

**BCS, The Chartered Institute for IT
BCS School Curriculum and Assessment Committee**

Notes of the meeting held on Wednesday 9 November 2021 at 2:00 pm
Online meeting

Present

Prof Dame	Muffy	Calder	MC	Chair, University of Glasgow
	Julia	Adamson	JA	BCS Director of Education
	Miles	Berry	MB	University of Roehampton
	Beverly	Clarke	BC	BCS National Outreach Manager
Prof	Tom	Crick	TC	Swansea University
	Sharon	Cromie	SC	Wycombe High School Academies Trust
	James	Donkin	JD	Ocado Technology
	Pete	Dring	PD	Fulford School
Dr	Helen	Harth	HH	Health Education England
Dr	Peter	Kemp	PK	King's College London
	Samina	Kiddier	SK	Department for Education
	Robert	Leeman	RL	Arm
	Mark	Martin	MM	Urban Teacher
	Niel	McLean	NMcL	BCS Head of Education
	Sarah	Old	SO	Ofqual
Prof	Simon	Peyton Jones	SPJ	Microsoft Research
	Sue	Sentance	SS	Raspberry Pi Foundation
	Jane	Waite	JW	Raspberry Pi Foundation/QMUL
	Marc	White	MW	Ofsted

In attendance

	Liz	Bacon	LB	Abertay University
	Simon	Humphreys	SH	
	Alastair	Irons	AI	
	Ruth	Lehane	RLeh	Meeting Secretary
	Maxine	Leslie	ML	Meeting Secretary

Apologies

	Kerensa	Jennings	BT
Dr	Bill	Michell	BCS, Head of Policy
	Nicola	Mounsey	Calday Grange Grammar School
Dr	Saima	Rana	GEMS World Academy, Dubai
	Liz	Walters	Ofqual
Dr	John	Woollard	University of Southampton

Notes

NB: Members contributed to a [Google document](#) during the meeting.

1	<p>Welcome, apologies, declaration of conflicts of interests & Chair's Report [SCAC/2021/08]</p> <p>The Chair welcomed all attendees, in particular L Bacon, A Iron and S Humphreys. There were no conflicts of interest reported. The Chair's Report was circulated prior to the meeting.</p>
2	<p>Notes/Actions from previous meeting held on 7 July 2021 [SCAC/2021/06]</p> <p>Members APPROVED the notes from the previous meeting, for posting to the website.</p>
3	<p>Matters arising from Notes/Actions</p> <p>No matters arising not covered elsewhere on the agenda.</p>
4	<p>SCAC Working Groups update [SCAC/2021/10]</p> <ul style="list-style-type: none">• GCSE CS subject specification (Rob Leeman) <p>MC expressed how well the Working Groups were progressing and how each one would be given an agenda slot in each meeting. An update on each Working Group had been circulated as a pre-read and this meeting RL will be concentrating on GCSE CS subject specification.</p> <p>RL reported that there had been a 'red pen' exercise looking at what could be excluded, updated, and improved. RL asked for feedback particularly around the headings as a way of categorising the subject and also the percentage ratios.</p> <p>SPJ said he thought that CS could be categorised into three sections: communication, information and computation.</p> <p>MB noted that algorithms had been included with programming but queried whether this would work as there was a massive distinction between programming and algorithms. Also, 25% for Data Science is a high-risk inclusion and MB voiced concern that there are rules about subject content overlap and it would need to be sufficiently distinctive from other content taught within other GCSE subjects.</p> <p>RL said that it would be distinct as CS would be looking at raw stats, what meta data is, handling the data and massaging that data. Statistics would be applied but delivered in a different way.</p> <p>MB thought that part may be worth re-visiting under the heading of 'information' as suggested by SPJ. RL said that the term 'Data Science' was designed as a catch-all to encompass all that content. JW said she was confused by 'Data Science' wording and agreed to the idea of making the data element more generic.</p> <p>LB indicated that although she has not had any involvement in some years, it felt hugely technical. She voiced concern about teacher competence and said that a CS degree teaches a far wider range of the subject, and this feels too detailed. LB said she would prefer to see something much broader – a more T shaped curriculum. There should be more about how CS affects society as a whole and it would be challenging for the number of teaching hours.</p>

SH agreed with LB. It is labelled as Computer Science but has always argued (currently to no avail) that it should be computing and should be far broader. The principle of categorisation should enable students to get a handle on the context of CS in society. SH noted that SPJ's titling suggestion was good. On the Data Science front, there is some cross over with vocational qualifications which include more data handling. SH suggesting wrapping this in with old school spreadsheets, but it was important not to overlap with VQs.

TC said that with his Welsh curriculum hat on, it felt like a lot of content although he understood the desire to make changes, it may make problems for us further downstream. The issue with Data Science is that it's difficult to leave out but keeping it in may also be a problem. We need to think of the practicalities when thinking about the breadth of a Level 2 qualification.

MC explained that the WG were tasked to look at what is currently in place and what small changes can be made rather than a wholesale re-write.

AI echoed LB, SH and TC and said it was about not making it too dry or exclusive as they don't want to turn people off. It has to be made interesting and to get more people to take the subject. There was a huge drop off between GCSE to A-level. They need to look at getting a more diverse group interested and there is a gender issue.

NM re-iterated MC's point that the purpose of the group is to look at the changes that can be made under current policies not what it should be in an ideal world. It may be worth separating those conversations. He said that when asking about content it's better to ask what else can be included rather than asking to give something up. The list would then be really long but then priorities can be looked at in terms of what works better. NM also mentioned concerns with subject overlap and that students have to do maths in physics for example, but the devil is in the detail.

SS said that CS at university is broad but GCSE is very narrow and suggested that 20% on each of the things that matter. There should be more emphasis on where it can be used and how students can be empowered through CS skills. Peter Denning's 7 principles were mentioned.

SK & JA join meeting

JD said that small changes are needed to make CS more relevant and important. LB mentioned the massive gender challenge and that this is a societal issue. The big turn off is around age 12 – 13, secondary age. Girls see stereotypical media images and it's the same in other subjects. We're trying to fix the problem after the horse has bolted. Society needs to be fixed first.

JD agreed that there is a gender imbalance but that the problem was at primary school too and she said things had gone backwards in the last 20 years.

MC summarised by saying that generally people liked the idea of categorisation of titles and everyone like Simon's idea of categories, but 'Data Science' was problematic. MC said that some of the context around tweaking what we have was not there at the beginning of the discussion, but it was agreed that the list is currently too big and unteachable. It may be worth considering what we want in, rather than what we want to remove.

RL thanked members for useful comments and that was presented is a work in progress. The next step will be a version which is much more teachable in the time available. He

	<p>agreed that engaging girls and making it more relevant to their experience needs more thought.</p> <p>NM asked if there may be any volunteers for reference groups to comment on the outcomes of the working groups (SC volunteered). RL encouraged members to add further comments to the G Doc.</p> <p>ACTION: Members to contact RL / ML if they would like to be part of reference panels and add further comments to the G Doc.</p>
5	<p>Discuss what is needed to encourage universities to desire/require CS qualifications for entry</p> <p>Pre-read circulated prior to the meeting</p> <p>MC introduced A Irons, L Bacon and T Crick who had been invited to take part / lead the discussion.</p> <p><i>MW arrives at meeting. HH also in attendance</i></p> <p>JA gave some context and explained that SCAC were interested in talking about what unis could do to make GCSE and A-level CS more attractive? There is a relatively low number of students taking CS compared to those taking CS at degree level. It is not a direct pipeline. The gender balance at A-level not great, but in FE, it's much better. There is a question about whether the courses are incremental or if courses start again each time.</p> <p>LB said it wouldn't be realistic to ask for A-level CS because it would reduce the intake. She explained that Unis have different syllabuses. Only a small percentage ask for maths, and some don't even ask for specific subjects. HEs mostly start from scratch and go at quite a pace, hoping everyone keeps up. This gets tackled in different ways by different unis. The problem with lowering the grade requirement would be that it would affect league tables and therefore cause tensions. Unis can encourage students to have CS A-level but that doesn't mean much.</p> <p>MM worked at UTC for 5 years. They did cross over teaching between A-levels and first year grads. The challenge would be how to disseminate that to schools. MM suggested taking industry into schools to show how digital skills can be used in the community and to help society with anything from climate change to homelessness. It needs to be seen to be more relevant.</p> <p>MC questioned how that would be communicated and MM suggested student ambassadors. He worked with A-level students who were evangelists. In private school, what worked with girls was representation in the content.</p> <p>MB said it was worth thinking about this in the same way as GCSE. At the moment, A-level is designed as stepping-stone and is not working even then. CS at A-level should be seen as attractive if you're doing any programming in any degree course.</p>

	<p>MC said students generally only take three A-levels and so questioned is there enough space to take CS?</p> <p>SPJ suggested that unis could encourage students to take A-level CS by saying they would have access to more advanced degree modules. Differentiated teaching in unis is what's needed. It would be more work but more rewarding for students and lecturers. If students have taken A-level, they should be able to go further.</p> <p>MC explained that in her university there have been different first year courses. It is labour intensive but more satisfactory. Students can fast track with a CS Advanced Higher or A levels (must include Computing and Mathematics) and go straight into second year, but this is rarely taken up. Some unis do have multiple streams.</p> <p>LB said that there are modules in the first year where half the content is covered in A-level and half isn't. There could be harder modules for those who have done CS A-level but that could lead to issues of fairness. There is a problem with matching syllabuses to different entry requirements.</p> <p>SPJ asked if there was at least one modest thing that could be done as this subject has been spoken about before and we're still stuck. MC suggested that the aim shouldn't be to make CS a pre-requisite but to make it valued and the reasons why it is valued clear to teachers, parent and most importantly, students.</p> <p>JD asked that if CS A-level is not going to be a pre-requisite, should it exist? Does it have stand-alone value?</p> <p>NM noted that A-levels are preparation for HE but also have to be worthwhile in their own right. NM replied to a query from MC on whether Psychology and Economics have a similar problem. Psychology requires a science, and don't require Psychology A-level either, but do see it as commitment to the subject.</p> <p>PD said that he thought it was a huge selling point for students to be able to fast track in Scotland. PD knew of a contact involved in reforming the music curriculum for undergraduates and postgraduates and had involved A-level teachers in the process, which had been vital.</p> <p>JW asked about producing a strategic objective, something tactical and operational, a statement that can be signed up to as a direction of travel.</p> <p>JA said they need to work on things so that they are valuable in their own right and to make them routes and pathways to other qualifications. Students need to know how it will help in other disciplines. It needs to be valuable and relatable to next steps in a career and hold value within society. Tweaks to specifications needs to be made for it to be relevant in today's world.</p> <p>SPJ suggested a future action could be to look at the A-level specification in the same way as the WG is looking at GCSE, so that CS A-level valuable in itself.</p> <p>MC thanked everyone for their input.</p> <p>ACTION: consider reviewing A-level Computer Science in the same way as GCSE CS</p>
6	Grade boundaries for GCSE [SCAC/2021/11]

	<p>PD thanked the members for reading the stats in the paper, noting that a second letter had been sent to Ofqual on this. There is a need to grow the subject in diversity. There is now some good quality teaching through the help of the NCCE and qualifications are viewed as good progression routes. But students should get the credit they deserve, and CS students generally get a grade lower than in other subjects. It needs to be fairer and equitable with other subjects. Weaker students can come out a grade and a half lower which puts teachers off encouraging students to take the subject as they are held to account. There has been discontinuity of data due to covid so there is a need to go back further to ask for more data to back this up.</p> <p>MC said it was good to see the numbers in black and white and these have been extraordinary times for Ofqual but we're trying to gently bring this subject back up the agenda.</p> <p>SO confirmed the letter had been read and completely understood the frustrations. She confirmed that a reply will be sent very soon with willingness to engage with concerns and see what can be done. SO acknowledged they were already outside their SLA but they wanted to be right rather than quick. A draft response has already been written. SPJ noted that Ofqual has much more information than SCAC does, so it would be good to engage on what that evidence is. SO indicated that the response will say that we 'hear you' and let's see what we can do.</p> <p>SPJ said that it would be helpful for our community to know Ofqual are working with on this and asked SO for advice on how this could be done. SO was unable to give an immediate response to this but undertook to come back on this point.</p> <p>MC thanked SO.</p>
7	<p>Agreed actions and AOB</p> <p>TC offered to share some information regarding the emerging qualifications map in Wales all about moving from triple science and the roadmap to Science. TC said he would be happy to share that as an aside to what had been spoken about today.</p> <p>SPJ asked SK whether the new ministerial team will have an appetite for engaging on KS4 in England. SK indicated that they needed to test this with the new minister. It was likely that the most attractive option would be to look at GCSE content, rather than the possibility of offering an ICT qualification alongside CS. Rachael Gray will replace SK on policy and once embedded will liaise further. SK confirmed that DfE will continue to work with SCAC and will call for help if appropriate.</p> <p>MC summarised discussions saying that the GCSE WG remit was to make changes to what we currently have; the ideal may be another qualification in computing but that would be working on two goals at the same time. There is a strong conclusion about raising the profile of the A-level in its own right by looking at the A-level in the same way as the GCSE. Finally, engagement with Ofqual and thinking about communicating to the community. MC also noted that the Working Groups are looking for conclusions; the intention is that they are short-lived and will come to firm conclusions.</p>
8	<p>Close and date of next meeting</p> <p>MC requested for comments about Online or FTF and asked if we could use Zoom for future online meetings.</p>

	<p>ACTION: Arrange for March and November online meetings to be on Zoom – 2 hours</p> <p>ML noted that July’s meeting was a plenary meeting so suggested this one being face to face. Example timing: 10:30 – 13:00 including a break followed by lunch.</p> <p>Dates of future meetings:</p> <p>Monday 14 March 2022 Wednesday 6 July 2022 (plenary meeting) Tuesday 15 November 2022</p>
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**Actions –
responsible people in red**

November 2021.1 Members to contact RL / ML if they would like to be part of SCAC GCSE CS Working Group reference panels and add further comments to the [G Doc](#). **Members**

November 2021.2 Consider reviewing A-level Computer Science in the same way as GCSE CS **BCS staff**

November 2021.3 Arrange for March and November online meetings to be on Zoom **Secretariat**

July 2021.2 SCAC Working Group Chair updates

Liaise with Quintin Cutts for MM to learn more about the “for-all” perspective on computing in schools: modelling, problem-solving, and alignment with mathematics **NMcL/MM**

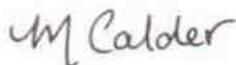
March 2021.4 WG kick off

Draw up a registry identifying work of each WG for adding other work so it is easy to identify overlaps and potential gaps **BCS staff**

March 2021.5 DfE Pupil, Parent, Carer Survey
Report back to SCAC July meeting on careers research being commissioned by DCMS **SK**

March 2021.6 DfE Pupil, Parent, Carer Survey

Ensure that making choices is including in the purposes of each WG, especially *A Culturally Responsive Curriculum* **WG Chairs**



Signed: _____

**Prof Dame Muffy Calder
Chair of School Curriculum and Assessment Committee**