

Looking forward: A critical analysis of literacy, numeracy and digital competence as crosscurricular responsibilities.

This essay will critically discuss factors that affect the implementations of the cross curricular responsibilities proposed in the evolving Welsh curriculum. It will analyse the benefits and limitations of Welsh Governments expectations and conclude with personal targets and educational recommendations for those involved in the change in Welsh education.

Donaldson (2015) emphasises that cross curricular responsibilities are the foundations for learning and are vital to ensure children have high skill levels to be successful in the forever changing modern world. Within the current Welsh Curriculum, the importance of developing literacy and numeracy skills alongside other areas of the curriculum is already highly valued. In 2013 the Literacy and Numeracy Framework (LNF) implemented in schools aimed to ensure teachers were giving children the opportunity to apply important skills across the curriculum (National Welsh Assembly 2013). However, with ever increasing demands for technology skills in the 21st Century, Donaldson (2015) also highlights the need for developing learners' levels of digital competence, stating them to be as important as literacy and numeracy skills. As a result, in 2016 a draft Digital Competence Framework (DCF) was introduced for teachers to begin to encourage the use and development of technology competence across the curriculum also. Consequently, in the evolving curriculum it is now a statutory cross curricular responsibility and therefore within this essay the term cross curricular responsibilities refer to literacy, numeracy and digital competence (Welsh Government (WG) 2019a).

The cross curricular approach used to teach these responsibilities skills is favored by many, Barnes (2015) and Kerry (2015) suggest that it is a necessary approach to teaching in the uncertain modern world, as it allows learning to be relevant and meaningful to the children. Supported by Cremin (2018) who highlights that making connections across the curriculum allows children to deepen their knowledge and understanding. However, Hirsch (2006) and Gardner (2006) argue that these cross-curricular skills are not necessary in education, they believe learning distinctive skills in each subject is needed for effective learning instead; children need to have ‘pure knowledge’ as opposed to applied knowledge. Nevertheless, Rose (2009, p.15) highlights how using a cross curricular approach should still respects subject integrity but encourages the reduction of boundaries to allow children to think ‘outside subject boxes’. Good teachers should not feel they have to choose between each approach but instead should be able to use them both effectively to enhance the learning (Barnes 2015). Considering the viewpoints, the writer believes that a cross-curricular approach to teaching is effective in developing well-rounded individuals through well-balanced, relevant learning. However, the writer also understands that there are many factors that can affect how the responsibilities are imbedded, which in turn can reduce effectiveness, including subject knowledge, assessment, and motivation. Therefore, these factors will now be explored.

Subject Knowledge

In the evolving curriculum one of Donaldson's 12 pedagogical principles refers to the ability to ‘reinforce cross curricular responsibility’, while Estyn (2018a, p.6) and Donaldson (2015,p.68) also highlight good pedagogy is to “make connections within and across area of learning and experience” (AOLE). However,

for this to be done effectively good subject knowledge is required, as teachers who do not have enough knowledge on cross-curricular methods can cause counterproductive learning (Alexander 2008). Good subject knowledge has always been a key strand in reaching high teaching standards, but confident, enthusiastic teachers are also an important aspect in ensuring an effective well-balanced curriculum (Kerry 2015), (Barnes 2015). A common misconception among educators is that teaching these cross-curricular responsibilities is simply teaching, Language, Mathematics and ICT skills, yet the expectation from Welsh Government on how to implement them is much more than that. In both the current and evolving curriculum, the emphasis for a balance between specific and applied learning is key. These responsibilities should be imbedded across the curriculum, giving children the opportunity to apply and use skills taught in everyday school, home and real-life situations (WG 2019a), (WG 2013). However, Hayes (2010) states that in many instances cross-curricular approaches are poorly planned and executed by educators, while Barnes (2015) suggests that the delivery often becomes tokenistic in manner with no specific skills being taught, due to lack of teacher understanding. The teaching and learning cycle highlights how it is the role of a good teacher to firstly establish/explain the learning, then understand and support, and eventually master it (Didau 2014). However, for this to be the case educationalists need to have good knowledge and judgment on how and why they are teaching, not just what (Biesta 2010), (Estyn 2018a).

From experience the writer believes that teachers are most confident with literacy as a cross curricular responsibility with it being applied through the curriculum most often. This is due to literacy being the basis to all learning supporting the teaching in many AOLE (The National Literacy Trust 2019). However, it could be argued that this doesn't necessarily mean that teachers have sound

knowledge on what and how they are teaching the skills, Beadle (2015) suggests that many teachers are not English specialists and often lack fluency in rules and correct language to help children's further their ability to speak and write across the curriculum. Moreover, teachers often find it more difficult to apply numeracy through other AOLE. Hayes (2010) highlights how teachers often struggle as cross curricular links between some AOLE are more prominent, for example teaching mathematics with science is much more natural than teaching mathematics and music. Nevertheless, there are strands in the curriculum such as 'data handling' that allow mathematical concept to be linked to many other AOLE (Haylock and Cockburn 2013). Teachers subject knowledge in mathematical cross curricular learning need to provide children with the skills to not only answer questions, but to problem solve and apply their learning, as a key expectation in the evolving curriculum states that "Mathematics and Numeracy, by definition, has numeracy at its heart" (WG 2019a, p.11), (Haylock 2011,p.1). Yet, teachers often only pay attention to the child's factual accuracy and neglect the logical reasoning and application of knowledge, due to them not fully understanding the mathematical concept (McAteer 2012). Research by Briggs and Crook (1991) and Hembree (1990) highlights that primary school teachers often have negative connotations with the teaching of numeracy, resulting in anxiety and panic of their knowledge. The writer experiences this while teaching mathematics in year 6 on Personal Teaching Experience (PTE), which resulted in not giving children the opportunity to apply their skills in other AOLE.

Due to digital competence being the most recent cross curricular responsibility, from experience teachers of older generations who were not exposed to a digital upbringing often lack confidence and subject knowledge to be able to deliver the skills effectively. Estyn (2018b, p. 5) and Welsh Government (2018)

highlight this as a key recommendation needed to prepare for the evolving curriculum, stating how we need to “audit teachers’ professional learning needs” while encouraging collaboration and training with other good practice schools, in order to support and guide teachers. Nevertheless, professional development programs such as Education and Training Foundation (2019) are available to offer online self-learning training modules to upskill teachers. However, it could be argued that if the knowledge is very poor, having individual online training may be difficult to access and understand, resulting in no improvement made. While on Professional Teaching Experience (PTE) the writer observed effective practice to improve teacher's knowledge by appointing a digital lead teacher. Mizdell (2010) highlights how assigning mentors and leaders is key in supporting new principles and professional development within education. The teacher would have a team of ‘digital bosses’, whereby the children would become the teachers and their expertise would be used to help teachers improve their skills. Payton and Hague (2010) highlights how many teachers feel that their knowledge is not as profound as their pupils, resulting in them questioning their teaching ability of these types of skills. However, using strategies that utilise children can often be the best resource, as their knowledge is often more advanced, and can be used to improve the teacher's skills and build a digital ethos within the school (Estyn 2018b).

Assessment

Another factor that affects the success of the cross-curricular responsibilities is assessment. Currently responsibilities are assessed through ongoing tracking against the LNF, with reading and numeracy tests of children from year 2 through to year 6 (WG 2014). However, it could be suggested that this current

method of assessment is a best fit approach whereby the children are simply meeting a 'tick box' as opposed to developing a competence in applying these skills. Cremin (2018) highlights how a simple yes or no assessment approach often results in very little meaningful context or account of children's learning. Furthermore, formally testing children could also affect the way in which a teacher supports individual learning, as they are not true indicators of pupils' progress and attainment (Kerry 2015). Payton and Hague (2010) highlight how many teachers support the use of a less didactic method of teaching but are under too much pressure to meet test results and therefore divert from personal values. In addition, a point to consider is that these indicator tests do not allow teachers to identify a child that is more able and talented in non-core areas of the curriculum such as music or who demonstrate profound communication or enterprising skills, yet these are key skills that are valued in the 4 purposes of the curriculum. Nevertheless, Donaldson (2015) highlights a fault in cross-curricular assessment highlighting the need for more purposeful formative assessment to progress learners. Using effective assessment for learning (AFL) strategies, is suggested to improve self-esteem and involvement in children's learning (Barnes 2015). While Black and Williams (1998) and Williams (2006) also highlight how AFL is key strategy in improving overall attainment and giving children the best chance for the future. Therefore, the writer believes that the assessment of the responsibilities should be through ongoing purposeful assessment as opposed to a checklist of skills.

Moreover, in the evolving curriculum Donaldson (2015) highlights an expectation is that all AOLE should be taught and assessed with equal weighting. However, from personal experience the teaching dynamics of the current curriculum does not allow educators to teach and assess all areas of learning

(AOL) equally, with there being a profound focus on Language, Literacy and Communications and Mathematics AOL. Therefore, it could be suggested that the imbalance is due to teachers feeling increased pressure on teaching and delivering high levels of cross-curricular responsibilities requiring the need for more Mathematics and Language. Rose (2009) highlights that overloading a curriculum leaves teachers with insufficient time to give children opportunities through all areas of the curriculum. In many instances' teachers feel pressured to meet high targets and therefore focus on teaching more measurable skills for assessment accountability as opposed to giving them meaningful learning and formative assessment (Barnes 2018). Therefore, it could be argued that including third responsibility in the evolving curriculum will add more pressure to teachers and further effect progression in other AOLE. However, if teachers are knowledgeable on how to develop skills cross-curricular they should understand that you do not need to teach e.g. more English lessons to be develop more cross-curricular literacy skills.

Motivation

The nature of cross curricular responsibilities should be authentic and natural and not seen as unnecessary add-ons (Donaldson 2015). However, with current pressures on teachers to reach an increasing set of expectations the writer believes that this may not be the case, unless addressed. Lack of teacher motivation can have a negative effect on cross-curricular learning. When teachers are stressed and overworked, it results in narrow interpretation of children's knowledge with poor preparation and execution of lessons (Barnes 2018). Whereas, if teachers model positive involvement

and excitable interest it can help learners invest in the learning (Kerry 2015). On PTE the writer observed teachers becoming frustrated with reduced motivation to teach DCF skills due to lack of suitable resources. In many cases school had good software e.g. access to Hwb but very little hardware to access it on. However, Welsh Government (2018) emphasises that it is teachers' knowledge and ability to integrate the DCF that is the main focus, as opposed to hardware/software issues. Nevertheless, it could be argued that teachers may have good knowledge but cannot integrate DCF if they do not have the resources to do so. Therefore, the writer believes that although the new curriculum has exciting concepts and key themes for ensuring children are set for the future, for it to be implemented effectively school leadership need to support and drive a well-balanced curriculum that support teachers' well-being (Mizell 2010). Estyn (2018c) highlights how best practice schools have whole school ethos to try to change the current method to teaching with leaders who encourage and guide teachers on trying new ways to teach to increase teacher motivation.

Moreover, Hayes (2010) suggests that cross-curricular links engage children, encouraging initiative, imagination, and personal enquiry. This is supported by Pound and Lee (2015) who emphasises that children learn skills best when they are applied in real, relevant, meaningful contexts which are given through cross-curricular approaches. However, it will not be successful unless the children are motivated in the learning. Barnes (2015) highlights that implementing these responsibilities can equally become confusing and unsuccessful by teachers not giving children relevant contexts for learning, resulting in unmotivated, unengaged learners. Estyn (2015) and Estyn (2016) suggest that including pupil voice is a good way to ensure teachers are weaving cross curricular responsibilities into activities the children will

enjoy and engage with. UNCRC also highlights how it is the right of the child, children should influence their education by being listened to. The writer saw areas of good practice on PTE where they would have 'lets get busy' day every week in the foundation phase whereby each of the teacher would focus on a different cross-curricular responsibility linked to a theme chosen by the children, all children would carousel round all classes through-out the day. However, it is not always possible to reach the interests of all children and can therefore still result in disengaged learners.

To conclude, the expectations for cross curricular responsibilities to be integrated into a well-balanced curriculum is key in the evolving curriculum. However, it is clear to see there are many factors that can affect how they are imbedded, and these factors need to be addressed to integrate them effectively.

The main educational recommendation the writer believes will have a major impact on teachers involved in the evolving curriculum is the emphasis on professional development. Estyn (2018a) highlights how good practice schools place high standards on not only their pupils learning but their teachers also, as this is a key contribution to children's education improvements. Ongoing development creates a "culture of learning throughout the school" which supports both children and teachers in the learning journey (Mizell 2010, p.18). This is particularly important for the introduction of the DCF, as Payton and Hague (2010) and Estyn (2018b) emphasises how acknowledging teachers existing skills is vital for support and reflective practice. Furthermore, developing clear school situation specific policies on how these responsibilities should be integrated within a school's curriculum is vital to ensure consistency and support. Cross-curricular teaching can become forced or unclear if teachers are not confident on how the leadership want

the curriculum to be imbedded (Hayes 2010). Therefore, school management teams need to create a whole school ethos that states the expectations and allows for this type of assessment and learning (Rowley and Cooper 2009). By creating a trusting clear expectation environment teacher's motivation and confidence can grow, and children's learning can improve.

Personally, from completing this essay I believe that I have an increased understanding on how cross-curricular responsibilities can be imbedded through a well-balanced curriculum, however I am also aware of the factors that can affect it. The qualified teaching standards highlights how a teacher should “demonstrates a knowledge and understanding of relevant pedagogies and disciplines within and across subject content, areas of learning and cross-curricular themes, and plans appropriately” (WG 2019b, p.30) Therefore, in reflection I believe I need to improve my competence in DCF to reach this standard. I feel that it is the responsibility I am least confident with; I feel I do not understand all skills e.g. Coding and not confident in ways in which skills can be implemented within the classroom. Therefore, to reach this target I aim to complete The Education & Training Foundation courses and share good practice with peers who are confident in skills to gain classroom ideas.

Work count: 2745

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