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CTs and Accessibility for Persons with Disabilities and Specific
Needs
Inclusive Education For Everyone
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    >> OLAF MITTELSTAEDT: Where is the video?
    >> The world summit on the information society, 2021 has
begun. It's off to an exciting start. Having already hosted
several workshops and sessions since the forum's launch in
January, as well as receiving a record number of submissions for
the WSIS prizes with 1,270 projects nominated. As the forum
progresses, we encourage stakeholders to keep an eye out on our
interactive agenda for announcements about exciting workshops in
our various related special tracks such as the opening of the
ICT and gender mainstreaming track on March 8. The opening of
the ICT's for wellbeing and happiness track, March 15th. The
opening of the ICTs and accessibility for persons with
disabilities and specific needs track, also opening on

March 15th. The high level track will open March twenty-second
with high-level policy sessions. The cybersecurity track
opening the 12th of April and many more such as the ICTs in
youth track, emerging technologies for sustainability
development track, as well as extended reality for SDGs track
all of which you can find more information for on our website.

      In addition to these exciting tracks, building on the title
of this year's forum, ICTs for inclusive and resilient and
sustainability societies and economies are hosting a series of
workshops, including biweekly projects, to use ICTs to respond
to the coronavirus pandemic which will take place till the end
of March. The work of our stakeholders will be displayed in our
virtual exhibitor space. Various other networking and social
events will be integrated into the forum with meet and greet
opportunities, frequent social media post and engagement, as
well as engagement during recognized U.N. days and weeks.
Participation in the WSIS photo contest is encouraged. Submit
your best photos. In addition, registration for the aging
better with ICTs hack-a-thon is now open. Create or join a team
and contribute to building a better future for older persons
around the world. We look forward to your participation. And
thank stakeholders for their contribution in shaping this year's
WSIS forum through our open process. We would like to extend a
warm thank you to our partners, without whom this forum would
not be possible. Thank you. We look forward to a successful
2021 WSIS forum.
      >> OLAF MITTELSTAEDT: Hi. I'm Olaf, and I will be the
moderator for the session. Inclusive education for everyone.
Now, before we start off, I would like to get -- do some
announcement on how we're going to run this one hour session.
First of all, I would like to welcome and thank all the
participants who are joining us today for this session.
      So just straight off, we will take questions through the
raise the hand function. It's in the Q&A that you should see
somewhere on your screen and the chat. Please note that during
the event participants' microphones are all muted. I can unmute
you, so if you would like that to happen, you would like to
intervene orally, please raise your hand. That's also a
function. I don't see you raising your hand, so you have to do
the raise of hand function.
      Once you are given the floor -- yes, I'll unmute you. Once
you're done intervening, please mute yourself again because
otherwise we're going to hear the noises that might be playing
there in the background and it's better for the system to cope
with the least possible audio.
      The session is going to be recorded and you'll find the
link at the WSIS site, therefore, can sort of relisten to it at

any time. And this is the best news of the day, we have live human captioning by the dear Julia.

Right off I would like to thank the team for the exemplary work we're doing over the years in WSIS and particularly to -- in this track which interested me the most. We have today a great assembly of tech experts. Assistive technology experts I should rather say. To start with that, a couple of words.

It has been now for quite some time that assistive technologies has used ICTs and if I look back at the beginning in the 90s that really started to take on, that assistive technologies would use more and more ICT technologies in order to provide a better experience for disabled persons, be it print disabled or deaf in particular. These assistive technologies were embraced simply because they did at least something. But if you remember Stephen Hawkins, the famous scientist who was incapable of speaking and he had this classical computerized synthetic speech apparatus that allowed him to communicate, and once speech developed into more human voice synthetic speech, he refused to change that. He wanted to stick with his old one.

In general, the quality of synthetic speech is judged by how natural it sounds. And we can all wonder why that is, and I don't because it's the better product simply because it mimics or creates the illusion of somebody actually talking to you.

This brings me to -- because you want to have an analogue voice talking to you, and it's the analogue social interaction that is so deeply in our being and the way we learn life and we act, respond out of and in human interaction. And this is -- is becoming now over the years a great part, and the greatest part probably -- I need to do some more empirical studies on this.

Two things. Let's talk about the greatest assistive technology that is presently in use and you are actually looking at this. It's video conferencing has been taking off in this pandemic times like crazy, and yet -- I was wondering about that because everybody's always complaining about it's new, it's new technology, a lot of first time users come to these video conferences and they're struggling with it, partly out of frustration. But I think there is more to be disliked when we video conference and it has something to do with -- I did a little bit empirical research on this. I went to a tutoring site where kids that struggle in school can look for a tutor for a specific subject and they have choices in how this is supposed to happen. They have the choice of either happening at their home or at the tutor's home or online.

Before the pandemic, the overwhelming choice was either at home or online. Now that the pandemic has been raging for quite some time, the overwhelming choice is at home and the idea of a virtual meeting online is practically never ticked. Now you can

say that could have several reasons and you're right. People might be fed up with that, but I think that students have been suffering from online schooling for so long that they're really fed up with it and actually like to do, as teaching has been done and I think it will actually never change, but we're going to be hearing more about that today, from another analogue being, namely, a human being.

So all assistive technology tries to replace the real thing and creating more or less a way to get to each other to understand each other and communicate with each other. And when it comes to teaching, I think this has a particularly value, and in my case, deeply enamored to a little school in New Delhi, which has a four-step program that combines the human teaching, the human element with a lot of assistive technology. What it does, it gets preschool kids who are blind and not -- normally from poor economic backgrounds -- into a normal classroom by a four step process. The first is mobility, Braille, the third is getting to know how to use assistive technology and the fourth is converting the textbook material that will be needed in the classroom in accessible format.

With that, and particularly the teaching of -- the inclusive aspect -- I have to do this. What they're doing in India -- this is not just happening in this school, this is a system or a process that has been going on for many, many years in India. They call it integration and not inclusion. I have a certain idea about why that is and why that isn't. I'd like to turn now over to Madeline Hickey. She is the specialist lead in policy and practice of the National Council For Special Education in Ireland and she knows a lot about inclusive and special education, particularly in Ireland. But you have been a great promoter of better educational outcomes for these students. Please, Madeline. You have to unmute yourself.

>> MADELINE HICKEY: Okay, good afternoon, everybody. And welcome and happy St. Patrick's Day. This is a national holiday here in Ireland. We're all celebrating in green, unfortunately I don't have a green background here today, but we'll manage without that.

I'm going to share my presentation. I'm just not sure if you're seeing that.

>> Not yet.

>> MADELINE HICKEY: Not yet, okay.

>> OLAF MITTELSTAEDT: Yep.

>> MADELINE HICKEY: Great. Okay. So I'm going to speak to you for just about five to six minutes on a piece of research that NCSE, have conducted a number of years ago, but it's still very relevant to today. And just in context of my own background, I'm a teacher, I'm a teacher of deaf students. I'm

now working in the National Council for Special Education, but there are a particular group of students and adults where technology has certainly transformed their lives in terms of cochlear implants, hearing aid technology, in terms of radio waves and FM systems.

Just to give you a brief introduction on what the National Council for Special Education. We allocate support to schools. We're a statutory body at the Department of Education set up back in 2003. We provide advice and supports to both parents, teachers and guardians. And we have an important role in terms of research. We undertake and we disseminate research and we also provide policy advice to our minister and we have a role also that's a developing role in relation to post-school and young adults.

In relation to our supports for schools, we allocate teaching supports and care need supports. We advise on the inclusion of students. We provide in school support for teachers and for students. And professional learning for teachers. We also have a dedicated support service known as Visiting Teachers for those students who are blind or vision impaired, and a separate service for those who are deaf or hard of hearing. And we have support in the area of behavior, especially in the managing challenging behavior.

In relation to the assistive technology, which is what brings us today, we provide recommendations for assistive technology for students and we also enhance multidisciplinary capacity within the education system with our therapists and our behavioral practitioners.

We have a real focus on inclusion in Ireland, and we have developed this framework, which is available on our website. I won't dwell on this. It is a very useful resource and it is a resource that's very popular that schools use.

We also have a wide range of supports for parents. And these are some of our parental booklets. We also have information seminars for parents, pamphlets and guidelines, including transition guidelines.

But the research, which is an area now we have up to 27, 28 different research reports that are all available on our website, and these are the things that are coming through in our research. Teacher upskilling and professional development of teachers. That's a really important issue that comes up time and time and time again. The importance of teacher upskilling and professional development for teachers.

Early identification and intervention is another very common theme. Sufficient and consistent access to therapy supports. And we're very conscious of this, and we have a new school inclusion model project that we're running currently

where we're looking at the in-school therapy supports in schools.

We know that it needs to be a focus on student outcomes and interagency and multidisciplinary work. They're the common themes that are coming through all our research. But in particular the research that is most pertinent to today is research report number 22 where we looked at assistive technology and equipment in supporting the education of children with special educational needs and what works best. And the link for that is on this slide, and it's also available on our website.

The NCSE commissioned this report to identify what assistive technology would work best for students with special educational needs. What we did discover is there's no easy identification of what works best. The variables are so -- there are so many variables depending on the needs of the student with special educational needs in terms of variables around the assistive technology. But training and supports is an area that also needed significant amount of attention.

There were interviews with 100 students and parents. 70% of those had said that the assistive technology they had met their needs. There seemed to be a very high level of satisfaction among the deaf and hard of hearing students and those students who are blind and visually impaired. It is a significant worry also that up to 20% to 30% said that their assistive technology had little or no impact.

Now, we have a number of recommendations for policy and practice. I'm not going to go through these now. But certainly universal sign for learning and overlap of ICT mentoring technology, and assistive technology and the need for a universal design for learning approach. We also need to make the system of funding and implementation and application for assistive technology easy and simpler for schools and students. We need to streamline how we have our assessments. We need a more formal approach to follow up on monitoring, and we need to ensure that there is sufficient training and information for teachers, for students and for parents.

I leave you with a number of references. Our own NCSE website, the link to our research report, the assistive technology scheme within our department of education and we have a digital strategy for schools in Ireland that we're updating currently in 2021. Thank you.

>> OLAF MITTELSTAEDT: Thank you, Madeline. That was great to hear. I could spend the next hour talking about and holding you with questions because this difference in perception -- me personally -- when inclusion came along in Europe, there was just a lot of gnashing of teeth and shedding of tears. If I

compare the difficulty that the obstacles that had to be overcome in Europe in particular with the Indian experience with integration and their process, I was just wondering why nobody ever looked there.

But to go on -- thank you, again, Madeline. I would like to go on to Santiago. Santiago, it's a homecoming for me, simply because the ABC consortium -- I shouldn't say that, the ABC because it stands for Accessible anyone books Consortium and adding consortium is superfluous. I've spent the last two decades working by, with for and through is a founding member of that consortium.

Santiago, what are the barriers that you have seen limiting the access and usage for an ICT for visual impaired persons?

>> SANTIAGO STREETER: Thank you, Olaf. Good morning I'm Santiago. In terms of what are the barriers, that impedes usage of ICT, we've seen throughout the years, for example, the unavailability of text to speech software and a good quality synthesizers in certain languages. As an ABC we provided support for the development of a female voice TTS software in the Mongolian language, which was made available through the Nvidia platform. It is free of charge on the website.

This software was clearer and provided better pronunciation than the male voice, which was previously available in Mongolian language. On the other hand, we also -- we've seen a limit in what is the access to electronic catalogs of accessible books for visually impaired persons. Again, coming with an example we worked with an NGO in Botswana where there was no catalog or accessible formats for the visually impaired students in Botswana. As part of the project what we did is we funded the development of a database, which is being hosted by the NGO in their website so that students can have access to books that they need from the national curriculum.

Two schools in particular benefited from this database, which helped them -- our understanding is it helped them improve their result as they now have access to educational materials. Thirdly, we've also seen the assistive software applications being developed. Again, through a project that we did in Vietnam with a very -- I would say a very sophisticated organization. We also helped with the production of a math conversion software for the Vietnamese Braille code that allows users to input math via a keyboard and convert it into Braille. Together with the handbook in Vietnamese. How we've dealt with these issues along with our ABC capacity building projects.

>> OLAF MITTELSTAEDT: Thank you, Santiago. Yes. The ABC was the baby born from the famous treaty which allows the transfer of books of -- accessible books across borders, which was impossible before legally. A lot of libraries particularly

ones in Switzerland just did it illegally. But that was not a path forward for developing countries, because the legal ramifications of that were just too threatening for them to go that route. Thank you again. Yeah. All the best to the ABC.

Which gets me to Veronica, Veronica is the founder and CEO in Cameroon. You have to forgive for Veronica, but the climate -- I think this is the wind, but sometimes it's the rain that really messes up an internet reception. And, therefore, we cannot see Veronica, but we can hear her. Veronica, hi. The question I have for you --

>> VERONICA NGUM NDI: Hi.

>> OLAF MITTELSTAEDT: What has been your strategy for -- now comes the most important part -- for women and girls with disabilities?

>> VERONICA NGUM NDI: Thank you, thank you very much. The main objective of the -- (choppy audio) is to empower women with disabilities and women with HIV Aids to overcome stigma. I do advocacy, we advocate for them to be included in education, in empowerment activity -- (choppy audio) with other organizations that work for the welfare of women. We always advocate for the inclusion of women and girls with disabilities.

Because women and girls with disabilities face a challenge of limited access to education, we try to organize local community educative talks that we educate them on the basics of programs. We collaborate with people and I promote the inclusion of women and girls with disabilities. At a level of a community organization, takes it as a primary aim to digitally empower women and girls with disability in communities.

We do our best to train them on how to use their smartphones, help them to also have access to smartphone, those who cannot have them. We help them to have access to smartphones so that we can teach them how to learn basic English, basically communication skills so that they can be able to express themselves basically in communities and in social interactions.

We teach them on how to improve on their economic -- by training them on empowerment skills like -- now with COVID-19 we trained them on how to produce hand sanitizer, face masks. Every way they can prevent, we work with the Women Empowerment Center in the northwest region of Cameroon where we advocate for women and girls with disabilities to be able to learn basic literacy with the benefit from the basic adult literacy program and learn skills that can economically empower them.

We also advocate in schools to ensure that women and girls with disabilities may have equal opportunities to access education as an ordinary person. In every aspect of the community, socially, politically, we always ensure, we

collaborate, we work and we network to ensure that women and girls with disability have equal access to these platforms that will improve on their knowledge, improve on their skills, improve on their livelihood and health. We ensure that women and girls with disability are actively involved and participating.

Even on the workforce platform, we ensure that women and girls with disability can also be on the workforce platform. I have been encouraging my women and girls with disability to be on the workforce platform because it's through the workforce platform that has the opportunity to be in this summit right now. (choppy audio) it's going to empower other women. So women and girls with disability, due to the challenges they face the stigma, they're always forgotten, they're always left behind. Their needs are most of the time generalized with the communities. Because of that, their specific needs are not always met.

So what I do is because I have a disability, I make sure that I stand at the forefront to show the example with community leaders, with CSO leaders -- I keep advocating and I empower to work like a team so we can continue to advocate for our rights for the respect of our rights. Give us opportunities to be included in education at all levels. From the local communities -- right now in Cameroon we're in the context of a humanitarian crisis and it has developed in schools in many ways. In communities, there are so many local community schools that have been created by local leaders. I also ensure that I meet the needs of children with disabilities. There are also adult programs where I also ensure, I advocate and sometimes I go in person to really speak with the leaders and operators to make them understand the needs of women and girls with disabilities to gain access to education.

Women with disabilities have challenges to access tools so they cannot really afford digital tools that they may use. From time to time, we also try to bring them together and explain to them the need, the need -- the importance for digital tools and how to use those digital tools for your self-empowerment to access opportunities. For those that we can provide once in a while we can provide for one person, but it is not enough because most of that -- because the women and girls with disabilities are numerous. We are living in a social crisis, and their needs are also numerous, they come up every day. Thank you very much. I think that's what I can contribute for my question. If there's another question I'll be happy to answer.

>> OLAF MITTELSTAEDT: Veronica, thank you very much. I think we should go on with the next panelist. I find this

session always much too short. Particularly the way that the audience can ask any individual panelist is kind of sort of severely limited. But you find ways to contact the panelists individually if you go to the website of this session at the WSIS website and find -- the way to contact them is available there.

Darren? Darren is our next panelist. And he's the project officer in assistive technology for the Australian Disability Clearing House on Education and Training. Darren has been involved in E-learning and accessible resource development for that particular field for quite some time.

Darren, what do you see as the emerging challenges facing students with disabilities?

\>> DARREN BRITTEN: Equity is probably one of the biggest if we're talking globally. In Australia and from my perspective, it's still access to information. We have a lot of new tools, a lot of new learning management systems, a lot of new ways to educate and deliver information to students and learning. But as rapidly as we're producing new technologies, we're adding new barriers. We solve old ones and we're creating new ones at the same time.

I have a couple of reflections on some of those and some questions I'll pose. If you don't mind I'll jump into my presentation if that's okay, Olaf?

\>> OLAF MITTELSTAEDT: Go for it.

\>> DARREN BRITTEN: I'll swap the screen, everybody should be seeing that. First off --

\>> We cannot see your screen.

\>> DARREN BRITTEN: It's not sharing? Let me try again. Is that better? Okay.

It's an overview of the ADCET and a couple of reflections over the past couple decades that have been working with assistive technologies within the education section in Australian universities.

First off I'd like to go a quick acknowledgment of country. I'm from Australia, it's currently after 12:30 in the morning and I'm sure the koalas are asleep. I'd like to acknowledge the traditional owners of the land, I pay my respects to their elders past, present and emerging. I'd like to extend my welcome to any traditional and first nations peoples from around the world who may be joining us for this presentation.

Quick overview, I'm here presenting in my capacity as an advisory committee member for the ADCET. I'll give you a brief history of ADCET and sites into digital inclusion and assistive technologies that have been used in the tertiary sector in Australia.

I've mixed up some of the slides to help with fatigue.

ADCET is the Australian disability clearing house on education and training. It receives funding from the Australian government, department of education of schools and is hosted by the University of Tasmania. It was launched in 2003 and half of its life its primary focus was gathering information and putting it together into one centralized location, hence clearing house.

And the other part was a regular newsletter went out to subscribers all across the higher education sector in Australia. The website primarily deals with three main areas, and that is information for disability practitioners, information on inclusive teaching, and information for students with a disability.

Over the last eight years, there has been a slight increase in funding to ADCET, and as a result of that they have been producing regular webinars and podcasts as well as the creation of new user requested resources. A lot of the content that gets created is directly from disability practitioners and/or from academic staff requesting particular resources to be made.

In 2020, and I'm sure it's going to be no surprise as Olaf mentioned earlier as well, video conferencing, most accessed content on the ADCET website was for deaf and hearing impaired students. It was probably two to one over all the other sections of the website. Then intellectual disabilities, physical disabilities and blind and visual impairments.

So the good. I was looking -- thinking about this session, back since 2003 and I was thinking one of our big breakthroughs we had at the university I was looking at is when we started perusing DAISY books back in 2008. It was a godsend for some of our students but there was slow adoption for technologies for some students. That has now changed of course. There's now literally hundreds of assistive technologies, there's so many things that can be called assistive technologies. In the range of apps or browser plug ins that do one or two specific things. Madeline alluded to as well it's very difficult to find a common piece of assistive tech that will assist in general most students. Everybody's very individualized, and it's generally more than one assistive technology, it would be multiple technologies.

Many of the technologies are now free or relatively cheap in comparison to what they were over a decade ago. Information can now be accessed across multiple devices and platforms. We've got various operating systems as well. There's more and more organizations and institutions that are adopting the web content accessibility guidelines. The guidelines for online content, although there's still a lot of the web that is not accessible to many. And COVID-19, as we're all aware, saw rapid development of tools to help enable participation. And some of

that was certainly to do with hearing impaired and deaf students given the nature of the amount of video conferencing.

I won't get sucked into automated captions and AI that's happened in that space. The not so good. As we found over this time, and it hasn't changed much so far. It's very easy for content creators to make inaccessible information. The tools, just allow it so easy to make it inaccessible. Especially in the tertiary sector. Emerging technologies, certainly improve some access but they'll continue to create new barriers. Old issues in 2003 where we need to convert things from printed hard copy into electronic formats. Now we've got all these things in electronic formats that need to move into different electronic formats and in some cases go back to hard copy or Braille for students, et cetera.

Not all students can afford the latest technologies or have high speed internet access. Augmented and virtual reality which universities are jumping on, they hold huge promise for inclusion in some areas of disabilities. In others they're very exclusionary. It's a very visual medium. We now have multiple mediums for information and teaching often takes the form of, you know, an aggregation of information where in one single session you've got audio, video text, images group interactions, whiteboards, polls, quizzes, et cetera. There's no one thing, it's not just text from a textbook that might be getting converted. It will be a whole range of interactions that need to be suitably made accessible to a student.

And, of course, digital equity, which I spoke about earlier which is not everybody has equal access to the technology to do these things.

I'll wrap it up there and just say thank you from Australia. Thanks, Olaf.

>> OLAF MITTELSTAEDT: Thank you, Darren. This has been enlightening. Yeah. I love all the pitfalls that came to view when it -- also will not go into captioning and live captioning and the preferences, voice for either.

Which brings me to Regina Young who is the founder and executive director for the association for the empowerment of deaf and vulnerable persons. Again, we're suffering from the fact of unequal distribution of technology. Regina is in Africa, I believe, and suffering again, from weather conditions so we cannot see her. I find that terribly unjust. Of course that part of the world that has good internet connection has the better voice, has the better understanding and the better video. This is the original problem. What do we do with ICTs when we have only limited internet access? The access is not even good enough to get audio across a continent or two.

Regina is the founder and executive director of the

association for the empowerment of the deaf and vulnerable persons. She is an advocate for the economic empowerment of, again, girls and women with disabilities. Regina, what kind of support is needed to effectively leverage technology in your work with persons with disabilities?

>> YOUNG REGINA AFANWI: Thank you so much, Olaf. Good afternoon, everyone. I'm glad to be at this conference. As Olaf has already said, the founder of the association for the empowerment of deaf and vulnerable persons. The goal is to economically empower girls and women with disabilities. I come from an area where we have socio political crisis, constant lockdowns, COVID-19 has come to increase the number of lockdowns. So it's really a challenge for children going to school or women going out to sell their products.

At the same time I'm really grateful I was able to join and launch a program where it empowered me so much on technology. I had a couple of trainings on how to use technology. And, therefore, I had to launch an initiative where I train girls and women with disabilities, especially focused on girls with hearing impairment on how to use technology to sell their products online using labels to sell on Facebook and What'sapp. I was not only training people on economic empowerment, students were also being trained so that they could be able to access the internet for information. These trainings have been impactful because we can see -- we realize for those who are doing economic empowerment, they have developed a lot of customer relationship online, which is some aspect of social inclusion because they don't discriminate whether they're persons with or without disabilities. For the students they're able to assess a lot of information online that is helping them with their schoolwork, especially on days where they are not able to go to school.

It's also important to know that we did not just only give this training and let them on their own, but we have been monitoring them online and offer trainings like the safety use of the internet to prevent harassment online. I must say it has been truly challenging, but it has been an exciting and rewarding experience both personally and professionally. Then we could benefit more or these persons with disabilities could benefit more if they had some more support with assistive technology, which is specifically suitable for the different types of disabilities with whom we are working.

For persons with hearing impairment, we are advocating that they could have -- if they could have more assistive listening devices which could amplify sound, especially in areas where there's a lot of background noise. For students in that case where they're studying in large class settings, it would be very

good for them. We could also do with technology devices which could change pictures to text or speech generation devices where text could be changed to speech. Because a lot of people here do not know sign language, there are limited sign language interpreters. There are very limited sign language interpreters so it's common in education settings to find a classroom without sign language interpreters. So sometimes we have to use some of the students to help persons who are hearing impaired. If we have these kind of devices that can convert text to speech, persons with hearing impairment could type what they want and then persons with -- who can hear can be able to hear what they want because they do not understand sign language.

We also do a lot with mobile telephones. Those are very, very practical because persons with hearing impairments, those who are in a classroom setting can be able to send text messages to each other. It's strenuous yes but it's better than they just being cut off because of the communication barrier. Computers are very, very necessary because they'll be able to look for information online that would help the students and also help those who are on economic empowerment.

Persons with hearing impairments could do a lot with devices. I've already mentioned we have social political crisis, and sometimes there are gunshots everywhere, everyone is running away except those who are hearing impaired. But if they have a listening device that could produce loud sounds or vibrate then it would let them know of events and so they would be able to run for safety.

Persons with visual impairments, we could also still do with laptops and mobile telephones. But then we could do with speech softwares that are installed on this mobile telephones. For example, we have the job assessment speech software that could use -- persons who are visually impaired could work on their own -- because this software would be able to direct them on what to do and to use the computers on their own.

We also have Braille. We have just a few, but there's so many students who are visually impaired and so many persons with disabilities who are involved in economic empowerment. This Braille could change text into those tack tile Braille cells that persons with visual impairment can touch and would be able to read effectively. In addition to all this technology devices, we also need empowerment on how to effectively use this technology to ensure proper inclusion of persons with disabilities. We also need a lot of training on how to use these devices. We also need financial and material support to train more persons with disabilities to use all these tools that we have mentioned so that they could manage their life effectively. Thank you so much, Olaf. Thank you for giving me

the opportunity to present.

>> OLAF MITTELSTAEDT: A pleasure, Regina. Solve one mystery for us, please. Which country are you performing all these wonders?

>> YOUNG REGINA AFANWI: In Cameroon, in Subsaharan Africa.

>> OLAF MITTELSTAEDT: All right. We have some questions. One is for Madeline. Wei is asking -- I'm going to give one question and while Madeline is answering her question directed to her, the rest of the panelists, please think of who and how you're going to ask the second question which is from Susie. Her question is are ICTs facilitating the lives of persons with special needs or do ICTs further disconnect the ties of this community with the world since many websites and information channels are not designed with accessibility in mind.

So I think that's a terrific question. But the first one to Madeline, the question was should the governments in the E.U. or particularly Ireland should be asked to finance assistive technology or who should do that?

>> MADELINE HICKEY: In Ireland for students in primary or post primary schools, the Department of Education finance the assistive technology. If it -- and the benchmark is that the assistive technology is used to enable the student to access the curriculum. So in the context of communication and for those students who have a medical disability in some form, it is the health service executive, which is the Department of Health that fund the assistive technology. So that's -- in our Department of Education, the benchmark is will this assistive technology enable the student to access the curriculum. And if that is the case, then the Department of Education funds the technology. And the technology is given to the school and the school owns the technology and is responsible for the management of it.

>> OLAF MITTELSTAEDT: Does that mean that then this technology is not available for home use for a disabled person?

>> MADELINE HICKEY: Currently, that's the situation in relation to education.

>> OLAF MITTELSTAEDT: I see. All right.

>> MADELINE HICKEY: Part of the problem in the home use is the issue of insurance.

>> OLAF MITTELSTAEDT: Unsurprising. All right. Let's get to the second question and maybe we can do a round robin on that one, starting -- again since you're online already, Madeline. Here's the question from Susie, do ICTs facilitate the life or do they create a greater separation with the rest of the community? She highlights particularly the problems of websites not designed with that in mind and that was a point that came up. Madeline, would you like to go first?

>> MADELINE HICKEY: Yes, I think it does certainly. Our

own research would show that, that 30% of the students and
families that we interviewed have said that the technology
wasn't -- didn't enable them to -- it was a disabler. So
certainly more needs to be done in relation to all of us taking
responsibility for making our content on our websites
accessible.
        >> OLAF MITTELSTAEDT: Thank you, Madeline. Santiago, books
can hardly be separating -- or maybe if you read a book you're
not communicating with anybody else. But you and the book and
yourself. What is your take?
        >> SANTIAGO STREETER: Thank you, Olaf. In terms of the
question, I agree with Madeline. It can be a deterrent for some
visually impaired students when they have to study. For
instance, in our case, in the context of the COVID-19 pandemic
we have to quickly switch from onsite training to online
training. With the consortium we developed this online training
course and we noted that a few of the participants had indeed
issues going through the course. So with time, we were able to
fix those issues and we were able to make it inclusive. But it
is true that many of these platforms are actually not compliant
and they're not really accessible at all. Yeah.
        >> OLAF MITTELSTAEDT: All right. Thank you, Santiago.
Veronica, what is your opinion and your take on if assistive
technologies separate us from the rest of society, in particular
maybe, if you want to go there, to -- particularly on website
design. Veronica, please, what's your take? Veronica? Where
is Veronica? All right. Maybe we get her back later.
        She's muted presently, maybe that's the problem. Okay,
Darren, what do you think of the goods and bads of assistive
technology?
        >> DARREN BRITTEN: There's great goods to be had, and
there's great bads that come from that at the same time. And I
think this goes back to the reflection I was having earlier.
The tools make it really easy to create inaccessible content.
You know, I think ICTs do a good job that making sure that by
default the tools make much more accessible content, but it's
about rapid development. And rapid development leaves
accessibility out the window and needs to be retrofitted.
There's definitely a divide, but I think consumers have power as
well. There's a huge buying force. I mean, in Australia and
even to America with different standards that a lot of websites
are certainly complying compliant if you're buying things from
them because they realize they're missing out with a huge body
of people. If they can't find your goods, they're not going to
buy them.
        So it's -- there will be new things that will fix things
and other things that will create new barriers, but I think

that's the wheel we're on.

>> OLAF MITTELSTAEDT: Thank you. Thank you, Darren. Now to Regina. Regina, you're working particularly with -- also with deaf people. Deaf people, because of their sign language have sort of a slightly different culture or own culture I should rather say within their community. So what is your take on what assistive technology, does it separate or integrate particularly deaf people?

>> YOUNG REGINA AFANWI: Thank you so much, Olaf. Thank you for the question. I will say yes and no, there are both sides. But more of yes because like I already said, my initiative on the future change program was to empower girls and women with hearing impairment or disabilities to be able to sell their products online. I say yes because when the crisis started and the corona pandemic and the lockdowns, I was a little bit worried how we would sell the things they're producing. We can see from the program, we have been able to train them on how to sell their products online, Facebook and What's App.

I'm saying yes, it's impacted the lives of those girls and women and have developed more customer relationships online. They can be able to communicate with persons with and without disabilities. They are using text and using labels. They don't have to communicate verbally. And sign language is not very common here. So that is a very big aspect of social inclusion, because they're able to communicate with persons with or without disabilities. I say yes to that.

It has increased visibility of their products online. This is all done through technology. If I had not introduced technology with them, they would stay with those products at home and maybe they would never sell. Because they're doing it online thanks to ICT, they're able to sell the product despite the fact they're staying at home or have the communication barrier.

When we look at the products these women are producing, the quality is increasing every day. I'm a trainer, I train them on the products. The quality increases every day because they're able to go online and download new designs and even how to produce this new design. For that, I say yes it has got a positive impact.

I also say no because with the internet connectivity problems we have here, it works a lot on your self-esteem. For example, I'm sitting here, I'm seeing your face, Olaf, I'm seeing everyone but they can't see me. I don't feel too happy about that. It has something to do with your self-esteem. So to a greater extent yes and to a lesser extent no. Thank you, Olaf. Thank you.

>> OLAF MITTELSTAEDT: Thank you, thank you, Regina. I

haven't heard from Veronica, so this leaves me to conclude this hopefully very informative session. I would like to thank the panelists for their time. And I would like to ask you particularly those looking on to us and to the audience to have a minute more or patience because we are now going to show a short video of the people who made this actually possible by helping I guess with money.

    (music)

    >> OLAF MITTELSTAEDT: So anybody still there? I thank you very much for participating and I wish you the most glorious of days. Bye, bye now.

    >> SANTIAGO STREETER: Thank you.

    >> MADELINE HICKEY: Thank you.

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