Consultation on the Development of a Digital Learning and Teaching Strategy for Scotland

Analysis of Evidence Gathered from Face-to-Face Consultation Events

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Education Scotland
Foghlam Alba

The Scottish Government
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1. ACKNOWLEDGEMENTS

1.1 The Scottish Government and Education Scotland would like to thank all who attended the face-to-face consultation events. Their views form the basis of this report and will help to inform the development of a Digital Learning and Teaching Strategy for Scotland.

2. INTRODUCTION

Consultation on the development of a digital learning and teaching strategy for Scotland

2.1 On 24 September 2015 the Scottish Government launched a public consultation on the development of a digital learning and teaching strategy for Scotland. The consultation document[1] set out the Scottish Government's vision that all of Scotland's educators, learners and parents can take full advantage of the opportunities offered by digital technology in order to raise attainment, ambition and opportunities for all. It also proposed that a strategy should be developed to achieve that vision and that four themes would form the foundation of the strategy:

- Empowering leaders of change to drive innovation and investment in digital technology for learning and teaching;
- Improving access to digital technology for all learners;
- Ensuring curriculum and assessment relevance in a digital context; and
- Extending the skills and confidence of teachers in the appropriate and effective use of digital technology.

A number of priorities for action were proposed under each theme.[2] Respondents to the consultation were invited to comment on the principles the strategy would be built upon, the four themes, the priorities for action as well having the opportunity to contribute anything else they wished to add. Following the close of the consultation period on 17 December 2015, all responses were collated and a separate, independent analysis report was produced and published on the Scottish Government website.

Face-to-face consultation events

2.2 In addition to the formal consultation, the Scottish Government and Education Scotland organised eleven face-to-face consultation events.[3] These events allowed a deeper dialogue with those interested in the development of the proposed strategy. Discussions focussed on how the four themes outlined in the consultation document could be successfully implemented. This report will focus on the outcomes of those discussions.

[1] https://consult.scotland.gov.uk/learning-directorate/digital-learning/user_uploads/395855_p2.pdf
[2] A more detailed explanation of each theme and the associated priorities for action can be found in Annex A.
[3] Details of the face-to-face events can be found in Annex B.

2.3 All but one of the face-to-face events utilised a version of a solution focussed approach[4]. The approach asked attendees to consider the following in relation to each of the four themes outlined in the consultation document:

- **Issues** – what are the issues that are currently preventing the theme from being successfully implemented?
- **Exceptions** – what examples do you know of where these issues have been overcome and how has this been achieved?
- **Goals** – What would you ideally like to see happen to ensure that this theme is successfully implemented?
- **Planning** – What should happen to ensure the goals already identified are reached?

The purpose of the discussions was not to reach consensus but instead to capture the range of views and suggestions offered by attendees.

Approach to analysis

2.4 The open ended nature of questions asked at the face-to-face events resulted in a wide range of suggestions and views being put forward. To ensure that all views and suggestions were taken into account, each suggested issue, exception, goal and planning measure was allocated to one of a number of high level topics.[5]

2.5 This report will not comment on all of the views that were put forward but will instead look at each consultation theme in turn and highlight the high level topics that arose under each theme.

[4] The Aberdeen event on 14 October 2015 asked attendees if they agreed with the priorities for action under each theme.
[5] The full list of high level topics can be found in Annex C.

3. EMPOWERING LEADERS OF CHANGE TO DRIVE INNOVATION AND INVESTMENT IN DIGITAL TECHNOLOGY FOR LEARNING AND TEACHING

Overview of issues

3.1 A recurring issue raised throughout the events was that in general, educational leaders at all levels do not possess the required level of expertise or confidence to invest and innovate in digital learning and teaching. Some felt that the digital devices available were so varied, and advanced so quickly that educational leaders didn't know what was appropriate to invest in. Others felt that educational leaders didn't know which pedagogical approaches to promote in order to successfully implement digital learning and teaching. All of the above resulted in educational leaders lacking the confidence to invest and innovate.

3.2 Another consistent issue was that it wasn't always clear who had the responsibility to invest and innovate. Some felt that this responsibility sat at local authority level and that staff at individual schools were unable to invest and innovate autonomously. Others felt that because there was no clear lead, those that could effect change decided that someone else would probably do it instead. A similar view was that no change occurred as there was no clear plan or strategy for investment and innovation.

3.3 Finally, there was also a generally held view that digital learning and teaching was not seen as a priority by leaders at all levels. Even when it was seen as a priority, the time and money needed to properly invest and innovate was often not available.

Overview of exceptions

3.4 Attendees consistently suggested that leaders can be encouraged to invest and innovate if they can be persuaded of the benefits of digital learning and teaching. In some examples this was achieved by staff at local authorities developing and presenting a case for the increased use of digital learning and teaching. In others, leaders had understood the benefits of digital technology informally through knowledgeable and enthusiastic colleagues, through links schools had built with technology companies, or through the knowledge passed on by learners at a school. Once benefits were understood at local authority level, attendees described how knowledge was successfully shared through blogs, newsletters and specially developed strategies for investment and innovation.

Overview of goals and planning measures

3.5 A number of goals suggested under this theme focused on measures that would help leaders gain the required level of knowledge and confidence to

invest and innovate. Suggestions included encouraging and supporting leaders in networking and sharing best practice, providing leaders with better career long professional learning (CLPL) opportunities, developing a clear strategy to aid decision making in this area and developing a digital skills framework that leaders could measure their knowledge and skills against. Attendees commonly suggested that national bodies such as Education Scotland, the Scottish Government, the Scottish College of Educational Leadership (SCEL), the Association of Directors of Education in Scotland (ADES) and the General Teaching Council for Scotland (GTCS) would be best placed to take this forward. They should share best practice through national networks, offer and promote CLPL opportunities and have a hand in developing national frameworks and guidance.

3.6 Others suggested goals that would make investment and innovation easier once the appropriate knowledge had been acquired. Views put forward included strengthening links between education departments and IT departments at local authority level, increasing funding for digital learning and teaching and explaining the benefits of digital learning and teaching to parents.

3.7 Finally, some aspired to see GTCS strengthen their professional standards around digital teaching, while others wanted Her Majesty's Inspectorate (HMI) to provide greater scrutiny when schools were not utilising digital learning and teaching effectively. It was felt that both of these measures would encourage educational leaders to invest and innovate.

Conclusions

3.8 From the evidence collected, it can be concluded that the main barrier preventing leaders investing and innovating is a lack of knowledge around the benefits of digital learning and teaching and the pedagogical approaches required to implement it effectively. Once these barriers are overcome, leaders at all levels can have the confidence to act autonomously and, where appropriate, prioritise digital learning and teaching. In addition, resource constraints appear less severe when leaders can clearly understand the benefits of their decisions.

4. IMPROVING ACCESS TO DIGITAL TECHNOLOGY FOR ALL LEARNERS

Overview of issues

4.1 Issues that were raised regularly tended to focus on digital infrastructure. Some explained that the bandwidth available to many schools is insufficient and consequently schools cannot provide regular internet access to all learners. Similarly, others felt that it was not clear what level of access was expected or appropriate. Another common view was that IT providers (whether external or internal) did not fully understand the service schools required when it came to internet access. As a result, IT providers often imposed strict filtering measures that inadvertently blocked teachers and learners from accessing a range of online educational resources. Furthermore, a closed network was often the norm in schools meaning that learners could not connect their own devices as part of a Bring Your Own Device (BYOD) strategy.

4.2 There was also a near universal acceptance that schools and local authorities struggled to find the money to invest in digital hardware for learners. Some suggested that even when money was available, educators were unsure about which devices to buy, and once procured, how best to use them. This often meant that learners did not have the opportunity to use digital devices as part of their education. A similar issue raised was that teachers were wary of the dangers of allowing learners access to the internet given some of its inherent dangers. In these circumstances teachers may shy away from allowing access at all.

4.3 There was also occasionally a view that it was difficult to provide consistent access to all learners as some did not have access to digital technology at home. In addition, some digital resources were not accessible to learners with additional support needs.

Overview of exceptions

4.4 Several attendees advised that issues relating to a lack of digital hardware could be overcome if leaders could be persuaded to invest in digital technology. Attendees often explained that leaders were more willing to invest if they could access advice from other educationalists that had already been through the process. Once investment and leader buy in had been secured; the provision of 1:1 digital devices often became a reality and access to digital technology improved.

4.5 Some attendees also explained how in certain local authorities, efforts had been made to build closer relationships between education and IT departments. This resulted in education departments having and greater influence over IT policies. Consequently, school filtering policies have been

relaxed, networks have been opened up to all devices and BYOD strategies have been successfully implemented. It was noted that all of these measures helped to improve access for learners.

Overview of goals and planning measures

4.6 It was common for attendees to want all schools to have appropriate digital infrastructure that would allow 1:1 device models to become a reality and allow learners to have anytime anywhere access. To achieve this, attendees commonly asked that the Scottish Government continue to invest in the Scottish Wide Area Network (SWAN)[6] in an effort to improve bandwidth speeds. Some attendees also asked the Scottish Government to ensure that digital infrastructure was a key consideration in the design of all new schools, and that the promotion of Glow[7] and any associated investment continues.

4.7 It was also consistent for attendees to suggest that collaboration was key to this theme. Some suggested that if a school had found a way to improve access to digital technology for all of its learners, it should be encouraged to share how this was achieved through new and existing networks. This would help other schools improve the digital access they provide.

4.8 Another popular goal for attendees to put forward was that a nationally agreed minimum standard for access should be developed. This would outline what appropriate access looked like and would help to eliminate inconsistency of access across Scotland. In addition, some attendees wished to see a nationally agreed understanding of internet safety which would outline ways in which online risks could be mitigated. The UK Government, the Scottish Government and Education Scotland were all identified as appropriate bodies to take these suggestions forward.

Conclusions

4.9 Schools and local authorities will face a number of barriers when attempting to improve access to digital technology for all learners. It is likely the first barrier faced will be one that is common to all four themes of the proposed strategy; that is to persuade practitioners to engage with digital teaching. The main stumbling block under this theme appears to be concerns over internet safety and unfamiliarity with digital hardware. It is hoped this barrier will be overcome as digital learning and teaching becomes more prevalent and the knowledge and skills of practitioners increase. Once practitioners start to consistently engage with digital technology there will be an associated rise in the level of internet access required by learners. At this point a number of barriers relating to digital infrastructure will become apparent. The current arrangements in many schools lead to insufficient bandwidth, closed networks and restrictive

[6] https://www.scottishwan.com/
[7] http://connect.glowscotland.org.uk/

filtering policies. If the benefits of digital learning and teaching are to be realised and barriers to access are to be overcome, there must be appropriate investment to improve digital infrastructure.

5. ENSURING CURRICULUM AND ASSESSMENT RELEVANCE IN A DIGITAL CONTEXT

Overview of issues

5.1 A common issue under this theme was that digital learning was not prioritised in CfE (Curriculum for Excellence). The effect of this was that teachers are not compelled to incorporate digital teaching into their lessons even when the opportunity presented itself. Some attendees suggested that digital learning and teaching was still seen as the preserve of computing science teachers. Another common issue was that given the pace of technological advancement, the experiences and outcomes[8] contained in the technologies area of CfE were no longer relevant for the increasingly digitised economy. Consequently, many teachers were unsure about what level of digital skills learners were supposed to aspire to. A related view was that even when it was clear that CfE was in need of improvement, there was no clear mechanism to make the necessary changes.

5.2 Attendees also consistently raised the point that digital assessment was not utilised often enough. There was a general feeling that this did not mirror practices in the professional world.

Overview of exceptions

5.3 It was common for attendees to offer exceptions to issues around a lack of compulsion for teachers to engage with digital teaching. Attendees occasionally mentioned local authorities or schools who had decided to prioritise digital teaching and develop a common understanding of the digital skills that learners needed to be taught across the curriculum. It was noted that measures like this compelled teachers to deliver aspects of CfE using digital resources. Some also mentioned examples of schools teaching digital skills to their learners in partnership with local businesses from the digital industry. Having this industry input ensured that the digital skills developed by learners would be relevant in future careers. Other examples focussed on teachers who were already willing to engage with digital teaching. Some attendees cited teachers who had found ways to use ubiquitous resources such as online tools, apps and games to provide digital teaching. Such measures allowed CfE to be delivered in a digital context without waiting for it to be formally updated.

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8 http://www.educationscotland.gov.uk/learningandteaching/curriculumareas/technologies/eandos/index.asp

5.4 Other exceptions commonly focussed on schools and local authorities who had found a way to incorporate digital assessments into their practices. Many schools had managed to utilise e-portfolios which allowed learners to record their progress in digitised form and update when appropriate. Some attendees also mentioned that schools had started to utilise digital resources more often for formative assessment while others mentioned that the digital assessments developed by SQA (Scottish Qualifications Authority) had been beneficial.

Overview of goals and planning measures

5.5 The most popular goal offered under this theme was a desire to increase the use of formative and summative digital assessment. There was a consistently held view that one of the major benefits would be quicker results and personalised feedback for learners. SQA were commonly identified as the right organisation to take this forward. However, some also asked for the Scottish Government and Education Scotland to ensure that Glow could provide an effective e-portfolio tool. As part of this work attendees also asked for e-portfolios and digital badges to be mainstreamed and recognised by higher and further education institutions and employers. It was also suggested that the Scottish Government should increase the presence of digital in the National Improvement Framework[9] especially as it had a focus on national online testing.

5.6 Some attendees also called for the experiences and outcomes in CfE to be rewritten while others felt that digital learning and teaching should become a responsibility of all teachers in CfE.[10] This would compel all teachers to engage with digital learning and teaching. Attendees also asked for a mechanism to review and update CfE to be established. This tended to be in recognition that the speed of technological advances meant that the need to teach newly emerging digital skills would become commonplace in the near future. Most thought that Education Scotland should lead on this but some thought it would also be beneficial for an expert group to be created to aid this work. All key partners in education should join the group along with employers from the digital industry. There was also generally a view that a newly reviewed CfE (or an alternative source of guidance such as HGIOS[11]) should contain a commonly agreed framework of the digital skills learners should develop and the definition of those skills. All of the above measures would ensure that CfE delivered digital skills that were relevant in today's digital economy.

[9] http://www.gov.scot/Publications/2016/01/8314

[10] http://www.educationscotland.gov.uk/learningandteaching/learningacrossthecurriculum/responsibilityoffall/index.asp

[11] How good is our school? - http://www.educationscotland.gov.uk/resources/h/hgios4/introduction.asp

5.7 Finally, there was also a suggestion that those who have adapted CfE and assessment effectively to work in a digital context should be encouraged to share best practice. There was usually a call to do this locally but occasionally it was felt that a national body such as ADES should create effective sharing networks.

Conclusions

5.8 From the evidence available it is possible to conclude that CfE does not do enough to compel teachers to utilise digital teaching. As a result learners miss opportunities to improve their educational outcomes and obtain the kind of digital skills they will require for life, learning and work. It is also evident that digital assessment is not utilised often enough and the associated benefits remain unrealised for many learners. It is clear that some schools and local authorities have found ways around these barriers. However, to ensure that curriculum and assessment methods are relevant in a digital context, a larger scale review of CfE and assessment practices should be considered.

6. EXTENDING THE SKILLS AND CONFIDENCE OF TEACHERS IN THE APPROPRIATE AND EFFECTIVE USE OF DIGITAL TECHNOLOGY

Overview of issues

6.1 One of the main issues raised was that as there isn't a clear way for teachers to measure their digital skills or a benchmark for them to aim for, many teachers felt that they did not have sufficient skills to deliver digital teaching. It was suggested that this problem was made worse by the lack of CLPL opportunities that focused on digital teaching. Similarly, there were suggestions that the Universities that deliver initial teacher education (ITE) were also unsure what level of digital skills should be conferred upon their trainee teachers. Some attendees also believed that ITE institutions did not have the time or resources to incorporate digital learning and teaching into an already busy course.

6.2 It was also common for attendees to comment that teachers simply do not have the time to learn new digital skills and constantly update them as technology moves forward. In addition, if a teacher does not wish to extend their skills in this area there is little to compel them to do so. Some attendees felt that although GTCS had professional standards that incorporated digital teaching, they were not promoted strongly enough.

6.3 Finally, there was sometimes a view that teachers struggled to understand the correct pedagogical approaches that were best suited to digital learning and teaching.

Overview of exceptions

6.4 It was common for attendees to state that issues under this theme could be overcome if effective CLPL and ITE was in place. TeachMeets, MOOCs and training provided by private sector technology companies were all highlighted as good examples of this. Some also felt that professional networks provided a more informal way for teachers to develop their digital skills. Online communities, social networks and blogs all provide teachers with a way to enhance their digital learning and teaching skills.

6.5 There was also a general view that teachers were compelled to undertake digital CLPL if a local authority or senior staff in a school prioritised digital teaching. In such cases classroom teachers tended to take responsibility for their own development in this area and seek out training opportunities. Others raised examples of schools or local authorities who had recruited 'digital champions' who were dedicated to providing advice on digital resources to other teachers. In some cases 'digital champions' were not teachers; success had been achieved by using learners or staff seconded from the digital industry.

Overview of goals and planning measures

6.6 There was commonly held view that teachers should be offered better ITE and CLPL opportunities relating to digital learning and teaching. This training would allow teachers to learn about new pedagogical approaches which are necessary to support digital teaching. It would also allow teachers to increases their knowledge of digital resources. It was felt that such training opportunities should be flexible, offering a mixture of classroom and e-learning opportunities in both formal and informal settings. GTCS and SCEL were commonly identified as appropriate organisations to offer formal training and promote informal training through professional networking. Other attendees suggested that a 'digital champion' in every school could deliver training.

6.7 Furthermore, attendees consistently raised a desire for a commonly accepted digital competency framework for teachers to be developed. Teachers could then understand the level of digital competence they were expected to attain in order to successfully deliver digital learning and teaching. It was generally accepted that this framework should also be used by ITE institutions to ensure that new teachers were properly trained. Education Scotland and SCEL were commonly suggested as organisations that should develop this framework. Others also felt that GTCS should strengthen their standards around digital teaching.

6.8. Finally, there was often a desire for those who are skilled in digital learning and teaching to be encouraged to share knowledge and best practice through new and existing networks.

Conclusions

6.9 It was clear from the discussions across the face-to-face consultation events that many teachers in Scotland are already incorporating digital resources into their teaching. However, if teachers are to unlock the full potential of digital learning and teaching and all of Scotland's learners are to experience the full benefits, it is vital that teachers have access to appropriate training. At present, many teachers have limited access to appropriate training and as such the full benefits of digital learning and teaching often remain unrealised. Work needs to be done to ensure that all teachers in Scotland have the opportunity to increase their skills and confidence in this area.

7. NEXT STEPS

7.1 The evidence collected from the face-to-face consultation events is of real value and will help to inform the development of a digital learning and teaching strategy for Scotland. It is however, important to remember that the evidence collected across the eleven events is specific to those events and it does not necessarily reflect the weight or range of views of all interested parties. The Scottish Government will therefore consider this evidence alongside the formal consultation responses, the views of all relevant stakeholders and any other relevant evidence when developing the a final digital learning and teaching strategy for Scotland.

GLOSSARY

1:1 – Model where there is one digital device for each learner

ADES – Association of Directors of Education in Scotland

BYOD – Bring your own device

CfE – Curriculum for Excellence

CLPL – Career long professional learning

GTCS – General Teaching Council for Scotland

HGIOS – How good is our school?

HMI – Her Majesty's Inspectorate

ITE – Initial teacher education

MOOCs – Massive open online courses

SCEL – Scottish College for Educational Leadership

SQA – Scottish Qualifications Authority

SWAN – Scottish Wide Area Network

ANNEXES

Annex A - The consultation themes

Empowering **leaders** of change to drive innovation and investment in digital technology for learning and teaching

Sustainable change is most effective when supported by organisational structures and senior leader knowledge of what works best. Leadership is at its most effective when provided with the opportunities to create, share and innovate. Altering organisational models or leadership thinking are important factors in embedding change into systems.

Education leaders at a local authority and establishment level have the biggest single influence on the ethos, culture and direction of travel in our schools. As such, school leadership is recognised as one of the key drivers for improvement in the *National Improvement Framework.* Scotland's education leaders and decision makers at a national, local and school level need to understand how digital technology can support outcomes and help to deliver existing priorities, if they are to make positive decisions about innovation and investment.

One of the key aims of the Scottish College for Educational Leadership (SCEL) is to ensure that schools are research rich organisations, where policy and decision making are based on an extensive data set. SCEL and the General Teaching Council for Scotland (GTCS) are both pivotal in supporting the development of professional networks to enable knowledge exchange. Identifying and sharing evidence from a range of classroom practice can support valid conclusions about the wider impact of digital technology and can be of tremendous value to senior leaders.

The proposed **priorities for action** are to:

- Support senior leader collaboration and networking in identifying what approaches to the use of digital technology work and how to achieve change.
- Ensure that innovative schools collaborate and share their practice for the benefit of the wider community.
- Identify an appropriate approach to sharing research on digital technology in learning in a way that is most accessible to senior leaders and practitioners.
- Ensure that our vision for digital technology use is adequately captured and reflected in school improvement guidance and the approach to school inspections in Scotland.

Improving **access** to digital technology for all learners

Where learners and teachers have a high level of access to technology and appropriate infrastructure, confidence in the use of technology improves. Where

variation in infrastructure and access exists, issues around educational inequality only become more pronounced. Improving access to devices and digital online services in school will help to establish a culture and pattern of use that have implications for school education and lifelong learning.

Local authorities are responsible for the delivery of education and therefore are responsible for providing learners with devices, connectivity and access to relevant online tools and services. The Scottish Government supports local authorities through the delivery of a high speed broadband connection and access to a range of tools and services via Glow for all learners and educators. A national procurement framework provides the opportunity to purchase devices at relatively low cost.

We know that learner access to infrastructure, technology and services that support learning differs from local authority to local authority, from school to school, and within schools. These variations have contributed to inconsistencies in the ways that children and young people across Scotland experience digital learning and teaching. Improved access for all our learners will require collaboration both at a local and national level, along with a strong commitment from all sides.

Alongside improved access, consideration needs to be given to child protection, data protection, content filtering, privacy and network security. Requirements for the specific setting of education are different from those in a corporate context – it is important to balance potential risk with the need for young people to learn to use relevant digital technologies in a real world environment.

The proposed **priorities for action** are to:

- Collaborate with partners, including local authority education and corporate services, to develop standards and guidance around learner access to digital technology in schools.
- Facilitate the sharing across local authorities of approaches to school infrastructure that put users at the heart of the design.
- Continue investment in high speed broadband through the Scottish Wide Area Network (SWAN).
- Consider future arrangements for Glow, ensuring the tools and services remain relevant and useful and continue to meet the requirements of the education system.
- Continue to provide a route to market for schools and local authorities for the procurement of digital devices.
- Explore the potential for other framework agreements that provide access to, for example, digital resources, services and support.

Work with stakeholders to establish channels through which partnerships can enhance the provision of access to digital technology.

Ensuring **curriculum and assessment** relevance in a digital context

We know that in the future, many of our children and young people currently in education will be employed in jobs that do not exist yet. The *Digital Skills Investment Plan*, published in 2014, highlighted how important the ICT and digital technologies sector is to the Scottish economy. We need a curriculum that equips all children and young people in Scotland with the attributes, knowledge and skills they will need to flourish in life, learning and work in the 21st century. In a competitive globalised marketplace, those who do not possess these skills will find themselves at a severe disadvantage.

In today's rapidly changing social, economic and technological environment, keeping the curriculum up-to-date and relevant presents both an opportunity and a challenge – but doing so will be crucial to ensuring that digital learning and teaching is embedded in our schools.

Curriculum for Excellence sets out the totality of experiences planned for Scotland's children and young people throughout their education, across eight curriculum areas – expressive arts, health and wellbeing, languages, mathematics, religious and moral education, sciences, social studies, and technologies – as well as in the three areas that are the responsibility of all practitioners: literacy, numeracy, and health and wellbeing.

At present, 'ICT to enhance learning' is positioned as a strand of the technologies curriculum area, distinct from but related to other strands such as Computing Science and Technological Developments in Society. While Curriculum for Excellence guidance indicates that 'all teachers, in all sectors, in all departments and in all settings, have opportunities to apply, reinforce and extend ICT skills within and across curriculum areas', this is not formally a responsibility of all.

https://www.educationscotland.gov.uk/learningandteaching/thecurriculum/

Education Scotland's recent report on the technologies area of Curriculum for Excellence, *Building Society*, highlighted the challenge that we face in ensuring the curriculum is kept relevant in the 21st century:

> We can be proud of what Scotland's technologies have achieved. However, that pride cannot lead to any sense of complacency when faced with the accelerating progress in the technologies around the world. Scotland's young people and communities need to be able to compete, thrive and provide leadership in that challenging environment.

The report concluded that "ICT has not yet had enough impact on young people's learning" and that "inclusion of advice on ICT with the other technologies, whilst logical in one sense, has diminished its influence and impact across the curriculum." Further, the report found that "developments in the digital technologies have accelerated since the original guidance on ICT was issued for Curriculum for Excellence. These developments have left 'ICT to enhance learning' looking like a dated concept, a product of its time which fails to promote an ambitious, accurate, forward-looking and creative role for the digital technologies."

Across the UK, careful consideration is being given to the position of digital skills within the curriculum. The recent review of the Welsh curriculum by Professor Graham Donaldson (*Successful Futures*, 2015) highlights that 'full participation in modern society and the workplace already demands increasingly high levels of digital competence and that process can only continue into a future that we cannot imagine'. The review calls for the development of a new 'digital competence framework' for Welsh learners, and proposes that 'literacy, numeracy and digital competence should be the responsibility of all teachers … these are so fundamental to thinking, learning and life that they should be developed and reinforced across the curriculum as a whole'.

Similarly, a recent House of Lords select committee report on digital skills (*Make or Break: the UK's Digital Future*, 2015) stresses that for young people, 'digital literacy is an essential tool that underpins other subjects and almost all jobs', and recommends that 'digital literacy is taught as a core subject alongside numeracy and literacy, embedded across all subjects and throughout the curriculum'.

https://hwbplus.wales.gov.uk/schools/6714052/Documents/Donaldson%20Report.pdf
http://www.parliament.uk/business/committees/committees-a-z/lords-select/digital-skills-committee/news/report-published/

In light of Education Scotland's *Building Society* report and other developments within the UK and elsewhere, the question needs to be asked: Are the existing provisions for digital learning within Curriculum for Excellence consistent with our ambitions? And if the answer is 'no', what should be done to redress that?

Like the curriculum, assessment is integral to learning and teaching. It helps to build a picture of young person's progress and achievements, and to identify next steps in learning.

Approaches to assessment can be supported by the use of digital technology in a range of innovative and powerful ways, such as: collecting and submitting evidence in a variety of digital formats; enabling the assessment of valuable skills that are otherwise difficult to capture; or providing opportunities for learners to undertake assessment at times and locations of their choice, thereby helping to personalise learning and widen access. We must ensure that assessment practices make full use of these opportunities to help to deliver positive outcomes for our learners.

The proposed **priorities for action** are to:

- Work with stakeholders to review the aspects of Curriculum for Excellence relating to the use of digital technology, considering their place within the curriculum structure and ensuring that they are relevant, ambitious and forward-looking.
- Work with SQA and other key partners to support, develop and embed approaches to assessment that make full use of digital technology.
- Explore ways in which digital technology can support the individual needs and capabilities of learners, and provide feedback to practitioners that is specific to the individual learner.

Extending the skills and confidence of **teachers** in the appropriate and effective use of digital technology

Excellent teaching is at the heart of improving outcomes for learners; digital technology can support this but it cannot replace it. In order to unlock the full potential of digital technology to enrich learning in Scotland's schools, it is vital to ensure that the teaching profession has the skills and confidence to use digital technology appropriately and effectively across the curriculum.

Teacher professionalism is highlighted as a key driver for improvement in the *National Improvement Framework*, and *Teaching Scotland's Future* aims to improve professional learning for all parts of the teaching profession, from initial teacher education through to senior leadership. It recognises the pivotal importance of digital technology.

> Twenty-first century Scots require high levels of skill and resilience if they are to thrive in a highly competitive, technologically sophisticated and interdependent world. Ensuring our education system anticipates and addresses the rapidly changing and variable needs of learners is a central professional and policy concern. The role of educators in preparing learners to engage successfully in this environment is of huge significance.

The GTCS Standards for Registration and for Career Long Professional Learning make clear that teachers must know how to use digital technology competently to support learning. To meet these standards, it is imperative that those entering the profession acquire a solid foundation in the use of digital technology through Initial Teacher Education. *Teaching Scotland's Future* stresses that 'this vital early phase in the development of new teachers must be relevant, coherent and of high quality'. Similarly, there must be learning and development opportunities for teachers at all career stages to ensure their skills remain relevant, appropriate and up-to-date.

Digital technologies hold vast potential not just for enriching learning and teaching, but also for supporting teacher education and professional learning in a variety of ways. Professional dialogue and collaborative learning, for example – both key elements of professional learning – can be enhanced through professional learning communities and collaborative online spaces. Similarly, tools like Insight – the senior phase benchmarking tool made available by the Scottish Government – can support practitioners to identify areas of success and drive improvement. Digital technologies such as these can provide real opportunities for teachers to progress, enrich, develop and enhance their knowledge and practice. This is reflected in the importance placed on data literacy skills for teachers by the *National Improvement Framework.*

The proposed **priorities for action** are to:

Open a dialogue with Initial Teacher Education (ITE) providers to agree an approach for embedding digital learning and teaching in ITE, in line with the GTCS Standards for Registration.

- Work with key partners to ensure a range of professional learning opportunities are available to teachers at all stages to equip them with the skills and confidence to use technology effectively, in line with the GTCS Standards for Career Long Professional Learning.
- Liaise with relevant stakeholders to promote greater use of national online learning spaces and professional learning communities to support teacher networking and dialogue.
- Ensure there are stronger links with relevant European and global networks to improve the two-way sharing of information, advice and dialogue between educators on a global scale.

Annex B – Details of face to face consultation events

Location	Date
Aberdeen	14 October 2015
Dundee	27 October 2015
Livingston	29 October 2015
Edinburgh	10 November 2015
Glasgow	12 November 2015
Inverness	18 November 2015
Aberdeen	19 November 2015
Livingston	23 November 2015
Dundee	24 November 2015
Edinburgh	30 November 2015
Glasgow	2 December 2015

Annex C – High level topics identified as part of analysis

Empowering leaders of change to drive innovation and investment in digital technology for learning and teaching	
Issues	
	There is not enough expertise/confidence to guide investment and innovation
	Bureaucracy presents a barrier to investment and innovation/nobody knows who is responsible for investment and innovation
	There is not enough resource (time/money) to invest and innovate
	A lack of strategy to put plans into action
	Leaders have a risk averse attitude
	Leaders do not see digital in education as a priority
	Poor infrastructure limits the ability to invest and innovate
Exceptions	
	A school or local authority has chosen to invest or innovate
	Individuals who understand the benefits of DLT are able to persuade senior leaders to invest and innovate
	Having a person to bridge the gap between the education sector and the IT sector
	Effective CLPL
	The learners drive innovation in schools
	Investment and innovation happens where funding is available
	HMI drives innovation and investment
	New school buildings help leaders to invest and innovate
Goals	
	Get leaders to understand DLT and its benefits
	Encourage networking and sharing good practice amongst leaders
	Develop a strategy for innovation and investment that leaders can follow
	Get leaders to have the confidence to invest in digital
	DLT should be seen as a priority
	Better CLPL opportunities
	Improve the link between the education sector and the IT sector
	Provide funding for investment
	Gain parental support for DLT
Planning	
	National body to promote/effect change around DLT
	Create new or utilise existing networks to share best practice
	Develop a framework by which leaders can evaluate/compare the level of digital use in their school/local authority
	Create a strategy for investment and innovation that leaders can follow
	Greater dialogue between IT and education
	Create stronger incentives for investment and innovation
	Digital champions/QIOs to promote DLT
	A change to CfE
	All schools to be on social media
	Change the name of Glow
	ITE to deliver appropriate teacher training

	Local Authorities to provide guidance on investment and innovation

Improving access to technology for all learners	
Issues	
	Current digital infrastructure is not good enough
	Practitioners do not have the required level of technical knowledge to ensure access
	Conflict between education and IT departments
	Lack of funding/resources
	Not all learners have access at home or a personal device
	Security risks associated with access to digital
	Lack of understanding of what level of access is expected
	Reluctance to change teaching practices
	Digital learning and teaching is not seen as a priority
	Lack of parental support
	Lack of public support
	Digital resources are not always accessible to all
Exceptions	
	Flexible/suitable IT infrastructure in place
	1:1 devices inc BYOD
	Guidance on how to improve access/ sharing best practice
	Funding/resources are available
	Buy in from senior leaders
	Teach digital citizenship
	Access supported by external organisations
	Good relationships between IT and education
	Digital is seen as a priority
	Extracurricular access
	Remove filtering
Goals	
	All schools have suitable infrastructure
	A nationally agreed minimum standard for access
	Provision of 1:1 devices inc BYOD
	Better understanding and agreement around internet security/safety
	Anytime/anywhere access
	Better relationship between education and IT
	Improve parental buy in
	Share best practice
	A focus beyond school aged learners
	Funds and resources available
Planning	
	National body to provide guidance/advice on access
	Create new or utilise existing networks to share best practice
	Improved use or improvements to current infrastructure
	Develop BYOD guidance
	Develop framework for understanding internet safety/security
	Each school can access advice at a local level

	Ensure that budgets for access are protected
	Increased dialogue between education and IT departments
	Local Authorities to provide guidance on access

Ensuring curriculum and assessment relevance in a digital context	
Issues	
	Digital references in CfE are no longer relevant nor prioritised
	Problem with assessment methods
	It is not clear what is expected
	Infrastructure hampers digital assessment
	Teachers are not skilled/willing/confident enough to use digital
	Change is too slow
	Change to curriculum and assessment is costly
	Digital not seen as a priority
Exceptions	
	Use of digital assessment
	Local Authority or school promotes digital curriculum and assessment
	Using readily available digital tools to teach CfE and assess learners
	Working with employers to ensure digital relevance
	Suitable digital infrastructure encourages DLT and digital assessment
	Teachers are appropriately trained in digital
	The award of badges
	Improved transition from primary to secondary
	Using CfE flexibly in primary phase
Goals	
	Better use of digital assessment
	Strengthen digital in CfE
	Definition of digital skills a learner should have inc levels of progression
	Remodel digital curriculum and assessment with employment skills in mind
	An effective mechanism for curriculum review and change
	All schools have suitable infrastructure
	Share best practice
	Improve transition from primary to secondary school
	Up-skill teachers in digital
	DLT should be seen as a priority
	Achieve parental buy in
	SQA to improve communication
Planning	
	Improvement to digital assessment inc national e-portfolios
	Update CfE
	Define digital skills
	Create new or utilise existing networks to share best practice
	A cross cutting digital approach
	Look at international case studies
	Achieve parental buy in
	A digital champion in every school

	Consult with learners
	Provide transition guidance
	Strengthen digital in teaching professional standards

Extending the skills and confidence of teachers in the appropriate and effective use of digital technology	
Issues	
	Variation in the technical skill sets of teachers
	There is no time to learn new digital skills
	Teachers cannot measure their digital skills
	ITE do not teach sufficient digital skills
	Teachers are not confident in using digital skills
	Lack of good CLPL opportunities
	GTCS does not push digital skills
	Some teachers have no interest in using digital
	Confusion over technical and pedagogical skills
	There are a lack of networks to share best practice
	Poor digital infrastructure discourages teachers to use digital
	Teachers do not know what appropriate and effective use is
	Teachers do not understand the benefits of DLT
Exceptions	
	Good CLPL available
	A school leader or local authority promotes the use of digital
	Sharing best practice across networks
	When learners/industry experts teach the teachers
	Good ITE
	Using digital on a small scale and then growing it
	Allowing teachers time to learn new skills
	Good infrastructure in place
	A risk appetite around digital
	Good understanding of pedagogical aims first and technical knowledge second
	Use of blended learning
	When an understanding on internet safety and security is in place
	When teachers understand the benefits of DLT
Goals	
	Better CLPL opportunities (technical and pedagogical)
	Develop a digital skills competency framework for teachers
	Share best practice
	Improve ITE
	GTCS to change professional standards
	Improve the confidence of teachers
	A digital champion in every school
	All teachers become engaged with DLT
	All teachers to understand the benefits of DLT
	DLT becomes the norm
	Better understanding and agreement around internet security/safety
	Improved infrastructure

	Improvement delivered from the bottom up
	Strengthen digital in CfE
	Technical support provided by the digital industry
Planning	
	Provide CPD opportunities
	Develop a framework of digital skills that teachers can use to measure their competence
	Create new or utilise existing networks to share best practice
	ITE to train all to a minimum DLT standard
	GTCS to change professional standards
	Collaboration between IT and education
	Individual schools promote up-skilling teachers
	All teachers forced to see digital as a priority
	Look at international case studies
	A national body promote up skilling teachers
	Create a common understanding of online security/safety
	Learners to support teachers

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