

Note of Cross Party Group on Digital Participation – 11 March 2015

Attendees

18 Attendees + Willie Coffey MSP and Liam McArthur MSP

Willie Coffey (WC) welcomed everyone to the meeting and thanked SQA for their sponsorship.

The minutes from the previous meeting were approved. The AGM report for the Cross Party Group was approved with one amendment to the membership list.

1. Computing Science: The Journey from 3 – 18, Raymond Simpson (Subject Implementation Manager for Computing Science, SQA)

Raymond Simpson (RS) outlined the computer science journey for school children aged 3 – 18. This encompassed the different technological skills and knowledge required at each national level of development. Computer Science as a subject has evolved since being known as computing or ICT, as is now just as much about creating programmes and software as it is about using them.

Q&A/Discussion

The CPG members agreed that we are still largely a generation of software consumers, not creators, so noted it is important to re-educate people with the necessary skills for creating.

Douglas White (Carnegie UK) commented that it is not clear where computer science is categorised as a school subject. However, perhaps we should be considering computer science as a compulsory cross-cutting subject which is implemented across the curriculum, much like English and maths.

Chris Yiu (SCVO) agreed but noted that this should go a step further and schools should be underpinning every subject with computer skills which should be used in all lessons wherever possible, such as in solving maths problems using computer science. Computing cuts across all aspects in general life, so why segregate it off in schools. WC noted the challenges in then examining it.

The CPG queried how various groups are taken into account with new software and app development and whether groups such as the visually impaired are consulted. Skyscanner for example brought together visually impaired people and made sure they could use the applications, but are others doing the same? RS responded that in the work done at schools it is required to consider different users not just the general public. Children are often tasked to think about different user groups and write coding for them.

Tommy Laughlin (Scotland IS) – Graduate CS engineers are in the second best paid jobs of all graduates straight out of university. We are therefore missing a trick and need to ensure that teachers understand the opportunities it brings as a subject for future career options.

WC found it unusual that given this was the case, why so few young people are choosing this route. RS responded that it was hard to tell why, but children have a very different

experience now to that of our own childhoods, technology-wise they are very well off. There are options, Singapore for example incentivise students financially to choose desired career options. Large companies in Scotland and the UK are able to import skills because these roles are seen as well paid even by international standards. In response to question, RS confirmed that there are engagement programmes in schools and job centres and job sites do expose the salaries. LM suggested there needs to be some kind of inquiry into attainment through the Curriculum for Excellence, especially in the senior phase to understand where in the process we are losing people in this area. Presumably there are opportunities with CfE to engage students more deeply through vocational activities and work experience? Hilary Weir (SQA) responded that there was disparate delivery of the digital aspects of CfE across primary due to available resources and geographic variation. There may be a CPD issue in that some teachers are still doing the old higher curriculum due to lack of confidence, there needs to be a message on career pathways to schools. We are in the early stages of using modern apprenticeships and hopefully a roadmap will emerge to link schools, FE and HE in this area. Gina Wilson (Carnegie UK) asked if access at home was a barrier for young people? RS said that usually the barrier is in school as there are variations across the country and between local authorities. At the point of refresh equipment could be 5 years old; over a 30 year period it is terrifying to think of the investment required. Most corporates use a 4 year disposability cycle.

A member asked where the current stream of grads are going, is there on the job training available? RS said that those with skills get snapped up quickly generally by the banks but they like to re-train people to 'their way'. Laura Muir (RGU) asked about the curriculum and User Interface Design – designing for disability and older people. RS said this is a big opportunity; design is usually centred on children which can help to focus UID for ease of use across the board.

WC wondered if there was a marketing issue that meant young people just weren't seeing the opportunities. RS said that the universities didn't used to look at computing in the same way that they would maths for example. There aren't that many natural programmers, people tend to drift towards doing what they enjoy, for a lot of people, programming would not be an immediate interest. There is some engagement through games which could be captured and progressed. In response to a question about skills for app development, TL said that there was a shortage of those skills; one company's requirements went from 10-12 people to 40-50 in one year. Work was being done by Skillset and Skills Development Scotland to identify and fill gaps in skills. The skills to translate from larger to smaller screen are in particularly high demand. There is a need for these core skills but also to understand how people interact with smaller devices.

The discussion concluded with the question of why people still tend towards traditional industries such as finance when the digital world has such potential to disrupt them and the need to create a new generation of creators rather than consumers.

2. Vocational qualifications and the digital participation framework – Hilary Weir (Digital Literacy and Enhancement Manager, SQA)

Hilary Weir (HW) outlined the different national, vocational and work-based qualifications outside of linear education. Over a thousand people a year are certificated in the top five vocational courses: HNC Computing Science SCQF Level 7, NPA Computer Games

Development SCQF Level 5, NC Digital Media Computing SCQF Level 5, Diploma for Information Technology and Telecom Professionals SCQF Level 6, Internet Safety SCQF Level 4. Computer Basics SCQF Level 3 is the most popular introductory unit designed to provide foundation knowledge and basic skills in using a variety of contemporary computing devices. The course provides step by step guides on a range of topics such as internet safety and legality, as well as guides to online shopping and online bingo for example. Other common units include Information Literacy, allowing users to learn how to search for and organise information, and Social Media Literacy to learn how to get the best value from it both personally and for commercial uses. Units such as these are all standalone so don't have to be taken as part of a wider qualification.

Q&A/Discussion

WC asked about data on job success in the digital industries. HW said that there was not much crossover but there was work happening on skills pathways to enable learning centres to see and expose the routes from learning to job more clearly. RBS are using an HND as part of their modern apprenticeship and there are a wide variety of modular units which will allow for tailoring in this way. Adrienne Chalmers (member) said she was struck on how we keep up with developments in this skills area and keep qualifications relevant. HW responded that qualifications will always be behind in some way, vocational qualifications are constantly refined based on feedback. There are attempts to futureproof by not namechecking etc. RS said that the SQA review every 3 to 4 years, computing science is very different to maths where the theory and outputs don't change. Mairi Macleod (ACS/CCP) asked how we ensure that teachers update their skills? RS said that Education Scotland has this brief and there is a huge amount of CPD available but in this area it can never be enough and it differs across local authorities. Courses can be based on minimum sign up levels and have seen some courses run on a composite basis with varying skills levels which is complex. WC asked which route, academic vs vocational offers the greatest success? HW said it was too early to tell, the aim is to keep creating opportunities and maintain industry validation of content. DW asked what the sense was from people doing these qualifications as to why they were doing them? HW said that the centres which deliver them are full so there is no shortage of demand with a lot of adult returners, a path to FE for students and some people with vast industry experience.

Claire Mack (Ofcom) noted that her two children have two very different experiences with computer science at school as not just down to funding and curriculum but also down to individual teachers and their own interests. How as a parent can online tutorials and skills be accessed and practised for school aged children at home?

HW – there are lots of online courses such as via the BBC website which have online games with maths and computing in. In terms of what SQA can do in schools, they don't have any leverage for what methods individual teachers choose to adopt, but the Wood Report may have an impact. It often comes down to the head teacher. Other than making schools aware of the SQA courses available for primary learners there is not a great deal more than can be done to push them into use. There are a number of other online resources available specifically designed for online learners such as Scratch.

Schools do not have to reach a critical size before these courses can be introduced (therefore smaller rural schools will not be disadvantaged), but it is ultimately down to the

teaching staff. These days a lot is asked of primary school teachers who are often required to teach foreign languages for example, and unless a teacher has a natural interest digital skills often won't get developed much in the classroom.

Plan C is a programme which goes into primary schools and shows children online resources like Scratch. It's important to note that an adult does not need to be an expert, but just needs to know what's available, as often other children can organically become teachers of computing skills within a classroom.

There is additionally a shortage of computer science teachers as many have gone to the well paid jobs that are available in the industry rather than teaching.

3. Digital Learning and Glow - Liza McLean (Scottish Government/Education Scotland)

Glow promotes online and digital for all curriculum areas in schools. Having begun in 2005 it was somewhat ahead of its time and then underwent a re-launch in October 2014. It is available to every teacher and pupil in Scotland and has a potential to reach over 600,000 individuals. Glow helps make digital learning more relevant and familiar and is a place to take advantage of what the internet has to offer in a safe and controlled environment. Previously Glow has been critiqued for being old and clunky so in moving into new services there will undoubtedly be some hurdles in migration for old users but a lot of work has been done with stakeholders to mitigate this and redefine its reputation.

Q&A/Discussion

The CPG queried whether Glow or something similar operates in different countries? What's unique for Glow in Scotland?

As far as they are aware Glow is the only programme operating nationwide. There are other smaller operations but usually on a local authority or school by school basis. When Glow was first introduced it benefited from being a national collaboration and the resource sharing that came with that.

The CPG questioned whether Glow was still free and whether it runs on all technologies and devices? How do parents get involved?

Yes Glow is still free. Parents have the ability to create accounts and Glow are currently working on the best way these accounts can be used to monitor and interact with their children's use. There are for example apps parents can use to see what their children's homework is, but in terms of monitoring often the favoured approach is still found to be looking over the shoulder. One of the biggest issues is accessibility, and actually the more commonly occurring problem is that kids have access to the technology more readily at home than they do at school. Glow is a cloud based system but schools are far further behind in their technology than most homes these days and generally struggle to keep up with the new software.

Liz Leonard (Ofcom ACS) – A central theme from all presentations today is the key role teachers hold in all this. Are we perhaps at a point where we do not allow people to become teachers unless they have reached a certain standard and awareness of computer science?

LM - There are certain standards of entry currently in place and teachers are required on a regular basis to demonstrate updated digital literacy and ability.

The CPG members asked whether Glow is making a difference yet since its launch in 2005 as would hope by now to see progress in teachers embracing the technology.

LM noted that it is perhaps worth going back to promoting the benefits of digital learning and digital literacy as teachers possibly lack the impetus demonstrated in the benefits it brings to young learners and their progression.

Raymond Simpson suggested that while new smart boards in classrooms put many teachers off, once the chalk ones were taken away they were forced to use and embrace them. Perhaps with a similar approach along with proper training for the teachers on how to use all the new devices and programmes, more progress can be made.

WC – Is there an assessment point for Glow?

LM – A full review is to be conducted in June. However, stats so far show that use figures have doubled since its launch in October. There are now 10,000 unique users out of 600,000 potential users, but a teacher may for example log in on behalf of a whole class therefore numbers aren't always wholly indicative of use.

Tommy Laughlin asked whether kids been involved in the user engagement elements and design process. Also what happens when a child leaves school – will they still be able to access Glow resources?

LM – yes resources can still be accessed but certainly more could be done to engage with school leavers. The learning doesn't stop once you leave school and the aim has always been to extend to college users. Young Scot has been involved in the development side.

Willie Coffey closed the meeting thanking all in attendance and the presenters, and advised that the next meeting would be held in June.