

Digital Competence Framework guidance

September 2016

A curriculum for Wales – a curriculum for life

Digital Competence Framework guidance

Audience

The entire education workforce, government and national partners, including local authorities and regional consortia, workforce unions, diocesan authorities, governing bodies and Estyn.

Overview

This document is to accompany the Digital Competence Framework (DCF) and help schools in Wales to implement it.

Action required

None – for information only.

Further information

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Additional copies

This document can be accessed from the Welsh Government's website at gov.wales/curriculumforwales

Related documents

Qualified for life (Welsh Government, 2014); *Successful Futures: Independent Review of Curriculum and Assessment Arrangements in Wales* (Professor Graham Donaldson CB, 2015); *Teaching Tomorrow's Teachers* (Professor John Furlong, 2015); *A curriculum for Wales – a curriculum for life* (Welsh Government, 2015)

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1. Introduction

The Digital Competence Framework (DCF) is the first element of the new curriculum for Wales to be made available. This guidance provides background information on the DCF and highlights some key messages.

About digital competence

Digital competence is the set of skills, knowledge and attitudes that enable the confident, creative and critical use of technologies and systems. It is essential for learners if they are to be informed, capable and have the potential to be successful in today's society.

Digital competence should not be confused with information and communication technology (ICT). Digital competence is one of three cross-curricular responsibilities, alongside literacy and numeracy; it focuses on developing digital skills which can be applied to a wide range of subjects and scenarios that are transferrable to the world of work. However, it is not intended that digital competence should be artificially imposed into all subject areas. The DCF therefore includes examples of classroom task ideas that can be used to develop skills in naturally occurring, meaningful ways.

Development of the Digital Competence Framework

In *A curriculum for Wales – a curriculum for life* (2015), the Welsh Government set out its plan to develop a new curriculum. The plan is based on recommendations in Professor Graham Donaldson's report *Successful Futures* (2015)¹ (following his independent review of curriculum and assessment arrangements in Wales) and with regard to digital competence the independent ICT Steering Group's report (2013)². As part of this plan, the DCF, encapsulating a range of skills that will help learners thrive in an increasingly digital world, has been developed by practitioners from Digital Pioneer Schools, drawing on research, including consideration of existing regional and international digital frameworks. The practitioners have been supported by external experts, including Professor Tom Crick from Cardiff Metropolitan University, Estyn and regional consortia.

The DCF has been developed to be inclusive of all learners aged 3 to 16-plus. It covers the development of skills from the earliest stages that very young children need to learn. For learners with additional learning needs this incorporates 'Routes for Learning' skills, which are the skills that form the foundation for other, higher skills to be developed.

This approach seeks to view the learner holistically and provide several pathways of possible development, broken down into small steps and individualised for each learner. Many learners will pass quickly through these stages; for others these skills need to be taught specifically, taking into account individuals' specific strengths and needs. This ensures there are the necessary developmental steps to using technology in creative ways.

¹ *Successful Futures: Independent Review of Curriculum and Assessment Arrangements in Wales* by Professor Graham Donaldson CB (2015)

² *The ICT Steering Group's Report to the Welsh Government* by S Arthur, T Crick and J Hayward (2013)

Progression

Digital competence is a cross-curricular responsibility and the structure of the DCF has been designed to align with the format of the existing National Literacy and Numeracy Framework (LNF). Both are currently structured around year-by-year progression, except where Routes for Learning are being followed. However, as the new curriculum develops and the concept of progression reference points is clarified, both formats will be reviewed.

Ongoing review

Work to refine the content of the DCF will continue after its initial publication in September 2016. This will be informed by ongoing dialogue with practitioners as they use the DCF and as work on designing the Areas of Learning and Experience of the new curriculum develops. It is not envisaged that such changes will be substantial but rather an 'evolution' that provides enhancements and takes account of issues identified by users.

The classroom task ideas within the DCF, in particular, are likely to change over time as technology, expertise and digital practice develop.

Practitioner support

Digital Pioneer Schools and regional consortia are working with the rest of the Pioneer Network and Partnership Schools to identify what support will be needed, where it should be targeted and what materials and resources are needed to enable schools and settings to use the DCF to support learning and teaching across the curriculum. This will be an ongoing process that is responsive to the needs of the profession.

Inspection

As now, Estyn will inspect standards and the quality of ICT provision. However, rather than only reporting on standards judged to be particularly strong or weak from September 2016, inspectors will always report on standards in ICT in quality indicator 1.1.

Where schools are creative and imaginative in taking forward initiatives for the benefit of learners, including drawing on the DCF to develop their practice, inspectors will approach such innovation and flexibility in a positive way.

2. Structure

The DCF comprises four high-level strands. These are subdivided into elements which, in turn, are supported by classroom task ideas.

Strands and elements

The DCF sets out the digital skills to be attained by learners aged between 3 and 16-plus years across four strands.

- Citizenship.
- Interacting and collaborating.
- Producing.
- Data and computational thinking.

Each strand is split into a number of elements, as shown below.

Citizenship	Interacting and collaborating	Producing	Data and computational thinking
<ul style="list-style-type: none">• Identity, image and reputation• Health and well-being• Digital rights licensing and ownership• Online behaviour and cyberbullying	<ul style="list-style-type: none">• Communication• Collaboration• Storing and sharing	<ul style="list-style-type: none">• Planning, sourcing and searching• Creating• Evaluating and improving	<ul style="list-style-type: none">• Problem solving and modelling• Data and information literacy

Skill statements and tasks

For each element there are skill statements which describe the skills a learner would be expected to have attained at a given stage. To help clarify their meaning and purpose, skill statements are supported by examples of 'classroom task ideas' that could be used to demonstrate competence for a particular skill.

Classroom task ideas

Where appropriate, skill statements and tasks are supported by classroom task ideas which provide suggestions and links to guidance and practical examples of what practitioners can do to use the DCF.

This is the most organic area of the DCF as classroom task ideas will need to change and develop to reflect new technologies and the increasing experience and expertise within the digital learning field.

Not all classroom task idea areas of the DCF are currently populated. Development of information for this area is ongoing and a second tranche of classroom task ideas will be added to the DCF in January 2017. Further development will continue after then, taking into account feedback and suggestions from practitioners who are using the framework.

Strands – further information

Citizenship

The focus of this strand is on learners developing the skills needed to contribute positively to the digital world around them. These skills will help learners to critically evaluate their place within the digital world, so that they are prepared to encounter the positive and negative aspects of being a digital citizen.

Critical thinking skills, strategies and tools will be developed and applying them in all aspects of their digital lives will equip learners to become responsible, independent consumers and producers of digital products in the rapidly changing digital world.

Interacting and collaborating

Under this strand learners will explore methods of electronic communication and identify which are the most effective for a given situation. Learners will also be able to store data appropriately and use collaboration techniques successfully.

Learners will explore both formal and informal methods of communication, suitable for a range of contexts. This will include, for example, professional aspects of e-mail and other communication channels such as social media and instant messaging.

Storing and sharing has become an essential part of our lives. Learners will not only look at how to store data on different systems but also at the implications of data laws. Along with storing information, learners will understand how to share it appropriately and for specific purposes.

Collaboration, in all forms, is an important aspect of the curriculum and electronic collaboration is vital. Learners will explore a range of collaboration methods and as they progress, they will develop the skills to successfully work together in different contexts and situations as and where appropriate.

Producing

This strand covers the cyclical process of planning (including searching for and sourcing information), creating, evaluating and improving digital content. It should not restrict creativity but should ensure rigour, so that what has been created is fit for its intended purpose. While some of the skills in this strand are applicable in other contexts, it is critical to the development of digital competence that they are applied to a digital context.

Digital content includes a huge variety of multimedia components, such as: text, images, graphics, audio, video and any combination of these. It is intended that learners experience and create using a wide range of multimedia components across contexts for a variety of purposes. The DCF also recognises the importance of creating original content as well as redesigning or repurposing existing content either individually or collaboratively.

Skills develop as the level of sophistication of digital content increases. Moving through the DCF, learners will begin to combine multimedia components in increasingly complex ways, requiring greater consideration of the audience for and purpose of the digital content. The hardware and software tools used to create and edit will also increase in complexity and schools and settings should work with their local authority/regional consortia to assess whether additional resources would add significant value to the delivery of the DCF. This should include reviewing against existing centrally funded services such as Hwb, before any investment is made.

Data and computational thinking

We live in a data-rich environment with databases being an intrinsic part of our lives. Through this strand, learners will gain an understanding of the importance of data and information literacy by exploring aspects of collection, representation and analysis. Learners will look at how data and information link into our digital world and will develop essential skills for the modern workplace.

Computational thinking is a combination of scientific enquiry, problem solving and thinking skills; it is not thinking like or about computers.

Computational thinking has many concepts and approaches, some of which readily fit with the Producing and Interacting and collaborating strands. Before learners can use computers to solve problems, they must first understand the problems and methods of solving them. Among other things, learners will consider the following high-level questions to gain an understanding of why computational thinking is important.

- Is this the most efficient way to solve the problem?
- Is this the fastest way?
- Does it require the least amount of resources?
- Does it solve the problem and give the right answer?
- Can it be used to solve other problems?

3. How to use

The DCF is available in an online, interactive format, hosted on the Learning Wales website which can be accessed through www.learning.gov.wales. There is a short video explaining how the online version works and how elements can be selected in order to create views that meet your individual needs. It is also available as an Excel spreadsheet that can be downloaded from the online version above.

The Welsh Government, in partnership with Digital Pioneer Schools, is also developing a self-assessment confidence-rating tool for individuals, for schools to assess their DCF development needs. This will be available in September 2016.

During the autumn term a skills audit tool will also be developed. Therefore, schools and settings should not feel the need to develop an audit tool of their own.

4. Timetable

From September 2016

Developing understanding and planning

- DCF is made available to schools and other settings (ages 3 to 16-plus years).
- Schools/settings familiarise themselves with the DCF, agree their strategic vision for cross-curricular digital competence and consider how to translate this into practice.
- As noted by Professor Donaldson in *Successful Futures*, identifying a lead practitioner could be an effective way of coordinating the integration of the DCF as a cross-curriculum responsibility.
- Welsh Government with the Pioneer Network will develop a digital competence skills audit tool that schools/settings can use to inform planning.
- Pioneer Network develops a high-level Professional Learning Offer (PLO), working with regional consortia and taking account of feedback from practitioners who are using the DCF. The PLO will be available from September 2017.
- Estyn continues to inspect standards and the quality of ICT provision. Rather than reporting on standards judged to be particularly strong or weak only, inspectors will, from September, always report on standards in ICT in quality indicator 1.1. Estyn guidance on ICT inspection can be accessed from www.estyn.gov.wales/document/supplementary-guidance-skills.
- Additional classroom task ideas are made available.
- Welsh Government, Digital Pioneer Schools and regional consortia capture and review feedback on the DCF throughout the year and beyond so that refinements can be made as appropriate.

From September 2017

Refining and integrating the DCF into the new curriculum

- Pioneer Network continues to collaborate to develop the new curriculum and keep schools and other stakeholders engaged in the process and keep them apprised of progress.
- DCF and PLO to be refined taking account of feedback from practitioners and other curriculum review programmes of work.

From September 2018

Emerging new curriculum with digital expectations embedded

- Schools/settings have made good progress in using the DCF in their schools/settings.
- The ambition is for the new curriculum to be available to schools/settings from September 2018 and used to support learning and teaching from September 2021.

5. Support

The four main support mechanisms for practitioners are as follows.

- Classroom task ideas – this element of the DCF is a key support resource which will give practitioners a range of useful information, links and guidance to support delivery of the DCF.
- Professional Learning Offer (PLO) – this is under development and will be available in 2017. It will be shaped by professionals for professionals to help ensure that the support is responsive to practitioner needs.
- Regional consortia – the four consortia will be hosting events, offering other advice and support for schools and along with challenge advisors ensuring consistent messages about the DCF.
- Estyn will identify any good practice observed in schools in preparing for the DCF and share this on their website.

A list of the Digital Pioneer Schools who have contributed to this guidance can be accessed from <http://gov.wales/docs/dcells/publications/160107-list-of-pioneer-schools-en.pdf> and the Welsh Government is grateful to the schools and the individual practitioners involved for giving their time, energy and expertise.