

Naace Response to National Curriculum Consultation – Supporting Evidence

February-April 2013

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Outline

Naace have collected responses from our members and from other interested educators in a variety of ways:

- Direct responses – email, conversation, etc.
- Video Vox Pops at our conference, March 2013
- Responses via a range of web 2.0 tools at our conference, March 2013
- An on-going survey for collecting responses during this consultation period
- Responses via partners, including CEOP and SWGFL
- An interactive curriculum symposium at our own conference, March 2013
- A voting session at the Education Innovation conference, March 2013
- Naace Talk Lists - email discussion groups for our members

We have attempted to represent different viewpoints fairly, so there will be occasional responses that are at variance with the overall response that Naace has submitted, but which have been part of this full, frank and open discussion between educators who are passionate about providing the best possible learning experiences for young people. We feel it is important to recognise the depth of feeling and the deep consideration that has been given by a large number of educators and respectfully request that these be read alongside the overall Naace response for submission as part of the curriculum consultation.

Numbers of responses:

| | |
|---|-----|
| Direct responses via email, conversation etc. | tbc |
| Vox pops | 11 |
| Web 2.0 responses | 6 |
| Survey responses | 108 |
| Curriculum Symposium responses | 280 |
| Responses via partners | 75 |
| Education Innovation voting | 26 |
| Talk Lists contributions | 114 |

Do you believe this programme of study is a positive move for the subject?

The vast majority of responses to this question were negative:

| | Responses via Naace Members | All responses |
|--------|-----------------------------|---------------|
| No | 51% | 50% |
| Unsure | 29% | 25% |
| Yes | 20% | 25% |

When looking at the responses to these questions, even the “Yes” responses and the “Unsure” responses had qualifying statements which made it quite clear that a simple yes, no or unsure doesn’t tell the whole picture. It is important to look at the nature of those statements, too, as many reflect those who have said no and we have taken them into consideration in formulating our overall response. It is probably better to consider that there is much more of a spectrum of responses than those choices given in the surveys and there is a lot of common thought, even if the actual answer chosen differs.

The following comments were included in the survey responses that answered “No” to this question:

A lot of children will be switched off the work as it won't be in their interest

Although I feel that it is important to include teaching programing as an element for gifted and talented I feel that the current provision is broader and more appropriate for the majority of pupils. The current ICT programme is more inclusive and cross curricular.

Children need to have access to creative use of ICT in all areas to explore and discover and create a real interest in all areas of digital technology.

Computer science is suitable for only a small minority of pupils. It will be very demotivating for many less able pupils

Far too much computing, too many non-specialists operating at KS3 that struggled with ICT and making it interesting to kids. How can they possibly cope with lots of computing without national training programme on a vast scale?

Has the potential to be very damaging, plus the lost opportunity cost - this is a chance to reinvigorate the subject and could well be thrown away.

I agree with Naace that ICT should be a balance between IT, Digital Literacy and Computer Science.

I agree with the addition of programming, but feel that the broader curriculum is still necessary. Not all children will be programmers. Children still need to learn to be competent users of technology.

The focus on CS may prove to be negative in some schools, including the loss of ICT teaching.

I am concerned about the lack of variety in Primary - our LA have just installed loads of "security features", now it takes any child longer to log on and so learning time is shortened in the name of e-safety. The children can play games and are quick to use different "Apps", but as to actual typing, note making form and browsing they are less confident now due to so many security concerns

I think the lack of ICT is a backwards step which will put us in a similar position to what we are in now in just a few short years. It's highly unbalanced

I work in a first school and the younger children need to be taught key skills first.

It appears to be focused completely on only one aspect and not looking at the subject as a whole. I think there will be a greater skills gap if this goes ahead.

It does not encourage imaginative use of technology to enhance learning

It fails to consider the cognitive levels of children

It is not an inclusive curriculum and fails to identify where pupils will develop discreet digital literacy skills.

It is very limited and although the overall aims refer to 'communication' this aspect is not clearly evident in the Key Stage content.

Its focus is too narrow - Computing and programming specifically will take up much of the curriculum time. Non-specialists will find learning the new material challenging and subsequently may teach it in a very dry way - putting many off the subject. The KS3 content is more challenging than existing KS4 content. Children in KS1 can barely read and write, never mind be able to explain what an algorithm is. Although Computing is compulsory at KS4, taking a GCSE (or equivalent) is not - all pupils should have the opportunity, - meaning they equally have the opportunity to turn it down. The all pupils should statements that follow are nebulous and in reality will mean that reference to computational thinking will appear on other subjects' SoWs but not happen in practice.

Lack of IT - skills are not embedded in all subjects and IT is NOT being used in lessons in many schools

Many of the careers in the digital sector will miss out of this overly Computing focused curriculum. Where is the creative elements of the subject gone - I teach - Web design, video and sound production, graphic design, DTP, photography - where will these skills be developed in this curriculum?

Not enough creativity included making it unbalanced.

Not in its current form. No way near enough digital literacy. Who is getting the kids to learn how to use ICT effectively?

Particularly at KS1. There is no mention of the children using other forms of technology, such as cameras, flip cams, recorders or being allowed to be inquisitive learners and explore and develop their enthusiasm

for learning. It seems very prescriptive and geared towards a mathematical way of approaching the subject.

The balance between different areas of the ICT curriculum is now wrong.

The new PoS has some key elements missing from the previous documents but does not go far enough to encourage the use of digital creativity beyond that which could be loosely called programming.

The removal of many creative aspects such as web, video and sound editing and design is detrimental to the idea of computing/ICT. Many ICT careers are creativity based and removing this aspect from the curriculum would not prepare students adequately for their future.

There has to be a clear balance between computing, ICT and Digital Literacy. I agree there has to be elements of programming however it can be dry and take pupils a long time to implement.

There is no mention of the use of ICT across subjects or staying safe/e-safety etc.

There needs to be a balance of skills, knowledge and application across the fields of ICT use, Creating Systems and computing namely using Office, Graphics and other systems, creating graphical images and animations, websites and models etc. and finally programming systems (control, games, apps etc.).

There was definitely a need for an updated programmed of study for ICT however this is not what I hoped for. I think I'm fairly ICT literate; however I don't actually understand the subject content for KS1. What are algorithms? There also appears to be a lack of mention of any of the exciting ways children can access ICT through a variety of tools- talking postcards, microphones, digital cameras and video recorders. Young children need a practical purpose for what they are learning. What is the point of knowing what an algorithm is if you have no idea why you need to know this as you've never been exposed to any devices that can be programmed?

This is a giant step backwards. The disappled curriculum contained sustainable objectives covering communicating, handling data, modelling and programming. It was fine.

This is a return to the Computing of the 1980s which was only accessible and understandable by pupils of higher academic ability. Special school pupils will have no chance, as in order to program it is necessary to have higher order linguistic skills including facility with sequencing and syntax.

Too heavily balanced to the science part

Too heavily focused on computer science aspects at primary school level.

While I whole heartedly agree that a new emphasis on computing/computer science is positive, there is still a need for the ICT model to be available for all students.

Whilst I feel that there should be some movement towards delivering aspects of computer science at all key stages I do not think that this should be the main focus

The following comments were included in the survey responses that answered "Unsure" to this question:

Computing emphasis good, but not helpful to lose everything else

Happy to see more emphasis on "programming" but feel that other things left out - liked the draft that was published by NAACE at one stage better.

I believe that as well as computing science we also need to make sure that kids are computer literate in all ICT from Animations to Microsoft and other office programs - otherwise we will be deskilling the kids when it comes higher education and upwards. I know that kids are taught in primary school how to use power point etc. but they do not go into any great depth (I know because I have been into primary schools to help them deliver these programs because of their lack of skills)

I can't help but think there is a potential for throwing the baby out with the bath water. I had hoped there would be a bit more middle ground.

I feel the emphasis on computing is too much and we may lose the more creative aspects of ICT

I think the language used e.g. algorithm will create unease in primary schools, causing unnecessary confusion over what it actually means in real terms for implementation in the classroom.

I think the skills taught currently give a broad overview of ICT. Algorithms are a new concept but if there are exciting programs available, I am sure the children will enjoy this challenge. Do we have money in our budgets to support this change especially in KS1 and the programs to support?

I welcome the increase in computer science into the POS but I think there is a danger that there is too much specification of the computer science aspect and not enough of ICT - including, animation, graphics, sound etc. All useful things for pupils to understand

Inclusion of computer science is a positive move, but it seems to be at the expensive of digital literacy and other expressive media. The sends out the wrong message to schools and may be detrimental to the curriculum offered to pupils, in particular at Primary level.

Inclusion of more coding is positive; exclusion of everything else is not.

It could be, if it is a basic requirement for the subject AND there is a clear expectation that technology should be used creatively to enhance learning in other subjects. However, I don't feel that this is likely within the culture of testing that exists.

It is positive to see the inclusion of computing within the programme of study and the emphasis placed on the discipline, however the curriculum has to be broad and balanced and this PoS does not do that. I agree there needs to be equal importance on IT and digital literacy. It is positive that wider aspects of

computing are defined rather than the focus on programming which is only one aspect of the discipline. I worry that a narrow focus will not meet the needs of all learners and will in fact turn off many rather than switch them on.

Not 100% certain that CS is suitable for everyone

Some aspects good but now too one sided

The breadth of study concerns me

The importance of Digital literacy across curriculum areas and the acknowledgement of some creative ICT courses alongside Computing is important.

The pendulum has swung too far towards computing perhaps

There needs to be a balanced curriculum including both Computer Science and ICT, these skills are not automatic and do still need to be taught. The draft is very computer science heavy

Too much emphasis on computing. IT must still be taught.

We will only be able to tell one it is implemented. The sloppy drafting does not provide confidence in terms of rigour. Muddled ideas on attainment targets and assessment are a concern.

Whilst I agree that modelling and simulation needed to give added focus (in primary they are often neglected due to lack of suitable expertise to teach them), I do not believe that they are the be all and end all. When exactly are children going to learn how to use the ICT skills which are now deemed to be second class. There is an assumption that these will be picked up from home or by using skills within other subjects but this is not the case for all children. At some point in formal education basic skills need to be taught - admittedly children will often then pick them up and go with them very quickly. A major omission is the chance for children to explore digital literacy through music and images, this is going to be a major part of many future careers/learning.

The following comments were included in the survey responses that answered "Yes" to this question:

A clearly thought-through vision of Computer Science, ICT and their connections has been missing for years.

A move away from desktop publishing...

But there should also be some creativity!

Giving teachers the ability to set their own curriculum is far better than forcing everyone to teach the same thing. Customisation is essential in this subject as schools operate differently with different technological skills

I don't think it is the right programme of study yet, but I do believe that the conversations taking place about it are a move in the right direction rather than having to work with a very dated programme of study.

I think we needed a stronger emphasis on computer science and programming.

If we want ICT to be considered a specialist subject rather than an additional extra that is used to support other subjects.

Introducing computational thinking into KS2 and beyond is fantastic. A lot of KS2 teachers will struggle in delivering this effectively without a lot of support, training and guidance.

It allows pupils to become creators and not just consumers if ICT

Some positive elements and some not so. I believe that there does need to be a change from ICT, for example learning how to make PowerPoint, spreadsheets and word should be merged into other areas of the curriculum. ICT should not be a discrete subject. However, computer programming and other aspects should be taught separately.

Yes, but as a teacher the breadth of study is of concern. There are many aspects of expertise required from Graphics, video and animation through to algorithms, programming and hardware. I fear that unless schools understand the need for teachers to specialise, akin the D&T, teachers skills will become diluted and have less credibility with students. There is a need for on-going CPD and not just initial training.

Do you agree that the subject name should be changed from ICT to Computing?

| | Responses via Naace Members | All responses |
|---------------|------------------------------------|----------------------|
| No | 72% | 69% |
| Unsure | 11% | 9% |
| Yes | 17% | 22% |

The following comments were included in the survey responses that answered "No" to this question:

Absolutely not! This is a retrograde step. The term ICT has always set itself apart from the industry 'IT' by being about pupils' use of IT to communicate ideas (the 'C' part). The term 'Computing' implies a

confined area of learning through a 'computer'. What about cameras, videos, microphones, sensory devices and other peripheral creative resources? Where is the creativity?

Absolutely, categorically, 100% NOT.

Again, if this is subject specific then maybe but the likelihood is that other important aspects of using technology in primary schools will be lost.

Because ICT does not just involve computing but involves other processes as well.

Both need to exist as well as digital literacy, but happy with the overall change.

Calling it computing takes away the whole aspect of the digital age and using information communication.

Can't see computing winning out long term so no. Call it ICT & computing or vice versa

Computing is a good name but it is more akin to programming and computer science, which has proven to be for the more elite in the schools. It needs to be something that is different to ICT or Computing

Computing is a limiting term when digital technology is wide ranging and constantly changing.

Computing is a sub-set of ICT

Computing is too narrow a name and does not represent the subject overall. ICT is probably wrong too.

Computing still has a stigma of being geeky/difficult and just programming; the subject is so diverse that naming it as such would ultimately "scare" some students putting them off the subject.

Computing to me is programming and I accept that this element needs to be taught but certainly at Primary level this is not all that needs to be taught. We would be teaching children exactly what the old name states - to communicate information using technology in all its forms.

Computing too narrow a description for what computers and technology are used for

Digital literacy would be better - encompassing ICT / Digital Literacy and Computing.

Digital technologies. Computing is far too narrow.

I do feel however that the name should be changed from ICT to IT

I think it will not reflect what the subject should ultimately cover; Computing does not indicate digital literacy to me for example.

ICT and Computer Science should be separate subjects within ICT as a whole.

ICT is about a range of skills and knowledge and computing, although very important, should not dominate. IT is used across all areas of life and computing is only one aspect that may be attractive to some but not to all

ICT is more than computing. The whole point of ICT is that it is used as a vehicle to undertake a whole variety of tasks and enhance learning in a wide range of subject areas. Computing is ONE aspect of ICT.

ICT may no longer be appropriate but Computing is too narrow. Perhaps Digital Technology or similar might be better though would be confused with Design Technology when abbreviated Go back to IT!

ICT should be retained, with the addition of Computing alongside it at KS4.

In the time I have been teaching it, it has been Computer Science, Computer Studies, Computing, IT and ICT. If it has to have a name change then ICT & Computing would be more appropriate. Otherwise the ICT bit will completely vanish from the curriculum.

Information Communication Technology encompasses all that the subject should be. The three strands identified by NAACE provide an excellent blend for the subject and fit nicely under the umbrella term of ICT.

No as they are completely different

It gives the idea it's more about the computer. Technology is used throughout the adult world and I suggest that few of us know or bother about how the programmes work.

It should be called Computer Science.

It should be called Information Creative Technology and should concentrate on creating efficient and effective systems using a wide range of tools and programming.

It should be ICT and computing

Most learners currently have more need for IT skills than they do those of computing. "ICT" was always problematic; no one but schools uses the term. "IT" is much more common. However, "IT" is not the same as "Computing". They should be separate, and have separate names.

No because I think ICT and digital literacy should be included on PoS

No ICT is a more accurate description of the whole subject.

No need

Not necessary. To provide our children with necessary I T skills a narrow focus on computer science will be a retrograde step.

Other areas such as digital imaging, including video, communication and greater emphasis on making appropriate choices of software or hardware or method of presentation would be more appropriate than coding alone, especially at younger ages.

Term is too specific, particularly for young children who will associate it with just 'computers'.

The equivalent would be for someone to come along and say "We are no longer teaching Science. From now on it will be called Physics."

The term computing could be interpreted as more narrow than ICT, i.e. only referring to programming.

This is about technology - not merely programming!

This takes the emphasis off all the other forms of ICT and makes it sound like it will just be computers.

Too specialised. Suggest something very different from ICT

Where's the Digital Literacy?

Why change its name?

The following comments were included in the survey responses that answered "Unsure" to this question:

How about ICT and computing!

I think computing should be part of ICT, but ICT is also does not cover technologies as a whole.

I think it should stay as ICT to encompass the whole spectrum

Never liked ICT! - What was wrong with IT? Guess that at least a change of name will give the subject more weight - they can't just turn it into "can they use PowerPoint".

Not opposed to changing the name of ICT but don't think computing encompasses everything that this subject is about.

The name may be misleading as it is not clear what topic areas that the subject involves.

There still has to be room for creative iMedia and business users.

The following comments were included in the survey responses that answered "Yes" to this question:

But only IF other elements of ICT are specifically embedded in other curriculum areas; digital imaging in art for example.

However, the ICT skills should be included elsewhere in the curriculum. For example Literacy needs to include more ICT based skills such as typing skills, presenting information using digital media.

I think this gives a more complete view of the subject.

It will take getting used to. ICT is very 20th Century

The brand 'ICT' has been devalued by PowerPoint-lovers and worthless GCSE and A-levels. The chaff has taken merit away from worthy courses. 'Computing', to encompass a range of fields (CS, plus creative media) is a positive step. It says "We're not about using stuff we don't understand - we're about using computers and understanding computers" Scrapping 'ICT' will remove broad-but-shallow GCSE/GCEs and allow meaningful courses (e.g. GCSE CS to be delivered)

To shift a focus from using packages and run of the mill stuff, to challenging the children. The new elements of the computing subject will enable higher order thinking, and problem solving which is good.

Is the balance between Information Technology, Digital Literacy and Computer Science appropriate in this programme of study?

| | Responses via Naace Members | All responses |
|---------------|------------------------------------|----------------------|
| No | 81% | 79% |
| Unsure | 11% | 9% |
| Yes | 8% | 11% |

The following comments were included in the survey responses that answered "No" to this question:

95% of students that leave school need the skills and ability to use office applications

Absolutely not. Everything has been thrown out in favour of raw programming.

Too big a swing to CS

As well as technical understanding there needs to be an appropriate emphasis on digital literacy, information technology, skills and safe and responsible use of ICT.

But then digital literacy and IT itself should be taught in other subjects. Spreadsheets for data handling, word for publishing work, PowerPoint for presenting research etc.

Digital literacy seems to be woefully under represented - and yet this is something which will feature in both the working and home lives of many of our pupils in years to come. We need to equip them to live in

a technological age - not everyone will become a programmer - but most people will use technology day to day.

Far too much emphasis on programming from KS1.

I am particularly concerned about KS1 and KS2 where they are learning to use the machines before programming them - although the programmable toys are fabulous

I think it needs to be set out more clearly and it needs the three strands as above as some may leave it out if it's not explicit.

I think there is an imbalance between Computer Science and the more creative aspects of ICT at KS3

IT and DL seemed to be confined to 2 bullet points with a far greater number given over to CS. We are in danger of narrowing the curriculum rather than broadening it without fuller specification of IT and DL

It is heavily Computer Science biased

It is too far away from the everyday skills pupils need to acquire. SEN pupils need everyday skills within ICT and programming could be a fun modular but not the main focus on the curriculum.

It should be, but the programme of study developed is mostly Computing based - how can they justify completely removing a subject?

Lack of IT and digital literacy

My comment to the first question answers this

No e-safety, just a couple of again very nebulous statements about combining media in KS3; terrible.

No I think it should be at least one third each.

No mention of the communication as it should be.

See above comment, very technical.

Seemed to focus disproportionately on programming

Simply No! We need people with a wide understanding of all disciplines who if they wish can specialise in one of these areas later in life e.g. A level or Degree

The curriculum is heavily weighted towards computer science.

The emphasis is on Computer Science. As a Computing Graduate the KS2 element of the new PoS is certainly leaning towards the discrete subject of Computer Science.

The first two are overwhelmed by the computer science and so it will be taken as more important by teachers. All of the work over the last decade to embed the use of technology in learning and teaching could be sidelined by this initiative to raise the profile of computer science.

The name does not reflect a balance in any case. Arguably a balance could be achieved if the computing has a minimal interpretation but that then smacks of dumbing down. Certainly the reduction in breadth is a lowering of expectation.

The PoS is 90% Computer Science with too little reference to other areas.

There is a huge emphasis on the computing/programming side, which needs higher order linguistic skills and academic ability (see above)

There is little if any DL and IT in the KS3 proposed POS this has changed radically from the expert advice document. I believe that there should be adequate teaching of E-safety at all key stages. The removal of the second bullet point from KS4 - manage their online identity.... take account of ethical legal social and environmental consequences etc. is poorly judged.

There is no balance.

There is not enough digital literacy or basic IT

There is now an over focus on computing and the loss of the creative element of ICT

There isn't a balance at all. It's weak on ICT & digital literacy & heavy on computing. Gove has cowed to industry who will be soon complaining that people can't do "ICT" things

Too heavy a focus on Computing. Would like to see a separate PoS for IT/DL that could be taught on a cross-curricular manner

Too heavy on the computer science and very hard to identify the other areas.

Too much computer science

Too much computing - people who like computing fail to appreciate that it bores 90%+ of kids silly

Too much emphasis on computing especially at KS 1 and 2

Too much emphasis on computing. The creative aspect of the subject and possibilities needs to be encouraged although good curriculum leaders will do this regardless of what the curriculum document states.

Too much emphasis placed on the computing side of IT at such a young age, unrealistic.

Too much focus on computer science.

Use of multimedia is as if not more important than computer science

Very heavily computer science and programming, lacks creativity....I think the children will find it very dull unless we only cover parts of it...I work in an all-girls school!

Very heavily towards the science part. I do believe it should be introduced but it needs to run alongside the current ICT skillset taught. People still need Office skills plus digital media and creativity

What balance?

Where is the digital literacy let alone the ICT? Where is the digital systems media? How are students going to progress onto a ks4 course that is not computing?

The following comments were included in the survey responses that answered "Unsure" to this question:

Again, not a problem if the different aspects of information tech and digital literacy are placed elsewhere in an integrated fashion. Their absence from the whole curriculum is worrying.

I was never really aware of this balance.

There's quite a push for computer science across the year groups. It will take time to be cohesive.

Vague at KS4 but a fair balance at KS1 to 3...digital literacy - cross curricular?? In other POS?

I still have concerns there will be too much emphasis on teaching Word, Excel and PowerPoint which many of the students already know. Whilst these are powerful tools to get other jobs done, surely other departments can cover these, for example a Maths department would be better teaching Excel and how to use formulas and create scenarios and models. Extending students' knowledge of skills within these tools if we are using them for other purposes, sure, but there are other areas students need more, such as basic file management which isn't necessarily covered.

The following comments were included in the survey responses that answered "Yes" to this question:

The inclusion of programming and the study of computers is good however it is going to take some time to embed into schools that have only had a diet of ICT. Phasing out some of the basic work of ICT will eventually make the balance work and make programmes of study more exciting

I think we need more detail on the IT strand. Pupils need to use a range of media including sound, images, videos etc. otherwise it could be very limiting.

It does seem heavily weighted towards computer science and not a lot of emphasis on using ICT as a tool to solve normal everyday problems and using ICT in everyday life.

Is the wording of the aims for this subject appropriate?

| | Responses via Naace Members | All responses |
|--------|-----------------------------|---------------|
| No | 61% | 61% |
| Unsure | 22% | 22% |
| Yes | 17% | 17% |

The following responses are from voxpops taken at the Naace conference. They are transcripts of videos which can be found here:

<https://www.youtube.com/channel/UCmgOoqBdkipQdMz8ZbCiZDg?feature=mhee>

“The strongest part is the rhetorical part at the beginning about creativity and design and the need for students to be able to express themselves using the computer... it hasn't lived up to itself”.

“I like the fact that computing is now a core element and that schools are now empowered to do what they want with it – although they could do that during this recent period of disapplication.”

“Strengths – a lot more focused on creating content, more modernized curriculum, finally a mention of e-safety – but that is all they are talking about. Of all the four aims, only one mentions creativity. We're focusing on what realistically was one small section of the curriculum – control technologies - and we are forgetting about the parts that engage and inspire the kids. “

The following comments were included in the survey responses that answered “No” to this question:

As above - is there any evidence that teaching pupils to program will result in there being more computer programmers? More worryingly where are the teachers with the skills to teach this going to come from. Getting a well-qualified and capable ICT teacher is difficult enough. Anyone with the skills to deliver this is in industry.

Especially for primary school children the lacks of words supporting creativity, enjoyment and supporting learning are missing.

I feel that there has been much left out from the expert document. I believe that the cultural societal impact and "staying safe" elements have been overlooked and that the statement that pupils should be "competent confident and creative users of IT should be reinstated"

I think there is too much emphasis on the aims which then leaves not enough space for what pupils should be taught.

If I don't understand them, how on earth are my Year 2's going to? There needs to be child friendly examples of what this would mean when teaching. I hardly think I'm going to sit down and start talking about 'algorithms' or 'logical reasoning'. The children won't know the words and will be totally disenchanted. It needs to be fun and interesting.

It focuses on what has been taught rather than the extent to which it has been learnt.

It needs clarification - the same technical terms are used at each KS with no indication of what depth is required and how their meaning might change at each KS

It's inconsistent with the overall NC aims which are not even aims, more a statement of "fact" and a justification.

Lacks ambition.

Language and goals expected are too high, don't think computing is a KS1 area.

More clarity needed

More detail for ICT required.

More detail of the need to incorporate digital literacy as a skill for employment needed.

No it should still stay as ICT to encompass ALL ICT

Not at KS1

Not easy to translate into practice

See above.

Seems designed to intimidate, unnecessarily so, especially at KS1.

Teachers will need clarification of what this might look like in reality. 'Algorithms', for example, are not a new concept but many teachers will need to know what this looks like in reality.

Terms such as 'algorithms' are definitely unsuitable for KS1 when 'step by step set of instructions' is clearer for all. I am not at all sure what the govt meant by 'decomposing problems into small parts to solve problems in terms of 'computing'. Language needs to be clearer.

the aims are again skewed towards programming ... the majority of children will not use this skill in day to day life but they will require digital literacy and information technology skills as they live in an era dominated by technology.

The application and creative use of ICT should be the driver for ICT and not the technical aspects of computer science.

The wording is confusing and will worry most staff; the aims need to be clear and easy to be understood by all.

There are lots of assumptions.

There should be one aim to make pupils confident users and creators of ICT systems using a range of means - not solely programming

Too much "computing" will turn pupils off ICT.

Too much stress on computer science. The 30 November aims are much more appropriate: The National Curriculum for ICT should ensure that all pupils ☐ *Are competent, confident, and creative users of information technology* ☐ *Can critically evaluate and apply information technology (including new or unfamiliar technologies) responsibly, collaboratively and effectively to solve problems* ☐ *Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve them* ☐ *Can understand and apply the fundamental principles of computer science, including logic, algorithms, data representation, and networks* ☐ *Can critically articulate the individual, cultural, and societal impacts of digital technology, and know how to stay safe, exploit opportunities, and manage risks* *At each stage in their education pupils should be sufficiently competent in digital literacy to support their learning across the curriculum. By the end of KS3 they should have the knowledge and understanding to make informed subject choices at KS4.*

Too technical. Children should be taught the correct terminology but these aims are not subject appropriate.

Too vague, not enough about the skills and levels. Wishy washy. What kinds of programs are we meant to be writing? Some children can only just access the keyboard and type? Especially in KS1! Does also not show progression from the EYFS. This is not taught specifically so will have implications in KS1.

Unless the wording is accompanied by useful examples.

Very vague in areas.

The following comments were included in the survey responses that answered "Unsure" to this question:

Again seems to be quite fixed towards computer science rather than digital literacy

Algorithm in KS1?

Algorithm Many primary teachers will need some help with this

The KS3 aims are very good, then it just dies at KS4... These need re-writing as they are ambiguous

The following comments were included in the survey responses that answered “Yes” to this question:

Absolutely not. The wording is a subset of the original Nation Curriculum subject with added confusion.

The intention is correct but this PoS has been hijacked.

Whether all Primary Teachers understand it remains to be seen (as staff meetings and ICT Co-coordinator’s conferences it has had to be reduced to more simple terms before people understood what it meant.)

Do you believe the level of content in this draft programme of study is appropriate and ambitious for each key stage?

| | Responses via Naace Members | All responses |
|---------------|------------------------------------|----------------------|
| No | 54% | 54% |
| Unsure | 18% | 15% |
| Yes | 27% | 31% |

The following responses are from voxpops taken at the Naace conference. They are transcripts of videos which can be found here:

<https://www.youtube.com/channel/UCmgOoqBdkipQdMz8ZbCiZDg?feature=mhee>

“Some of the stronger stuff such as programming seems to be at the exclusion of any form of creativity and key stage 4 was like an empty hole when I expected it to carry through the promise of the early pages”

“People who talk about computing don’t seem to appreciate what can be done with it, it seems that IT has been thrown out and computing has been seen as the solution. We need to have a 3 stranded approach with digital literacy, computing, e-safety – a whole range of things – and also IT for IT’s sake – looking at the designing and creativity - I’m worried it has been thrown out and replaced with that (computing) – it’s ridiculous that I should be saying this after all these years of arguing we should have computing in there”

“I’ve split my own curriculum ideas into three areas - communication, e-awareness, programming (which includes computing). I think, in a nutshell, we need more than just computing and programming. For example, my daughter at work has had to use a database and it can’t just be about writing code.”

“An element of computing, programming computer science is a sensible idea. The obvious weakness is the lack of balance between those elements and everything else. The draft programme of study is great if you want to be a web developer but if you don’t, it gives very little scope except in the last bullet point which basically says “everything else”. It doesn’t promote and encourage creativity across a range of digital media. Because of the lack of breadth, technology across the curriculum is important – technology for learning. What skills do we need to develop discretely in order to facilitate technology enhanced learning? Content creation in a range of formats, for use on a range of devices, for a range of purposes and a range of audiences. That is so crucial. If we are serious about creating a country of creators, innovators, inventors that is eminently sensible but I don’t think the programme of study as it stands allows for enough opportunities for people to do that unless they want to be a coder. I think there are opportunities for innovation, creativity and brilliance that go outside that and the ICT curriculum should reflect that. If it doesn’t, it is professionally irresponsible.”

“Strengths – for the first time it looks like a computing curriculum that might have some relevance beyond school. But it seems over academic and has been hijacked – there isn’t enough of the creative side. Putting it as a discrete part of the curriculum tends to reinforce silo thinking and doesn’t encourage it within maths or business studies, so some aspects might fall between the cracks. For me, one of those big areas is business intelligence – a phenomenal growth area both on entrepreneurialism side and in real jobs in industry. Quite often it is fast tracks for senior management or people who understand the organization who benefit from being able to look at performance indicator, trends analysis and being able to present those effectively on their own terms – those seem not to be covered at all in school. Knowledge of industry strength database systems would make people more employable. A few other topics would be interesting to pick up – ergonomics – how people interact with devices – that kind of thing we need to think about even if that is in subjects like biology. Old stories of logic and fundamental thinking underpin ability to spot weakness in bad programming. Something fundamental - we still need to be able to type and the speed of being able to gather information and pass on information is important.”

“I quite like the idea of there being computing in there – yes, I will do that but now can I have the other bits that are back that are missing! It’s those bits that I’ve been calling ICT all these years that are missing – it begins to look to me as though it is thinking ICT is a subject not a tool. I want it to be both. There are some good things in the computing – though I’m not sure it needs to be done with such young children, but then should we be starting formal education at the age we start it – that’s a whole other parallel argument, though. Could some of the missing aspects be covered in other subjects? If we have reached the point IT is embedded in the rest of the curriculum as we say it is, then yes, it should have been written into the maths and the English, the geography, the history whereas as far as I can see, the geography has a bit written in and there is only one mention of it in Maths. If we are going to use

technology in an embedded way in other parts of the curriculum, do we need to teach skills/techniques discretely as part of ICT so that children have that depth of understanding? These need to be developed in an appropriate context, but I don't see that rigorous depth of training will happen if the programme of study remains as it is at the moment. Teachers will look at those bullet points in key stage 1 and key stage 2, and just do those. Those who are already on the way to using an embedded ICT programme will carry on doing it but others won't get anywhere near it – they will only do the computing bit and they won't know what that means yet.”

“I have conflicting thoughts about the new programme of study. On the one hand, it is a fantastic opportunity and leaves open a lot of scope for creative and innovative teachers to fill the gaps that are in it. I think it is too constrictive and too confined to the one computer science agenda and misses the creativity and innovation, particularly down at the younger end. So I have mixed feelings. In the hands of innovative, creative, forward thinking schools it is a real opportunity for them to do some exciting stuff. However, I know from old that unless you are prescriptive and set a minimum entitlement some people might use that as an excuse or a reason to just do that minimum and we are in danger in certain schools of young people missing out on opportunities as a result.”

“I have a problem with producing lots of people who code for the sake of coding –might just kill the love of coding amongst a lot of kids. I don't know anyone who is in a leadership role in ICT or software companies who didn't teach themselves.”

Strengths of the draft programme of study via web 2.0 responses:

- It leaves space for teachers to add their own context to the learning.
- It is challenging for teachers and learners (particularly at primary) - forces teachers to learn the technical knowledge not rely on being 'facilitators' who know nothing.

Weaknesses of the draft programme of study via web 2.0 responses:

- Lack of acknowledgement of how technology influences and changes other subjects.
- It's not actually an ICT curriculum - fails to prepare children for the majority of jobs and careers.
- There is a lack of genuine reference to e-safety. Reference to the role of all adults for e-safety needs to be mentioned somewhere.

The following comments were included in the survey responses that answered “No” to this question:

Absolutely not. This is a narrow, inadequate curriculum.

Again wishy washy- needs to be more specific about what the end levels are and examples of learning.

Ambitious, yes. Appropriate, no.

Ambitious, yes; Appropriate no! - Especially at KS1

As with other curriculum areas, the design seems to limit higher-achieving students from going beyond the expectations of the year group. There is no recognition of extra creativity, or application of skills in different areas or contexts.

I understand the need for, and agree with, the teaching of CS, but teaching children about applications and their use is probably more important.

Based on secondary teaching some of the planned computing elements at Key Stage 1 and 2 are over ambitious.

Computing is not appropriate at KS1 and should be limited at KS2. ICT needs more time at these stages to give a good base to introduce computing later. You risk turning students off ICT. Not every student will end up following computing studies. EVERYONE needs good ICT skills.

Deficient in digital literacy and communication. Heavily biased to programming - which is important but not any more so than others. I do like that they specify a range of devices in KS2 though. Can't comment on KS3 as I am Primary.

Don't believe all primary teachers would be able to deliver PoS - too difficult for younger pupils

I can only comment on KS2 but yet again there seems to be too much to realistically fit into a crowded curriculum. ICT is often taught through a cross curricular approach and it is indeed essential to teach skills and then have the chance to apply and embed them demonstrating their purpose in real life. Computing with its heavy emphasis on programming would be much harder to fit into a cross curricular approach requiring dedicated time for programming for example which is just not available in the proposed curriculum for KS2.

I feel it is age-inappropriate! UKS2 and certainly KS3 have the independence and ability to programme, at LKS2 and KS1 they need basic user-skills and variety of uses

I think that it is too advanced....my other concern is that if that this is what they are expected to know at KS1-KS3 then they are going to have to update the computing a-level to be even more advanced! Also what do they mean by for example - understand at least two key algorithms....I am hoping that there is going to be further explanation and training for non-specialists.

In KS3 it needs to be more and not all programming and in KS4 it seems as if the kids do not need to do it at all - except for a little bit.

Is Mr Gove aware of real world children? Not aspiring grammar level children? Love him to come and spend the day with us.

It is geared to produce a particular learner and to be taught in a particular style. Too uniform.

KS3 looks especially inappropriate. May well have a gender bias, reducing the proportion of girls who choose further study relating to technology.

Most of my experience is with KS1. There seems to be a lack of creativity in this draft curriculum. I would like to see them given more opportunity to explore and make/create.

No consideration for SEN pupils. These pupils can currently access a good proportion of the NC ICT programme of study and can become competent users.

No some of it is too simplified and should be written to stretch our most able pupils across a range of disciplines.

Not enough detail to define.

Particularly KS1

Particularly not at KS4 as there are only two points covered. There might as well be no guidance if this is all there is. Many of the points are extremely vague as well - lots of people will struggle implementing this properly.

The bits about computer science are an appropriate step forward at KS 1 and KS 2 ... I am unsure about KS 3 but feel that KS4 has been left in the lurch here. There is probably an examination issue.

The computing content is certainly ambitious however there appears to be little else.

The programmes of study, particularly for KS1 and KS2 are too much weighted towards computer science. There needs to be much more emphasis on the use and application of ICT in a range of learning opportunities.

The wording appears to be ambitious, but is in reality designed to exclude and confuse, by using unnecessarily technical language even when describing simple concepts. This is an attitude that does not speak well of the DfE's regard for teachers or parents looking to this document for clarification.

There is a lack of development of digital literacy. From my experience as a consultant working in Primary schools, if this is not made a statutory part of the curriculum, digital literacy will only be taught by 'enthusiasts', and will. It is provided for all.

Too ambitious with current CPD

Too much!

Too narrow a focus on computer science at the expense of digital literacy.

Utterly inappropriate!

What about future photographers, film makers, animators, and other arts based digital competences? Teaching programming is good but not at the cost of the other areas of ICT.

The following comments were included in the survey responses that answered "Unsure" to this question:

Ambitious is the key word here and without good KS1 and KS2 provision it will be difficult to cover the content and KS3 content, there needs to be a coherent plan on how this provision can be met or it is an idea that will be too difficult to implement from the start.

Ambitious yes, appropriate for KS1 and 2, no

At key stage 3 the content is excellent, if schools follow the content is 2 programming languages and algorithms then it will be well balanced. But what happened at KS4, the planners simply got bored and went to sleep. it is ambiguous, are they saying only Computing or are they saying that there is an option and students can take either or what?

It is ambitious but KS1 need skills to use ICT before understanding the science behind it.

It seems completely vague to me- what skills are the children meant to be learning? Is it programming an on-screen robot to go in a straight line, or is it programming a traffic light sequence? What is logical reasoning? The skills need to be set down clearly with examples of how to achieve them.

KS2 and KS3 seem very ambitious - but that depends on the interpretation of the terminology e.g. what does algorithm means at each key stage. Clarification will be necessary

Some parts seem quite tricky but children are much more ICT savvy now so hard to say.

Somewhat, but it depends how you approach it. Making music for example could be seen as an algorithm, repeating patterns, simple steps.

The proof of that will be in the outcome. Big words can mean very little if they are interpreted at a low level. On the other hand programming search algorithms is first year university stuff so it could be argued that for average KS3 learners that is inappropriately ambitious. Replicating a university under graduate course does not seem a sensible match to 11-14 year olds.

Too vague at KS4

what is in it is appropriate - it is what is left out that worries me - given half the chance many schools will only do what is required and not what is implied. Where is the mention of IT across the curriculum?

Wording is too woolly to be sure it is ambitious or just plain ridiculous

The following comments were included in the survey responses that answered "Yes" to this question:

As far as it goes but in quite a narrow area and is therefore not broad and balanced enough.

At first glance, the computer science elements of the curriculum are very challenging for the age groups concerned.

Especially for lower years

Far too ambitious, low ability kids and I mean those holding levels 2/3 on entering year 7 will never be able to cope with computing

However teachers will need training to deliver the curriculum. The majority of Primary School teachers are not trained to teach computational thinking.

I am concerned about the lack of emphasis on internet safety. If it doesn't come into computing where will it come? I think we need more detail in what pupils should be taught; this has been sacrificed to get it to 2 sides of A4.

ICT has lacked ambition for years and has forgotten that children are clever beings. For example, CCEA's justification for removing A-level Computing and dumbing-down GCSE Information Systems to become ICT was that programming was "too difficult". This is nonsense - programming is being successfully taught in many KS2 scenarios now, though appropriate tools must be chosen. This dumbing down affects other subjects. Topics once taught in KS2 maths are now taught at GCSE/A-level. Children only realised that they were 'hard' because poor teachers said "this is hard". Maybe the teachers who wanted programming purged from the curriculum needed re-training?

It is VERY ambitious for KS2 and KS3.

Very ambitious.

Does this programme of study provide effective progression opportunities?

| | Responses via Naace Members | All responses |
|---------------|------------------------------------|----------------------|
| No | 41% | 43% |
| Unsure | 29% | 24% |
| Yes | 30% | 33% |

The following comments were included in the survey responses that answered "No" to this question:

Absolutely not. It is a narrow, ill-thought-out subset that covers some aspects of computer programming.

It all seems rather samey across the KS

It is likely that pupils will be taught bad habits in primary schools which will cause problems at secondary. Currently many of the pupils who arrive at my secondary school have been taught to use caps lock, rather than shift to get capitals when typing. This is an almost impossible habit to get them out and slows typing speed and causes problems for SEN pupils with poor linguistic skills. I can see the same happening with programming - in the old days when we taught pupils to program they had to unlearn the use of the GOTO statement if they had done any programming prior to secondary school.

It is too one sided to allow for real progression for all students

It tails off during KS3 and there is no detail in KS4 especially for students not formally studying ICT.

It will depend on the expertise of the teachers and their confidence to let the pupils "go"; otherwise it will be a minimalist approach with teachers ticking a box

It's very narrow. Students with interests in ICT are being ignored

Key stage 4 has no clear progression.

KS3 content more challenging than current KS4 provision.

No - more step wise progression needs to be looked at, at both the top and bottom of the programme of study.

Not in user aspects of ICT

Not throughout

Only as far as it goes in computer science at KS1 and KS 2 ... unsure beyond that.

Progression between key stages is unclear.

Some of the content seems a little adhoc. There is not enough emphasis on creative use of a wide variety of technologies.

The ICT content is very vague. More time and structure is required.

Unbalanced so progression will not be effective.

What about the office worker, who just wants to type out documents, or the kid who has to show presentations for part of his/her courses or work.

The following comments were included in the survey responses that answered “Unsure” to this question:

Again at KS3 no problems, at ks4 and the transition it is ambiguous in what is written is it to progress to ICT, computing and digital literacy or one of them or an option. We have found Computing too difficult for the lower ability so what happens to them. What happens in GCSE courses (ICT) where there is an element of programming. There is no continuity after KS3

Completely depends on the skill of the teacher.

Confusion here between continuity and progression. The use of the term Attainment target implies a degree of precision that is not there. While the POS will not necessarily prevent progression, it won't particularly support it for individuals. There needs to be some sort of assessment framework to support progress. There is no rigour in what is provided from that point of view so it will depend on individual teachers and schools.

Focus is too narrow.

It could do...but it depends upon I also believe the teachers competency to be able to ensure progression.

Some progression is seen, but again there are no specifics. It is not meaty enough?

The PoS progresses, but inappropriately.

There seems to be progression in computer science. There needs to be progression in all aspects of ICT - digital literacy, ICT skills, information technology, and safety and security - especially for KS1 and KS2.

With so little detail given it is hard to see the progression- all that happens is the wording changes between key stages. What is the difference between 'write and test programs' and 'design and write programs that accomplish specific goals'? Surely the former needs a goal otherwise what are you testing against?

Within the confines of the programming element for KS1 and 2 - yes - but what about the other uses of technology?

It does put a lot of emphasis on the early Computer Science concepts required to scaffold students onto Key Stage 1 and 2 where teachers are not necessarily confident in the subject. At this stage in my short experience as a secondary teacher, I am finding this scaffolding lacking in students.

The following comments were included in the survey responses that answered “Yes” to this question:

As far as it goes but in quite a narrow area and is therefore not broad and balanced enough.

Between Key Stages, but not within. There is a job to be done to ensure progression between year groups.

If the comment on point 5 is addressed

In computer science yes.

It does, however I am not sure how realistic they are. As an ex programmer I know that not everyone can ... some are naturals - some can be taught but some will simply find it difficult to move past a certain level however good the teaching.

Probably but not for a few years until children have worked their way through the system. A one year intro is a bit tight

Progressions are fine but the starting point is too high.

There is progression between key stages. KS4 seems very light but I am a primary teacher. There should be some accreditation for KS4.

When delving deeper progression is there, but again this needs to be clearly written so can be understood.

Within its limited remit.

Within the single strand yes, though am unsure why a y1 child needs to know the word algorithm.

Yes but I feel that it is not in the right direction for the subject perhaps at a higher level.

Does this new National Curriculum show higher expectations for ALL pupils?

| | Responses via Naace Members | All responses |
|---------------|------------------------------------|----------------------|
| No | 47% | 47% |
| Unsure | 18% | 18% |
| Yes | 35% | 35% |

The following comments were included in the survey responses that answered “No” to this question:

Again the over emphasis on computer science will not encompass the needs of all pupils

As my comments above point out the expectations of KS3 are correct and the balance is good but at KS4 it is muddy waters with no clear direction so how can expectations be set

Definitely not as the narrow focus does not allow for all pupils to progress their digital literacy skills.

Differentiation is not as clear as it could be, mainly because of the skeletal nature of the document.

Due to it being too narrow in its breadth. Not all pupils will benefit from this change of direction at primary school level.

For the more able (especially logically able) yes....however for lower ability pupils who still find saving their work in a logical way a challenge I dread to think how they will cope with "design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems" as an example

Higher in Computer Science but lower in everything else.

History has the same "sameness" about it too - all secondary lead

I have concerns that non scientific students will struggle.

It is not specific so gives less of a holistic approach to the subject. The children might be able to use algorithms but can they use ICT to support their own life? Skills for life?

It shows a lack of understanding of what is required and a lack of vision. Yes we need more computer scientists, but this is not the way to deliver the outcome effectively. We also need a great many more people who are effective users of technology in the round.

It shows higher expectations in one narrow field for those students that can access words like algorithm and abstraction. It shows a reduction in expectations in terms of breadth.

No - it is too specialised towards pupils who show strength in computer studies (programming). Even in this area it would not push the most able pupils enough. Also note at present in KS3 most pupils get about 1hr of ICT a week - trying to teach programming with only one hour a week curriculum time would be like pissing in the wind - sorry for my French - but I can't think of a better analogy. If you want pupils to be more able in ICT the answer is simple we need: Money spending on training for teachers; we need more curriculum time at both KS3 and KS4; ICT needs to be taken seriously. I come from an industrial background (over 20 years working in Information Technology and Pharmaceuticals) and when I entered teaching 15 years ago I could not believe how bad the provision for ICT was and this new suggested curriculum will take it back another 10 years.

Not really as it is all about computing science.

Please consider children with special needs who may find the large amount of programming input difficult.

Some expectations too far for lower ability students.

The expectations seem broadly in line with the old NC for control, just with more technical terminology. The single style approach will exclude many children from broader success in ICT.

Those NOT interested in computing will get disillusioned and not be able to use ICT competently as there is little time to develop good skills.

Too high therefore making it inaccessible for some.

Where is the scope for creativity?

The following comments were included in the survey responses that answered “Unsure” to this question:

Challenge for all' is needed rather than 'most should have reached this level etc.

Heavy focus on computer science and algorithms at key stage 2 feels unrealistic.

I appreciate that the focus on computing will stop schools from just avoiding control as has frequently been done, and covering this up with less technical aspects of ICT. In this it is establishing a clear expectation that this area matters. However, it does not recognise many aspects of creative, artistic or divergent thinking, just logic, which any games designer will tell you is only half the story.

I would suggest the expectations are lower- yes they are probably working with more modern technology, however the skills of developing ideas, reviewing, modifying and evaluating all seem to be missing.

It might to age 14 but a bit vague beyond that

KS4 seems very vague after such detail in KS3 for example

No, where the QCA scheme of work was being taught most of these outcomes were covered already. The difference will be that newer technology will be used and there will be a better balance of skills. Some of the QCA was very out of date. Yes, teachers can always find ways to challenge pupils by looking into the next key stage or by broadening their experience.

Unrealistic expectations.

The following comments were included in the survey responses that answered “Yes” to this question:

Again I feel that newly suggested programme does not lend itself well to differentiation across SEN schools.

But only in computing - it doesn't develop all the other aspects. However, due to its reduced content it does leave schools open to shaping the ICT content to meet the needs of the school and its pupils

But the focus is all wrong.

How will it be effectively delivered through current knowledge of staff?

It does, but I feel some is not appropriate for primary pupils, the history content needs changing!!

It does, but not necessarily appropriately. What about lower ability and SLD students?

Too high for SEN (see above). Many of my pupils will not be able to progress much beyond KS1 in terms of concepts. Currently I have pupils taking GCSE level courses in ICT. There is no way that GCSE level courses will be accessible to them in this curriculum.

Unrealistic ones

Does the new programme of study help parents to understand what their children should be learning at each key stage?

| | Responses via Naace Members | All responses |
|---------------|------------------------------------|----------------------|
| No | 76% | 76% |
| Unsure | 13% | 13% |
| Yes | 12% | 12% |

The following comments were included in the survey responses that answered "No" to this question:

2 pages of A4 is not enough space

But then the old one didn't either?

I think parents would struggle to understand the wording of this document without any examples being given.

If the terminology needs clarification for staff many pupils will not understand what is required.

I think it is less explicit than previous programmes of study, which may make it harder for parents to understand.

If you put the text through a reading age parser it demonstrates that most parent and most children will not understand it. I can't see any rationale for the POS as presented being more accessible to parents.

Probably most IT teacher will need a considerable time to understand it particularly how it translates to activities appropriate to ALL children.

It is very vague and uses too many 'buzz words'

It shows them what will be taught, but not what has been learnt. Levels are going, so I'm led to believe.

It's very confusing for teacher/educators/publishers, let alone people who aren't used to reading Specs.

Language is incomprehensible to non-experts.

Language is too complex for many parents to understand what is required and to help at home.

Language is too difficult for a none specialist to interpret

Lots of technical language which the majority of parents will not understand.

Majority of parents won't be able to relate to the concepts

Many teachers let alone parents will struggle with the terminology

Many will not understand the terms used.

Most teacher will not understand until copious non stat guidance is developed so expectation that parents will seems strange

Not enough detail included and not parent friendly.

Not unless they have a background in IT.

Only if they have a degree in Computer Science and understand the terminology.

Only if they themselves are computer programmers.

Parents and teachers will be confused and intimidated by the technical language. At the very least there needs to be a glossary of terms.

Parents are contacting school asking about the compulsory Computing element at KS4 with ICT going. But that is not in the study. If teachers cannot understand what is going on at ks4 how can parents understand this

Parents feel de-skilled as it is; this is way beyond most.

Parents may be unable to understand what it really means

Removal of levels would make it difficult for parents to track progress

Some of the language used is technical and may need some explanation for parents.

Teachers are confused - so parents with little IT knowledge will be lost at the terminology.

The language is overly technical and will not help non-specialist parents any more than it helps non-specialist teachers to understand the learning.

The language is too arrogant and over pitched.

The language is too technical in both IT terms and educational terms for parents to understand.

The language of the objectives is not accessible to all, and with no examples it is just words on a page. How are parents to relate these objectives to how they use ICT in their lives?

The language used is not accessible for most parents.

The vocabulary used in the computing is not every day speak!

There would need to be much more clarity for parents to understand what this actually looks like.

This is jargon for teachers, let alone parents! I am worried as a parent that my child will be focusing on this kind of curriculum!

The following comments were included in the survey responses that answered "Unsure" to this question:

Haven't spoken to any parents about it.

There is some programme of study but it is not presented user friendly.

Yes, but parents wouldn't know how to help based on the wording.

The following comments were included in the survey responses that answered "Yes" to this question:

But will need translating into language that parents understand by the teachers delivering the programme of study.

The programme does say what the government feels children should be learning at each level.

Yes as it is very black and white however does not reflect the wider range of skills pupils need to be successful digital citizens.

Is it realistic to expect this programme of study to be in place by September 2014?

| | Responses via Naace Members | All responses |
|--------|-----------------------------|---------------|
| No | 61% | 61% |
| Unsure | 17% | 14% |
| Yes | 21% | 25% |

The following comments were included in the survey responses that answered "No" to this question:

Absolutely not. Schemes of work need to be developed, resources created, teachers trained, etc. At least 1 more year would be perfectly reasonable

Absolutely not. Teachers will need time to reflect on what these changes will mean, to the way they teach ICT. Many will need CPD training to enhance their own skills. Schools may not be able to afford this and who's to say that if another Government get in, it won't all change again...

As it hasn't been finalised yet it's not leaving schools very long to resource for the new objectives, train staff in relevant skills and build the new curriculum into the existing planning (bearing in mind it's not just ICT that they will have to do this for). With only five vague objectives for KS1 this also doesn't give us much to go on.

At Primary level I think there will be a significant training need for teachers.

From my experience in primary school, even the aspects of the less ambitious QCA, covering control and monitoring were not taught effectively and consistently due to lack of teacher skills, subject knowledge and confidence.

How are ICT teachers in KS3 going to deliver programming - where will they obtain the skills?

How can it be a true consultation and adapt to educationalists views and implemented by September?

I don't want it to look like this so the answer is no. If it does stay in this format then there is an enormous CPD issue

In secondary schools, yes, but I suspect primary schools will struggle with implementing it so quickly, which will leave more work for Key Stage 3 teachers.

I think non-specialists in ICT who are in KS2 will find the new PoS very difficult to implement as they will not have the technical understanding behind what they are teaching. This is fine if, for example, they are delivering something like Scratch/Kodu, where children can explore and learn. However, as soon as a 'bug' appears in the code will non-specialists be able to support children in finding it and addressing it?

I thought it was September 2015.

If the subject becomes Computing/Computer Science, then there are training issues for staff that will need addressing before the subject can be successfully implemented, particularly at KS1 and KS2. It will probably not be possible to achieve the necessary level of teaching expertise by September 2014.

If this POS become ratified I believe that there will be a need for a great deal of CPD. This cannot be completed for 2014

Lack of CPD will hinder this taking place

Many staff will not be qualified. Many primary staff will struggle to be qualified when you consider that there is rarely specialist teaching in primary schools. Time will be needed to persuade industry professionals to train to teach. They cannot and should not be expected to walk from industry into a classroom and it won't work!

Need proper consultation and further study

NO NO NO NO Get the training in place and paid for all teachers in all schools. Also get initiatives in place for IT/computing trained people to enter teaching, get the right programme of study in place. Get resources in place first (not after) e.g. books, websites, etc.

NO WAY! Teachers who are non-specialists or have not had any training/used programming languages before will find it very difficult to adapt as they will have to learn it all to be competent enough to teach it. Also teachers who are competent will not be given appropriate time to be able to write SoW and produce resources to support their colleagues. The DfE will also need to produce sample teaching units if they want this to go ahead as we will not be able to create purposeful lessons or support our pupils without adequate time and/or training.

No. Total haste.

Not enough teachers have knowledge of Computer science

Not without significant support which will be required across all curriculum areas

Probably not, given we will have to rewrite most of the KS2 curriculum and not just ICT/Computing. Schools that have been exceeding expectations in control already will not have a problem, but many schools will need a significant skills upgrade.

School ICT coordinators are going to need a far greater knowledge of algorithms and computer science than they do at present. As a foundation stage teacher with responsibility for ICT in an infant school, I find this rather overawing and frightening and I am sure I am not alone

Teachers need training to ensure their subject knowledge is up to date (Particularly primary school teachers)

There are huge CPD implications for Computing and History.

There are serious staffing issues.

There is a huge training issue here. Very few schools and academies will be in a position to deliver the content by September 2014. However, unless it is put into place by September 2014, schools and academies will not move on the subject.

There will be a significant need for teacher CPD to enable them to teach this.

There will be lots of teachers who will need training and support to be able to deliver this. Lots of authorities have now lost their ICT central support which will be a problem and possibly cost schools a lot of money

To borrow the estate agents mantra it's all about training training

Too much teacher training required.

Training, equipment?

Training, costs, equipment all need to be put into place, plans drawn up and tested. This will take 2 years at least.

We need training BEFORE the event

We will need a more detailed POS and resources and programs and allocation of money will need to be given to schools to support this change.

Where are all the teachers going to come from? It will be like the 1980s when maths and physics teachers got landed with it or did it because they were keen amateurs. People with a Computer Science degree, like myself, were very unusual in the teaching profession. Just having a knowledge of sorting and searching algorithms is going to be enough to put off the majority of people. Many current ICT teachers just will not have the knowledge or skills.

The following comments were included in the survey responses that answered "Unsure" to this question:

Converter courses for ICT teachers need to be considered.

If it can be made clear what this actually looks like.

If positive changes are made yes.

If the school gives us time off then we could do it. But during normal working times at school my time is allocated to other things that the school sees as more important.

It needs to be as now they have dis-applied the current NC - some schools are doing very little and are confused.

It will only work if teachers are properly trained. This will only happen if time is provided and the Unions don't moan.

Only if given plenty of time to make the changes and funding to buy necessary new software etc. if needed.

Very concerned about the timescale but delays may be even more problematic.

Possible CPD issue of staff not having the relevant programming / app designing skills

That depends upon how much training and support the government is committing to the change. On past experience it seems that it is realistic to get it in place but a lot less certain as to how well it will be taught. I suspect people will end up teaching things that are wrong. A recent debate about the search aspects in KS2 showed experienced teachers and HE people did not know how Google search engines work and would have ended up teaching things that are factually incorrect.

There seems to be an enormous CPD requirement to get it fully in place. If it is to be phased in starting with year 7 then it might be possible. With National Strategy there was funded training and I think this will be required here for successful implementation?

We can work towards it but it will not be fully implemented without investment in training and infrastructure.

We'll need training for teachers, equipment and time!

With the exception of computer science the other two strands are already being covered. They need to be constantly expanded to take into account new technologies. Teachers will need more training especially in the computer science strand. Most primary schools will need a scheme of work to ensure continuity and progression. Non specialist teachers in primary education need a scheme of work to follow. It takes time for these to be developed. Very little thought has been given to assessment.

The following comments were included in the survey responses that answered "Yes" to this question:

As long as time is given to schools to adapt

If it remains as such a narrow focus

If training is provided.

If you are going to do it, get on with it! We have been waiting long enough for some certainty.

Training?

However a major training infrastructure is required.

How would you include ICT within other subjects in these draft programmes of study?

The following comments were included in the survey responses:

?????

????????????????

A statement of suggested ICT use.

All the current ICT targets and skills would need to be supported and taught

Application in a range of contexts of KSU where appropriate, encouraging effective digital literacy and extending subject understanding through access to resources

As before when we spent eons working on cross curricular dimensions and all that nonsense.

I am concerned that teachers in other subjects may not be able to teach ICT properly.

I don't think that's possible.

Science, maths, geography graph creation, spreadsheet skills and databases. English, media DTP skills. D&T modelling.

As said above, word processing for publishing work in literacy, data handling, science etc. ICT can be integrated where possible into every subject.

Can't based on that info

Clear, explicit instructions to use digital technology in other subjects, e.g. In Maths students will be taught how to use computer models, in English students will be taught how to act in a digital environment, in History students will use primary sources and evaluate them, etc.

Digital literacy overview and link to other curriculum areas.

Each key stage should emphasis that ICT should be taught through a cross curricular context. They should learn the skills to use the ICT tools to support their learning.

Each subject would have explicit mention of the use and application of ICT within that subject. For example, English would mention the use of word processing, presenting, film etc.

Embed ICT into all subjects as a tool for learning

E-Safety

Explicit links within the other PoS.

Good question. How would you? Probably the POS do nothing in this respect.

I am totally unsure of the new programme of study and how to include this across the curriculum.

I feel it has to be taught as a discrete subject.

I think that the present cross curricular opportunities may be lost and that specific provision needs to be included

I would include it in the DL and IT strand. The phrase 'In a range of contexts across a range of subjects,' should indicate cross curricular work.

I wouldn't. ICT should be included in each subject POS.

ICT is already a tool for learning not a subject in itself in primary so we will integrate it creatively as we always have done. DT is important and IT can enhance any creative work as well as be used for learning any other subjects.

If 'computing' is going to remain as a subject then it is crucial that 'ICT' is explicitly embedded as an expectation in other subject so that children develop digital literacy skills and an understanding of how to behave online.

In an appendix to each PoS explaining where technologies can and will enhance teaching and learning in those areas.

Include creative aspects within all subjects

Include E-safety elsewhere or across the board - no mention at KS3 in ICT and none elsewhere either. Suggested guidance towards using technology elsewhere (not necessarily ICT as such) would make sense as well.

It is very difficult to see how ICT Across the curriculum is explicit at all.

It needs mapping across all subjects at all levels so that students are given tasks, which use ICT effectively, using a variety of software. Teachers need training in this. Need to get away from just PowerPoint. There is so much freeware available to use

It needs to be explicit in their own PoS or it will not happen

It would be tricky - it sounds very isolated. The lessons would be discrete. It would take away the creativity of teaching ICT so that it is meaningful for children. I do not think that children in KS1 should be learning about algorithms.

Links likely to be forced and spurious.

Maths is better placed to teach Excel. Primary schools should be teaching Word in English and using PowerPoint in Humanities.

Literacy - presentation of ideas using digital media, typing skills, reading e-books, PSHE - e-safety

Maths - writing code to solve math problems

More integration of tasks/overlapping of topics so that student can use skills learnt in other subjects used in ICT

Science - D&T joint projects

Science and Maths are opened up to ICT but it closes off other subjects.

Should the skill be taught inside the (for example) History lesson rather than discretely, since surely it is the History that is the key. Computing is the tool to facilitate this.

Subject specific resources, hardware and software. Inclusion for all abilities and understanding Media

Supplementary guidance outlining opportunities for TEL across the curriculum would be useful.

There is no indication of how this would happen; I guess I would use my teacher judgment to make appropriate links!

There should be an expectation that ICT is in the planning for every theme that you teach.

This would prove difficult as the new PoS is really about Computer Science. In KS2 there is one statement about using ICT to support other areas. Currently, using all elements of ICT for presenting ideas is probably all that could be included in the new PoS. Lots of ICT opportunities will be lost due to teacher confidence.

Too many examples to write! ICT is embedded in every lesson at my school across all the curriculum.

ICT is used in the delivery, practice and securing of understanding in all subjects. From the use of a visualiser to quizzes and content research.

Very difficult as there is no time to do this and really looking at the POS it does not appear to be high on the agenda. So as we need to concentrate on the POS in Computing, ITAC will be put on a back burner

With difficulty in KS1 except for links with numeracy

With difficulty!

With some subjects (Maths, Science, DT), it would be relatively straightforward. For other subjects, it is not immediately obvious.

Would need time to plan but have always been clear curricular links

You could include some of the POS in PSHE- E safety, maths, algorithms, programs in lit and numeracy? Using word and PowerPoint, excel can these be used in the change.

Curriculum Symposium responses

At the curriculum symposium at the Naace conference (March 2013), colleagues were also asked where they would see any parts that were not included in the draft programme of study for computing could be included elsewhere in the curriculum. Responses do not indicate confidence that this teaching would be thorough and in depth. Responses are short and frequently truncated due to the limited number of characters available in the voting system:

Anything could fit in other places but would it be taught?

I have a real concern that some schools do not give enough weight to the skills

I thought the plan is that we use technology and skills appropriately across the curriculum?

E-Safety. Possibly could go in PSHE but need specialist knowledge

Cross curricular use of ICT needs to be referenced in all subjects

No. Other subjects use some aspects of ICT but don't teach detailed use.

Appropriate use of technology throughout the curriculum

Not really

Yes all over the place but needs explicit mention that tech should be used

Teaching the underlying skills that need to be in place...

It is always possible to fit elements of ICT to other areas, but how prescriptive?

E-safety in PSHE

Don't know enough about other programmes of study

Everywhere

Yes

Communicating sound podcasting English, creativity using images...

Yes but only with appropriate staff development first.

On a practical level no. there are still teachers in other areas with limited knowledge.

Soft skills; team work; presenting to an audience; working under pressure

Yes literacy, but assumes teacher knowledge

ICT skills should be included in all areas of the curriculum

Yes but other subjects are as restrictive, based on knowledge.

English to include reading of onscreen texts

Social media

They do not need to be prescribed, other than for inspection purposes

Yes, geography and to reverse the question how IT can be used to help.

Yes, creating models, simulations and games to consolidate and develop learning

ICT is a tool so why would you give any other answer than yes

Possible but other teachers don't or won't deliver them

Yes skills could be built into subjects e.g. modeling in science

In all subjects – explicitly! Primary teachers need to see the opportunities

Yes, they would fit into literacy, maths, science and all other areas

In an ideal world yes, but not sure we are there yet ... ictac by another name

As most other subjects offer relevant contexts

Not sure this is relevant. Shouldn't teachers be able to use this cross the curriculum?

E-safety and cyber bullying into pshe or whatever it is called assuming it still exists

E-safety in pshe, multimedia in literacy, topic work, maths etc. and data handling

Data fits well with science and maths, art for digital images, audio in music

I would have hoped to see reference to ICT in all subjects. Sadly that doesn't seem to be the case

Appropriate digital literacy in every subject or area

Yes but training others would be needed for them to teach these aspects

Potentially everywhere depending on what it is

No at least not until the students had been taught the skills that they can use

Everyone seems to be ignoring art, design and technology, creative industries

ICT in general should be cross curricular, science and maths data handling

Most elements need to be formally taught

Collaboration, creativity, solving real problems

Creative use of tech to create, manipulate, d&t, art

Yes the curriculum is holistic. Embrace this.

Possibly maths science maybe technology

Digital literacy in the literacy curriculum looking at films

Depends on how specific you need it to be. Parts of the new PoS are so vague

Yes in a school that was prepared to make cross curricular links, but most don't

Creative aspects links within music art media design

Ergonomics in biology, logic in English

It's not a matter of missing parts, is about overall balance

Music sequencing and creation; film making editing and information literacy

E-safety in pshe, research, evaluation in all subjects

Digital literacy in English history geography; creative use of digital tech

Stem areas

Yes, digital literacy but this would need additional CPD and support

Technology enhanced learning across the curriculum

E-safety

Higher thinking skills but would then need applying back to ICT e.g. system

They should be in PoS, needs to be broader and balanced

Some pshe, arts, humanities, literacy but we know how well

Digital literacy should run as a theme through all subjects

Data handling in humanities and science and mats

Media manipulation in English, data analysis in maths

Digital literacy should be explicit in all areas

Creativity is missing as an explicit statement but fits everywhere

Pshe, literacy, maths

Not obviously.

Yes

Pshce, all subjects in some senses

How about pshe for social sections although not sure that has a PoS

Apart from e-safety and programming it should be in all other subjects

Yes

ICT is an enabler and so the creativity, problem solving should be within ICT

Not in current structure but would fit in a media literacy PoS

Yes, but the profession isn't ready for that yet. The skills don't exist yet

Media and business are obvious links but they are not NC

English

Digital literacy within English. Creativity within art and design.

Yes data analysis to science and maths, publishing to English

ICT can be used across all the curriculum, no mention of technology apart from...

Yes but that would require rigorous training for staff

Not sure but art should probably focus on digital media more

Yes but who defines this?

Some will

No

E-safety in SMSC real world in DT and design in art

E-safety

Technology should be referenced in English, maths and science

Creativity

DL cross curricular as is e-safety

Yes. Lots of digital media stuff fits across curriculum

Modeling – DT/science engineering searching (databases)

E-safety in ks3 pshe, ICT across the curriculum generally

What will be needed to implement such a programme of study in school?

Cpd

Lots of training and cpd and time to learn new software

As per j thousand ... complex change

Cpd, time to be creative

Cpd, framework for planning, ladder of progression

Serious supported cpd with time and resources and successful models

Huge dollops of patience and ability to be resistant to feelings of frustration

Time to play

Programming skills in teaching staff and more support

Cpd

Staff training in various programming languages

Teacher training is critical for the successful delivery of the programme of study

Money time patience good infrastructure enthusiasm

Massive amounts of cpd, resources

More curriculum time

Cpd, supplementary materials, glossary

Depends entirely how the school interprets it but will need cpd

Training... training... training

Cpd, communication

Training, training, training

Cpd and time

Cpd

Without good cpd schools need to have this in place for all staff

New staffing or loads time for cpd for interested staff

Staff with the skills needed and support from schools smt. I doubt this will happen

Teacher expertise in coding

Motivating, engaging, broad curriculum with a variety of areas eg animation, digital literacy

Vision, passion, understanding, lots of training and support

Staff trained in confident use of technology and staff who have experience

Work together, examples, opportunities to learn

Cpd for teachers, outside experts and trips visits to real world

Expertise, knowledge and skills of teachers; cpd, time and money

Teachers that know how to interpret the text

Cpd, cpd, cpd and leadership

Cpd, resources, confident teachers who can teach programming, support

Out of the box thinking, new assessment strategies

Cpd opportunities for staff and appropriate resources to support staff

Cpd incentives

More guidance, sample outline on what good practice may look like

Cpd

SLT backing, major cpd, local authority support where available

Cpd required hugely. Where are all the computer scientists?

Need e-safety, critical and evaluation skills

Clear PoS, training programme with opportunity for local div...

Real life projects like apps for good

Staff training, resources, understanding

Cpd, time, sup...

Cpd for all staff in programming language

Knowledge

Add to SDP then cross curricular working party to see how these areas can be added

Staff knowledge and prior learning

Computer science cpd

Computer science cpd

A massive cpd programme

Time, money, training, lots of it and support from anyone without ICT

Inspiring school leadership, cpd and positive support

Money, trained staff to a competent level and appropriate hw and sw

Cpd, planning time, software/hardware budget, status for the subject!

We are ready as we are all trained computer science teachers

Training, supporting resources, ofsted to inspect it

Ali Blackwell cpd digital leaders passionate teachers

Freedom

Cpd and freedom to deliver creative programme with flexible boundaries

Training, understanding, creativity

Change to learning design

Staff cpd, money for resources, time, commitment

Cpd

Money!!!!!!!!!!

Training resources

Very strong training plan

Cpd, curriculum time

Teacher skills and capability; money to train staff

Professional development

Cpd and recruitment of staff

Lots of cpd

Training for staff and time to develop resources

A massive programme of cpd

An easy enough technology to do it

Support to enable cpd and for schools to develop a broad balanced and relevant curriculum

ICT knowledge in teachers across curriculum

Quality cpd, time and framework for collaboration

Quality training/cpd with time for staff to become confident

Staff who are of a high enough caliber as and interested in actually learning

Cpd for staff, some examples of what good computing looks like

Training, allocation of curriculum time is an hour a week

Preparation time, cpd could be done as peer support, funding for equipment

When is an algorithm not an algorithm and when does it become simple?

Cpd and lots of it

A lot of training, resources, break down barriers that mgt, staff and students...

Knowledge, understanding, skills, cpd, flexibility

Training for staff, different type of cohort

National base for sharing sow and lesson resources and vetting or rating them

Teachers' skills

Time for hands on development of skills and knowledge

More computer suites, support of slt, robust inset for non-specialist teachers

A lot of staff training because my teachers can't stand ICT

Cpd, confidence to be able to programme

Cpd around computer science and engaging pupils effectively with technology

Time, skills, understanding, confidence, strategy

Training, time to create new sow, opportunities to make

Cpd for staff

Money and time

Staff expertise

Cpd, breaking down barriers around programming

Minimum opportunities for creativity

Vision, cpd, more cpd

Training

Training

Knowledge of computing and computational thinking

Effective resources and support for teachers

Cpd for staff to ensure the fear element is taken out of teaching

Professional development, teacher buy in to curriculum vision

Loads of cpd, up to date equipment and software

Cpd, cpd and more cpd

Confident teachers, relevant cpd, suitable pupil prior skills

A huge cpd programme for staff with no computing expertise

Lots of relevant cpd and a wide range of teaching resources

Training for teachers frightened of computers

Technology, vision, realistic plan, cpd, space for fun

Selling the big picture to school leaders and teachers

Training, technical support, faith

Suggested guidance and possible progressions, staff cpd programme

Staff up skilling cpd

A magic wand

Other comments to inform the Naace response

Supporting wiki of best practice examples to go with PoS

Leave out safe use of technology and we are setting students to be.... (At best ill-prepared for the world they inhabit, or at worst, victims (or worse still, perpetrators) of crime and abuse)

Must stress need for a creative curriculum

Think the proposal is far too CS orientated and needs to be rethought

An emphasis as to the importance of this subject

Change of name to ICT and computing

The response must be positive and not denigrate what is there

Don't make it tech driven, it needs to be pedagogically driven 1st and tech 2nd

Yes, too much focus on computer science means that ICT areas may get lost

Can you ensure special schools are included in the consultation?

More use of good ICT

Keep working on it, don't quit

Teachers can teach anything well and should push themselves to

The narrowing of the curriculum to computing is a step back to the dark ages

Highlights from TalkList discussions

Surely whilst it is up for consultation it could be interpreted as - well some are not happy with the proposals but look they are getting on with it.

I completely agree that we should build upon existing schemes of work rather than trying to invent our own.

That does not mean it is right that any Govt can take control of what children learn in schools without an agreed consensus. The Secretary of State has the powers to control the curriculum and is now exercising them. This has profound implications doesn't it? There is a clear momentum of opposition building, not only from teachers and educationalists, but it is also spreading to parents and those that want to preserve the middle ground and ensure that children have the best start in life.

There might be an expectation that parents and the public will hold schools to account, but voters will hold the government of the time to account as well if it fails to prove that its policies provide the right opportunities for the next generation through its education system.

"7. Do you agree that we should change the subject information and communication technology to computing, to reflect the content of the new programmes of study?" While the question itself is pretty closed this is the opportunity to provide reasoned arguments that the more open and inclusive subject of ICT should be kept... ICT as a broad subject ...encompasses both skills and knowledge relevant to 21st century society and learning. We've allowed others to dictate the agenda (even dare I say followed a policy of appeasement in the belief they might compromise)

I see some classic ploys being used by the current government to instigate change e.g. breaking something that doesn't need fixing in order to create dissatisfaction and drivers for change etc. There is also duplicity here with a government professing to be decentralising and making schools independent during a period of radical transformation when the reality is that they are actually just removing the middle layer of local and democratic management of school provision and support for schools while creating what must be one of the most centralised systems in the western world with individual schools/academies having a legally binding agreement with the central government secretary of state for education.

Naace and others had put forward curriculum suggests to ensure that an ICT (CS, DL, IT, whatever) curriculum contained the breadth, depth and robustness and rigour that the subject deserves within our information society and technology driven economy. However, there is now a consultation on a PoS which appears to be stripped of relevance, dumbed down in depth of application and made to appear

rigorous by including technical terms in no- supported contexts. Yet ours is not the only subject to be suffering at the hands of the government!

(Schools) do not have a choice about having a programme of study and schemes of work for ICT - they are required to do this by Ofsted and a responsibility to their learners. I would therefore modify the suggestion that we think about what schemes of work based on the proposed PoS might look like and instead build on the examples of the broad and balanced schemes of work already created by good schools in order to respond to the consultation with a PoS that reflects good practice and the wider aspects of ICT knowledge and study.

Yes, there is very much a case for ensuring we empower and equip teachers/schools for this new curriculum. I agree about the importance of computing but am also concerned that ICT has grown to mean so much more than just computer science.

Algorithms – well, really that just seems to me to be a bit of techie terminology of the sort that children love and that adults often “shelter” them from, in the same way as I am sure a similar debate about terminology happened when we started talking about digraphs, phonemes, etc. in literacy. Back in my science teaching days, introducing and demystifying real scientific terminology was a real and valuable part of what we did – and so it should be with computing terminology, too. We shouldn’t underestimate the ability of young children to take these terms on board. The big challenge will be introducing the teachers and parents!

We have a moral obligation to keep shouting out about the other aspects of ICT that have been missed from this programme of study. Martha Lane Fox’s job of bridging the digital literacy gap in the whole population looks set to be an ongoing and expensive challenge if aspects of IT and digital literacy are missing from this curriculum. If part of the purpose of education being to prepare youngsters for the real world of work, there are so many different roles that they will be going into that we need to keep those in mind.

I share the concern of others that for some schools, if it ain’t in the programme of study they will see no need to include in a scheme of work.

Judging by those (Ofsted) criteria the proposed curriculum will be in adequate! :-)

Perhaps makes more interesting reading if you swap Computing for ICT...

Wiki scheme of work isn't as catchy as wiki curriculum...

I think algorithms can be very simple but are characterised by outputs being determined by responding to some sort of condition (e.g. (parameters, rules, inputs, etc.) so any set of instructions that involves a conditional statement might be regarded as an algorithm. Things like ITTT and Kodu are great ways to introduce and develop understanding of algorithmic thinking.

To my mind it is the learner that is solving the problem rather than the sequence of instructions themselves forming part of the problem solving process.

Agree collaboration not dictat is v good but then we do need a framework to hang stuff off - a skeleton which can be fleshed out in many ways - otherwise we'll get a vast ragbag of ideas which will be of limited help to others. Trying to get a balance between useful, structured support vs. prescription. I hope we've learnt the lesson from QCA etc. of producing these for teachers, even if only as exemplars. Also, creating a scheme of work collaboratively is, I think, exactly the sort of CPD that will address the pedagogy of computing; something which I think will matter much more than the minimum core knowledge entitlement.

That's an algorithm - a sequence of instructions, not executed separately, but in a block, to solve a problem.

There is a passion for teachers to make sure that they offer a balanced meaningful curriculum.

One scary element of the future is the insistence of one Head teacher to only have teachers with computing qualifications deliver the curriculum and not allowing "ICT" staff time to gain the qualification meaning that the curriculum would be delivered mostly by the Mathematics department.

If schools are to ensure their curricula are broad, balanced and fit for the 3rd millennium I'd hope they'd look to teach much more than this minimum entitlement.

I'm not sure why I feel so precious or emotive about this subject.... it may be because I've always regarded algorithms as being about problem solving rather than simply creating a set of instructions. The use of term Algorithm to me has always denoted an element of "cleverness" or an approach through which a problem can be solved through a process that is somehow greater than the set of individual instructions that it contains.

An analogy... As a chemical physicist I'm really impressed with Brian Cox's current TV series on Life as it educates people that the processes of life are all about physics and chemistry e.g. plants/photosynthesis is actually all about particle physics and quantum mechanics. In fact I'm quite tempted to rewrite the science curriculum so that we ensure that primary school children are taught about "particle physics" and "quantum mechanics" from an early age rather than much less rigorous topics such as "life processes" or "biology"....

There should be a model national curriculum that clearly lays out expectations for how learners' knowledge and understanding of ICT should be developed in a progressive way and based upon the experience of practitioners of what has been successful. I share the exasperation that the ICT NC was used as scapegoat for the failure of the qualifications system and that it actually contained much that was useful in embedding and developing ICT into school curricula by non-subject specialists (which is why there is such good use of Bee-bots, logo/turtle type tools in primary schools already in place.)

As a self-confessed geek I would point my finger at the nerds for the language used to express the PoS....

My concern about the changes to the National Curriculum is that I believe that for the schools that benefit from having a national expectations and framework to work within the changes will be counterproductive. The aim of slimming down a prescribed national curriculum to provide schools with the space and flexibility to create their own exciting and engaging curricula is a worthy cause but there is considerable naivety at work here.

Experience shows that good schools have always used the NC PoS as a guide but tailored their school curriculum to provide the best outcomes for their students (which unfortunately has meant in some cases maximising test results and qualifications and ignoring parts of the PoS that don't contribute to these outcomes).

Experience also shows that schools like to do what they perceive they are being told to do. E.g. when the non-statutory examples of NC Schemes of Work were introduced schools slavishly and relentlessly followed them – I still see the ICT SoW being followed in some schools.....! It is these schools that I worry about who are likely to drop the breadth and richness that was within the previous ICT PoS because it has been cut from the NC. Whereas good schools will use the flexibility that they have to maintain and build upon this richness of ICT and develop what we at Naace would call 3rd Millennium Learning.

The National Curriculum is by definition no longer "National" because not all schools are required to take account of it. So turning the NC into a book of knowledge that must be taught by some schools but not others seems nonsensical... Viewing the NC as a model that outlines the breadth of knowledge and range of learning experience that school curricula should include does make sense and is probably why I have yet to find Academy that does not make reference to the NC within their curriculum planning.

Why, oh why are we debating what an algorithm is? The National Curriculum for ICT has had it covered using generic language since its creation in 1987 - and it was so brilliantly future-proofed that it is still relevant today:

At Level 1: cause and effect (pressing buttons)

At Level 2: sets of instructions (entering a whole series of button presses or computer instructions before calling the 'start' command.

At Level 3: naming and saving the set of instructions so it can be retrieved and run on demand. The instructions can include input and/or feedback.

At Level 4: creating routines which call instructions sets as required, depending on outcomes or inputs at each stage.

This, it seems to me, covers the whole algorithm debate in a clearly understandable form which any KS 1 & 2 teacher can introduce in class, building year on year. Robots, Logo, Sherston's Crystal Maze, Scratch and many other commercial offerings support the teaching of this valuable strand which covers "Computing" and Programming in depth. If this strand had actually been taught effectively since 1989 when it was introduced as a statutory requirement, perhaps we'd have been spared this ridiculous and unnecessary consultation.

This consultation is faffing about, trying to decide if some specific aspect of the subject should be included, using specific wording (eg. Search Engine) that could easily be as obsolete as the dodo within a couple of years.

Personally, my anger is growing by the day. If I might repeat myself, Gove is definitely trying to fix that which ain't broke. A measure of lunacy that defies belief.

It's been depressing to watch the focus on this single item, when, as so many people have commented, it is what is missing that is of the greatest concern.

Key Stage 1 teachers will happily get the BeeBots, Roamers etc. out the cupboard and get on with it. But can we rely on enthusiasm to drive the rest of the ICT curriculum?

Unlike the previous stages of this process the responses to the consultation can't be hidden due to FOI. This means it is harder for the DoE to fudge the level of opposition to the proposed curriculum.

Now read it (the draft programme of study for computing) again – only the last bullet point covers all the other aspects of ICT – communication tools, video, animation, data handling etc. The things that make ICT exciting and enable learners to develop the skills they will actually need and use in the real world. That is not to say that exploring Logo, Scratch or Makey Makey cannot be fun – well taught it is, but the idea that at KS1 children need to know what an algorithm is and how they are implemented in programmes on digital devices can only have been dreamt up by geeks with no understanding of young learners whatsoever. It gets no better at KS2 and but KS3 the whole PoS could be taught as a classroom based theory course with little practical work at all. This is NOT ICT, it is a watered down Computing GCE from the 1970's.

The response to Gove's proposals needs to be MASSIVE.

Gove, with the support of the media, is attempting to take control of the education of our young people. And don't believe that you can escape this by your school becoming an academy - it takes only a stroke of his pen to bring academies back under the national curriculum, as it did to exempt them from following it.

If we ignore technical terms like 'algorithm' which need defining before anyone can join the debate, a big problem with the draft curriculum is that it specifies what to do. "Use a search engine", it says, as if The Gove knows that search engines will always be the way we interrogate the ubiquitous mass of information within which we are becoming immersed.

One of the good things about the ICT Curriculum that has been ignominiously disappplied despite its continuing relevance is that it never specified particular software or hardware. For example, it says: "Communicate", not: "Use a Word Processor". It encompassed technology that hadn't even been invented in 1989 and is still relevant.

"Use a search engine" and similar specific statements are likely to be out of date within a very few years and our children will be guided into a dead end faster than you can say "Britain used to be great".

If the leading lights in the subject struggle to find a simple explanation of one element (algorithms) in the KS1 programme of study, what hope is there for the non-specialists who will have to teach it?

It's worth looking at the language used in other subjects, e.g. the PoS for KS1 Science. Even without the non-statutory guidance, the statutory statements make complete sense to a non-specialist. Is it too much to hope that we can achieve the same in our subject?

Similarly, the language of the History PoS is clear enough for people to express their disagreements. If this is a genuine consultation – and is it? – How will the wider community feel able to comment on the Computing proposals, if they have to visit Wikipedia in the hope of understanding what they mean?

I suppose you could apply it to other subject areas like Art, where being able to create the paints and brushes would end up being more important than being able to paint.

The one spanner in the works for the Art brush and paint comparison is that the level of skills and technology required to make paints and brushes have not developed exponentially over the last twenty years, unless of course you count graphic design, graphical manipulation and CAD/CAM. We need all three ingredients to sustain and expand on the knowledge and skills needed to use technology as a tool for life, use it to stretch creative boundaries and to build and programme the technology of the future.

I will be strongly advising schools to retain the softer side of ICT in KS1 and 2 and embrace the challenge of computer science. KS1 children must begin to develop those skills to be able to 'select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information' at KS2. (Which in my mind includes animation etc.) The fact that it isn't mentioned explicitly is not a big problem to me. Although the term software, seems rather odd and is perhaps a little misleading, as I am not sure you can combine software. I am assuming it means resources created in different software.

I would appreciate a clear succinct and simple definition of algorithm that directly relates it to computer science and not other sequences such as recipes.

Interestingly, a games technology student who is also employed within the gaming industry told me that they didn't use the term algorithm and what I seemed to be talking about was a function!

I think there is a danger in creating a curriculum that is too specific. IT/Computing (whatever you want to call it) is a very broad subject but whatever aspect of that subject there is some common ground which can be very useful in other subject areas.

I guess that there is a difference in approach depending upon whether you are a user of IT or a creator of IT. In the past ICT has been seen more appropriate to users of IT while Computing is more appropriate to creators of IT. So are we seeking to provide a curriculum that is for consumers of IT or for innovative creation of IT?

There are many interesting and important ideas in these pages but my instant reaction was that while I can't argue with much that has been included but I am alarmed at what is missing. The IT / Computing / ICT industry has far more strands than just programming, vital though that is. For instance where would our excellent games industry be without designers? ... Any PoS needs to make explicit the inclusion of things like animation, movie making, product (such as websites) development and a myriad other items that need greater prominence than being hidden away and simply there by inference.

Personally, I welcome the fact that the new PoS for computing provides an entitlement for much more programming and other aspects of computer science.

*Whilst the aims state clearly that pupils should be "**responsible**, competent, confident and **creative** users of information and communication technology", there seems little entitlement to be taught to work creatively in digital media at KS1 and 2, even though this was an integral part of the draft PoS submitted by the BCS/RAEng to the DfE in November.*

In terms of developing skills for a digitally literate workforce, to focus on programming to the extent that pupils may never be taught to work creatively on a computer with text, sound, images or video during the whole of their primary education seems somewhat myopic.

Similarly, responsible and safe use of digital technology is not mentioned at KS3, where it is arguably of even greater importance. The loss of these elements is logically inconsistent with the aims of the curriculum and the PoS, potentially harmful to the economy and may have negative impact on children's wellbeing. I do hope these omissions are merely an oversight by ministers or their advisors, which they'll be eager to correct after the consultation process.

The whole objective is to make the national curriculum as unappealing as possible; as little to do with real children and their learning as possible and with no relevance to equipping citizens of tomorrow at all. That way, it will act as a motivator for schools to become academies.

...this curriculum is a travesty - it is a political document with aims and objectives that have nothing to do with children.

It seems to me that the new Computing POS is being mainly driven by certain sectors of industry and commerce that need high ICT understanding and skills, rather than by a balance of representatives from all such sectors.

As pupils come through KS3 and start to make choices to study qualifications that will be appropriate to the kinds of future careers they envisage for themselves, it is surely the responsibility of schools to give them a balanced vision and a balanced choice of KS4 study and qualifications. If pupils develop good understanding of computing, business ICT, creative ICT or web design, what doors might this open for them? What other subjects would complement this choice? There are exciting and growing career opportunities in these sectors, but because they have in many cases only recently developed I suspect that a lot of schools, and even ICT teachers, have only a poor vision of what these careers are and just how big the opportunities for future employment are.

The emphasis that is being placed on coding and programming is short-sighted. We have introduced programming software in our school - Kodu and Scratch - and our Year 6 pupils have enjoyed investigating and exploring these new programs and creating interesting and imaginative 'worlds' and scenarios. In particular, some of our more reticent boys have really excelled and have become our programming 'experts.' Pupils should not just participate in games but understand how they are

created. It is important that programming is included but not given the prominence which is currently being suggested.

What is important is that our pupils are given the skills to use 'real-world' technology; those applications which will assist them in their future learning, their workplace and at home.

I think there is a danger in creating a curriculum that is too specific. IT/Computing (whatever you want to call it) is a very broad subject but whatever aspect of that subject there is some common ground which can be very useful in other subject areas.

It's interesting to note that today the whole slant since Michael Gove decided to say anything on ICT has been negative. Indeed, I note that Miles in his post mentions the 'entitlement' word, this has rarely ventured above the parapet in anything said about revising the curriculum. Indeed, when it comes to all the draft PoS, one must assume that it is not an entitlement curriculum, or at least an entitlement for some, but not all.

Like those who have already contributed to this discussion my fear is that we will lose all the aspects that make up our subject apart from those that are being directed and learners will end up in a 'caught not taught' scenario when it comes to using technology effectively and being discretionary users (God bless YouTube!) using technology to meet their and their audience needs.

There is going to be a big problem as children get older and spend more time on programming which is that, given limited ICT curriculum time in KS3, learning how to use applications that are important in other subjects, and in life and generally, is going to have to be tackled in other subject areas.

Overall it seems to me that Gove does not understand that the curriculum a school needs to offer its pupils is a lot more than learning about a set of subjects - or perhaps he does, but is using the curriculum review as a lever. The new POSs look to me much more like specifications for exams at KS4/5 than parts of a rounded curriculum through which to educate children. The original national curriculum did a reasonably good job of creating a broad curriculum specified through 10 subjects, though the fact that it was subject-based led the 'subject experts' who care more about their subject than a broad education to try to ram the curriculum impossibly full of all their pet bits of knowledge - as we are seeing happening from some of the computer science fraternity in this ICT POS.

I think we have to break out of thinking about "our subject area" and take a mature view as professional educators of what we can contribute to the way schools design and manage their overall curriculum. So though I care about the ICT POS I see it as only part of what a school's curriculum and schemes of work should say about pupils working with and about ICT.

A brief observation on the importance of teaching ethics in any programming curriculum - there is an interesting report on BBC technology news noting that: "Children as young as 11 years old are writing malicious computer code to hack accounts on gaming sites and social networks, experts have said." A little knowledge can be a dangerous thing . . . ! Full article at <http://www.bbc.co.uk/news/technology-21371609>

I'm appalled at the name change. I know it's only a name but it's intended to move the focus from competent user to programmer. If I might use an analogy, it's rather like changing a broad-based, fit-for-all study of fossil fuels in society to 'engine maintenance'. And forcing it on every student.

An analogy with learning to ride a bike, lots of practice on corners etc. is great but we still need to teach about road safety, courtesy etc. which is not instinctive in kids. A shortage of specialist teachers and repetitive use of Microsoft applications was at the root of the 'boring' perception

I see the change of name and the PoS within a political context which is reflected across all the draft subject PoS. The deep thinking with wide consultation that took place in the late 80s when the NC was established is not there today for political reasons. A History teacher at the time, I remember the deep concern that ideas that were thought that the huge steps to make History challenging and relevant would be curbed by the imposition of the National Curriculum. The fight for the meaningful development of skills and concepts against knowledge and facts was very real. The result was a fair compromise in which those skills and concepts were taught within a pretty uncontentious context with choices for teachers with regard to content. I don't know if anyone has looked at the draft History PoS, but it's now an index of topics in chronological order from KS1 to KS3 with no regard to appropriateness of content to the age range. Indeed, I feel sorry for KS2 teachers being asked to cover the content prescribed which includes, "the ancient civilisations of Greece and Rome" as well as British History from "the Stone, Bronze and Iron Ages" to "the Glorious Revolution, constitutional monarchy and the Union of the Parliaments". The Geography PoS is no better either. My point is that this is all the draft PoS have been reduced to the lowest common denominator reflecting a simplistic view of schooling. There has been little consideration for the implications on teaching or even pupils' learning, but then this curriculum is not meant to be about that, or even necessarily delivered. The political aim is that no school will be obliged to deliver it.

When Naace ran its consultation on the ICT National Curriculum amongst members, the meetings that I was in all agreed how good the existing national curriculum for ICT is. As you say, it uses language that address the principles and that clearly gives the reasons why these areas are important to study. I suspect that over the next several years government statements about the ICT curriculum, its name and content are going to come thick and fast in response to lobbying and fads. The message for schools has got to be focus on the long-established consensus wisdom enshrined in the current ICT national curriculum, which covers all that they are now talking about as 'computing' as well as the broader parts of ICT (if they properly teach the whole of it). And to develop a much clearer view of the various career paths that need high level skills in various aspects of ICT and hence of what KS3 pupils need to study, in order to gain some insight into what is involved in these potential careers.

Though I did my bit when I was a science teacher to develop numeracy and literacy, I could still see a strong need for the English Dept. to help pupils use language more effectively and the maths dept. to help them use maths more creatively. So too for ICT.

Back in about 1987, when the very first advisory teachers were appointed under the ESG (Education Support Grant) initiative, the Inspector for IT in Cambridgeshire was Elizabeth Cole. She had a personal abhorrence of the term "Computing" because it smacked of controlling the machinery rather than using it. Controlling it, she argued, certainly had value; but the full potential, even in those early days, could be seen as what you could do with Information Technology in its broadest sense rather than just program computers as devices. Programming was not ignored but it was not seen as the sole objective.

In my opinion it (the original National Curriculum for ICT) got the whole thing amazingly right. It didn't say "learn to word process", it said "communicate" which is as relevant today as the day it was printed. It also had programming/coding (call it what you will) in the "measurement and control" strand. The problem has been that teachers taught word processing and largely ignored programming. So when Gove says the ICT curriculum is boring he's missing the point completely.

E-safety in the draft programme of study

Responses from our own members reflect concerns that had been expressed to the Child Exploitation and Online Protection Centre (CEOP), who conducted a similar survey with their network of 85000 professionals who deliver CEOP's Thinkuknow e-safety resources.

Do you believe that the draft Computing Curriculum satisfactorily addresses students' needs around e-safety and positive behaviour online at Key Stage 1 and 2?

A significant majority of CEOP respondents also believed that the draft curriculum would not satisfactorily support schools to meet Ofsted's expectations. Comments include:

E-safety has to be a priority for the teaching of KS1 and 2 pupils. They have more open access than we realise at home.

There is simply inadequate reference made to e-safety and its subset of information literacy.

(The Curriculum is) not explicit enough about how to report/seek help for unsafe usage, trusting online identities, etc.

There is no reference to e-safety and positive behaviour online at Key Stage 3 or 4 in the draft Computing Curriculum. Is this appropriate in your view?

Again, the comments made by our own respondents were very closely related to those reported by CEOP:

(This is) the age group probably most at risk from grooming online and inappropriate language/content.

There needs to be a lot of work around e-safety with pupils in KS3 and KS4 as the internet and social networking is providing a big opportunity to lure people into sexual exploitation and the potential to be abused online.

Although e-safety could be seen as part of whole school safeguarding, if there is no specific reference in any curriculum area there is a risk it will be left to assemblies and general guidance. This is not targeted enough.

E-safety and positive behaviour online is not referenced in any other curriculum areas. Do you believe that it should be referenced in PHSCE/Citizenship/English/any other subject?

Similarly to Naace respondents, those with expert knowledge of this aspect of the curriculum felt that e-safety needed to be explicitly referenced in areas of the curriculum including Citizenship, PSHE and English. They also noted the tension between the new curriculum and Ofsted's e-safety requirements.

At present the proposed curriculum most closely matches inadequate in Ofsted's criteria.

It's not progression if it stops at the end of Key Stage 2! Any secondary school delivering the draft Programme of Study would not be teaching e-safety and would therefore fail to meet the Ofsted criteria.