

One of Wales' aims in the evolving curriculum focusses upon the skills children must acquire to be "ambitious capable learners" (Donaldson, 2015, p.31). The curriculum will be separated into six 'Areas of Learning and Experience' (AoLE) and cross-curricular teaching will be at the heart of classrooms. Kerry (2010), Kelly and Stead (2013) define cross-curricular teaching as the combining of various subjects into one topic. The Plowdon Report (1967) recognised that there are natural subject overlaps in children's learning which should be embraced. Therefore, although Wales is now changing to a cross-curricular curriculum, this is a philosophy that was discussed fifty years previously. Teaching in a cross-curricular way will ensure that children learn in meaningful contexts (Donaldson, 2015). Additionally, Hayes (2010) and Barnes (2011) argue that cross-curricular methods increase children's motivation levels as they enjoy the learning. This is because the children can be involved in the planning and ensure their pupil voice is heard (CCW, 2017). During Professional Teaching Experience (PTE) children showed enthusiasm and engagement within topic sessions. Moreover, an additional enhancement of the new curriculum has been the introduction of literacy, numeracy and digital competence as cross-curricular responsibilities (CCR). Donaldson (2015) believes the CCR are the skillset which are the foundations to lifelong learning. The CCR should be embedded meaningfully into sessions to increase the opportunities to develop these skills. However, there are benefits and limitations to consider when embedding the CCR into AoLE which will be evaluated throughout.

A benefit of integrating the CCR into AoLE is that learning is conducted in relevant circumstances and, thus, provides children with the knowledge of where best to apply these skills. Within Donaldson's (2015) pedagogical principles, it states that children's learning should take place in meaningful contexts which can be achieved by teaching in a cross-curricular way. Estyn (2018a) echoes this, asserting that schools must plan "worthwhile cross-curricular activities" (Estyn, 2018a, p.5) by fusing subjects together for purposeful learning. Estyn (2017a) has recognised Cylch Meithrin Cefneithin Gorslas as providing high levels of numerical support by placing the learning into meaningful contexts which has increased children's understanding. Additionally, primary teachers have an advantage when implementing the CCR into sessions as, for example, mathematical skills can be developed in a cross-curricular way because the teacher knows each child's ability (Haylock and Thangata, 2007). Therefore, practitioners will be able to adhere to Donaldson's (2015) proposal of embedding the CCR into AoLE. Moreover, integrating the CCR into meaningful contexts

will suit particular AoLE. For example, the Health and Wellbeing AoLE has particular links with developing oracy skills using programmes like ‘Philosophy for Children’ (PfC). The programme is beneficial in developing oracy in a meaningful context because children are provided with opportunities to develop thinking skills and justify their opinions (Sternberg, 1988). Additionally, wellbeing skills are also enhanced in the PfC programme as Dawes et al (2004) asserts that rules must be implemented to protect children’s opinions. Therefore, combining Health and Wellbeing with oracy is beneficial as it adheres to the purpose of “healthy, confident individuals” (Donaldson, 2015, p.31). However, a limitation of implementing PfC in schools is that teachers require specific training and funding which many schools do not have (EEF, 2015). As observed on PTE, schools have a limited time frame and budget to conduct their topics which limits the number of meaningful contexts that schools can provide. Therefore, although providing children with purposeful circumstances in their learning can be beneficial, there are barriers that potentially limit the effectiveness of implementing the CCR into relevant scenarios.

Furthermore, practitioners must plan their sessions thoughtfully to ensure that the CCR are embedded into AoLE. Teaching in a cross-curricular form is beneficial to students because, for natural learning opportunities to arise, it is effective for subjects to overlap (Rose, 2009 and Rowley and Cooper, 2009). Therefore, as Estyn (2016) and the Welsh Assembly Government (WAG) (2017) assert, the role of the practitioner is to plan for opportunities to find logical connections and embed the CCR. Additionally, a further enhancement in integrating the CCR is that teachers can specifically plan what skills they want to develop in a meaningful context. During PTE pupils used their letter writing skills learned in a discrete literacy session to write a historical letter. Medwell et al (2002) and Hall and Harding (2003) state that effective teachers ensure that children have a clear audience for their writing. Moreover, Alexander et al (1992) argue that pupils can be challenged in their thinking when taught in a cross-curricular way. Thus, by embedding literacy skills into AoLE children will develop both their CCR skills and the AoLE skills. However, during PTE teachers commented that they felt confined to rigid schemes of work which do not offer opportunities to interweave the CCR. This imitates Cremin, Barnes and Scoffham (2009) and Hosack Janes (2014) who argue that teachers want to plan creative sessions but there is not enough opportunity to do so. Additionally, a further limitation of planning for embedding the CCR into AoLE is that teachers might only use the responsibilities rather than developing them. It

is important that the CCR skills are taught so that the children are able to improve upon them. The WAG (2018) states that “spoken language skills need to be taught” (WAG, 2018, p.6) before they can be used. However, during PTE schools put oracy in their planning as a CCR but they were not developing the oracy skills. Although it is acceptable to sometimes just use the skill, it is also paramount that children are given opportunities to develop them. Therefore, teachers must ensure they specifically plan to develop the CCR in all AoLE to avoid limiting the effectiveness of Wales’ new curriculum.

Another potential limitation of embedding the CCR into AoLE is that teachers will need to ensure that pupils are still making progress. One of Donaldson’s (2015) pedagogical principles is to ensure assessment within teaching to guarantee that progress is achieved. Cross-curricular teaching is beneficial to children because it can “help understanding and challenge thinking by providing a context” (Pound and Lee, 2015, p.112), however, it can prove more difficult to assess. The Literacy and Numeracy Framework (LNF) and Digital Competence Framework (DCF) clearly state what skills the children should be achieving (WAG, 2016) which is beneficial to embedding the CCR into AoLE. If staff can assess their students using the LNF and DCF, the staff can assess the extent to which their lesson is effectively providing the students with the relevant skills they require (Kyriacou, 2007). However, during PTE teachers were assessing children based upon the CCR skills alone rather than the AoLE skills. Consequently, the children were not developing the AoLE skills because too much emphasis was placed on the CCR. Resultantly, embedding the CCR into AoLE could limit the progress children make in their AoLE skills. However, there is a necessity to ensure that the CCR are embedded in the curriculum. One benefit of using digital competence as a CCR is, as Harrison (1998) notes, that children can produce higher quality work when they have used technology. However, a limitation in assessing students is that teachers must have a secure knowledge of the LNF and DCF to know what skills the children should be developing. During PTE teachers lacked confidence about implementing the DCF and also found numeracy difficult to naturally weave into AoLE. Moreover, students are generally more literate than numerate, hence the necessity for numeracy to be embedded throughout the curriculum (Estyn, 2015). Therefore, a limitation of embedding CCR across AoLE is that teachers must be supported in integrating the responsibilities.

Another aspect which may disadvantage embedding the CCR into AoLE is that teachers may not have sufficient knowledge of the specific skills. As Woolley (2014) and Cross Cut (2018) comment, teachers must use their pedagogical knowledge to support individuals to develop the CCR into AoLE as well as having a secure knowledge of both the AoLE and the CCR to ensure that no pupil is limited in their learning by a lack of teacher subject knowledge. Estyn (2018b) claims that many teachers feel confident about the implementation of the DCF, however, during PTE teachers felt apprehensive about the expectations of the DCF and sought my advice when using technology. Estyn (2018c) echoes this, asserting that teachers knowledge of the DCF “is at an early stage of development” (Estyn, 2018c, p.114) which ultimately limits the effectiveness of embedding the CCR into AoLE because some teachers lack the subject knowledge. Elston (2007) observes that computers are the main source of technology in schools, however, this research is outdated due to the rapid developments in technology. Estyn (2018b) has recognised that teachers in Key Stage Two are less confident in their knowledge to deliver the specific digital competence skills and, consequently, this limits the potential skills to be developed by students. Cox, Webb and Abbott (2003), Somekh (2007) and Mundy (2012) echo this, highlighting that students are not provided with opportunities to develop every IT skill due to a lack of competence by the teacher. Estyn (2018d) has recognised Cornist Park Primary School as excellent practice for supporting practitioners with their subject knowledge in the implementation of the DCF. This is achieved by offering staff specific training in the four areas of the DCF and providing practical examples to use in the classroom. However, during PTE the internet failed on an IT session and, consequently, the lesson had to be completed on paper due to a lack of subject knowledge in how to fix this. Therefore, teacher subject knowledge could potentially limit the effectiveness of embedding the CCR into AoLE.

Furthermore, a benefit in embedding the CCR is the natural motivation children feel during topic sessions. Children who find certain CCR difficult might prefer the skills being disguised in AoLE and placed in a meaningful context. Resultantly, children may feel more confident and motivated to develop these trickier skills if integrated into projects. This is reiterated by Haylock and Thangata (2007), who comment that primary teachers are in a beneficial position because they know their children’s abilities holistically and can accommodate their requirements in a cross-curricular approach. This is echoed by the WAG (2013a) who emphasise that students will feel motivated in their learning if teachers “fully integrate these

skills into their planning to provide exciting new learning experiences for learners” (WAG, 2013a, p.26). Another advantage of specifically developing digital competence as one of the CCR is that students show an increased motivation to learn when ICT is utilised (OECD, 2016). This mirrors an observation from PTE, whereby the students were excited when it was revealed that they would be using iPads. This extrinsic motivation, of offering the iPads to complete the work, should intrinsically motivate the children to produce high quality work that they are proud of. Although this should be beneficial to embedding the CCR into AoLE, a limitation observed on PTE was that the session had to be compromised as there were not enough resources for one iPad each. Consequently, embedding the CCR into AoLE will motivate children in their learning, but schools will have to ensure that sufficient resources are available to all of the students.

A potential limitation to integrating the CCR into schools is that teachers find tenuous links to ensure that all the skills are covered. This was apparent during PTE when the children used stopwatches to time their sprints in a Physical Education session. However, the children spent so much time trying to use the stopwatches that it had a detrimental impact on the amount of sprints they were able to achieve which was the learning objective. This indicates that there can be times where it is more appropriate to not include all of the CCR. This is promoted by the WAG (2017) and Estyn (2017b) who confirm the CCR should be embedded in a purposeful and meaningful way that enhances the session. Therefore, although Donaldson (2015) emphasises that students must be provided with “regular opportunities to deepen their understanding of number” (Donaldson, 2015, p.40), to be beneficial to the students, it should only be conducted if developing number is enhancing the session. This can be achieved in AoLE naturally, as du Sautoy (2004) points out, for example children’s understanding of music is based upon recognising that it is counting. Therefore, learning music is complimented by understanding number and, consequently, both skills can be developed simultaneously which ensures that there are no tenuous links. Additionally, Estyn (2018e) has recognised Rhydypenau Primary School as best practice as the school has created meaningful links between literacy and music which, in turn, has raised the levels of literacy in the school. However, a barrier of embedding CCR into AoLE is the links becoming forced and vague. This is echoed by Upitis et al (1997) and Barnes (2011) who notes that it is easy for schools to believe that they are teaching in a cross-curricular way but are doing so in a tokenistic way. This was observed in PTE during the lead up to Christmas, when the children were adding

Christmas trees and gingerbread men to develop the one-to-one principle. Although this was engaging to the children and the teachers believed they were teaching in a cross-curricular format, the children were not learning anything about Christmas itself. Therefore, a potential limitation to implementing the CCR into AoLE is forcing links between subjects that are not benefiting the learning.

Finally, it is paramount that schools ensure that the CCR are embedded into AoLE to prepare children to embrace the changing world. Donaldson's (2015) new curriculum is beneficial because it focuses upon the skills children will need in the future. One advantage of embedding the CCR into AoLE is that countries which boost their PISA scores will see enhancements in their economy (OECD, 2010). However, a limitation to embedding digital competence is that the art of handwriting is becoming a dated skill which Smoker, Murphy and Rockwell (2009) argue is detrimental to children as more words are remembered when handwritten compared to being typed. Conversely, Yanikoglu, Gogus and Inal (2017) assert that technological tablets allow students to develop their pincer movement by holding a stylus but additionally take photographs and access the internet. Consequently, schools should embrace that digital skills are becoming an expanding component in modern society and recognise them as a benefit to children's learning (Fraillon et al, 2013 and Donaldson, 2015). The WAG (2013b) reiterates this, stating that "learners need to be equipped with the skills and knowledge to enable them to engage as future drivers" (WAG, 2013b, p.15) of technology. Moreover, another advantage to students developing the CCR in AoLE is that students will be provided with opportunities to think creatively which is a desirable skill for many employers (WAG, 2014). Nachmanovitch (1990) agrees, arguing that having a cross-over of subjects can allow for thinking to become more creative. Additionally, although Health and Wellbeing is an AoLE, perhaps it should have been a CCR to ensure that children's wellbeing is developed across all AoLE. Therefore this might limit the effectiveness of embedding the CCR if children are struggling with their mental health. Palmer (2010) argues that it is vital that students are provided with an opportunity to explore their emotional skills because they are lifelong skills. Therefore, if Health and Wellbeing was a CCR, children would be able to develop these skills across all AoLE. Resultantly, although the CCR will have a beneficial impact in providing children with some employability skills, it does still require teachers to ensure children are open about their wellbeing even though this is not a CCR.

To conclude, there are many benefits in implementing the CCR into Wales' evolving curriculum. Wales is a step ahead of other nations in this respect as Ofsted (2010) asserts that cross-curricular methods are excellent in supporting pupil's achievement in schools. Nevertheless, there are potential limitations in embedding the CCR into AoLE that must be reviewed. Therefore, two recommendations will be set to ensure potential barriers are overcome. Firstly, a personal recommendation for my practice is ensuring that genuine links are created between numeracy and AoLE. It is crucial that pupils are provided with opportunities to develop their numerical skills across the whole curriculum (Estyn, 2017), but currently I find it difficult to ensure this is done so in meaningful contexts. To support this target, specific reading into Pound and Lee (2015) has highlighted the purposeful numerical links that can be achieved throughout the entire curriculum. Additionally, the recommendation of supporting the teaching network with regards to the implementation of the DCF in AoLE will be set for the WAG. Estyn (2015) comments that teachers had a positive uptake of the LNF and consequently improvements were made, but there does seem to be some confusion in implementing the DCF. Gibbs et al (2008) and Becta (2009) asserts that it is paramount that teachers ensure that they develop students specific IT skills. Consequently, if teachers have a secure knowledge about the DCF they will be able to ensure that all students are receiving a high quality education. Resultantly, these two recommendations will benefit schools in equipping their students with the necessary literacy, numeracy and digital skills they will need to be successful in Wales and beyond.

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