

Does the DCF Framework really support a pupil's digital literacy?

First, it is important to get a clear definition of what the digital competency framework is when discussing its effectiveness in the classroom. The Welsh Government (2018) describe digital competency as “The set of skills, knowledge and attitudes that enable the confident, creative and critical use of technologies and systems”.

So, what does this look like in education settings?

Well digital competency is now part of a trio of skills, alongside numeracy and literacy, put forward by the Welsh assembly government that need to be incorporated into lessons to improve the pupils' outcomes in these areas. The aim of including these skills into all areas of learning is to help the children of Wales to become adaptable learners, who have the skills they will need in the future for employability as well as general life (Education Wales, 2020). Mills (2023) stated that the benefits of becoming more digitally competent were “the ability to understand and produce digital and non- digital texts that combine a range of modes of expression, and the ‘soft skills’ needed in contemporary workplaces, such as collaboration, communication, creativity, and problem solving”.

The DCF Framework aims to help children and young people to build these skills while in school, integrating them into all the lessons that the children attend. For some it may be easier to integrate than for others. For example, technology-based subjects would find it

easier to integrate digital literacy into their subject than others, drama, and the expressive arts for example.

How does it work?

The digital literacy framework is based around four elements. Citizenship, interacting and collaborating, Producing and Data and computational thinking. In each of these elements there are stages that the children will work through to become a “conscientious digital citizen” (Hwb, 2022). The children need to complete one progression step before moving on to the next ensuring that they are mastering the digital skills required to progress.

Citizenship

Focusing on the Citizenship element of the DCF Framework, the aim is that:

“Through these elements learners will engage with what it means to be a conscientious digital citizen who contributes positively to the digital world around them and who critically evaluates their place within this digital world. They will be prepared for and ready to encounter the positive and negative aspects of being a digital citizen and will develop strategies and tools to aid them as they become independent consumers and producers.” (Hwb, 2022)

The Citizenship element is then split into four distinct categories:

- Identity, Image, and Reputation
- Health and Well Being
- Digital Rights, Licensing and Ownership
- Online Behaviour and Online Bullying

By working through these elements, it is hoped that the children and young people gain a good understanding of what it is to be an online citizen. An example of this would be as part of this element children and young people learn how to communicate online, starting with interacting with others online, but then moving into discussing how an interaction with someone online makes the child feel, knowing how to communicate any concerns they may have with an appropriate adult, and demonstrating appropriate behaviour towards others when communicating online (Hwb, 2022).

All these skills are important to learn and as they cover such a wide variety area it would be easy to incorporate them into all lessons, not just ICT lessons.

What does this really look like in practice?

The DCF framework aims to seamlessly include Digital competency into all lessons in schools, however as previously discussed that is not always the case. Although it is possible to merge the DCF framework into the lessons, for some teachers they see the DCF framework as a tick box exercise that needs to be completed and then checked off the list.

An example of this would be an art teacher taking the class to the library to research an artist for her lesson, the students were not studying this particular artist, but the teacher felt they needed to provide a DCF lesson and so had the pupils complete research that is not of any benefit to their art education or, really, to their digital competency. It could be argued that there is a tentative link between that activity and the producing element of the DCF framework by sourcing information but there are

many ways that the aims could be met in a more productive way, for example creating online art or collaborating with other members of the class to produce a fact file on the topic that they are currently studying.

If teachers view the digital competency framework as a negative exercise that they need to complete then it will not be of benefit to the pupils, however if the staff and school as a whole embrace the digital competency framework and ensure that the elements are being met in a variety of lessons then this will have a positive impact on the pupils and will help to build new transferable skills.

Digital competency, Numeracy and Literacy

The world is quickly changing, and the children and young people of today are going to be part of the generation that leads on the digital world, therefore understanding key digital skills are essential for their futures. There are very few jobs today that do not require digital skills in the same way as they require both literacy and numeracy. It could be argued that with technology and the digital world playing such a big part in society should pupils have compulsory digital literacy exams in the same way as they have numeracy and English. The DCF framework makes a positive start in developing children and young people's knowledge but as the digital world is always changing and evolving, if the education system can keep up is unclear.

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Is the digital world really a better place to be?

Children of today have a vastly different childhood experience than children of fifteen or twenty years ago. The Office of National Statistics (2021) found that nine out of ten children access the internet every day, which is eighty nine percent of children between



(Scheff, 2015)

the ages of ten and fifteen. With the ever-developing digital world, children have access to the entire world on their phones, tablets and computers but is that a positive or a negative?

You cannot deny that technology is everywhere today and as a result children are coming in to contact with technology from an incredibly early age. Livingston (2020) stated that “parents move between embracing, resisting, or balancing the role of technology in their own and their children’s lives”. As parents they understand the ever-growing digital world but as it is different to how they were raised attempt to find the balance between more traditional play and the new digital experience.

Of course, not all technology is bad. The digital experience opens the world for children and young people, allowing them to access information, experience new things and communicate in a way that without access to technology they would never experience.

Kovařová (2024) believes that “kids today are undoubtedly the reigning champs of tech engagement, turning digital landscapes into their modern playground”. That from an early age, children are becoming more computer literate and digitally competent, exploring the world through apps and online resources, which allows them to develop skills that they will

need later in life. Does this come at the cost of children missing real life experiences though, with parents relying on technology to entertain and pacify the child rather than using situations as a learning opportunity to teach key skills and to develop play in the child.

Children are not born seeking out the digital world, it is without a doubt a learnt behaviours that they imitate from those around them. This follows the behaviourist model of development where children learn through observation, positive reinforcement, and the environment around them (Cherry, 2023). By children seeing technology in their environment and seeing family members and peers using it then they will learn to gravitate to it. Children's apps also provide a positive stimulus for developing children, with bright colours, songs, and interactivity.

Looking at technology in this way it can seem that children using technology and becoming digitally literate is a good thing however there can be a downside to allowing children to engage in the digital world. "Internet access may also compound risks to children that, unless managed, could undermine their well-being" (UNICEF 2021). This implies that access to the internet and all that it holds could have a negative impact on children's wellbeing.

One negative aspect of the internet and the digital world is the unrestricted access to information which either may be untrue or unsuitable for the person accessing it.

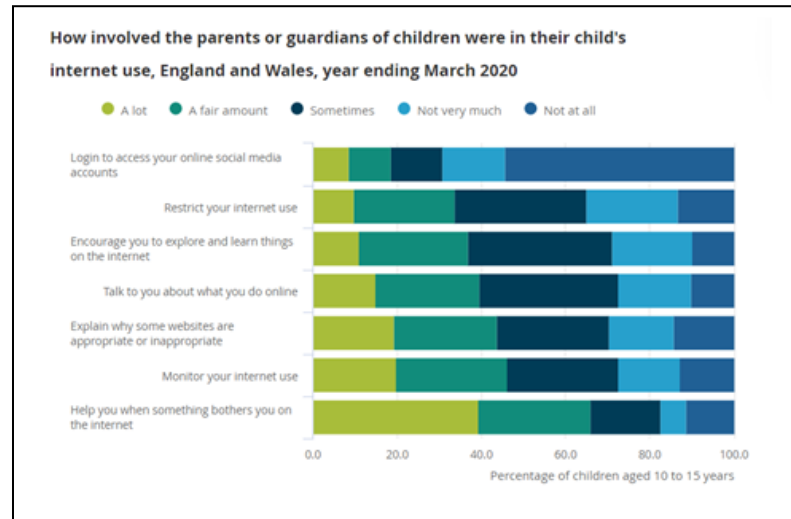
In contrast the connectivism theory from Siemens and Downes (2005) explains how "internet technologies have created new opportunities for people to learn and share information across the World Wide Web and among themselves". Siemens and Downes (2005) believed that the use of technology can assist in learning and how the future of education would be less led by the teacher but instead seeing the teacher as guidance with children using online technology to research topics and learn information, then sharing what

they have learnt with their peers. The learning may take several steps to gain total understanding of the topic but by following the topic online in various forms and conducting their own investigation on the subject they gain a better understanding of the topic (The incidental learner, 2021). This style of learning also allows the students to look at a topic from different perspectives, giving them a more rounded view on what they are learning.

So, what does this look like in classrooms? Well, many staff use the connectivism approach in their teaching, sending their students of both primary and secondary school age to research around a topic, finding information from various places and applying it to the knowledge that they already have. An example of this would be in Wales with Key Stage 4 and 5 pupils completing the Welsh Baccalaureate, which encourages the pupils to look online for sources of information to build a project of knowledge of their chosen topic, looking at different perspectives and the validity of the sources that they are looking at (Welsh Government 2022).

When allowing children and young people to go online it is important that they are aware of online safety and what that means to them. Although this is taught in schools, with more children accessing the internet at home on mobile devices it could be argued that the families of the children play a role in keeping them safe online but teaching them what is appropriate and monitoring their online activity.

The Graph on shows how many parents monitor what their children are doing online. It shows that around half of the parents asked did not regularly check their child's social media activity. However, it also shows



(Office of national statistics, 2021)

that many of the parents are talking to their children about what they are doing online, explaining why some sites are inappropriate do monitor their child's internet usage.

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The pros and cons of digital learning

Today's generation of young people have gone through unprecedented times in their education journey. For the first time the education system was taken online, and the children had to engage in digital learning. Many schools turned to apps like class dojo, google classroom and teams to get work to the pupils, but was the digital classroom a success or did it leave some children left behind? Ordenez de Pablos (2021) stated that "Digital technologies can provide innovative solutions that can prevent the negative effects of lockdowns of countries and regions on education", but did the digital classroom cause more harm than good?

The rolls of school staff changed over night and the challenge of adapting to unusual ways of working was met by most. In many comprehensive schools, pupils were already using programs like Google Classroom and Microsoft Teams to share and submit work and provide homework for the pupils, but for the first-time staff had to prepare to live teach lessons online to their pupils. As a Communication Support Worker (BSL) in a comprehensive school the roll in the school changed overnight. The norm of supporting translation in the classroom on a one-to-one basis turned to online support, attending the lessons set out by the teachers and supporting the pupil where possible through translation over video link, this came with problems. Technology meant that the screen would freeze so the pupil would regularly miss parts of the conversation and when an attempt was made to use the auto produced subtitles, often words would be incorrect and so the information did not make sense.

Another issue faced was with the lack of engagement with the online learning, not completing the work set and not attending online lessons when they were scheduled. The

question needed to be asked if they were missing the lessons through choice and opportunity or if there was a larger issue that needed to be resolved. Working in a mixed privilege environment means that some pupils had access to online resources on phones, tablets, and computers whereas others did not have access due to not having devices that they could use or lack of internet connection. Schools did try to rectify this by providing devices and wireless internet for the pupils who needed it but with limited resources and a greater need there were not always enough to go round. This was found in many areas with articles stating that “a ‘digital divide’ further widens existing attainment gaps and inequalities faced by disadvantaged children” (Fleming, 2021).

Cranmer (2020) suggested that just providing equipment for pupils who need it is not going to give all the pupils the same opportunity with Livingston and Palmer (2012) stating that it has more to do with a family’s offline situation than their access to online resources. With that in mind, when looking at the difference in the engagement of pupils through the medium of digital learning, the engagement may not be solely through the lack of suitable devices to complete the work or the internet connectivity but also the attitude of the families regarding digital education. This is not the case for all parents however with Sky News (2024) reporting that one in three parents believe that the digital learning that happened during the pandemic showed that children do not need to attend school every day as their needs can be met at home with a mix of online learning and some face to face sessions, however with the levels on engagement during the pandemic varying so much would the engagement levels continue to fall if digital learning was to continue and what impact would that have on the children and young people and their futures.

When looking at digital learning especially during the pandemic, we need to consider how the digital learning experience caters for differences in abilities. For a pupil who is struggling with their work digital learning may bring additional challenges. According to Vygotsky's Zone of proximal development (1978) is the difference between what the children know and the potential of what they could learn from a more knowledgeable other scaffolding the lesson for them until they gain understanding and confidence to then do it for themselves (McLeod, 2023). When looking at digital learning during the pandemic it could be thought that children did not have direct access to a more knowledgeable other like they would have done in the classroom environment. It would have been possible for the teacher to provide the information, but for those who may have needed additional scaffolding then digital learning meant that the teacher could not work with a child on a one to one or small group basis to aid in their understanding. This could greater the gap in abilities between the children and cause pupils to disengage from digital learning if they were not getting the support that they needed.

In contrast, Dewey (1938) believed that children adapt and grow according to their experiences and environment. Dewey (1938) also advocated for parental involvement in the child's education, at a time where the parents were key in supporting the child's education at home it could be suggested that the digital learning experience was beneficial for engaging the parents in the children's education rather than solely relying on the school to support learning. The difficulty with this, Vygotsky (1978) may argue is that depending on the level of the parent's knowledge and understanding of the topic, the child may not have access to a more knowledgeable person at home in the form of a family member, and so there is a difficulty of digital learning and educational support.

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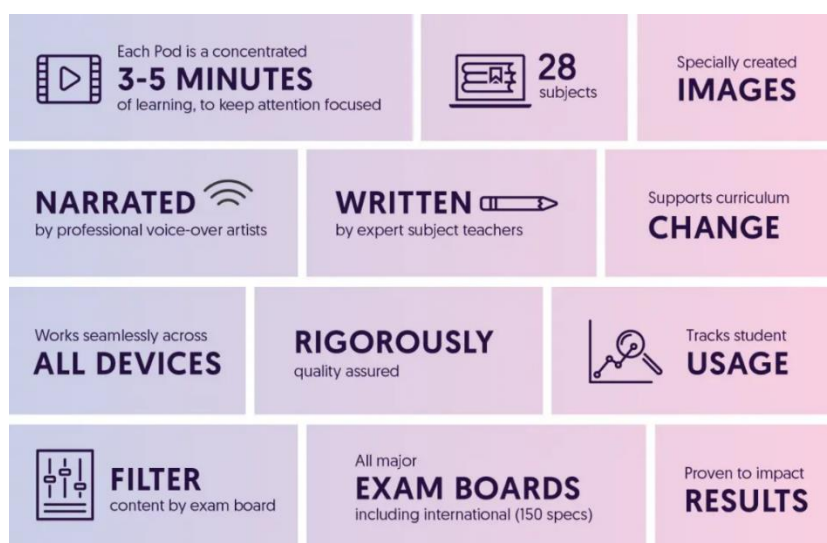
GCSE pod (2024)

How the use of GCSE POD can support students sitting their GCSE exams.

GCSE POD is a digital publisher that supports both teachers and students to prepare for their GCSE exams. The concept of the programme is that the teacher can set revision 'pods' on a topic for the pupils, The pupils are then able to use their individual logins to access work that has been set but their teachers. The work is delivered in the style of a podcast with interactive activities that can be set to support the students in retaining the information. As this is aimed at GCSE students it is intended for comprehensive school students but can be used for all ages in the comprehensive school community, not just the specific GCSE exam years.

The program has over twenty-eight different subjects that can be assigned to pupils by teachers to help them work towards their GCSE's and according to GCSEPOD.com (2024) pupils who use the GCSE pod programme

achieve a grade higher in their GCSE results than those who do not use it. The



GCSE pod (2024)

programme is available online and via an app so can be accessed on mobile phones, tablets, and computers to suit the needs of the user. GCSE POD also allows teachers to track the progress of their pupils and to see if they are engaging with the work that has been set and how they are doing at the retrieval exercises which then allows staff to target support if there are gaps in a pupil's knowledge.

What do the students think?

Child A uses GCSE pod for most of their revision for both small in class tests and for formal exams. Child A has struggled with revision techniques and does not seem to benefit from either reading the information or making notes on a topic, they prefer to learn through conversation and videos. When they were introduced to GCSE pod, they were sceptical, however after using the programme to support their revision for an exam they found they could take in the information at a much quicker speed than through reading or note taking and was retaining the information that they were learning. The 'pods' are between 3 and 8 minutes long, which gives manageable chunks of information followed by retrieval exercises to ensure they understand the topic.

This programme has been used by most of the pupils in the class as they find the pods engaging and relevant to the topic. One downside however is for a Deaf pupil in the class this programme is not suitable as it does not provide subtitles or a British Sign Language interpretation for the pods. This is however proving to be useful to those pupils who have a specific learning disability, such as dyslexia, as the information is given auditory, so they do not need to rely on writing notes or working at speed to keep up. The programme does not however support those pupils for whom English is an additional language as it does not offer the option to translate the pods into different languages.

What is the theory behind GCSE pod?

As the teachers use the tracker to monitor progress, pupils are rewarded for using the programme to study, this will be in the form of public praise and in physical rewards to encourage the pupils to engage with the programme. It could be seen that this is the school using Skinner's Operant conditioning theory (1948) to encourage the pupils learning by providing reinforcers to encourage the pupils to engage in the activities. By providing the pupils with a positive response in the form of rewards, through verbal praise and tangible rewards, the pupils want to chase the reward through engagement. This style of reward also allows for competition between the pupils for the most time spent using the programme to gain the rewards. Lindon (2015) stated that the competition is an extrinsic incentive, meaning that the motivation and decision to engage is coming from an external stimulus, in this case the rewards from the school and competition with friends, rather than from an internal stimulus. Lindon (2015) implies that this style of motivation only works for the duration that the reward is maintained, so in this case if the school stopped providing rewards for the engagement with the programme, then the pupils may lose interest as the desire to participate is not coming from an internal desire but from an external reward. Of course, for many children the reward for using a programme like GCSE pod is a better grade in their exams than those who do not use the programme, however for those pupils who engage for the challenge, reward and competition could also be benefitting at the end of the journey with a higher grade as they have engaged in more revision than they may have done without the external stimulus.

When looking at the programme GCSE POD, the feedback received is a positive one.

Teachers and school staff like the fact that it reduces the workload for them by providing

ready made POD resources for the topics that need to be covered in their GCSE's. It also makes it easier for teachers and school staff to track the engagement and progress of the pupils meaning that for some pupils who may need more targeted support, which can be identified and acted upon.

The nature of GCSE POD though does not suit every learner. Many learners like the short podcast style revision as opposed to note taking or reading revision notes as it is quicker and easier, but some students do not feel like they take the information in by just listening to the information, they would need it to be more engaging. This could be resolved by the pupil not taking alongside listening to the POD or by following up the POD with making revision notes.

The access group (2024) claim that by using GCSE POD it is promoting independence, however you could argue that pupils only engage in the activity to participate in the competition and reward system that the school provide, so it is not truly independent study. The pupils also rely on the teaching staff to allocate them topics of study, whereas if they were engaging in independent study online or from books then they could read around the topic to get a better understanding.

Although there are many positives to using a programme like GCSE POD to aid in revision for pupils, it may be more appropriate as an additional tool for revision rather than being solely relied upon to prepare students for their GCSE examinations.

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