GLOBAL EDUCATION INDUSTRY SUMMIT – NOTES FROM RAPPORTEURS

Summary

1. Discussion in each of the sessions was helpful in identifying challenges that could be addressed through collaboration between all of the parties associated with education and some of the solutions. At times different points of view highlighted tensions. Such tensions appeared, for example, where innovation reduced dependence on traditional teachers, possibly in a situation where there is limited supply of teachers pointed towards the importance of careful consideration of context.

2. The argument in support of analysis of context was also seen to be critical when considering taking a successful practice in one location and adopting it in another. As suggested at the Summit, practice is not changed by having technology. It is not like fire. You can be warmed by simply standing next to a fire. Simply providing technology or making people aware of an innovative practice is unlikely to change anything. Greater care in management of change, perhaps through adoption of design thinking might hold greater likelihood of impact and points again to the importance of supporting communities and networks of practice to take practice forward.

3. Another tension lay in the tendency to view groups as homogenous. Students are students, teachers are teachers, commercial companies are commercial companies and policy makers are policy makers. Just as there seems to be increasing recognition of the benefits of personalisation for students' learning, so we should look at how to engage each of these other groups and the constraints or freedom within which they work. Those with solutions to promote, sell or share may still be excellent listeners and have the judgement to apply their creative thinking and experience to the learning challenge with which they are faced. Alternatively, they may be solely focused on their pre-prepared solution and be a less supportive party with which to collaborate. In similar ways, finding where teachers are in terms of the normal distribution curve of innovative thinking may indicate how likely they are to adopt and succeed with new ways of working and point towards the type of personal development appropriate to their circumstances.

4. Solutions to these each of these challenges probably lie, firstly, in development of each of us as life-long and life-wide learners and implementers. It's partly about what we know, what we are able to do, and how we apply our knowledge and skills to the challenges we meet. That reflection on our own work is important in modelling the skills and behaviours that many of us appear to wish to see in our students.

5. Secondly we should focus on collaboration and assist set up the circumstances in which those behaviours are adopted and amplified – in order to seek and implement workable and supported solutions. Taking steps to develop the conversation between industry, governments and education professionals is one step towards setting the circumstances in which collaborations can develop. Providing mechanisms for networking and development of communities of practice is another way in which collaboration might be assisted.

6. Thirdly, in a more structured and evidence based way, we might learn from the experience of other sectors and consider their adoption in education. To do so would not simply be a question of looking at outcomes, but also understanding the policies, skills, guiding values, behaviours, and practices. The

Global Education Industry Summit, is a potential location for learning from such practice given the participation by industry and other organisations.

7. Further suggestions for actions included:

- Recognizing the importance and strength of learning from times off line as well as times on line
- Providing the circumstances in which government, industry and education can effectively "speed-date" and match potential solutions with challenges to be addressed
- Recognising and articulating what constitutes an effective market for education technology and supporting its development in countries where none exists
- Addressing the relevance of learning to life and student's future success and not presuming relevance – associated with "unlearning" some of the practices we have developed
- Development of a culture of appropriate risk taking and learning from failure rather than viewing failure as purely a fault
- Creating a shared resource of vignettes demonstrating the practices that are successful through government-education-industry collaboration
- Creating a shared resource gathering information on leading schools using technology particularly well and how they are managing their relationships with industry and government to achieve optimal results
- Markets for skills, enterprise and small businesses can have positive societal impacts, providing opportunity and hope to sections of the community that might have been excluded from traditional success. Finding ways in which industry and entrepreneurs can share their expertise and approach may help spread their practice more widely
- Call for actions from each country participating in the GEIS2015 to suggest a number of new ideas and act upon them
- Ensure that the over-riding vision for education-industry collaboration is clear and that actions are initiated in support of that vision.
- Ensure that the creative energy and ideas of children and students are engaged and supported

SESSION 1: Redesigning learning environments to better support learning

8. Three challenges were set for discussants:

- Schools need a physical and digital infrastructure through which improved teaching and learning products can be delivered. However, using technology does not automatically improve learning – it is not an innovation like fire, where one gets a benefit just by standing near it. Instead, technology is a catalyst that can empower deeper content, more active learning, more authentic assessment, and links between classrooms and the real world. These are innovations we know improve learning. How can we ensure that schools are given the optimum digital infrastructure?

- The range of knowledge and skills students need for a global, knowledge-based, innovation-centred economy is greater than can be taught in even the best classrooms during the school day. In the world of adult employment, people do business anywhere anytime. Working is no longer localised in an office but distributed throughout the waking life of the adult. Schools need to adapt learning to similar modes of living. The biggest difference between an industrial educational system and a 21st century educational system is extending learning life-wide, using technology to make any place, anytime a rich opportunity for learning and enlisting the help of parents, community members, and informal educators as students' coaches, mentors, and tutors outside of school. Technology is a vehicle for accomplishing this vision, as it already has in business and in wellness. How can we help learning become life-wide?

- The biggest problem in education is scale. While phones and social media have gone to scale, education innovation hasn't. We can find wonderful learning environments that accomplish every educational goal one can name – but the vast majority of these are not scalable to new settings that do not have all the unusual conditions for success these innovations require. The big challenge for business in education is designing and implementing scalable innovations that adapt to the strengths – and weaknesses – at each educational site. As we have seen in other sectors of society, technology can be a powerful means for scale. How can we develop innovations that are designed for adaptation not simply adoption?

9. Discussants reinforced these challenges, or added additional ones:

- We need to bring innovative approaches into the standards infrastructure. Can we develop new ways of measuring which validate innovative approaches and how is this best achieved?

- We must move forward in the light of evidence and experience, at the same time as enhancing teacher capacity and motivation. So how can we support teachers so that they act at the heart of innovation?

- We need to use technology to improve teacher capacity, not provide a substitute. How can we avoid corporations using their significant investment to replace professional teachers with low paid substitutes?

- The differences between educational challenges across Europe remain vast. How can we build on a Europe wide interest in improving learning outcomes to take learning solutions to scale?

- There is wide-spread agreement that learning needs to become more personalised, and yet most of the innovations remain fixated with mass roll-out. How can we retain the focus, while going to scale, on the individual child?

- We need to improve educational outcomes for migrant children. For instance, how can we shorten the time it takes for migrants to learn a new language.

- We know that we want more entrepreneurial young people, and we know that they will need ICT skills and knowledge. But what skills and knowledge precisely will be of value to them?

- The world beyond education is changing very rapidly. For instance, computers have fundamentally changed the nature of maths, and yet we still teach maths as if nothing has changed. How can we get education to start moving at the speed of the world beyond?

- The skills required in the labour market are changing. How can the two sectors of education and employers work more effectively together to generate better outcomes for young people's employment prospects.

- Informal learning plays a much greater role in young people's lives than ever before. Learning in the family is now of much greater importance. What sort of infrastructure would better support family learning?

- Most innovation doesn't come from the top, it comes from the bottom. How can we ensure that the sparks if innovation light system wide conflagrations?

- What stops teachers innovating is not lack of budget or lack of will. It is lack of time. How do we make more time for teachers to plan and implement better practices?

- We must remember that education is more than the core subjects of science, maths and literacy. How do we ensure that local traditions, culture and values continue to play an important part in the education of young people?

- Education should be about improving the quality of people's lives and to do so we must better understand what young people want to learn and why. How can we create systems that allow pupils to self-organise to achieve their chosen learning?

- We need to put more effort into improving education in the Southern two thirds of the globe. How can we focus on solving problems in these regions quickly ensuring that change is for the better?

- Schools in Denmark have been focussing on life-wide learning. How can we build on this experience to allow more private companies, sports clubs and other organisations to support and enhance the learning of pupils in schools?

- We should view learning as taking place in a much wider set of environments than in school alone.

- New Zealand has a sophisticated integrated education service. But is such organisation the prerogative of small more affluent countries, or can this model be applied to developing countries with huge resource challenges?

- National Governments with responsibility for education are under huge pressure to get education right. Education is probably the biggest single activity for which each government is responsible. How can we turn this focus on educational progress at the political level into a force for good?

- There are innovations that have been developed, trialled and have proved to be successful. But how can we make education systems more open to the adapting of such innovations?

10. The discussion was concluded with the reflection that what had emerged was a comprehensive list of challenges to address. The list of challenges proved the importance of opening up this dialogue.

SESSION 2 - Mobilizing technology to widen access and improve quality

11. Education systems face the challenge of widening access to high-quality opportunities to learn. In the 20th century education at scale and standardization have led to an extraordinary expansion of

education systems. However, scale and standardization have had their limitations have not brought opportunities to all:

- Can technology do more to widen and differentiate access for disadvantaged learners?
- How can technology be harnessed to personalize learning and to fine-tune educational opportunity to each learner's needs?
- Which policies can and should be developed to ensure that all learners benefit from the best possible opportunities to learn?

12. The opening presentation in this session reflected on the challenges of widening access and improving quality at the same time. New educational resources including open education resources have made significant impacts, as have new formal and informal education environments. Digital technologies increase access to education and opportunities to learn, but technology is not a magic wand, we need to think about other factors including access to technology and connectivity; social attitudes to learning; legal issues associated with use; skills and competences of learners and teachers; business and financial models.

13. In some countries access to technology and connectivity is considered a public good. The goal for all countries must surely be universal access to all that you need as a teacher and a student. We should also reflect on the growing influence of non-market entities and their ability to provide access. Services and offerings such as Wikipedia, Khan Academy, freely available press articles; video material through Youtube provide additional opportunities. Some governments decide to provide resources, often framed as Open Educational Resources; for example, content repositories in Belgium or Norway, Core Curriculum aligned state content in the US, open book publishers in South Africa and France, policies for teacher resources in France and New Zealand and open digital textbooks in Poland.

14. Availability and access to content itself will not transform education, although it can be a foundation for a good education. We should transform ways in which educators and learners make use of content; where appropriate we should move static content and traditional resources like textbooks; and towards new, more engaging materials that encourage curiosity, exploration, engagement and learning. Discussants discussed some of the challenges of "Mobilizing technology to widen access and improve quality" and suggested that a vision for ICTs in Education must precede the development of systems, criteria, networks, clusters and cooperation as a foundation for improving quality in education. The discussion could be divided in the following six themes:

1. *Open educational resources*: Open educational resources (OER) are growing in breadth and quality, as is their use in classrooms, networks, and school communities. It is important to understand that "open" does not necessarily or simply mean "free of charge" but may also mean free in terms of ownership and usage rights. The use and adoption of OER materials is increasingly a matter of policy in schools, especially in the many disciplines in which high quality educational content is more abundant than ever. The goal is that OER materials are free to copy, free to remix, culturally sensitive, and free from barriers to access, sharing, and educational use. The goal is to give students the flexibility to make their learning as effective and efficient as possible. Appropriate mentorship, especially for primary and secondary school students is essential. Partial solutions may lie in developing and sharing appropriate policies for open educational resources built on cooperation between industry and the ministries and public organisations. Systematic development of networks and clusters, may encourage joint development of an open education resource market.

2. *Open standards*: Better, more accessible services are best delivered through a truly open process:

open to those who use our public services, and open to suppliers, of all sizes, so that competition and innovation can deliver improved services. Transparency and access to data should be at the heart of government and public services, making it easier for publishers to release data in standardized, open formats.

3. *Research and development*: Evaluation, research and development in terms of prototyping new approaches to use of materials, are required to ensure that progress is encouraged and good practice developed.

4. *Teacher education*: Teacher education should include purposeful use of IT for teaching, to equip and support teachers in development of core skills in teaching with IT and to encourage engagement of institutions of higher education and industry partners in schools. Such work could help to provide states, districts, schools, and teacher education institutions the foundations upon which the integration of technology in their programs can be built.

5. *Education Leaders*: The rapid and continuing development of technology in schools requires a new generation of leaders who to use these new tools to enhance their own productivity and decision-making activities and who understand the benefits of integrating technology into learning. Such mature leadership in use of technology includes understanding of when it can provide real benefit, and it cannot. Leadership is often the most important factor in successful integration of ICTs into the school's instructional practices and curriculum. Research has shown that without effective and supportive leadership, changes in the teaching-learning process and widespread, effective uses of technology in learning are not likely to occur.

6. *Personalized learning*: A key opportunity for technology's use in support of learning lies in its potential to support and develop students' personalized learning. Software can track and indicate learners' progress in relation to learning objectives, reflect their state of knowledge granular levels, and use gathered evidence to suggest an appropriate next step for each student. Technology has the potential to learning plans more flexible and personalised, and to assist in making students' learning and teacher's teaching as effective as possible. Such personalization can assist not only within the school system, but also in life-wide and life-long learning.

SESSION 3 - Digital Revolution Supporting Pedagogies and Teachers

15. Digitization challenges everyone, but also enables new opportunities. Teachers in particular have a role to play. However, is simply 'going digital' enough, or should digitization be considered an opportunity to rethink pedagogies and teaching practices, and more broadly, change working cultures in education? If digitization is such an opportunity, then policy making should respond by providing new opportunities for teachers, so that students benefit from new opportunities to learn and to demonstrate their creativity. New pedagogies should meaningfully make the most of digital devices and resources.

16. Making such digital change in education cannot be left to schools and educational institutions alone; it requires smart innovation in devices, software, materials and, of course, associated development of teacher competences and strategies and school communities as a whole. In most countries governments are not at the steering wheel of digitization, but they can certainly set the framework conditions. We need innovators and experts from government, business, research and education to work together to develop and implement new approaches for educating and supporting teachers so that they are well prepared and equipped to face the digitization challenges. How can and should governments and industry work together to support this?

17. The digital revolution is a very real revolution. The opening presentation of the session highlighted two of the fundamental shifts in learning and education that are having an impact on pedagogies and teaching practices:

- Increasing access to information and educational material
- New ways of presenting the material, reflecting on it and discussing it

18. In terms of access to information, digitization is introducing many new and more possibilities than ever before. Traditionally, students were limited to access to a textbook and to a teacher. When trying to solve a problem in class, students could study the textbook or ask the teacher. Now things are different – connectivity, devices and access to a world of information in digital format is fundamentally changing this dynamic.

19. In terms of presentation of learning material and how discussions in class and beyond take place, digitization has introduced many technological developments, discussion on the digital revolution to concentrate has tended to concentrate around presentation, rather than access to information. In the longer term, the revolution in access to information is likely to have a greater impact than the changes in the presentation.

20. It seems obvious that digitization should be considered an opportunity to rethink pedagogies and teaching practices, and more broadly, to change working cultures in education. The real questions are, however, how will this change happen and what is the role of policy makers? How do we provide new opportunities for teachers to make new and make the most of new pedagogies? We need innovators and experts from government, business, research and education to work together to develop and implement new approaches for educating and supporting teachers so that they are well prepared and equipped to face the digitization challenges.

21. Building innovative capacity into education: pedagogies and teaching is therefore a conversation about change and one of the words you rarely hear in the context of change is 'easy'. We also know that 'being right is not a strategy for change' – today's pedagogies and teaching practices may be very effective in the here and now, but need to be reviewed constantly to take account of the challenges of the future. So the fundamental issue is how to build innovative capacity into the education system. Innovation and education are in many ways unhappy bedfellows. We desire the ability to take risks but we want to avoid risk-taking. We desire innovation but we want stability. We also have to be wary of our desire in education to depend entirely on 'evidence-based change' – the time taken to generate research evidence to support innovation in a rapidly evolving technology cycle presents a fundamental paradox. Maybe the answer lies in better and faster sharing of research evidence using non-traditional means.

22. We need a vision supported by the courage to change – for example, in fundamental areas such as how we teach subjects. Identifying a vision of where we are trying to get to – as opposed to the mechanics of how to get there – is perhaps the most challenging aspect in the context of policy making. The fundamental question for education systems is now how to remain relevant in a world of educational alternatives. The discussion within the session was wide-ranging but can be distilled into four key themes for building innovative capacity:

1. *Teacher education - rethinking CPD*: to support teachers, we should build the capacity to change and to innovate into teacher education. We need to strengthen the capacity of teachers to make use of latest findings and empower them to deploy that in the classroom. If we are asking teachers constantly to do better things (Cf. simply doing things better) then we need to think about how to best help teachers. Part of that is about 'unlearning', which requires affective and

social support. One of the answers may be with an innovative learning system to support teacher development. Taking cues from the corporate learning world, the issue is one of performance support rather than 'training'. An innovative support system for teachers could include 'learning at the point of need – rethinking the paradigm for CPD. Importantly, bottom-up change also requires teacher-led collaboration. Trends such as content sharing, content curation and online collaboration building trust are essential to develop an innovative ecosystem.

2. *Design thinking – supporting innovation*: Introducing design thinking into the process of innovation around pedagogy and teaching practice could also deliver results. Take a cue from world class digital designers – designing for use with digital is a different discipline requiring, for example, an understanding of issues such as UI/UX (User Interface/User Experience understanding). There may also be an opportunity to develop simple 'rules of thumb' such as: only use technology to do things better.

3. *Models of assessment*: Digital pedagogies and new teaching practices imply new models of assessment. There is a widespread recognition that you can't assess knowledge in the same way that you teach it, but how do we improve assessment literacy to support innovation? How to move away from a situation where we continue to value what we measure, rather than measuring what we value. Undoubtedly, as students generate massive amounts of valuable data through digital interactions, learner analytics, personalization and adaptive learning take on a whole new importance.

4. *Student voice*: We can learn a lot from how students engage with new technologies and pedagogies. In the digital gaming industry, there is a philosophy of 'Player First', giving players an embedded role in product development – maybe a 'Student First' approach to developing pedagogies could also be adopted. There are many examples of ground-up movements driven by students – for example Coder Dojo and Digital Youth Councils.

SESSION 4 - Partnerships for transformative education policies

23. How to create transformative education policies? That was the question. "Through partnerships" was the answer. There was a very strong consensus among the participants that forward-looking education policies require a very close co-operation between industry, schools and authorities. That is the starting point.

24. However, it is not enough. We also need

1. Networks of like-minded people

2. Clusters where start-ups and teachers; researchers and educators; parents and business leaders; artists and students can experiment with new ways of learning and new ways of teaching

3. Leadership from policy-makers.

25. It was noted that we are entering an unprecedented era of learning. It is an era of new opportunities but it is also an era of a great disruption. Future class rooms and schools may look very different from what we are used to seeing. Methods of teaching may seem strange compared to those of the past. One thing is, however, likely to remain: learning takes place in a fruitful interaction between a teacher and a student in a structured environment. The task at hand is to create as fruitful an environment for learning as possible.

26. The session started with a discussion about the uncertainty created by technological change and by government cuts in many countries. It was felt that sometimes there is "change for change's sake". Better coordination was called for.

27. A central theme in the discussion was whether a well-functioning educational market already exits. It was felt that in a few countries such a market does indeed exist. In addition to book publishers, authors and illustrators it includes technology companies, software developers and other players. In other countries, there is no educational market. Partnerships can be a step toward creating a proper educational market where public and private actors can find each other. It was pointed out that governments must avoid policies or creating institutions that crowd out market-based solutions.

28. Participants emphasized that collaboration between education industry, ministries and schools must be concrete and open. It must be based on clear standards and platforms. And it must be open to everyone to participate. Collaboration between vocational schools and industry must be as pragmatic as possible. It must provide new and authentic skills and work experience.

29. Partnerships can be developed through experimentation. "Speed-dating" between educators and start-ups was mentioned. "Experience visits" to companies or research centres was another example. Getting parents involved in different aspects of education was also deemed valuable.

30. The role of technology was discussed in length. It was pointed out that technology amplifies both good and bad teaching. We must not lose sight of the fact that quality teaching is and will remain in the centre of the learning process.

31. Discussants also noted that:

- We need advancements in technology to create connectivity and access across the globe.
- We need powerful and less expensive devices, interoperability standards, APIs, single sign-ons, platforms and more. These are technical and engineering solutions
- We need researchers - neuroscientists and cognitive scientists and other fields of study to improve our understanding to how people learn
- We need support for research and development, product testing methods and protocols, learning analytics and data mining
- We need entrepreneurs and designers and startups to create and pursue solutions to challenges both grand and small
- We need teachers and teacher teams to provide deep insights into pedagogy, the best ways to manage groups of students, the methods for engagement and motivation, ways to engage students with relevant and powerful problem solving. Teachers design curriculum, new assignments and share insights into evolving pedagogy.
- We need governments and policy makers to ensure laws, regulations and policies that keep our sights on the public good, ensure safety and security, and promote rather than hinder innovation.

32. Together we are capable of developing powerful, purposeful networks that connect the right people, and organizations. If we can develop these partnerships, we will offer the world something of value.