

APPENDIX GA36c

LEVEL 6 ASSESSMENT SPECIFICATION

Student name:	NADELLE DAVIS	Student ID number:	1702088
Programme:	BA in Education with QTS		
Module:	Cross Curricular Responsibilities: Literacy, Numeracy and Digital Competence		
Module code:	ECAD6012	Contribution to Overall Module Assessment (%):	50%
Lecturer:	Rachel Wallis	Internal Verifier:	Rachel Wallis
Assignment Title:	Looking forward: A critical analysis of literacy, numeracy and digital competence as cross-curricular responsibilities.	Word count (or equivalent):	2, 500
Submission deadline:	20.12.19 (23:59)	Return date of provisional marks & written feedback:	31.1.20
Submission method:	All written assessments, where practical and possible, must be submitted via Turnitin unless otherwise instructed by the Lecturer. (Please DO NOT put this assessment specification into Turnitin or it will match many similarities with other students' submissions.) Alternative submission method (if applicable): Late submission of the assessment will result in a late penalty mark. Penalties for late submission: Up to one week late, maximum mark of 40%. Over one week late, 0%. Only the Extenuating Circumstances Panel may approve a change to submission dates.		
Academic honesty / referencing:	Academic honesty is required. In the main body of your submission you must give credit to authors on whose research and ideas your work is based. Append to your submission a reference list that indicates the books, articles, etc. that you have used, cited or quoted in order to complete this assessment.		

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

Introduction

In this assignment, I plan to critically analyse the differing perspectives of the benefits and limitations of literacy, numeracy and digital competence as cross-curricular responsibilities in the evolving curriculum in Wales. The current Draft Curriculum for Wales 2022 (WelshGovernment, 2019a) has accepted Donaldson's (2015, p.43) recommendation in Successful futures that Literacy, Numeracy and Digital Competence should be viewed as a cross-curricular responsibility and 'embedded within' all 'areas of learning and experience'. Literacy, numeracy and digital competence are vital as they develop a 'range of competencies and skills' that provide a foundation to 'almost all learning' and are essential to 'participate successfully and confidently in the modern world' (Donaldson, 2015, p.39; Welsh Government, 2019a; ICT steering Group, 2013). The structure of the cross-curricular responsibilities within the new draft curriculum 'mirrors existing good practice' by providing frequent opportunities for learners to 'develop, extend and apply' their literacy, numeracy and digital competence skills across the curriculum and will help to develop children's knowledge and understanding of the six areas of learning and experience (Estyn, 2017a, 2017b; Hayes, 2010; WelshGovernment, 2019a, p.1; WaveHill, 2019, p.iii).

Nationally, Children are starting school with lower literacy and numeracy skills than ever before yet, internationally there is a rising trend in demand for stronger literacy, numeracy and digital competence skills (National literacy trust, 2011; Donaldson, 2015; WorldEconomicForum, 2016). Almost '90% of new job roles require digital skills to some degree and these skills are built upon numeracy and literacy (HouseofCommons, 2017, p.7; National Numeracy, 2019). 'Given the current scale and pace' of technological change in the world, children that are now in primary school may work in jobs that do not yet exist so Wales' learners need to develop a

wide-range of transferable skills to be successful in their lives (Bell, Bristow and Martin, 2017, p.2) Whilst the recent PISA Global education tests have indicated a positive improvement in the skills of Wales' learners, Kirsty Williams highlights there is still room for improvement and embedding the cross-curricular responsibilities in all areas of learning and experience will increase their exposure to the skills and support learners' attainment (BBC, 2019; WelshGovernment, 2019b).

Barnes (2015, pp.62-65) suggests that there are 'eight distinct types of cross-curricular teaching and learning' that to varying degrees applies 'skills, knowledge and attitudes of a number of different disciplines' to a 'single theme, problem, idea or experience'. Barnes (2015, p.1) and Hayes (2010) further highlight that as our 'world is cross-curricular', teachers should refrain from creating unnecessary subject boundaries which may hinder learning. By using a cross-curricular approach, alongside the twelve pedagogical principles, to embed literacy, numeracy and digital competence, children's learning will be 'more holistic', meaningful and transferable to real-life experiences and will help to achieve Donaldson's (2015) four purposes of education (Barnes, 2015, p.1; Hansen and Vaukin, 2012; Hayes, 2010, p.383). However, the implementation of the cross-curricular responsibilities in the new curriculum may present some challenges for learners, teachers, schools and the Welsh Government in terms of planning, assessment, teacher training, resources and confidence (Hayes, 2010).

Teacher Subject Knowledge

The Teacher Professional Standards (WelshGovernment, 2019c, p.31), Barnes (2015, p.63) and Kerry (2011) support the 'vitally important' role of teachers taking every opportunity to advance the learning of literacy, numeracy and digital competence 'through their effective application of subject knowledge and discipline'. Teachers in Wales will require excellent pedagogical skills to recognise the opportunities where 'meaningful and coherent links can be made' across the areas of learning and experience to embed the three cross-curricular responsibilities (Kerry, 2011, p.129).

Firstly, Askew (2012, p.35) argues that the teachers that are most 'effective at teaching numeracy' are those that have a teaching style that considers the children's learning and the connections that they may make. Haylock and Manning (2014, p.25) support this view and suggests that teachers consider using 'The Connections Model' (Appendix 1) that illustrates the relationship between pictures, symbols, language and practical experiences to support the learners' mathematical understanding. Teachers in Wales will need to be aware of the importance of learners making cognitive connections to support their understanding when planning opportunities for cross-curricular responsibilities across the curriculum. By providing cross-curricular opportunities for learners to make these connections through discussions, 'investigations and explorations', 'rather than just learning by rote', a higher-level of transferable understanding will be promoted and will support the achievement of the four core purposes. (Haylock and Manning, 2014, pp. 25-26; Donaldson, 2015).

Secondly, Haylock and Manning (2014, p.431), Burgess (2009) and Estyn (2017b) all recognise that as well as 'common subject knowledge', teachers also require 'special subject knowledge' to be able to predict and analyse errors and misconceptions and to provide explanations. Teachers with inadequate special subject knowledge may miss learning opportunities that may affect learners' understanding and limit their progress (Haylock and Manning, 2014; Grigg, 2010; Pound and Lee, 2015). During my Professional Teaching Experiences (PTE), I observed a guided reading session where a teacher with poor phonics knowledge faced difficulty providing oral and written feedback when analysing a child's decoding method for a split digraph word. Gardner's (1993) theory suggests the view that children learn from the adults around them. Therefore, if teachers have a lack of special subject knowledge in literacy, numeracy or digital competence this may impact embedding the cross-curricular responsibilities effectively across all areas of learning and experience and furthermore may result in learning across the entire curriculum being negatively affected.

Feedback analysis from the current draft curriculum recognises 'the important role that professional development will play in successfully embedding the new curriculum' as teachers may require specific training to adapt their practice (WaveHill, 2019, p.iv) . The Education Workforce Council (EWC, 2019) has developed a Professional Learning Passport (PLP) that is designed to support practitioners with evidencing, reflecting and planning their learning to help improve their practice and could be used by their schools to identify training needs within the teaching of the cross-curricular responsibilities and plan more targeted training to improve skills. Additionally, practitioners could use a cross-curricular teaching model, such as Barnes' (2015, p.72) 'Interdisciplinary cross-curricular model' alongside the twelve pedagogical principles to plan each unit of work and the subject knowledge they will require in advance (Donaldson, 2015; ImpactWales, 2018). However, Barnes (2015) highlights this can present challenges as it can be time-consuming and very challenging for the teacher to predict the subject knowledge required in advance.

Resources

Welsh Government have introduced the Hwb (2019a) digital platform that will help to support the introduction of literacy, numeracy and digital competence as cross-curricular responsibilities in Wales. Hwb enables all teachers and learners in Wales to access 'a range of centrally-funded, digital tools and resources' that support the curriculum in school and at home (Hwb, 2019a, p.1). Hwb is cost-effective as it reduces the amount of software that a school requires as many programs, such as Microsoft Office 365, are available on-line (Hwb, 2019b). Hwb can support Wales attaining its Well-being Goals by helping to close the technology 'participation gap' through providing more equal access at school and home to 'opportunities, skills and experiences' that help develop 'ambitious, creative learners' that are prepared for 'life in the 21st century' (WelshGovernment, 2015; FutureLab, 2010, p.9; Donaldson, 2015, p.29; WorldEconomicForum, 2016).

However, the availability of hardware, such as iPads, and broadband in schools may hinder the implementation of the digital competence element of the cross-curricular responsibilities in schools in Wales. During my PTE in 2019, there were 15 chromebooks that were shared amongst the five key stage two classes. Each class had just one morning and one afternoon slot scheduled each week which were not always scheduled at the most effective times. Furthermore, broadband signal was often intermittent and would not work at all in my classroom. During one session, I had planned for a group of children to research a topic on the chromebooks, however, with no classroom broadband and no teaching assistant to accompany the children to work in the school library, the research could not be completed during the planned session. I have experienced similar issues at many schools I have visited. It would be extremely challenging to successfully implement digital competence across the curriculum with this level of access to hardware and broadband. Estyn (2018) highlight that some secondary schools have introduced a 'bring your own device' approach that could be adapted to subsidise inadequate hardware provision although this may be less suitable for primary school age children and may present issues with network capacity. Additionally, it may upset and segregate children who do not have devices to bring to school.

In my experience, Welsh Government's Hwb platform is an excellent resource that closely supports the implementation of literacy, numeracy and digital competence as cross-curricular responsibilities. However, the Welsh Government will have to continue to invest in the platform and develop software to ensure it continues to meet the needs of teachers and learners in Wales. Additionally, as the platform is available on-line, schools will be unable to access and benefit from the Hwb platform without sufficient physical resources and broadband (Hwb, 2019a). I suggest the Welsh Government and schools prioritise the funding of hardware and reliable broadband to enable each child regular, individual access to the equipment and to support the implementation of literacy, numeracy and digital competence as a cross-curricular responsibility. In the meantime, teachers that share hardware should collaborate to construct a creative timetable that makes the most effective use of the resources available. Digital Competence is becoming 'increasingly fundamental to

learning and life' and it is essential that our learners have the best opportunity to be equipped with transferable digital competence skills for the modern world (Donaldson, 2015, p.40; ICT steering Group, 2013; FutureLab, 2010).

Planning

The cross planning of Literacy, numeracy and digital competence as cross-curricular responsibilities should aim to support learners in making meaningful links and enhance learning between the areas of learning and experiences (Donaldson, 2015; Kerry, 2011; Rowley and Cooper, 2009). However, some concerns have been raised during feedback analysis that the current draft curriculum 'lacks detail' in some areas of learning and experience and as teachers have a limited amount of time to plan lessons its implementation may result in a challenging workload for teachers (WaveHill, 2019, p.17)

The current draft curriculum for Wales 2022 (WelshGovernment, 2019a) should support teachers' planning of Literacy, numeracy and digital competence as cross-curricular responsibilities and aims to support learners in making meaningful links and enhance learning between the areas of learning and experiences (Donaldson, 2015; Kerry, 2011; Rowley and Cooper, 2009). However, some concerns have been raised during feedback analysis that the current draft curriculum 'lacks detail' in some areas of learning and experience and as teachers have a limited amount of time to plan lessons its implementation may result in a challenging workload of planning for teachers (WaveHill, 2019, p.17)

Barnes (2015, p.66) identifies a tokenistic cross-curricular approach, where schools and teachers do combine two or more subjects but 'genuine connections are not made' which may result in a tedious mix where no new learning occurs in the secondary subject (Roth, 2000). Schools and teachers may resort to adopting a tokenistic approach in an attempt to include the three cross-curricular approaches into each lesson. During PTE in 2019 I observed a class teacher include digital competence in their lesson in a tokenistic way by asking one group of children to use

the laptops to write their re-count rather than use a pen and paper like the rest of the class. This method was used regularly to incorporate digital competence and a full range of skills from the framework (WelshGovernment, 2019d) were not being developed. The teacher felt under pressure by the senior leadership team to include some degree of digital competence within her plans for every lesson. Digital competence in this lesson could be considered as within the substitution level of the SAMR model (Puentedura, 2015) (Appendix 2) as the inclusion of technology was a direct substitution of the pen and paper that the remaining children used and added little enhancement to their work. However, Puentedura (2015) suggests that if teachers incorporate the higher levels of the SAMR model when planning their teaching, they will avoid tokenism and children's learning will be enhanced through their inclusion and new learning opportunities encountered.

Furthermore, during PTE I encountered that some cross-curricular responsibilities were more challenging to incorporate meaningfully into some areas of learning whilst others have more natural links. Oracy literacy skills were a natural addition to the vast majority of my lessons and discussion and collaboration consistently enhanced the learning. However, at times I found numeracy challenging to include within some of my PSE or Religious Education based lessons and other lessons at times as it did not naturally link to the topics and would not have enhanced the learning. If teachers are made to force these unnatural links into their planning of all lessons, it may limit the enjoyment of the lesson for both teachers and learners and may be detrimental to the children's knowledge and understanding (Kerry, 2011).

To avoid a tokenistic approach, which does not enhance learning, teachers could be allowed to use their professional judgement about when to incorporate cross-curricular responsibilities as they understand the needs of their learners best and should not feel forced to make unnatural links that do not enhance learning to meet inclusion expectations (Barnes, 2015). However, senior leadership teams need to trust and support their teachers' professional judgement.

The draft curriculum feedback analysis (WaveHill, 2019, p.54) identified schools' potential need for support with 'long- and medium-term' planning to ensure all cross-curricular responsibilities are covered. In response to this feedback, Welsh Government could consider creating a cross-curricular tracking tool to enable teachers and schools to track their implementation of the cross-curricular responsibilities to ensure a full-range of the skills are being developed meaningfully and naturally over a period of time.

Conclusion

To successfully incorporate the three cross-curricular responsibilities in Wales, I believe the Welsh Government, schools and practitioners still need to consider and plan for some challenges identified with the implementation. Welsh Government will need to consider the specific training needs of practitioners to adapt to this new style of practice and support schools in regularly assessing and identifying training needs to ensure staff have the knowledge and skills to confidently deliver the approach. Furthermore, Welsh Government could introduce a cross-curricular tracking tool for teachers and schools to ensure a wide-range of skills are developed across the curriculum. Moreover, whilst Hwb is an excellent resource for education in Wales that will improve the incorporation of the cross-curriculum responsibilities in Wales as advances in technology are changing so rapidly it is essential the Welsh Government continue to invest in the platform and hardware in school to ensure the greatest impact on learners.

As a trainee and future newly qualified teacher (NQT), I will be using the EWC's PLP to assess my training needs to improve my ability to embed the cross-curricular responsibilities in my own practice (EWC, 2019). I recognise that my professional development in all areas is an ongoing learning continuum and my knowledge as an NQT may limit my incorporation of the cross-curricular responsibilities. However, I will continue to strive to improve my pedagogical knowledge which will enhance my lessons and help me to support learners along their own learning continuum. I will always look for meaningful ways to embed the cross-curricular responsibilities in my

teaching of all areas of learning and experience without forcing links. Furthermore, I will collaborate with my staff team to ensure resources are used effectively and mutually share any good practice to have the most effective impact on learners' attainment.

In conclusion, the potential incorporation of the three-cross curricular responsibilities within the final draft of New curriculum for Wales 2022 (Welsh Government, 2019a) will ensure a focus is maintained upon embedding literacy, numeracy and digital competence as key skills that learners require to achieve the four purposes of the curriculum and are increasingly vital for life in the modern world (Donaldson, 2015). Furthermore, it will support Wales' attainment goal of higher PISA rankings (BBC, 2019; Welsh Government, 2019b). However, we must be mindful that Singapore, who remain in the top three in recent PISA results, took several years to see improvement after their 1997 curriculum reform (Defis, 2018; OECD, 2019). Therefore, Welsh Government needs to be mindful that it may be several years until PISA results improve and significant change is seen in learners.

Word Count: **2750 words**

Reference List

Askew, M. (2012) *Transforming Primary Mathematics*. Oxon: Routledge

Barnes, J. (2015) *Cross-curricular learning 3-14*. London: Sage Publishing.

BBC (2019) <https://www.bbc.co.uk/news/uk-wales-48982460>

BBC (2019) *Pisa Education Tests*. Available at:
<https://www.bbc.co.uk/news/uk-wales-50629432> (Accessed: 6th December 2019).

Bell, Bristow and Martin (2017) *The future of work in Wales*. Available at:
<https://www.wcpp.org.uk/wp-content/uploads/2018/04/The-Future-of-Work-in-Wales.pdf> (Accessed: 15th November 2019).

Burgess, T. (2009) 'Statistical knowledge for teaching: exploring it in the classroom'. *For the Learning of Mathematics*, 29(3), pp.18-21. Available at:
<https://pdfs.semanticscholar.org/0c76/ce716609baf692074fe7d5caad6d3afa254a.pdf> (Accessed: 5th December 2019).

Defis, N. (2018) *A test for Welsh Education*. Available at:
<http://athrofa.cymru/2018/05/15/a-test-for-welsh-education/> (Accessed 15th November 2019).

Donaldson, G. (2015) *Successful Futures*. Available at:
https://dera.ioe.ac.uk/22165/2/150225-successful-futures-en_Redacted.pdf (Accessed: 26th November 2019).

Estyn (2017a) *The Annual Report of Her Majesty's Chief Inspector of Education and Training in Wales 2016-2017*. Available at:
https://www.estyn.gov.wales/sites/www.estyn.gov.wales/files/documents/Estyn_Annual%20Report_2018_English_Accessible.pdf (Accessed: 5th December 2019).

Estyn (2017b) *Developing a skills-based curriculum in primary school*. Available at:
<https://www.estyn.gov.wales/effective-practice/developing-skills-based-curriculum-primary-school> (Accessed: 1st December 2019).

Estyn (2018) *Preparing for the Digital Competence Framework (DCF)*. Available at:
<https://www.estyn.gov.wales/sites/www.estyn.gov.wales/files/documents/Preparing%20for%20the%20DCF%20eng.pdf> (Accessed: 10th December 2019).

EWG (2019) *Professional Learning Passport*. Available at:
<http://www.ewg.wales/site/index.php/en/professional-development/professional-learning-passport.html> (Accessed: 1st December 2019).

FutureLab (2010) *Digital Literacy across the curriculum*. Available at:
<https://www.nfer.ac.uk/publications/futl06/futl06.pdf> (Accessed: 10th December 2019).

Gardner, H. (1993) *Frames of Mind: The theory of multiple intelligences*. 2nd edn. London: Fontana.

Grigg, R. (2010) *Becoming an outstanding primary school teacher*. Essex: Pearson Publishing.

Hansen, A. and Vaukin, D. (2012) *Primary Mathematics across the curriculum*. Exeter: Learning Matters.

Hayes, D. (2010) 'The seductive charms of a cross-curricular approach', *Education 3-13*. 38(4), pp. 381-387, DOI: 10.1080/03004270903519238.

Haylock, D. and Manning, R. (2014) *Mathematics Explained for Primary Teachers*. London: Sage Publishing.

House of Commons (2017) *Digital Skills Crisis*. Available at: <https://publications.parliament.uk/pa/cm201617/cmselect/cmsctech/270/270.pdf> (Accessed: 1st December 2019).

Hwb (2019a) 'About Us'. Available at: <https://hwb.gov.wales/about> (Accessed: 10th December 2019).

Hwb (2019b) 'Office 365'. Available at: <https://hwb.gov.wales/support-centre/hwb-services/microsoft/office-365> (Accessed: 10th December 2019).

ICT Steering Group (2013) *The ICT Steering Group's report to the Welsh Government*. Available at: <https://cronfa.swan.ac.uk/Record/cronfa43590> (Accessed: 28th November 2019).

Kerry, T. (2011) *Cross-curricular teaching in the primary school*. Oxon: Routledge.

National Literacy Trust (2011) *Literacy: A route to addressing child poverty*. Available at: <https://literacytrust.org.uk/research-services/research-reports/literacy-route-addressing-child-poverty-2011/> (Accessed: 5th December 2019).

National Numeracy (2019) *Why is numeracy important?*. Available at: <https://www.nationalnumeracy.org.uk/why-numeracy-important> (Accessed: 1st December 2019).

OECD (2019) *Pisa 2018 Results*. Available at:

<https://www.oecd.org/pisa/publications/pisa-2018-results.htm> (Accessed 9th December 2019).

Pound, L. and Lee, T. (2015) *Teaching Mathematics Creatively*. 2nd edn. Oxon: Routledge.

PuenteDura, R, R. (2015) *Transformation, Technology and Education [video]*.

Available at: <http://hippasus.com/resources/tte/part1.html> (Accessed: 9th December 2019).

Roth, K (2000) 'The Photosynthesis of Columbus: exploring interdisciplinary curriculum from the students' perspective', in S. Wineburg and P. Grossman (ed.) *Interdisciplinary Curriculum: Challenges to Implementation*. New York: Teachers college press.

Rowley, C. and Cooper, H. (2009) *Cross-curricular Approaches to Teaching and Learning*. London: Sage.

WaveHill (2019) *Curriculum for Wales 2022: Feedback Analysis*. Available at:

<https://gov.wales/sites/default/files/consultations/2019-10/curriculum-wales-2022-feedback-analysis.pdf> (Accessed: 5th December 2019).

Welsh Government (2015) 'Well-being of future generations (Wales) act 2015': *The essentials*. Available at:

<https://futuregenerations.wales/wp-content/uploads/2017/02/150623-guide-to-the-fg-act-en.pdf> (Accessed: 10th December 2019).

Welsh Government (2019a) *Draft Curriculum for Wales 2022*. Available at:

<https://hwb.gov.wales/draft-curriculum-for-wales-2022> (Accessed: 26th November 2019).

Welsh Government (2019b) *Achievement of 15 year olds: PISA National Report 2018*. Available at:

<https://gov.wales/achievement-15-year-olds-program-international-student-assessment-pisa-national-report-2018> (Accessed 11th December 2019).

Welsh Government (2019c) *Professional Standards for Teaching and Leadership*. Available at:

<https://hwb.gov.wales/storage/19bc948b-8a3f-41e0-944a-7bf2cadf7d18/professional-standards-for-teaching-and-leadership-interactive-pdf-for-pc.pdf> (Accessed: 15th December 2019).

Welsh Government (2019d) *Digital Competence Framework*. Available at: <https://hwb.gov.wales/curriculum-for-wales-2008/digital-competence-framework-curriculum-for-wales-2008-version> (Accessed: 15th December 2019).

World Economic Forum (2016) *Employment, skills and Education* [video]. Available at: <https://www.youtube.com/watch?v=7g8OpiWR83Y> Accessed: 10th December 2019.

Appendices

Appendix 1

Image reference:

Haylock, D. and Manning, R. (2014) *Mathematics Explained for Primary Teachers*. London: Sage Publishing.

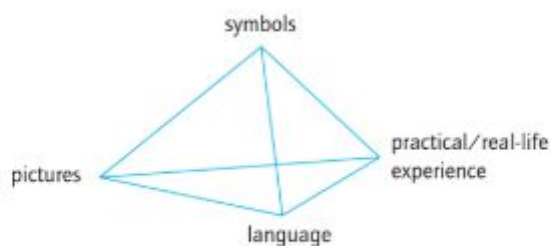


Figure 3.1 A model for understanding number work: making connections

Appendix 2

Image reference:

Puentedura, R, R. (2015) *Transformation, Technology and Education* [video].

Available at: <http://hippasus.com/resources/tte/part1.html> (Accessed: 9th December 2019).

Levels of Use: A Classroom Example

<i>Transformation</i>		
Redefinition	Tech allows for the creation of new tasks, previously inconceivable	Tools for visualization of narrative and structural aspects of text
Modification	Tech allows for significant task redesign	Textual, visual, audio tools for construction of shared knowledge
Augmentation	Tech acts as direct tool substitute, with functional improvement	Dictionaries, study guides, history sites linked to online text
Substitution	Tech acts as direct tool substitute, with no functional change	Shakespeare texts read in online versions
<i>Enhancement</i>		