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Untapped Talent: Can better testing and data accelerate creativity in learning and societies?

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“Yes it can!” Session chair shares his hopes for big data

Can better testing and data accelerate creativity in learning and societies?

“Yes it can!” was the resounding answer from session chair, Michael Nettles at the opening session of the Salzburg Global Seminar program on *Untapped Talent*.

As the Senior Vice President ETS – best known for its design, administration and scoring of assessments like the GRE and TOEFL – it is unsurprising that Nettles is an advocate for better testing, but it is the potential for big data that most excites him at this week’s session – the sixth that Salzburg Global and ETS have partnered on together.

Big data is opening up numerous, well-paying job opportunities in the US across diverse sectors, from commerce to medicine to education – but these openings are unlikely to be filled.

“The fact is, we do not yet have the capabilities, or even the know-how, required to achieve our vision for all these data,” lamented Nettles in his opening speech.

“We have barely begun training the people to do the work. In the United States, there are more than half a million unfilled jobs in the IT sector... By 2020 there will be 1.4 million computer specialist job openings, but that our (US) universities are unlikely to produce enough qualified graduates to fill even 30 percent of them,” he added.

Why is this? And how can better assessments – and data usage – fill this talent gap?

One way in which data can help is by feeding algorithms that can “replace race-, class- and culture-based criteria with demographically blind data-based criteria that remove subjective human evaluators,” says Nettles. This would help the tech sector become more diverse and end the perception that you have to be white, male and well-connected to get ahead in the industry.



New forms of assessment, such as games, can help identify valuable STEM skills in those who typically struggle in current tests. By generating “fine-grained data” – such as “document edits, gaming collaborations, responses on intelligent tutoring systems, even eye and body movements recorded by body sensors” – which is then immediately available for review, “the learning process itself can become the best source of evidence of learning, replacing the test,” remarked Nettles.

This could have potentially huge advantages for those students who currently underperform in traditional testing environments, enabling their so-far “untapped talent” to be fully realized. There would also, of course, be much larger implications for test designers, administrators and teachers. Who would collect this data? As Nettles’ colleague Catherine Millett pointed out in her opening remarks, teachers often have little knowledge or care to collect such data – especially if it gets in the way of simply teaching. “How do we identify the ‘right’ big data?” she asked.

“Every keystroke on a computer can be captured, cataloged, analyzed, and used. Whether it *should* be captured, cataloged, analyzed and used is a different, but equally urgent, question,” added Nettles.

Further consideration also needs to be

taken of the *cost* of employing such tech solutions; socioeconomic gaps could be widened rather than narrowed.

“Entrusting so much of our education, careers and personal lives to algorithms and analytics also runs the risk of replacing our humanness with a blind faith in data processes,” warned Nettles.

Over the course of the next four days, over 40 experts in pedagogy, assessment and data analysis will consider the innovations and potential pitfalls of new forms of assessment of so-called “21st century skills” – communication, creativity, critical thinking and collaboration. Alongside ETS, partners on the session include the National Science Foundation (NSF) and the Inter-American Development Bank (IDB). The session is also being held in association with the Royal Society of Arts (RSA).

Speaking on behalf of the IDB and its delegation from Argentina, Chile, Mexico, Uruguay and the US, Soledad Bos, Education Senior Specialist with the IDB, said she hopes to share the innovations in Latin America and the Caribbean, as well as learn from other regions. Nora Newcombe, a psychology professor at Temple University whose work is funded by the NSF, encouraged participants to consider the “science of learning” and to avoid making assumptions about how innate creativity is and how simply it can be assessed.



Clare Shine, Nora Newcombe, Soledad Bos and Catherine Millett

Hot Topic: “What is creativity?”

Ana Alania & Heather Jaber

“ I don’t have a formal definition of creativity, I just think we see a lot of it out there. We need to be exposed to it and promote it in a way. We have to think more about creativity outside of traditional confines.”

Catherine Millett

Senior Research Scientist, ETS, USA

“ Creativity is not a trait in a person that can be assessed or tapped. Creativity is an occurrence that can happen when children or adults are prepared with knowledge and in a setting in which they are allowed to explore the parameters of a problem in a way that it has not been previously explored. Some will blossom in that situation more than others, but that does not mean that they have a trait of creativity.”

Nora S. Newcombe

Psychology Professor, Temple University, USA

“ The definition I use is a world-used definition, which is ‘imaginative activity fashioned to produce outcomes that are judged by observers to be original and of value.’ ... In terms of my work, RSA’s work, it’s very much focused on closing the creativity gap. We see those gaps in three ways. First, the gaps between learners who have the opportunities and capacities to develop

their creativity, and those learners who don’t. Secondly, the gap between the creative potential of teachers and whether the school systems support or stifle that creativity. Finally, the gap between some systems and institutions – schools in our case – that nurture or squash the creativity of learners and teachers.”

Joe Hallgarten

Director of Education, Royal Society of Arts (RSA), UK

“ Creativity is thinking outside of the box. From my economics mindset, creativity is not part of what we do everyday, so when I think outside of my little model, I am being creative.”

Soledad Bas

Education Senior Specialist, Inter-American Development Bank, USA

“ I really like [E. Paul] Torrance’s way of assessing creativity, which is fluency, flexibility, originality and elaboration. I really believe in the potential of enhancing creativity in schools and in students – K-12 and higher education. So I don’t think it’s only an innate talent that either one is born with or not, I really believe in being able to enhance or to accelerate creativity, but we need to work on it.”

Zemira R. Mevarech

President, David Yellin Academic College of Education, Israel

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If you do intend to write for your own organization either whilst you’re here or after the session, please make sure to observe the **Chatham House Rule** (information on which is in your Welcome Pack). If you’re in any doubt, do not hesitate to contact Louise.

We’ll be updating our website with summaries from the panels and interviews with our Fellows, all of which you can find on the session page: www.SalzburgGlobal.org/go/558

You can also join in the conversation on Twitter with the hashtag [#SGSedu](https://twitter.com/SGSedu) and see all your fellow Fellows on Twitter via the list [www.twitter.com/salzburgglobal/lists/SGS-558](https://twitter.com/salzburgglobal/lists/SGS-558)

We’re updating both our Facebook page www.facebook.com/SalzburgGlobal and our Flickr stream www.flickr.com/SalzburgGlobal with photos from the session during this week and also after the session. (If you require non-watermarked images for your own publication, please let Louise know.) We will also be posting photos to Instagram www.instagram.com/SalzburgGlobal, and we encourage you to do so also, using the hashtag [#SGSedu](https://twitter.com/SGSedu).