time.

There are many important life skills not captured by scores on achievement tests. Hence, non-cognitive tests. Cognitive tests, I think, have received too much importance. I'm glad to see they were slowly pushing away. Social-emotional skills, character very important, and we can measure these skills, and we have much broader inventories. From school systems, from observations. Not just self-reports, which can sometimes, especially in the early years, be very inaccurate, but parental reports and the kind of things that Tyler was talking about way back in 1940.

We also know, and I think this, to me, is a very encouraging sign is that these non-cognitive social-emotional soft skills are more malleable into the later stages. They seem to be. It's not that you can't teach people more facts. You can teach people more tools. Raw IQ tends to be much more rank stable. That's the point. Then there are a lot of other systems that I think we can fruitfully engage in, and so to go forward today I really look forward to the

discussion, and I look forward to hearing the other presentations.

But I would just ask you to think, maybe a little more broadly, a little more exclusively, and maybe a little more generally about a particular system of some broad general principles. So thank you very much.

MS. WINTHROP: But also could you tell us about your work at OECD, and particularly your insights about changing education systems, formal education systems?

MR. MIYAMOTO: Right. Thank you, Rebecca for the introduction and I would also like to thank the organizers for inviting me to this event.

So first of all, I think Professor's presentation clearly provides a very intriguing synthesis of the powers of social-emotional skills or soft skills and the difficulties of measuring them. I think we'll have all day to discuss all these issues. But, from an education perspective, I think that's what Rebecca asked me to really focus on. From the

education perspective I think there are three important policy messages and implications. Many of them have already been emphasized by Professor Heckman's presentation.

First is that soft skills are malleable through childhood and adolescent. And not only schools, but also families and communities can play an important role in fostering these skills. This is one important implication.

The second one, as Professor Heckman said, soft skills can be measured, but relying on some of the traditional methods isn't good enough. That's pretty clear. And so we need to better measure. But, you know, perhaps I should also add that in order for an education system to actually engage we need to have measurement systems that are implementable, actionable. I see that in some of the very important leading measures that are out there. It's actually quite difficult to implement in schools or the teachers to do, so.

The third important implication is that soft

skills or social-emotional skills can bring wider benefits to the individual and the society. I think, of course in the focus of this discussion is on the impact on soft skills on workforce success, but soft skills bring a much wider impact on individuals' lives in the society. Has a strong impact on health, civic engagement, and well-being, so I think we should very well take into this note why the benefits count during the discourse.

So I actually wanted to go back to some of the points that Rebecca was making in her first presentation. So there's an emerging evidence pointing to the need for policymakers and practitioner committees to highlight the issues around soft skills. Now, but are these stakeholders really ready to translate these evidence into concrete actions, so that's really the heart of Rebecca's first presentation. So my tentative conclusion is that, you know, we're not there yet. Not there yet. And let me offer five very short reasons behind it.

The first, obviously, because, you know, the

policymakers and education practitioners have very limited know how on ways to foster these soft skills. I must say, you know, before I started working on this issue on soft skills several years ago, I had really naively thought that one of the reasons for -- on the investment, possible on investment in soft skills is that these stakeholders, you know, policymakers and practitioners didn't quite understand, you know, the real power of soft skills, and that they didn't quite understand some of the key dimensions of soft skills that drive children's life and success. But clearly I was totally wrong. I mean, the more I talk to different policymakers, including ministers and superintendents, teachers, and even employers the more I understand that all these stakeholders actually understand very well the powers of soft skills. They even have a pretty good idea about different dimensions of soft skills that drive children to a lifetime success.

And these dimensions of soft skills that they acknowledge are actually very much in line with

the evidence based as presented by Professor Heckman. And also as described in the Child Trends report which I found a very good report, excellent report. So there's a lot of understanding, actually, among the stakeholders, but what's really missing is I think some of them don't seem to have enough information to actually implement that, you know, to actually work to enhance these soft skills or social-emotional skills. So we need to work a lot there.

Now the second reason that hinders translating evidence into actions is that many of the existing measurement instruments are not only limited in their construct coverage, but also administratively challenging to be delivered in schools. This is a point I just made before. From the education perspective, I'll just focus on the last point, it is really important that, you know, that the existing measurement tools are really -- I mean, can be delivered within a limited timeframe that, you know, typically teachers, schools have.

When I ask teachers or superintendents to

deliver some soft skill measurements they always say, well you have a maximum of 45 minutes to measure soft skills and many, many other background items. So the amount of time we have, actually, to deliver these measures are really limited. So that's one constraint. There's also technical requirements. It's very difficult to actually deliver, use this kind of device, iPads, although that would make it more efficient to deliver or measure soft skills.

There are also ethical concerns about assessing certain types of skills, especially soft skills. There are some countries out there in which teachers, policymakers, are quite averse to researchers coming in and assessing children's personality traits, soft skills, especially when they feel that it has some diagnostic nature. So there's a lot of challenges out there in translating evidence in tractions.

The third point, which I think is very important, is that there's a false notion, at least some hold a false notion that focusing too much on

social-emotional skills, soft skills, may hinder our academic learning. And look, in this audience, I mean, you clearly understand this is not the case, but when we really discuss these issues about the importance of doing more to raise soft skills many, many of these stakeholders still come back to us by saying that well, you know, our core business is in raising academic skills, so we want to secure enough time. But thanks to the latest evidence, including those by Professor Heckman, we know that soft skills actually foster and compliment the development of academic skills. So I think we need to, you know, really emphasize this key message. We've also done at the OECD using Korean evidence-based measures like responsibility, locus of control, drive, Korean children's academic development.

There's another false notion or false point that prevents translating evidence into action. This is a notion that social-emotional learning requires a -- you know, drastic changes in the way that schools are organized or, you know, in the drastic changes in

the curriculum so that, you know, so that these activities, new activities can be implemented. What we find out when looking at some of the successful practices is that, in fact, you know, one could start implementing these social-emotional learning formats by adapting school practices at the margin by adapting, you know, the school climate so that, you know, each players in schools are more compassionate among each other, for example, or giving mutual respect and care, for example. There are many other ways to enhance these social-emotional learning. You know, really at the margin. I think we should start really at the margin.

The last point I wanted to make, and this is another hindrance, possible hindrance, to translating evidence into action is that there's an insufficient recognition of the wider benefits of raising soft skills. And this is also a point I had made earlier. So, I mean, we know, especially this committee, knows that soft skills plays an important role in raising workforce performance, labor market outcomes.

Now, even that, the evidence around that should be sufficient to trigger more serious engagement in soft skill development, but what we also find out, and many evidence shows the impact of raising soft skills has a significant impact on health outcomes, civic engagement, reducing crime, and also well-being. And if you quantify all that I think the impact is tremendous. And if stakeholders understand, you know, this wide effect of soft skills not just on labor market outcomes, but there's a variety of social outcomes I think this could help change the dynamics of the discourse. I think that's a very important point I wanted to make.

MS. WINTHROP: That's perfect. We'll bring you back in.

MR. MIYAMOTO: Okay. Good.

MS. WINTHROP: I had one quick question for you. I really loved your comment about, you know, often times teachers, principals, policymakers are very, you know, think very favorably about soft skills. They think it's important, but when push

comes to shove, certainly at policymaker levels, superintendent level, the idea is that actually investing in support soft skills cultivation's going to take away from academic success, and that there's some sort of hierarchical rank order. I've seen that a lot.

I wanted to ask really quickly for you to clarify. You made mention, and I haven't experienced that myself, maybe others have, that there's some countries around the world that actually in principle don't like the idea of accessing soft skills because there's somehow diagnostic of personality or something. But what was that all about? Could you flush that out just briefly what you meant by that? Like, what were their reservations?

MR. MIYAMOTO: Right. So the example I have was when discussing with the Norwegians. The fact that it is, for the Norwegians, it's more the adverse attitudes towards testing in general. In general. Especially for the young children. I don't think they have any assessment, even achievement type of

assessment until grade 5, if I understand correctly. So for these countries it is absolutely difficult to deliver these kinds of tests.

My understanding is that for very young children, you know, age 12 I would say, I mean, these are just way too much, you know, to allocate time, you know, the precious school time on diagnostics. That can be just pushed forward much later in the year.

MS. WINTHROP: Interesting. Stephan, I want to bring you in from the business perspective. Both sort of commenting on Professor Heckman's vision he laid out and the issues he put forward, but also, you know, from someone who's worked quite a bit with businesses around the world and coalitions of businesses who care about this. You know, what is the business perspective on all this? What would you guys think needs to happen to translate research to action?

MR. TURNIPSEED: Thank you, Rebecca and thank you for inviting me to be on the panel and certainly thanks to all the work you all are doing in the room to support and lift this very important topic

up, and certainly for the work, Professor, you've done and Koji as well.

The business community is broadly the consumer of the output of education. And as a result of that consumerism we generate value, we hope, for the economics in which we support and economies in which we live. One of the challenges that we've seen over the last 20 years or so, plus or minus, is that a lot of the things that we took for granted, these success skills, these so called partnership for 21st century learning. We called them the 4 Cs or the soft skills or these success skills that we have taken for granted as coming to us really aren't coming to us any longer. We find children that are -- workers that are coming in very much attuned to a test input/output mentality. A one right answer type of mentality, which is an unintended side effect, I suspect, of well-intended legislation for high stakes testing.

But the notion of one right answer is just not working. It's not working today and it likely has never worked really well. And in the past, in the

systems that we had in the past in the current educational system which is very much of academic manufacturing system it did a really good job. The system does exactly what it's designed to do and it does it very, very effectively. When I went through the system, quite a long time ago, you could accurately predict, more or less, what I could go do. I was educated as an engineer, and as an engineer I could embrace a certain body of content and work through that content and it could, more or less, predict what I would be doing 5, 10, 15, 20 years out. That's not the case any longer.

The ability to learn and operate with a single body of content is just simply not the world our children live in. Think a little bit about technology. I'm not going to stereotype and say all in here, but I will say many in here will remember a time before there were certain things like pagers. Some people might be wondering, what is a pager? I remember, frankly, because I grew up in rural Alabama. Not before the invention of telephone, but I remember

before us having a telephone. And so we were not technologically deeply connected in the part of Alabama that I lived in.

Today, if you look at a child today, they're living in a world that is technologically rich. And this technology, while it's not the source of change, it is an accelerator of change. That acceleration of change has outstripped the ability of the current educational system to deliver the worker that we need. The citizen that we need. And it's not just the worker, by the way, you know, people often times assume that all business and industry want is a worker who can produce some type of economic value that generates the profit for the stakeholders and for the stockholders and that sort of thing, and that's really not the case.

What we need are workers who can anticipate problems we've not thought of. Who can creatively solve those problems. Who can work together in teams. Who can collaborate, and who can communicate, sometimes very technical things, to very non-technical

individuals. And we're just not seeing that. And part of the reason we're not seeing that, I think, is that a lot of the places where we learn this, and thing about these so called soft skill, if you really reflect upon that, where did we learn how to get along with other people? Where we learned about playing in a sandbox and playing at recess? How many people remember recess?

MS. WINTHROP: Exactly.

MR. TURNIPSEED: It's a big deal. By the way, they don't have recess in schools any longer. It's almost taken away. They don't have recess. They don't have organized play in many cases. Most of businesses interactions now have been engaging with the afterschool market. That's where most of our money goes is to support afterschool activities, beyond school activities, because that's the place where children are presented with contextualized problems that they're deeply passionate about. And they come up with remarkable solutions, and they communicate, and they collaborate. And when we look

at that we say that's the kind of people who will be successful in whatever our industry happens to be.

Now, it doesn't mean that they should not be academically competent and should have skill sets and knowledge bases that come out of the academic world, and they shouldn't have all of these types of things. But it does mean that that alone is not sufficient. In fact, many large companies, and you've seen them now, have simply given up looking at academic results. They're just not interested in it. They bring workers in, they give them a problem, especially in an area of computer science. They give them a problem and if they can solve it in 20 minutes or less with a unique and creative solution, and they can interface and work and get along with people they get hired regardless of what their academic results are. Google, for one, has stated it. That's something they're looking for.

So when business and industry looks at this we, while there is a need for common language, we deeply understand that because it allows you to talk to policymakers. And at the partnership we use this

notion of four C this creativity, critical thinking, problem solving, collaboration, communication it's easier to remember. It's got a little cache for policymakers and it works out reasonably well. I think it's necessary to get that common language. However, seen from business and industry that's not the imperative for us. The imperative for us is getting an output. We need an output. We are in deep trouble.

The demand for creative solutions is outstripping the ability of the workforce to provide that. A little thing to think about. Some thinking about that, in 2003 there were about 6.2, 6.3 billion people, and there were about 500 million devices, smart devices that could talk to each other. And about half, about 40% of that 6.3 billion people had internet connectivity. And those of you who remember before internet and remember, think about it now, we have enormous productivity gains, automation gains. If you look at what we can do today as a result of connecting people.

The same thing happens when you connect devices. In 2015 we've got about 7.2ish billion people, more or less. About 40% of them connected to the internet. We have 25 billion devices who are talking to each other. And the productivity gains from these devices talking to each other our astronomical, and it doubles about every five years. By 2020 7.6 billion people. Interestingly enough, about half of them now connected to the internet through high-speed broadband mobile technology, which will be a reality in the next five years. Which means that all of the emerging economies will now be on the same level playing field with the developed economies. And they will have the advantage of not having a legacy system. They don't have hardwire to deal with, but they still will have the same access. And there will be 50 billion devices talking to each other.

The gains in what we can do from manufacturing. The gains from what we can do from business and industry will demand a different type of worker. Because the devices will be instructing the

worker as to what's wrong with them. And so, guess what we'll use robots to fix most of that. What we need is people thinking about what new things can we create? What new places can we go? How can we solve these grand engineering challenges? And that's not going to come from memorized content of the past. That's going to come from innovative, creative, critical thinking, problem solving, collaboration, communication which are things that, while they might be measurable in the soft skill world, I don't know is -- I am the least degreed person up here which is why I have the most titles. It's sort of my ability to gain some sort of credibility for being up here, you know?

But we have to sort or recognize that while all of that's important we deeply need to have an output which means we have to look at educational system much, much differently. When we were 11.5 billion people how do we engage with education and how we engage with society will be and must be remarkably different, and business and industry recognize this.

We're on the bleeding edge of this. So that's kind of how we're looking at it.

MS. WINTHROP: Thank you, Stephan. Your last or second to last point about, sort of, the pace of technology change I think is particularly important because some of the discussions, certainly in the global development space is well, you have that technology, but that's really just in, you know, sort of advanced economies. It's totally different out here in Africa. But your point is yes, it's different today, but it's coming. It's a question of time.

MR. TURNIPSEED: We're almost there.

MS. WINTHROP: But I did actually have a question for you, Jim, based on Stephan, what you said. Do you think -- because Stephan, you're talked about companies sort of not even looking at GPA doing, you know, sort of competency-based tests for recruitment. And I can see why that could be important and good, but Jim do you think they're missing a truck? You just presented how GPA is actually a pretty good indicator or sort of proxy for

some of these other skills. I mean, what would you say back to Google?

MR. HECKMAN: Well, I think it's a predictor, but I think the kind of test that he was talking about and the application of how people would actually solve a problem is probably much more relevant for Google. I think it is an extra piece of information. I mean, the history of GPA was really that, you know, viewed as a biased measure, even though I don't think that's really correct in most cases because you can average over, you know, the anomalous teacher. But it does measure these traits, so I think they are missing a dimension.

But I think also Google is also probably not looking just at the SAT score or the IQ or a lot of these other classical dimensions. They really want people who perform. I think that's the right test.

MS. WINTHROP: The right way.

MR. HECKMAN: The right way to ask is what curricula can we have that will actually make for successful people? And I think that has not typically

been the question asked of many educators of people who are coming up with measures of tests, so.

MS. WINTHROP: Stephan, and then we'll open it up to audience questions.

MR. TURNIPSEED: And to that point, asking the right question is really what business and industry have been trying to get their head around is what is the right question? Is the right question how do we measure all of this? Is the right question what do we need to prepare children for? What is the right question? Because for us, the right question for us is how do we think about a globally prepared workforce that operates in a global economy that creates value for society. Because that's kind of what we help do along with governments, NGOs, and others. It's all about trying to create value for society and how do we manage to do that.

This right question, you know, is really, in some cases, it's better just can you fix this and can you make it work? Or in other cases it may be a much deeper question. And I guess I would suggest, at

least at this point, that part of this right question is are we focusing on the right thing? Many times we tend to focus on the educational process, which is an adult-centric model. If you focus on children, I have profound belief that children actually do know what's best for them. If you just ask them.

MR. HECKMAN: Be careful.

MR. TURNIPSEED: Well, in some cases.

MR. HECKMAN: Up to an extent.

MR. TURNIPSEED: Up to an extent, agreed.

MR. HECKMAN: I mean, there still is a role for parents in there.

MR. TURNIPSEED: There is. No, no. I don't want to say that, but I think they do have a -- you're right about that, especially since I've got grandchildren now. But I think that we've not engaged children in the educational process. We've done education to them.

MR. HECKMAN: Right.

MR. TURNIPSEED: We've not engaged them. And when they come into the world of work, the very

first thing we do is engage them in the process to say how do you work best in this environment because we're --

MR. HECKMAN: Yeah, but see --

MR. TURNIPSEED: -- it's necessary that we do that.

MR. HECKMAN: No, but see you're getting to something that I was trying to hint at in my own talk and that is when you think about education, and I think the typical notion of education and the typical notion of a lot of these educational interventions is kind of like a teacher in front of a room --

MR. TURNIPSEED: Exactly.

MR. HECKMAN: -- standing and lecturing.

MR. TURNIPSEED: Exactly.

MR. HECKMAN: There is this notion of this one way flow, and yet everything about successful education whether it's -- I would call parenting, education, mentoring, whatever is this interaction.

MR. TURNIPSEED: Exactly.

MR. HECKMAN: And it's the process of

interaction. I don't think that has to be the big change that we think more about this process of interaction.

MR. TURNIPSEED: Exactly.

MR. HECKMAN: Because it's interaction they're going to go into.

MR. TURNIPSEED: Exactly.

MR. HECKMAN: And it's interaction that creates these skills, and it's interaction. But this suggests, really, a pretty radical, in some ways, conception about what education's about. Instead of somebody who gets, like a B.A. and Ed degree who can then kind of give a set of prepared lessons, you're talking about somebody who can interact and challenge --

MR. TURNIPSEED: Right.

MR. HECKMAN: -- engaged a student.

MR. TURNIPSEED: Exactly.

MR. HECKMAN: And then the second part would also be somebody that can take an inventory of that student.

MR. TURNIPSEED: Definitely.

MR. HECKMAN: And provide multiple, you know, multiple descriptions of that student. And the only thing I would add to your very interesting suggestion would be maybe we might also want to think about the fact that, you know, there isn't like a single universal skill.

I mean, one of the things I see in some of the papers is we want to come up with a single score or a particular measure. Life is very heterogeneous.

MR. TURNIPSEED: Yes.

MR. HECKMAN: There are multiple tasks, so the very trait that makes for a good research mathematician probably makes for a very lousy door to door salesman. And I think we should really understand that. That there really are multiple traits, multiple tasks, and we think about those inventories. We want to use the broad range, right?

MR. TURNIPSEED: Assortment.

MR. HECKMAN: But that involves this thing. And the only -- I'm going on too long, but this thing

about play you said is absolutely important.

MR. TURNIPSEED: Absolutely.

MR. HECKMAN: It's amazing that again we somehow -- it's the self-focus that somehow -- No Child Left Behind became the ultimate pathology, right?

MR. TURNIPSEED: It did.

MR. HECKMAN: We got rid of even physics and music from schools because, you know, we wanted to get these test scores out there, and we just stripped away everything that was valid about education, useful. The thing that Horace Mann was talking about, I mean, it's commonsense, but I think what's going to happen when we look back on the 1960 era to roughly this era here we're going to say for about 40 or 50 years American society, and probably world society, got caught up in the throes of cognitive psychology and thought everything could be boiled down to a test and then everything 50 years later, as we improve and escape this trauma, was we understood a much broader notion of human skill and what the purpose of

education was about. I think that's all we were saying here.

MR. TURNIPSEED: I fully agree with you because that's where the workers were coming to us before with all that.

MR. HECKMAN: Yeah.

MR. TURNIPSEED: I must say, it's a great mystery to us when we put five people in a room all highly educated and they sit there and look at each other. They don't talk. They just, you know, and then you give them a task and then they do things different. It's not that they're not smart people. It's just they don't realize -- and then you say, look. This is how this looks, and the learning curve is so rapid, because humans like to do this, throw something in there and let them play with it, 30 minutes we've got them back to normal again. So it's not like it's a trauma that's not overcomeable.

MS. WINTHROP: Koji, let's bring you in here because basically I think there is a really interesting supposition that you brought up in,

perhaps, not so directly about, you know, changing how learning looks like. If we can change how learning looks like in the education system and look at, sort of, people like to call it hands on, minds on learning, playful learning as sort of a symbol for the types of learning we're talking about that can cultivate these heterogeneous skills.

One of the things you said in one of your points was we have -- if we want to make that shift we have to make school systems and policymakers feel like they can do it in a way that's not, like, completely abolishing everything and starting afresh. How does one do that?

MR. MIYAMOTO: Right. I mean, well --

MS. WINTHROP: Like realistically, feasibly? You know, what's the, sort of, breadcrumb path of change there?

MR. MIYAMOTO: Well, I mean, Professor Heckman just mentioned about this traditional teaching method of one teacher, you know, facing the whole students. So, in fact, you know, I just came back

from Japan two weeks ago just to put my children to Japanese schools. I have experienced, you know, how things were taught 20, 30 years later than I had experienced and I was quite shocked. I was actually shocked that some of their math teaching classes were exactly the same. There's actually no -- so there was a teacher giving a one-sided lecture. This is grade 2, so about 7 year old students.

So clearly -- I mean, I didn't mention that to the teachers there, for good reason, I suppose. But clearly, I mean, one could involve much more interactive way of teaching math skills by allowing some children to become the leaders of the discussion. To bring, you know, more concrete experiential subject in math teaching and learning by solving concrete projects, you know, through math learning. So there are many ways to do that at the margin.

I just wanted to add that, you know, since I was a bit critical to the Japanese schools, I also discovered many important ways for them to enhance their social-emotional skills or soft skills which is

actually -- in Japan they employ extensively the informal learning, so this is outside of the territory. What they do is that, for example, all the kids participate in preparing lunch. So they form a group, they're responsible, and they deliver. So, you know, there are many activities like that informal learning opportunities out there in schools where children could actually interact, think, solve problems, come up with new ideas, and that's another way to, I think, in which school systems improve soft skill development at the margin.

MS. WINTHROP: Great. We have five minutes left and I just want people to pose some questions that we can continue on in the coffee break and continue on in the next sessions. We have two questions all the way down here. Elena, if you could come down here and then two questions over here. The front of the room is very eager. The back of the room is digesting. Okay.

QUESTIONER: It's self-selection.

MS. WINTHROP: It's self-selection. If you

could keep it brief. And again, we'll just pose and then we'll talk, you know, and please do introduce yourself.

QUESTIONER: So on the policy side of things, is that not something that should be looked at in a deeper way? Shifting our systems or measuring learning not only on the creative side of things, on the non-creative, going on the soft skills or character skills. I'm not sure yet what should be used, so just a question in terms of how we can push a little bit on the policy side of things or should we go to the Norwegian way. Maybe we should not test so much or at least not in the first year. Would not be my first approach, but I would like to hear the panel about that.

MS. WINTHROP: We had Rachel.

MS. HINTON: Hi. I'm Rachel Hinton from the Department for International Development in the UK. My question builds, actually, on Jemark's. I mean, as an anthropologist myself I warm very much to James Heckman's recognition of a broader need for using a

range of methodologies to look at what children are learning.

I'd just like to hear from the panel about any interesting, kind of, initiatives for measure these soft skills. How far have we gone? How far do we have to go?

MS. WINTHROP: And we have one last question in the pink.

MS. CAMMAGE: Bran Cammage Future Work Consulting and FHI360. Professor Heckman, thank you very much. You mentioned mentoring as a way to foster these character soft skills in the workplace. Do you think that employers should consider mentoring as a way to bring their young workers to full productivity, and to the level that Stephan was sharing with us they expect?

MS. WINTHROP: All right. So it's a little unfair of me to say to raise questions and not answer them, so I've changed my mind. I'm adaptable. Could you, perhaps, each of you just briefly answer and then we'll -- we have about two minutes left. Then we'll

close to coffee break and I'm sure they'll be a lot more questions people will come up and continue the discussion. So a quick, brief answer. Anybody want to go first? Any question, up to you.

MR. HICKMAN: Let me -- I was asked a question specifically. This idea of mentoring, I mean, apprenticeship programs and programs that are linking school and work and kind of engaging the person that's a form of mentoring. The successful versions of them. So I think that's already in place.

And in terms of this question about how we might come up with measures in terms of policy relevance. I mean, look, there used to be -- you're going back to your school days. I remember my own school days when there was a grade in deportment and so forth.

MR. TURNIPSEED: Yes.

MR. HICKMAN: And that's exactly what Tyler was saying though. There are these broader inventories that have already been there. And they're there in the teacher records. What really I think

happened was the view was somehow if we had an objective measure, we get rid of all the subjectivity of involving the teacher. But that throws away a tremendous amount of information.

And so, Tim, I hope, when he talks later today is going to talk about school records. I mean, that's a little less personal in the -- kind of the teacher inventory of having a look. But I think that can give you some way to essentially say, well, how many kids are absent? Are they showing up on time and so forth? I think there are inventories that we can have, and it satisfies your feasibility. Schools are already collecting these data. Schools are already doing it. It's not like we need to have some brand new test and put them under an FMRI and spend millions on each students. They're readily available, but there's been a barrier in the past somehow thinking this was administratively unfair and that somehow the objec-, so that, I think, is the barrier.

It's more this barrier of say can we use what are 'subjective measures' averaged over correctly

and aggregate them? And I think we can. I mean, I think there really is available information to do that. So I am optimistic you can actually use what information is there. And, of course, you can supplement it. I'm not saying it's all there, but I think we can come up with records of how many children are actually showing up and, you know, behaving in certain ways.

I think there's been this barrier that people have created, right? Somehow talking about behavior gets very close to saying how you should behavior. I think there really is a difference that has to be made in this area. I think this gets into -- so when Emarch Sim and Martha Nussbaum talk about capabilities there's a very fine line. And the very fine line is, is this the way the person should be? So we want every little boy and little girl to do this, this, and this, some cookie cutter model. But I think that's not what we're talking about. We're talking about skills that enabled people to be whatever they want to be, to give them the capacity.

So, you know, self-control and some of these values like cognition, self-control, the ability to regulate yourself in various ways. That's not saying that you're supposed to, you know, save 50% of your income each paycheck or something. But what it is saying is you have the capacity to sort of imagine doing that as opposed to being kind of unrestrained and violent and being unable to -- so I think that is a delicate issue though, right? You know, do we want to talk about behavior. You know, behaviors are very useful indicators, but I don't think we want to come along and say there is an ideal behavior. So you want to separate out, kind of a model, and I think that gets into some of the political sensitivity, does it not? When people talk about, you know, you want my kid to be a certain way. No. I mean, being neurotic may be good or may be bad, I mean, it depends on the task. And that's the point.

I think that's the important thing is I'm an economist. You talk about comparative advantage. That's what life is all about, multiple skills, and

people sifting and sorting, and you really want an inventory of those skills because there's so many tasks that require these skills in different mixes. So that's why I'm really suggesting an inventory. Not a score, not a PISA score, sorry Koji. But not a single PISA score and say, ah, Shanghai. We were with Saks, right? Saks --

MS. WINTHROP: Yes, yes we were.

MR. HICKMAN: -- made a demented statement in Korea saying, you know, oh, the reason why South Korea's doing well is it has great PISA scores. And I told him later, I didn't get a chance in the session to say, supposed the South Korean labor force move north to North Korea, kept the same PISA scores what would their productivity be? There are a lot of other factors that matter. And that's the point. We want to be able to essentially sift and allow this heterogeneity of views, so okay. Enough. Sorry.

MS. WINTHROP: Thank you. No, that was great.

MR. HICKMAN: I know. Too long though.

MS. WINTHROP: Not at all. Koji, what about the -- Koji and Stephan, what about the questions around national assessment systems, national exams, or kind of the tail wagging the dog of assessment systems, and which path do we go in terms of shaping that? And the question about a lot of kids around the world are not even mastering basic literacy and numeracy skills. How does that figure into this discussion? Either one of you.

MR. MIYAMOTO: I'll start with the last one. A lot of children around the world, indeed, there's still many children around the world who are in that situation. Just to give you an example, in a country where I've been in Bogota, Columbia they're still many people that doesn't meet the very minimum basic literacy. And I think what they're trying to do, this is the (inaudible). They're trying to actually mobile this social-emotional learning to impart help the learning of the core skills.

They're not only integrating those social-emotional learning principles in these basic

curricula. They also try to integrate new citizenship curriculums and many other different approaches to development, so they can be complimentary. I haven't seen really the results yet of these novel work, but, again, the principle is that these soft skills would help, actually, children achieve cognitive development, to meet the basic literacy. I think that's sort of the principle that we're hearing.

So in terms of assessment systems, that's a very difficult question. My sense is that with the current state of the measurement of soft skills or social-emotional skills I mean, we may not be in a situation where we can integrate this measures as, you know, as, for example part of accountability, you know, to evaluate whether schools are performing well, whether teachers are doing what they're supposed to do. Many people ask us, you know, whether we should also implement social-emotional assessments. I mean, our honest view at this point is that we're not sure if we're there yet.

On the other hand, what we can do in terms

of social-emotional measurement is to introduce these in existing measures. You know, some of the very useful measures that Professor Heckman had described we can use that for formative assessment purposes, you know? To allow teachers and schools see how children are developing some of the key capabilities that matter.

So I think measurement can be usefully employed even at this stage for this type of purposes, but we're not so sure if we can use that, use this measures to assess, you know, to have a comprehensive assessment of schools or individuals to see how they -- you know, whether they have achieved a certain level of social-emotional skills.

MS. WINTHROP: Thank you, Koji. Stephan, last word.

MR. TURNIPSEED: I think the notion of a broad assessment that at least proves on some level that statically systems are working in a reasonable way is a reasonable expectation. In the U.S. we have the NAEP, the National Assessment Educational

Progress, which is statistically statistical variant that's used here. PESA, of course is statistical. You take samples. You don't test every child.

I think the notion of testing every child every year in two subjects or three subjects and then extrapolating that to the whole notion of what the child is worth and how well they're doing is a system that doesn't make sense in any business world I've ever been in. It's not the world that I live in where you take a single measure and then extrapolate it to a large -- to, you know, especially where humans are involved.

And so I think there are places for assessment, and the assessment is different than a test. You know, testing, assessment, and accountability are three different words. Unfortunately, they get moshed together and they get pushed together so that we -- you know, in the industry we test things. How big is this thing? Is it the right size? You know, we assess our employees on multiple points, and then we have an accountability

system which is based on key performance indicators. They're three different words. And when you try to put them all together into one work, into one output you really lose the plot.

Assessment, at a summative level, is something that statistically is relevant, and there is need for that. Assessment at a formative level is something that we have to liberate the classroom and liberate the teacher and the child to engage in because it's an inner personal thing, and it's the idea of recording it that's getting in the way of it. If you just let children and teachers and mentors interact and do what they're educated to do, and do what we normally do is we play and we interact with each other that'll probably work out all right. Many of us in here, and I suspect Jim and I have the same experience, I only took two standardized tests in my entire educational experience. One was the SAT and the other was the ACT. And so robust was my high school that I was never a freshman in college. I got 45 hours of credit and just went right on into the

next year.

We don't see that any longer because we're focused on recording and gathering data, and I'm not sure that it's helpful in the educational process. And to this question of emerging economies and fragile economies, they're over 250 million children who are either not in school, 50 million or 200 million who are being undereducated. And this speaks to a profound lack of capacity and capability within the educator, and who the educators are, and our ability to lift them out. And technology, this broadband technology, because the growth of connectivity among human beings will be coming at the benefit of mobile broadband, and our ability to tap into that and create professional development systems, and abilities to interact with not only student, but the teachers is going to be a measure, I think, of how we're able to reach into that very, very profound need.

I will always say. We've got to do it in a very playful way. We've got to let human beings do what they're designed to do. We are the most --

according to many research documents and researchers, we are the most playful creature on the planet, and yet we constrain ourselves through, whatever reason, to being the least demonstrated playfulness in our educational process. That just is not working out well for anybody.

MS. WINTHROP: Thank you, Stephan. I think that's a good closing.

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