

‘Looking Forward: A Critical analysis of Literacy, Numeracy and Digital Competence as cross-curricular responsibilities.’

This assignment will highlight the use of Literacy, Numeracy and Digital Competence through a cross-curricular approach in Wales. Teaching through a cross-curricular approach stimulates learning and provides meaningful, relevant opportunities whilst considering the interests of the learners (Barnes, 2015; Hayes, 2010). Supporting this, Donaldson (2015) and the Welsh Government (2015) connote that the newly proposed curriculum will develop these three aspects as cross-curricular responsibilities intrinsically, further enhancing the four purposes ensuring that learners equip appropriate skills to apply to the modern World. Moreover, ensuring learners are competent in all aspects enables the application of knowledge across the curriculum complementing the twelve pedagogical principles (Donaldson, 2015; Impact Wales, 2018). In addition to this, cross-curricular education influences the wider skills to education with emphasis on global citizenship, critical thinking skills and the ability to independently voice their opinion (Welsh Government, 2008; Turner, 2012). Furthermore, Hayes (2010) and Ofsted (2010) concurs that embedding cross-curricular approaches influence the attainment and perspective of individuals holistically.

In order to deliver effective cross-curricular pedagogy through the three responsibilities, Turner (2012) and Estyn (2018a) indicate that practitioners are required to have profound subject knowledge to enable suitable opportunities to stimulate learning. Haylock and Manning (2014) adhere to this such that acquiring good subject knowledge in content and teaching is recognising how various methods of learning will affect the learner. Furthermore, encouraging practitioners to be creative within their teaching and providing environments that are relevant to the learners and their current knowledge enhances the engagement (Ransam, 2012; Lennon, 2015; Estyn, 2018a). In coherence to this, Didau (2014) implies that learning is more memorable, particularly in Literacy and Numeracy, when learners are activating prior knowledge to problem solve thereby emphasising the importance of practitioners reflecting on their teaching in order to guide the learners’ critical thinking and creativity. According to Donaldson (2015) and Haylock and Manning (2014), competence within numeracy and mathematics allows learners to understand and support the wider aspects of the world around them through communicating both numerically and creatively. Steiner (1919, cited in Barnes, p51) concurs that embedding cross-subject learning cultivates the challenges of the future that learners will face enhancing encouragement.

Savage (2011) implies that highlighting new aspects and ideas to teaching connects the responsibilities to citizenship and cross-curricular pedagogy. Reflecting on a Humanities lesson taught in Professional teaching Practice, ensuring effective transferral of subject knowledge and Literacy skills was essential to develop the class’ subject knowledge. Also, enhancing their ability to work within groups and use their current research skills in order to create a poster to present to the class within a role play plenary

consisting of a Shabbat meal Table. Barnes (2015) concurs to using role play in all areas of learning as it enhances the wider skills such as thinking skills whilst also expanding the language used and heard by the learner. Through this task, the learners were able to activate their prior knowledge from previous Religious Education lessons whilst also using their knowledge of posters with regards to the success criteria to progress their learning. Adhering to this, the Welsh Government (2013) illustrates through a case study that enabling the learners to dictate their own success criteria develops the independence and allows learners to be in control of their own learning.

Supporting this, cross-curricular teaching regarding oracy, requires context to enhance the discussion and communication skills (Morrison, 2013). Nevertheless, Turner (2012) refers to a ‘transmission model’ indicating that although obtaining subject knowledge is essential, many practitioners tend to disregard the emotional and social attributes to education. Adhering to this, Didau (2014) connotes that literacy is best taught when the appropriate quality of language and context is delivered as learners will benefit from information that is relevant and meaningful. Integrating literacy across the curriculum emotionally and socially is essential to extend the learner’s viewpoint of learning and their individual wellbeing (Estyn, 2017). In addition to this, education settings should acknowledge that relevant teaching enhances the application of literacy skills simultaneously where learners can enhance their understanding and ability to use their higher-order skills such as reading, particularly as it is essential for oracy and writing (ibid.). Hence, Vygotsky’s (1978, cited in Pound, 2008, p.51) ‘Zone of Proximal Development’ that language is fundamental for both the social and intellectual aspects of life, therefore, supporting the subject knowledge and language given to learners socially can complement their individual learning experiences at various points within education and life. Thus, indicating that opportunities for group work is essential to active learning (ibid.) However, Didau (2014) acknowledges that perhaps the vastness of support from practitioners, particularly in writing, minimises the learner’s independent thinking emphasising that the amount of guidance given should rely on the capability of the learner.

In accordance to The Rose Review (2009, cited in Turvey et al., 2016, p.4) and Estyn (2018a), digital competence and ICT should be elevated to be parallel with other core subjects. Similarly, Donaldson (2015) synthesises with this that Literacy and Numeracy are currently prioritised, however, more emphasis on digital competence is required as it plays an omnipotent factor in the modern world through communication and networking. Furthermore, Pickering (2014) concurs that digital skills, such as coding and the integration and knowledge of technology, are significant to a learner’s everyday life and their future, particularly as the upcoming generation will most likely be the most knowledgeable in a world of evolving technology. Consequently, emphasis is placed upon the ‘Science, Technology, Engineering and Mathematics (STEM)’ programme, in order to positively influence learners’ sustainable career opportunities in which skills developed will assist the emerging technologies (Donaldson, 2015; WG, 2016). Acquiring a minimum knowledge of computing enhances the learner’s

literacy and numerical skills development substantially as learners will be able to sequence and understand how various programs work which can then be applied to additional areas such as the composition of music (Welsh Government, 2008; Bird, Caldwell and Mayne, 2017). Hence, the proposed draft framework will ensure that learners can explore computational thinking in all aspects of their lives outside of ICT and computing lessons (WG, 2019). Despite this, Beauchamp (2016) acknowledges the significance of technology assisting learning, however, if the utilisation does not extend the learner's ability, then it portrays lack of value. For instance, within placement, presenting a PowerPoint to the learners had little effect on the learner's digital competence, however, allowing them the opportunity to use the technology themselves enhanced their research and computational skills. Similarly, McAteer (2012) connotes that the use of digital competence within Mathematics should not overpower the purpose of the lesson nor prevent mathematical thinking. Therefore, this underlines Estyn's (2018) aims that practitioners should enable learners to independently improve their literacy, numeracy and digital competence skills.

In order to achieve this, all practitioners within education must have deep subject knowledge and skills through all responsibilities intrinsically to scaffold the learning (Donaldson, 2015). Supporting this, ensuring that aspects of digital competency is delivered in all areas of learning is a fundamental element to achieving the QTS standards (Turvey et al., 2016). However, Barnes (2015; 2018) indicates that the use of ICT and digital competence combined within education is limited compared to the use at home. Moreover, this may be a result of a lack of practitioners' skills whereby Weale (2015) and Beauchamp (2016) synthesise that ensuring learners leave education with enough digital literacy skills is currently difficult where education systems are not equipped with high enough standards of digital competence. Nevertheless, NGFL (1999, cited in Turvey et al., 2016) implies that it had been recognised since that era to ensure that practitioners equipped a satisfactory competence within ICT and digital literacy. In fact, ERW (2019) emphasises knowledge of the DCF is significant in providing opportunities, supplying schools across Wales with a variety of resources and encourages the use of Hwb to engage learners. On the contrary, reasoning behind a lack of skills may be the result of the shortage of time to learn consistently progressing technology compared to other areas of learning and the lack of subject knowledge transferred whilst in education themselves (Kleine, Hollow and Poveda, 2013). Despite this, Donaldson (2015) indicates that the focus should be the pedagogy itself and not be placed upon on evolving technology. Regardless of individual practitioners' skills, Audain (2014) implies that connecting with various members of staff who are more knowledgeable in ICT engages teacher involvement in the area of learning, whilst also helping to advance their own personal skills that aid learners. Hence, the requirement of assigning digital leads within schools, ensuring frequent events are attended in order to obtain new ideas that can be transferred across schools (Estyn, 2018b).

Simultaneously, implementing effective cross-curricular responsibilities throughout the curriculum, particularly digital competence and Literacy, is problematic where resources and environments are

limited (Turvey et al, 2016). Adhering to this, McAteer (2013) indicates that even within Numeracy, misconceptions arise when resources are restricted and do not express meaning. Nevertheless, Barnes (2015) states that the use of partnerships within the community or any educational environment positively is actively engaging in learning whereby learning can commence regardless. Illustrating this, when teaching Internet safety to the Foundation Phase, the technology that was available was limited, however, development of digital literacy was still enhanced through stories, discussion and creating a poster. Thus, experiencing a variety of methods and practices aids learners into actively collaborating through social, cultural and intellectual aspects effectively (Hague and Payton, 2010).

On that account, planning for cross-curricular responsibilities within lessons should be thoroughly and carefully considered to incorporate engagement and positive attitudes to learning (Barnes, 2015; Cremin and Arthur, 2014). Adhering to this, Savage (2011) and Kerry (2015) emphasise that effective planning consists of objectives and targets to ensure that learning is purposeful. Moreover, setting targets and learning objectives provides better opportunities for practitioners to assess the learners, thereby, stimulating next steps and connections to the following lesson (ibid.). However, Askew (2012) confers that determining learning objectives and outcomes may restrict learners' abilities and learning experiences. Robinson and Aronica (2015) appends to this where rather than lesson boundaries limiting the learning experience, it should expand the knowledge and thinking of every learner. Ensuring thinking skills are developed through lessons that provide challenge and acquire problem solving is essential to a learner using cross-curricular responsibilities, allowing both practitioners and pupils to connect prior knowledge and achieve the specific goal of the lesson (Newell, 2016).

Therefore, ensuring planning promotes consistent inclusion and differentiation through collaboration in a whole school approach is significant to learning (Estyn, 2018a). Incorporating a thematic whole school-curriculum activates the engagement and allows a beneficial form of assessment identifying strengths and weaknesses to the learning (Rowley and Cooper, 2009; Donaldson, 2015). Moreover, Barnes (2015) indicates that thematic approaches enhances interest of both pupils and practitioners simultaneously thereby improving the quality and standard of teaching. Illustrating this, effective cross-curricular links were demonstrated during professional teaching practice whereby the placement school ensured that an opportunistic short-term planning embedded World War One and 'Remembrance Day' into each aspect of the curriculum. Therefore, all learners across the school were enhancing the three cross-curricular responsibilities historically whilst also developing areas such as creative development dependent on their choice. Hence, thematic approaches such as this allows learners to make connections with pre-existing knowledge enhancing their inquisitiveness (Didau, 2014). Within this planning, it is significant to recognise that the role of the practitioners should facilitate the learning experience, enabling deepened interest whilst enhancing opportunities for learners to express and discuss their interest in the learning (Barnes, 2015). Westland (2009) concurs that providing a curriculum that is more creative and child-led provides practitioners to adjust learning to suit the learners, ensuring

mathematical and literal skills develop more efficiently. Furthermore, planning for intrinsic skills through themes helps create continuity across the school (Donaldson, 2015). Despite this, for coherent combinations of skills, embedding themes may not be effective as the intended purpose of the lesson may not be reflected to the learner and as a result, creates confusion (Barnes, 2015; Cremin and Arthur, 2014). Therefore, Grigg (2015) indicates that planning for themes and cross-curricular approaches may create unrealistic and irrelevant references to some areas of learning. Supporting this, Barnes (2015) synthesises that individual subjects can be equally as creative and innovative whilst implementing cross-curricular links. For instance, within the Foundation Phase, mathematical operations and algorithms are not taught, instead, the focus relies on the relationship numeracy and literacy has on their everyday life (Newell, 2016). Hence, meaningful songs and rhymes that occur daily to enhance thinking skills and creative contexts within the curriculum (ibid.)

According to Donaldson (2015) and Estyn (2018a), effective planning enhances successful assessment ensuring that practitioners can record all learners' competences across the curriculum. Kelly and Stead (2013) acknowledge assessing literacy, numeracy and digital competence can be difficult through areas of the curriculum as skills vary such that their ability within the area of learning may not complement the cross-curricular responsibilities skills. Illustrating this, when assessing on placement, it was evident that some learners had rich knowledge within Science and Mathematics through the spoken feedback from the learner. However, when marking the work, there were misconceptions in the written literacy as a result of handwriting and grammar which then contrasted the prior experience. Therefore, assessment that stimulates discussion and insight on the pupil and teacher progress is much more efficient within a cross curricular approach as learners have control of their own learning, enhancing their own achievements (Chen, Moran and Gardner, 2009; Rowley and Cooper, 2009). Moreover CAMAU (2018) adheres to this whereby allowing control from the learners promotes inclusion regardless of abilities and needs. Similarly, Black and William (1998) and Savage (2011) indicate that pupil-teacher feedback is worthwhile when the focus is directly on the learner disregarding comparisons with peers. Nevertheless, Lewis (2019) implies that meaningful feedback can be portrayed through standardized testing by identifying correct guidance and attainment. Donaldson (2015) and Adams (2019) recognise that PISA tests indicate that learners within Wales and the UK, are not achieving the expected outcomes in comparison to other countries, particularly regarding problem solving and creativity. Despite this, effective practices of creativity were enforced nationally to be adjustable and collaborative in order to raise standards (Ofsted, 2010). Consequently, Adams and Barr (2019) articulate that learners may visualise their education and life as meaningless thereby indicating that the wellbeing and purpose of the learners is far more beneficial than assessment. Furthermore, Driscoll, Lambirth and Roden (2012) synthesise that besides a practitioner's role to facilitate learning, it is significant to recognise the diverse and cultural attributes that will affect the experiences learners obtain prior and during education. Therefore, in order to decrease the gap of attainment, schools could support the

families of those who are 'EAL' through understanding their prior experience of language to extend the dialogue and prompting them with visual aids (Allot and Waugh, 2016).

To conclude, the integration of cross-curricular responsibilities requires strong teacher subject knowledge and skills to deliver effective pedagogy to the learners (Barnes, 2018; Impact Wales, 2018). In order to achieve this in Wales, education systems are recommended to equip their staff with the correct skills in preparation for the intended curriculum (WG, 2015; Estyn, 2018). A personal target would be to ensure that revision of literal and numerical skills prior to any lesson taught is crucial to enhance understanding, avoiding misconceptions whilst motivating both myself and the learners. Turner (2012) and Kerry (2015) indicate that practitioners are required to be flexible with changes to all areas of the curriculum, however, a lack of training, resources and support can limit all members of staff. Nevertheless, acknowledging the support given from ERW (2019), the Welsh Government could provide sabbatical courses in all three responsibilities, particularly digital competence, equivalent to the Welsh language sabbatical courses in order to enhance confidence throughout the school. Furthermore, upskilling trainee teachers in the digital competence framework is essential to developing a successful education and raising standards (Estyn, 2018b). Additionally, successful cross-curricular approaches consist of collaborating effective practices of planning, pedagogy and assessment through a whole school approach thereby enhancing the quality of teaching and skills intrinsically (Cremin and Arthur, 2014; Estyn, 2018a). Lastly, Donaldson (2015) states that ensuring practitioners continue to relate the teaching of numeracy, literacy and digital competence to real life problems is essential to the development of perspectives on the modern world. For instance, learners can identify patterns and problems in Numeracy and apply them to additional aspects of the curriculum and everyday life, therefore, enhancing the wider skills required for the twenty-first century (Haylock and Manning, 2014).

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