BCS, The Chartered Institute for IT, Academy of Computing Board
School Curriculum and Assessment Committee

Notes of the meeting held on Wednesday 15 July 2020 at 11:00
Online meeting

Present

Prof	Muffy	Calder	MC	Chair, University of Glasgow
Mrs	Julia	Adamson	JA	BCS Director of Education, Academy of Computing
Mr	Miles	Berry	MB	University of Roehampton
Dr	Jon	Chippindall	JC	Crumpsall Lane Primary School
Ms	Beverly	Clarke	BC	BCS National Outreach Manager
Prof	Tom	Crick	TC	Swansea University
Ms	Catherine	Elliott	CE	Sheffield City Council
Mr	Dave	Gibbs	DG	STEM Learning
Dr	Helen	Harth	HH	Loughborough University
Mr	Peter	Kemp	PK	King's College London
Mr	Atif	Khan	AK	Pearson
Mr	Robert	Leeman	RL	Arm
Mr	Peter	Marshman	PM	BCS/Leighton Park School
Mr	Niel	McLean	NM	BCS Head of Education
Prof	Simon	Peyton Jones	SPJ	Microsoft
Dr	Saima	Rana	SR	Westminster Academy
Mr	Neil	Rickus	NR	University of Hertfordshire/BCS
Dr	Sue	Sentance	SS	Raspberry Pi Foundation
Mr	James	Spencer	JS	St Martins School
Mrs	Jane	Waite	JWa	CAS London, QMUL
Ms	Liz	Williams	LW	BT
Mr	Matthew	Wimpenny Smith	MWS	Headington School
Dr	John	Woollard	JWo	University of Southampton, CAS Assessment Working Group

Observers

Ms	Clare	Fowler	CF	Department for Education

In attendance

Mr	Mark	Martin	MM	Urban Teacher
Mrs	Maxine	Leslie	ML	Meeting Secretary

Apologies

Mr	James	Donkin	Ocado Technology
Mr	Pete	Dring	Fulford School
Sir	Mark	Grundy	Shireland Collegiate Academy Trust
Ms	Lucy	Ireland	BCS Learning & Development Deputy CEO
Mr	Gareth	James	BCS Head of Education
Ms	Kerensa	Jennings	BT
Ms	Samina	Kiddier	Department for Education
Dr	Bill	Mitchell	BCS Director of Public Affairs
Ms	Sarah	Old	Ofqual
Ms	Carrie Anne	Philbin	Raspberry Pi Foundation
Ms	Katy	Potts	Islington Council
Ms	Liz	Walters	Ofqual

1. Welcome, apologies, declaration of conflicts of interests & Chair's Report [SCAC/2020/02]

The Chair welcomed all attendees, in particular Beverly Clarke, Clare Fowler and Tom Crick who were attending for the first time and apologies for absence were received as above. There were no conflicts of interest to note.

2. Actions from previous meeting held on 13 November 2019 [SCAC/2019/21]

Members APPROVED the notes from the previous meeting and the action list from previous meetings was reviewed (see Actions section below).

3. Options Appraisal [SCAC/2020/03]

J Adamson introduced the previously circulated paper on Key Stage 4 options, which was at version 9. It was noted that it was not the best time to lobby governments due to the pandemic.

Members discussed the pros and cons of the terminology *computing* vs *computer science* and opinions were divided. MB, PK and JWo would like to see a GCSE across all of computing, replacing GCSE Computer Science particularly as, when the GCSE CS was introduced, no one had expected GCSE ICT to be removed.

It was acknowledged that SCAC should aim for a consensus view rather than a majority. MB pointed out that the specification needs tweaking and that he is happy to promote technical and non-technical overlap alongside informal qualifications. DG agreed with the promotion of technical awards alongside GCSE CS, to enable the full range of further study options as well as addressing the technical skills gap. The new T-level increases the urgency of this. PK had a concern about going down this route, as it is easy to promote tech, but schools are unlikely to take it up due to its status on league tables.

CF indicated that the options had been well thought out but she also appreciated the comments made. This is still a very new subject for schools and NCCE has found that confidence still needs to be built. Changes to the computer science specification are achievable but full curriculum/qualification changes are not in the current menu for Ministers. In terms of funding, DfE is currently looking at what has been achieved and what it might want to achieve in future, so it is unlikely to 'dry up' as a lot has been achieved and we will want to carry this on. However, this is dependent on the Treasury.

There was concern that by enlarging the VQ framework, those that can't access computer science may be disadvantaged as if schools tend to choose the least difficult option. This would be an argument for keeping it as one qualification so that schools do not decide on one but not the other. There was a need to re-educate people about what computer science is and broaden the existing GCSE. Another worry is that a one qualification solution would lead to a broad, non-detailed curriculum. The Cambridge assessment development saw the digital literacy split out which thinned the volume.

SPJ acknowledged that it was good to know what we want, but there is a need to be realistic rather than too ambitious. Incremental changes are more achievable and it could help to amplify *paragraph 5.3* to address Members' concerns for students who do not choose a computing qualification. It would also be interesting to obtain broader feedback once it is available, particularly from government and teachers, providing a channel to do so.

Action: JA to update Options Appraisal document (v10) to reflect Members' discussions

4. Textbooks [SCAC/2020/04]

Members received the previously circulated 'Textbooks for the teaching of computing'. SS reported that the NCCE and DfE were jointly working on computing/CS textbooks under the contract. The international textbook review, undertaken with JWo's help will be available on the Teach Computing website in September 2020. There is also guidance of teachers on using textbooks and work was underway on developing criteria for teachers.

There was some discussion on digital vs physical books. Given the online teaching situation necessitated by the pandemic, maybe we would be looking backwards if we rely too much on printed books? A lot of publishers are finding that the market for physical books is drying up and they are switching to digital. On the other hand, some schools value textbooks and it can especially be a solution where students don't have access to technology to access digital versions. MWS agreed, stating that from a primary school teacher view, it is important to have physical books but with links to online books. If there is an element which is online, it helps to keep a static book up to date with eg activities and videos. Book budgets are also a factor as, after Covid-19, schools won't have the money to spend on banks of textbooks.

A useful reference was Tim Oates ' Why Textbooks Count' 2010 and also the criteria drawn up by the DfE for mathematics books (focus on Mastery Learning).

5. CS qualifications in Devolved nations (MC)

The Chair proposed that the document be parked and we move to a more quantitative approach, such as an audit of 4-5 qualifications across the four nations, looking at areas such as the role of assessed work. Data analysis included in this sort of document would be useful for SCAC, for schools across the UK and those outside too, including government. It may prove difficult to obtain sensible quantitative data because of sensitivity and the difficulty in drawing comparisons of such different systems; however, it was noted that all nations publish data after exam series, even if it is only historical data, it would help. HH indicated that the JMC produces a systematic framework document for maths education across the four nations produced by the JMC and offered to put JA in touch with the authors.

Action: JA to liaise with HH on JMC contacts to help with producing a quantitative comparison document

TC gave an update on the schools curriculum developments in Wales, giving a rapid overview of what has happened over the last 4-5 years, some of which has parallels with similar activities in Scotland.

The major review of curriculum and assessment commenced in 2015 with the new 2020 curriculum being introduced year by year, covering ages 3-16. There are six thematic areas and TC is leading on science & technology, within which there are six "what matters" statements. One of the six is "Computation underlies the digital world". There is a new GCSE and A-level in Digital Technology starting in September 2021, alongside GCSE and A-level Computer Science with further qualification reform possibly to follow at KS4 (level 2). GCSE Digital Technology criteria for consultation may be found here.

Members were interested to note the split of GCSE CS and Digital Technology, alongside each other with parity of esteem. TC indicated that a lot of schools would be likely to offer both as there was a huge demand for qualifications in this space, although there may be limits in terms of offerings and timetabling.

6. Computing Curriculum and BAME [SCAC/2020/05]

The Chair welcomed guest speaker Mark Martin, who had been working with BCS, to talk about what we should be doing as a Committee to address issues such as institutional racism and encouraging pedagogy in the context of a culturally responsible curriculum. It was noted that it would also be useful to look at diversity in terms of ASD and SEND as well.

MM introduced his presentation (see *slides*) by indicated that it was important to be proactive about approaches to BAME and the computing curriculum. When people talk about race in computer science, there are different responses but it would be good to have a unified response, it is as if there is a pink elephant in the room, conversations do not take place and issues fester. It is important to take on these uncomfortable conversations and say what we want to say as computer science body, that diversity should be reflected in the tech and CS is seen as being for all students. The question is how is the pipeline treating them, however much a teacher does their best to train young people, when they get to the workplace, they start to experience issues.

For example, we need to find out why black students are under-represented in student cohorts compared to the wider community, why black students are dropping out of courses and the reasons behind there being 0% black representation in senior CS roles. PK agreed (via the chat), indicating from his research that in 2016, there were 73.6% of GCSE CS students in London that were BAME, but a huge lack of representation in the upper tier of industry.

HH indicated (via the chat) that the Royal Society is looking to do some work in this area, and it would be good to discuss this offline.

We need to understand where the bias is occurring, including within the computing curriculum, where it could help to ensure that curriculum is designed by a diverse group of people. There is evidence of a talent drain, in particular for CS teachers that are going abroad to teach, so it is important to change the narrative.

MM indicated that he had launched *UK Black Tech* in 2017, involving young people that have their own digital businesses. Examples include teaching at university at the weekend, and conducting mock interviews for young people interested in working at tech companies, to build confidence. Also partnering PwC to work with communities across the UK.

There was widescale support for the SCAC to look at this issue. BC viewed this from an education and a personal angle, particularly as this road has been travelled many times with the same outcome. It is important to give all students role models which are diverse and (via the chat) at CAS we are working with Mark and CAS #Include to develop a *CAS in a BOX* resource that covers lots of areas under the diversity and inclusion heading - such as ethnicity, LGBT, SEND and gender.

MM raised the idea of using more 'in touch' scenarios and relevant examples when teaching, to empower young people to use resources as a force for good.

One question was whether it was useful to distinguish between diversity and inclusion. PK indicated (via the chat) that there are definitely some intersectionality issues here, eg all BAME female groups were better represented in GCSE CS than white females (2016).

When PK and MB put together the Roehampton report, part of reason was diversity, not just SEND and gender but also ethnicity. They found that females from BAME backgrounds were better represented than white females, but as previously indicated, there was a huge drop off when get near to power in big organisations. It would be good to see how those from BAME backgrounds fare in each stage. ICT seems to be well represented, whereas CS is not. This is possibly to do with schools' offerings and the selection criteria used but there needs to be more work to see how inequalities are manifested. The number of BAME HE students does not translate into the employment figures. There might be a good piece of work across educational and non-educational levels (eg clubs, Code Clubs).

The Chair agreed that we need to understand the landscape but through the focus of schools and the computing curriculum. Members agreed that the Committee should advocate for more representation of BAME around the table during specification writing.

NM suggested that step zero was to say that consideration of BAME representation should be informing all agenda items, not only an isolated agenda item. The danger is that we have the conversation, but it gets lost as soon as we move onto next item. It should be a lens through which we view everything. The Chair thanked MM for his inspiring input to the meeting and agreed that we look through a lens for agenda items, stock check and ask students what they think of the curriculum.
Action: agenda setters to incorporate diversity issues within every future SCAC agenda item

Resources & further reading:

- SPJ's Google doc
- CSTA's statement on Black Lives Matter
- PK's research paper on BAME female uptake
- Roehampton report BAME section 4.2.3, page 109 onwards
- 2016 BAME stats for London and other regions: KS4 and KS5
- http://ijoc.org/index.php/ijoc/article/download/6182/1807 and https://teachinglondoncomputing.org/diversity/
- SIGCSE 2020 from the US (Prof Nicki Washington, Duke University): "When Twice as Good Isn't Enough: The Case for Cultural Competence in Computing

7. Future Ofqual consultations

NM gave a verbal report on likely issues (e.g. Summer 2021 exams) and how we intend to respond.

For the BCS SCAC response to Ofqual's consultation on 2021, the deadline for electronic submission was imminent and Members were reminded to send any thoughts to NM. As before, the Chair will follow up the online response with a letter (previous letters are available on the BCS SCAC pages of the BCS website).

NM provided an update on the results from the CAS survey and from the focus groups that had been convened: 37 Members responded to the survey, of which the majority were generally supportive of most proposals. The two areas of disagreement were in including more optional questions, which respondents supported and Ofqual's proposal on the continuation of the NEA at A-level. This was opposed by those responding in the consultation but not by the focus groups.

There was a worry that Examination Boards would mark down as grades given by teachers was out of step with previous years. The Chair had also written to Ofqual on SCAC's behalf to express this concern. NM would keep Members informed of upcoming consultations, with an opportunity to feed in.

8. Review of Membership & Terms of Reference

This Item was deferred to the next meeting.

9. Documents for noting

The five governance documents were NOTED.

10. Agreed actions and AOB

Agreed actions as above and below. SPJ informed Members that John Nixon had moved on from the computing subject role at Ofsted and that we are waiting to hear about the new contact, so that regular meetings can be re-established. CF undertook to investigate and update SCAC on the new Ofsted contact point.
Action: CF to see if can find out new Ofsted computing subject contact and inform SCAC Chair/secretary

11. Date of next meeting

The next meeting will be on Thursday 12 November 2020, 11:00 – 13:00 and will be an online meeting. It is possible that the proportion of F2F and online meetings will change in future. The Chair thanked the presenters and attendees for the work that they do for computer science.

Actions - responsible people in red

July2020.1 Options Appraisal
Update document (v10) to reflect Members' discussions. JA

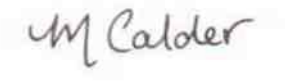
July2020.2 CS qualifications in Devolved nations
Liaise with HH on JMC contacts to help with producing a quantitative comparison document and invite either Scotland or NI rep to present to next meeting. JA

July2020.3 Computing Curriculum and BAME
Agenda setters to incorporate diversity issues within every future agenda item. Chair/BCS staff

July2020.4 Agreed actions & AOB
See if can find out new Ofsted computing subject contact and inform SCAC Chair/secretary. CF

November2019.1 Chair's Report
Look at compiling a glossary of terms for 'workbook' terminology and a paper to frame textbook usage questions with input from SS, Phil Bagge and Mark Dorling. MWS agenda

November2019.5 Parents brochure
Test the updated draft brochure with key people. MC
On-going



Signed: _____ _____

Prof Muffy Calder
Chair of School Curriculum and Assessment Committee