Naace Response to Government Consultation on Disapplication of ICT Programme of Study and Attainment Targets

Naace is the ICT association. We are a community of educators, technologists and policy makers who share a vision for the role of technology in advancing education. Our members include teachers, school leaders, advisors and consultants working within and across all phases of UK education.

As a professional association, we represent the voice of the UK education technology community in the schools sector at a national and international level, as well as supporting one another across the sector through conferences, courses and the dissemination of resources, research and reflection. We play a key role in both members’ professional development, through the challenge and support of a community of practice, and the development of the profession as a whole, through the sharing of innovation and expertise.

We are pleased to share our considered consultation response below following a wide consultation with our members, sponsoring partners, ICT Mark schools and other colleagues.

We are also providing a copy of our Draft Naace ICT Framework for your consideration and are happy to make ourselves available at your convenience to discuss any aspect of our response.

Our key contact for our work on the curriculum is Naace Professional Officer, Jan Webb. Jan can be contacted at jan.webb@naace.co.uk.
1a) Do you agree with the Government's proposal that the statutory Programmes of Study for ICT should be disapplied in maintained schools in England from September 2012?

No

Naace agrees that the current ICT Programmes of Study (PoS) and Attainment Targets need to be revised as part of a wider review of the National Curriculum. Naace is currently consulting with members and the wider community of teachers and other experts on a relevant and innovative model curriculum framework for EYFS to KS4 – the Naace ICT Framework - that builds on the most successful aspects of ICT taught in schools, as well as providing a programme of study (PoS) which would lead to specialist options such as Computer Science, Digital Creativity, ICT and Information Technology at KS4. This framework is intended to provide a stable basis for a broad approach to ICT, including computing, with the flexibility needed by schools in order to personalise the curriculum to meet the needs and aspirations of all their pupils. It develops the existing PoS to provide a coherent, progressive structure for schools, whilst addressing the gaps in the current provision. A draft of the Naace ICT Framework is included in this response to show how it is possible to refresh the current programme of study with broad themes and more specific areas for learning.

However, if the PoS are disapplied without a replacement being provided, the progress, performance and opportunities available to pupils will be placed at risk in many schools. Many schools require guidance if they are to deliver a broad and balanced ICT curriculum and without such guidance some schools will fail to deliver an adequate ICT curriculum. The ICT curriculum that children receive will be in real danger of becoming a “lottery”. In addition, where primary schools review and replace the current ICT Programmes of Study (PoS) with one of their own, given that secondary schools take pupils from a number of different primary schools, progression to Key Stage 3 may be severely compromised and pupil progress potentially hindered as secondary schools would no longer be able to assume a common baseline of skills, knowledge and understanding. As one of our members suggests about the removal of the PoS, “It leaves too much flexibility for schools to develop only a limited number of skills and not teach the full range of skills.”

Ofsted in the “ICT in schools 2008-11” report found that “Pupils’ achievement in ICT was good or outstanding in over half of the primary schools visited over the three years of the survey.” At KS3 Ofsted reported that when standards were low, “This was because there were too few opportunities for students to develop the relevant skills, knowledge and understanding.” This suggests that key aspects of the ICT PoS, in particular at KS3, are not being followed in all schools. This is exemplified by Ofsted’s finding that an area where standards are low in KS3 is in programming despite it being clearly defined in the KS3 PoS:

“2.2 e) use ICT to make things happen by planning, testing and modifying a sequence of instructions, recognising where a group of instructions needs repeating, and automating frequently used processes by constructing efficient procedures that are fit for purpose.”

Naace agrees with other stakeholders and commentators that the KS4 PoS is flawed because it does not contain a requirement to continue teaching programming skills.
Although these skills are not precluded, they can be interpreted at a relatively low level: “analyse systematically the information requirements to solve a range of problems; scope the information flow required to develop an ICT-based solution.” The omission of programming and other aspects of computer science from the KS4 PoS has led to many ICT courses and qualifications at KS4 not having sufficient rigour and being regarded as “boring” and “out of date”, with many taken as a relatively easy way for students to achieve ‘league table’ points. More than this, the KS4 ICT curriculum and qualifications have incentivised some schools to be selective about the PoS for KS3 and to neglect the required problem solving and programming requirements in favour of the applied use of ICT in the KS4 PoS and a number of GCSE or other qualifications.

The Secretary of State has taken welcome steps to ensure that ICT qualifications offered as GCSEs are no longer overvalued for league tables and has also been supportive of the introduction of rigorous GCSEs in computer science that go beyond what is required to be merely consistent with the ICT PoS at KS4. However, Naace agrees that the KS4 PoS does not provide an appropriate curriculum entitlement and standards upon which to base ICT related GCSE qualifications and does not promote optional courses and qualifications in more specialised disciplines such as Computer Science or Information Technology. This is further complicated by the GCSE ICT criteria being a simplified version of the KS4 PoS and Attainment targets, making such qualifications vulnerable to reduced standards. The KS4 PoS could be disapplied with the curriculum being defined by the appropriately rigorous and approved courses and qualifications.

In conclusion, whilst in urgent need of renewal, the current Key Stage 1, 2 & 3 Programmes of Study, if followed, do allow schools to provide an adequate route through to KS4 qualifications in ICT and Computer Science, providing that teachers make good use of the freedoms that are already available to them. However as stated above, if these PoS are disapplied the progress, performance and opportunities available to pupils will be placed at risk in many schools.

The world outside of schools is dominated by ICT – for communication, entertainment, research and socialisation; we need to prepare learners to be able to engage constructively, creatively and safely in this world – ICT capability is an essential life skill. Industry is demanding ever greater ICT skills, knowledge and understanding from school leavers and the best way that this can be achieved is if schools are given the direction they need to deliver a broad and balanced ICT curriculum. One of our members suggests that attainment targets should be consistent with National Occupational Standards, so that clear outcomes for assessment inform progression and preparation of learners so they are confident to use ICT to support their day to day study and later employment.

Schools need an ICT Programme of Study written by experts in order to prepare pupils fully for learning and the world of work. This Programme of Study should be written so that it is flexible and not only allows but encourages schools to innovate. This is the only way that we can ensure that a broad and balanced ICT curriculum is taught to all pupils.
1b) Do you agree with the Government’s proposal that the statutory Attainment Targets for ICT should be disapplied in maintained schools in England from September 2012?

No.

Whilst agreeing that the Attainment Targets are in need of revision, disapplicat

ion would leave schools without a national benchmark against which they can measure pupil progress and against which parents can measure the progress of their children and the performance of their school. As one member says, “We are not convinced that those schools currently failing to address the attainment target in a challenging and inspiring way will fare any better if it is disapplied.”

Disapplying the statutory attainment targets is likely to leave ICT learning with a lack of focused direction, especially where the National Curriculum Programme of Study has not been implemented in its entirety already. With no clear attainment targets, there will be a lack of consistency across the country, leaving pupils a “post-code lottery” ICT experience. In the absence of an attainment target or equivalent, it will be difficult to monitor and evaluate the effectiveness of ICT teaching and learning, or indeed any changes than might be implemented as a result of increased autonomy in schools.

It is inevitable that a new subject will evolve and also that changes have happened in the fast-moving world of ICT education since the original introduction of the National Curriculum PoS and Attainment Targets. However there is now much broader agreement on key themes and areas of learning that are not dependent on rapidly evolving tools and specific software but on generic and transferrable skills including communication, presentation, higher level thinking, collaboration, design processes, programming skills, computational thinking and systems design processes. Given that there is greater understanding of what ICT including Computing is, attainment targets, subject to appropriate revisions in accordance with changes to the PoS, will also be increasingly stable. The Naace ICT Framework can support such stability in targets for attainment so that there is consistency between schools and progression between phases, including Special Schools. Such an approach, relying on the stability of knowledge that has developed, will provide an essential and coherent basis for a rigorous KS4 curriculum. It takes into consideration respected research from organisations such as the International Society for Technology in Education (ISTEnets) and the Personal, Learning and Thinking Skills that have been adopted by many and accepted academic research into effective pedagogies such as Bloom’s taxonomy. We would like to see clear progression in Attainment Targets throughout a learner’s school experience and as such have endeavoured to provide continuity in our own ICT Framework.
1c) Do you agree that the statutory assessment arrangements for ICT at Key Stage 3 should be disapplied in maintained schools in England from September 2012?

No.

Without the requirement to assess pupils against the Attainment Targets and report the results to parents, schools will not prioritise the delivery of a broad and balanced ICT curriculum. They will have no obligation to develop their provision to include all the ICT experiences a learner needs, including programming and other aspects of computer science.

Monitoring and evaluation of ICT is important at a local, national and international level, as highlighted by UNESCO in 2009 in their guide to measuring ICT in education: “...lack of reliable, quality data, in addition to the absence of standardised guidelines for establishing relevant and comparable indicators, hinder policymakers in making informed decisions or in demonstrating greater commitment to integrating ICT into their education systems.”

By removing the statutory assessment arrangements, schools and LAs will not have the information they need that will help them to prioritise appropriately for learners to develop broad and balanced ICT skills or to provide experiences that are relevant in their own context, personalised for each learner’s needs. Data that may be collected in the absence of statutory arrangements may not be reliable or comparable and thus hinder higher level strategic decision making.

One of our members makes the point that some schools, already following a challenging KS3 course, value the recognition of effort and learning at KS3 and this encourages uptake at KS4 and beyond. However, they also recognise that “the assessment regime at both KS3 and KS4 can have a reductive impact on what is covered in ICT”. Others have pointed out that current GCSE assessments are seen as an easy option, even to the extent of being taken by learners who are aged 10 or 11. Naace would wish to see high standards in assessment arrangements at all levels so that appropriate rigour is demonstrated and so learners may benefit from a progressively challenging approach to learning ICT, knowing that achievements in ICT are valued – an important part of motivating learners to continue with their studies at KS4 and beyond. This progressive approach is key to avoiding the repetition currently experienced when studying at higher levels – for example, some A-levels at the moment don’t have GCSE as a pre-requisite that leaves those who have studied at GCSE with a less than seamless progression into higher level studying and which can discourage uptake.

Ofsted (2011) has reported about secondary schools that: “Assessment was the weakest aspect of teaching and was inadequate in one school in five. The schools visited rarely tracked the progress of individuals in ICT, established their attainment on entry to secondary school or took into account their achievement outside school. Although the use of ICT in other subjects was increasing in secondary schools, the skills were rarely assessed. As a result, ICT teachers rarely knew how well students applied their ICT skills elsewhere.”
This means that 80% of secondary schools have adequate or better arrangements for monitoring and assessing learning in the current Programme of Study, but procedures and assessment arrangements will need adapting to show progression as teachers introduce new curricula. Procedures and assessment arrangements should also include modern cross-curricular applications of pupils’ ICT capability and include aspects of programming and computational thinking which have not always been addressed adequately in schools but which are part of the PoS, as discussed previously. ICT teaching and assessment will need careful coordination by those with a holistic overview of a learner’s ICT experience, supporting the development of skills, knowledge and understanding in a considered, balanced way and reinforced by application in different learning contexts.

2a) What would be the likely impact in schools of disapplying the existing Programmes of Study and Attainment Targets?

Many schools are interpreting the potential disapplication of the existing Programmes of Study and Attainment Targets, with the expert panel’s recommendation that ICT be reclassified as part of the Basic Curriculum and the exclusion of ICT from the English Baccalaureate, as an indication that ICT is no longer valued by Government and that it is not something against which their performance will be measured. In this climate schools are unlikely to invest time and resources needed to develop their own Programme(s) of Study. They are therefore likely to continue to teach what they are teaching now or deliver a reduced ICT curriculum. For some the message is interpreted to mean a loss of ICT from the timetable, reduction or loss of ICT staff and neglect of necessary investment in technology, all of which have the potential to severely damage the UK’s position in the global market. See our recommendations in response to question 1 to mitigate against this danger.

With no Programmes of Study and Attainment Targets in place, the gulf between schools with teachers who are confident to teach creative and challenging ICT and to harness the potential of technology across the whole curriculum, and those schools who do neither, is likely to widen even further. Without a statutory entitlement for learners to a clearly defined ICT curriculum, professional development opportunities are likely to be increasingly diminished as schools focus on other subjects that provide a measure of their success, exacerbating the issue of “postcode lottery ICT”. Members suggest that this will be further reinforced by the home context that learners find themselves in: “Schools in more deprived areas would find that their children suffer from lack of access.”

Furthermore, by disapplying the existing Programmes of Study and attainment targets, there is no requirement to deliver any specific aspects of ICT, which is likely to worsen the skills gap for industries that need technically confident and competent employees and employees with experience of programming. Developing formal computer science qualifications alongside rigorous IT qualifications at Key Stage 4 and above will need all learners to be motivated and engaged through a broad and balanced ICT curriculum in EYFS to KS3 which includes systems design, programming and other computer science elements. Such a curriculum could include, for example, developing pre-programming skills such as logical sequential thinking from Early Years Foundation Stage and building games at KS2
using visual programming tools. It is important to develop – and to keep developing – a positive, confident attitude in learners from an early age in order to address the poor uptake of computer science at KS4 and beyond. By disapplying the Programmes of Study and Attainment Targets, the skills gaps already identified by industry will be in danger of worsening.

Moreover, an understanding of digital technology is such a vital part of life, study and work in the 21st century that Naace has grave concerns that the proposed disapplication will do lasting damage to many pupils ability to contribute fully to society, access opportunities for lifelong learning or achieve economic well-being.

2b) How might this vary between different types of school or differentially affect different groups of pupils?

Schools that have already developed their ICT curriculum beyond that which is set out in the existing programmes of study, because they recognise the importance of this to their pupils and recognise the impact of ICT on learning, will continue to do so and in doing so will ensure their pupils are best placed to make the most of present and future learning and employment opportunities. Our members have suggested that responses in individual schools will depend very much on the attitude of the head teacher, availability of resources and the enthusiasm of staff – meaning pockets of good quality provision. As one says, “Some students and schools will thrive whilst others lose touch with the subject completely.”

Schools that are not adequately preparing pupils through a broad and balanced ICT curriculum are most likely to continue to teach what they are teaching now or to deliver a reduced ICT curriculum. See our recommendations in response to question 1 to mitigate against this danger.

Academies, independent schools and free schools that are not required to teach the National Curriculum, are still likely to benefit from exemplification of excellence in ICT, guidance as to how that might be achieved and standards by which they may compare learners’ attainment.

3a) Do you agree that schools should be encouraged to deliver a more challenging, rigorous, discipline-related curriculum in ICT, especially by focusing on the foundational principles and practices of computer science?

Yes.

“But importantly - 'as well as' not 'instead of’”, as one member responds to the suggested focus on computer science in this question. Schools should be required to deliver a more challenging, rigorous, discipline-related curriculum in ICT and this includes, but is in no way
confined to, ensuring that the curriculum covers aspects of computer science that go beyond the programming included in the present Programmes of Study and that the majority of schools do not include in their current ICT schemes of work. Computer science is one element of what Naace believes to be an ICT entitlement and, as such, we continue to consult with organisations with particular interests in this focused area of ICT, such as CAS, BCS, Intel and Microsoft. As previously mentioned, developing attitudes and skills that promote the uptake of computer science at KS4 and beyond is important, and is one aspect of a broad and balanced ICT curriculum. Many other aspects of ICT also need to be taught discretely and by those with expertise in order that learners gain a greater insight into the tools and skills available, for example equipping learners to design systems for a purpose and audience and to use computers creatively in different contexts.

Opportunities to embed aspects of ICT throughout the curriculum are the responsibility of ALL teachers—these provide opportunities for contextual problem solving and application of ICT skills and knowledge, but it cannot be assumed that skills, still less knowledge or understanding, can be “caught” in the process or that learners will have sufficient skills or insight for problem solving and creative approaches without them being taught discretely. There needs to be a systematic approach to teaching ICT in order to ensure that ALL aspects are learnt effectively.

3b) How can schools be best supported to engage with the ICT industry and subject associations in curriculum development, in order to develop innovative and creative approaches to ICT teaching, including the teaching of computer science?

As stated above, schools should have an ICT Programme of Study written by experts in order to best prepare pupils for learning and the world of work. This Programme of Study should be written so that it is flexible and not only allows but encourages schools to innovate. This is how we can best ensure that a broad and balanced ICT curriculum is taught to all pupils. The Naace ICT Framework provides non-statutory guidance to support ICT as a National Curriculum subject and reflects discussions with organisations such as CAS, BCS, UKIE, ITTE, eSkills, awarding bodies, industry sponsoring partners and our members. The range of experience brought to this framework is a model for providing a stable and coherent basis for a broad and balanced ICT curriculum, whilst allowing sufficient scope for innovative and creative approaches.

Naace, as the ICT subject association, works with partners in the ICT industry and other stakeholder organisations to support schools in the development of innovative and creative approaches to ICT teaching and curriculum development. Members value this: “Partnership through ... Naace (to) keep(s) schools informed about the IT world, IT jobs, IT development etc.” Others mention the importance of being able to find industry partners can be involved directly with their schools, such as STEM ambassadors who share time and expertise with those in schools.

There are challenges for engaging schools in this process, at scale, as time out of the classroom is expensive and often perceived as detrimental to learners if the best teachers are taken out of the classroom to engage in time-hungry curriculum developments.
However it is critically important that we find ways of engaging and supporting innovative practitioners in such work. There are a number of initiatives that Naace is considering to facilitate such engagement, at present, including use of ‘camps’ in the summer holidays to hothouse teachers producing curriculum concepts and resources for virtual distribution, use of capture technology to record exemplar lessons, developments involving student digital leaders to build capacity and confidence, project work around the development of new technology empowered pedagogies, action research to produce the much needed supportive evidence to underpin large scale rollouts of winning strategies and seeking to provide bursaries to investigate the implementation of new technologies in schools, to name but a few.

Schools can best be supported in such work by the introduction of incentives and initiatives to recognise that this work is valuable and valued. Granting professional recognition for practitioners that engage in such work would also be significant. Gaining recognition is also important for learners, which is why we are consulting with an awarding body about how to encourage and motivate learners to progress with their ICT studies into KS4 and beyond through a range of award options.

Beyond encouraging schools to engage in curriculum development, the CPD needs of specialist teachers of ICT and Computer Science are considerable in order to develop innovative and creative approaches to ICT teaching, including the teaching of computer science. Schools must be supported in recognising that this CPD is a requirement not a luxury. Both industry and subject associations are willing and ready to create opportunities to provide CPD but clear messages of encouragement from Government would help, along with financial support and incentives.

Several subject associations have proven that they can be creative in developing a range of CPD opportunities on a shoe string, often offering free provision. With a little investment and supportive encouragement for teachers to take up such opportunities, much could be achieved.

Naace has a track record of working with partners to encourage engagement in CPD with our www.ictcpd4free.co.uk development in collaboration with TDA, our work with Vital, engagement with Naace Mark for Service Providers, collaborations with other Subject Associations through the CfSA and work with commercial organisations such as Microsoft and Intel to create inspirational learning opportunities for teachers, e.g. Fun Free Friday events.

We have also found that our work on the SRF, ICT Mark and our new 3rd Millennium Learning Award in particular is opening doors to engage schools in collaborative work that is influencing their curriculum practice and delivery. Further we are increasing our engagement with Teaching Schools Clusters and are finding considerable opportunity to provide support to these schools in both the development of teaching ICT including leveraging confidence in exploring and developing the teaching of Computer Science elements of the curriculum in primary schools in particular.
4) Do you have any other comments you would like to make about the proposals in this consultation document?

It has been very difficult to respond to this consultation without full knowledge of the longer term plans for ICT as part of the National Curriculum.

As such we offer the interpretations above in good faith as a representative organisation who believes that every child should have an entitlement for a broad and balanced, inspiring, rigorous and coherent ICT curriculum, based on a stable body of knowledge, in all key stages.

Naace has experience and data from its work with schools engaged on the Self Review Framework (c 2500 have migrated across to the new Naace SRF online system), ICT Mark Schools\(^\text{v}\) and a growing cohort of Third Millennium Learning Awards Schools\(^\text{vi}\). Our relationships with such a diverse range of schools provides us with a clear evidence base of current and emerging good practice and points of reference. We also continue to consult with organisations including CAS, BCS, eSkills, ITTE, UKIE, awarding bodies and industry sponsoring partners, collaborating with them to support effective and coherent provision for all learners.

We look forward to continuing our development of the Naace ICT Framework and are happy to engage with colleagues in the Department for Education in this formative work.

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\(^{i}\) Ofsted – ICT in Schools 2008-11 – December 2011  

\(^{ii}\) ISTEne\(ts\)s Standards for learning, leading and teaching in the digital age 2007  
http://www.iste.org/standards.aspx

\(^{iii}\) PLTS – as defined by QCA 2007  
for example, as applied by City and Guilds 2009  

\(^{iv}\) UNESCO guide to measuring ICT in Education 2009  
http://unesdoc.unesco.org/images/0018/001865/186547e.pdf

\(^{v}\) Naace ICT Mark - http://www.naace.co.uk/ictmark

\(^{vi}\) Naace – 3\(^{rd}\) Millennium Learning Award -  
http://www.naace.co.uk/thirdmillenniumlearningaward