

Model One

Benefits

- Teaching in a theme-based curriculum ensures that children are at the heart of the topic because the learning is relevant (WAG, 2014 and Estyn 2018).
- Theme-based teaching can ensure that children's learning is placed in authentic contexts, and this particular theme is "rooted in Welsh values and culture" (Donaldson, 2015, p.14) which is one of Donaldson's purposes for the curriculum.
- Bruner (1960) highlights that children gain an increased understanding when the topic relates to their personal experiences. Therefore, teaching through a theme can allow for the learning to be specifically tailored and made relevant to the children.
- Teaching in a theme-based model can capture the imaginations of children and, thus, increase motivation and engagement over a sustained period (Hayes, 2010, Barnes, 2011 and NCTL, 2015).
- During PTE, the children were excited at the prospect of doing "topic work". The children's topic, which was Victorians, allowed for skills from Geography, English and Religious Education to naturally develop as well as historical skills. Therefore, like this particular exemplification of the model, all subjects can be developed within the theme.

Description of activities

Barnes (2011) Theme-Based Model

This topic will take place a week before the school's Eisteddfod as an entrepreneurship task to fundraise for a local charity. This activity is for **Year Five students**. The children will use the theme of Welsh cakes as a stimulus for developing design and technology as well as the CCR. The Theme-Based Model has been selected (Figure One) because the Design and Technology skills will be new skills for the pupils, whereas Literacy, Numeracy and Digital Competence will all be developed in this authentic context after being introduced in a discrete session.

Wednesday: The children will be provided with the ingredients list and pictures showing the method in a random order. The children are to use the skills acquired in a previous discrete literacy session to write a set of instructions about how to make Welsh cakes.

Thursday: The children will use their mathematical skills in a real life context. The children will be given a budget of £100 per group and work out how many Welsh cakes they could make and the amount of ingredients required. The children will go to their local supermarket and cost out the ingredients they require for making their Welsh cakes, comparing the best value for money.

Friday: Using nets provided by the teacher, the children will make different size boxes out of card. The children will work out what price they will put the boxes of Welsh cakes at to ensure that they make a sufficient profit for the charity.

Monday: The children will make the Welsh cakes today. They will have to weigh out the ingredients, recognising the differences in 1000g and 1kg. The children will also need to multiply their ingredients to scale up the recipe for multiple batches to sell.

Tuesday: The children will use the iPads and the app iMovie to make an advert to promote their Welsh cakes to the public. This video will be shown at the Eisteddfod performance.

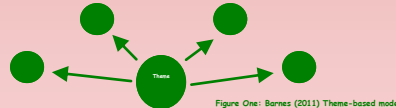


Figure One: Barnes (2011) Theme-based model

Curricular Skills

When cooking the Welsh cakes the children will have to "work to their specification/recipe to make products" (DCELLS, 2008a, p.12). Additionally, the children must ensure that they conduct "tasks safely and hygienically" (DCELLS, 2008a, p.13) when using cooking utensils. This session will become embedded into the Science and Technology AoLE in Donaldson's (2015) new curriculum.



(Donaldson, 2015)

When the children are making their packaging from the nets, they will gain an understanding that it can be made from cardboard. They will understand that "people produce unnecessary waste" (DCELLS, 2008b, p.27) and ensure that they do not produce extra waste in the completion of this activity.



(WAG, 2017a)

Limitations

- Practitioners must be wary in theme-based teaching that the links between subjects are meaningful and not tenuous. Estyn (2016) and the WAG (2017b) assert that literacy and numeracy should only be embedded into subjects if it enhances the learning.
- Upris et al (1997) and Barnes (2011) state that some teachers think they are teaching in a theme-based cross-curricular way but are actually not. Therefore teachers must be mindful that the subject skills in the theme are enhancing the intended curricular skills.
- During PTE, teachers believed that they were teaching in a theme-based topic but, actually, were forcing tenuous links which were not meaningful to the learning experience.
- If the subject is poorly planned then both the teacher and students will become bored of the theme. Work Life Support (2007) discovered that children perform at a higher level if their teacher is passionate about the subject. Therefore, having an exciting topic will benefit both the students and the teacher and, thus, using the theme-based model can ensure this.

Literacy Skills

The children will "write with a clear purpose" (DES, 2016a, p.10) ensuring "appropriate vocabulary" (DES, 2016a, p.5) and "use writing to show the structure of the writing" (DES, 2016a, p.11). The structure of instructional writing will have been introduced during a discrete literacy session prior to this session.

Numeracy Skills

This topic is intertwined with opportunities for the children to develop their numerical skills. This model will develop both the children's procedural and reasoning skills within this topic. The reasoning skills involve the children transferring "mathematical skills to [...] everyday contexts" (DES, 2016b, p.2) as they purchase the ingredients and measure. Additionally, there are a number of procedural skills that will be developed throughout this project. The children will learn to "plan and track money" (DES, 2016b, p.5) as well as "realise that budgeting is important" (DES, 2016b, p.5) when purchasing the ingredients. Moreover, the children will need to "add and subtract totals less than £100" (DES, 2016b, p.5) when working out the cost of each Welsh cake and deciding upon a price to sell each product. When creating the packaging, the children will "construct solids from given nets" (DES, 2016b, p.9). Finally, when the children are baking the Welsh cakes, they will need to use measuring utensils "with 10 equal divisions between each major unit [recording] using the decimal notation" (DES, 2016b, p.6).

Digital Skills

The children will create an advert using the app iMovie on the iPads. This will address the producing element of the CCR as the children create a piece of work using technology. In the creation of their video, the children will "combine a range of multimedia components to produce an appropriate outcome" (WAG, 2016, p.1). This means that the children may use photos, graphs, on screen text, animations and short clips to build their advert.

Cross-Curricular Teaching

Cross-curricular teaching is the combining of subjects in a thematic project. It is beneficial to students learning because, as Barnes (2011) asserts, it stimulates and engages pupils to learn. Cross-curricular teaching stems back over fifty years ago, when the Plowden Report (1967) stated that there are natural links between subjects which must be embraced. However, schools must ensure they plan "worthwhile cross-curricular activities" (Estyn, 2018, p.5) which have genuine, meaningful links. Moreover, Barnes (2011) has created cross-curricular models which highlight the differing ways to teach in a cross-curricular method. The two models exemplify cross-curricular teaching and provide purposeful learning opportunities. For these two sequences of lessons, the overarching theme of Wales will shape the project and will be conducted in the week leading up to St David's Day. Children should be provided with opportunities to celebrate the history and heritage of Wales (QCAA, 2003), and as the school would already be holding an Eisteddfod, the opportunity for these two cross-curricular schemes of work are available. Conducting these two schemes of lessons adhere to one of Donaldson's (2015) pedagogical principles which is the embedding the cross-curricular responsibilities (CCR) into sessions. These include Literacy, Numeracy and Digital Competence. These sessions will showcase how to successfully develop the CCR into meaningful activities.

Literacy Skills

The children will need to write a letter which persuades their pen pal to choose their holiday. Therefore, the children will need to "write a range of continuous [...] texts" (DES, 2016a, p.9). The children will need to think of their intended audience for their writing and ensure that they adapt their literacy skill that the year six pupils will be developing in the skill of being able to use paragraphs making links between them (DES, 2016a, p.11) due to this being an area of weakness for the particular group.

Numeracy Skills

This model will develop both the children's reasoning and procedural skills. To ensure that the children are planning activities which cover the breadth of Wales, a grid reference will be produced onto a map of Wales. The child will "use grid references to specify location" (DES, 2016b, p.7) when choosing their activities. Furthermore, in planning the holiday, the children will "use and interpret timetables to plan events [...] and make calculations" (DES, 2016b, p.7) as well as to "estimate how long a journey takes" (DES, 2016b, p.7) in order to create an itinerary. Furthermore, when the children are comparing costs between two supermarkets, they will be calculating "percentage quantities based on 100%" (DES, 2016b, p.4) to find the cheaper alternative. Also the children will "add and subtract numbers using whole numbers and decimals" (DES, 2016b, p.5) when they are adding up the total cost of the packed lunch for each supermarket. Ultimately, the children will "make comparisons between prices and understand which is best value for money" (DES, 2016b, p.5) when choosing the best value packed lunch. In presenting the results of the packed lunch investigation, the children will "explain results and procedures clearly using mathematical language" (DES, 2016b, p.2).

Digital Skills

When the children begin the topic by initially researching, they will have to ensure that they cite all sources when researching (WAG, 2016, p.1) to recognise the importance of understanding the need to acknowledge other people's work. Additionally, to develop children's skill of using the hierarchical formula, the children will use a range of software to produce and refine multimedia components (WAG, 2016, p.1) to complete this task.

- Little progress is made by students in the inferior subjects when using the hierarchical model. Gibbs et al (2008), Becta (2009) and the WAG (2018) assert that the specific skills must be taught. For example, schools cannot just use oracy to enhance sessions without teaching the fundamentals of oracy first. These skills must be taught in a discrete literacy session first.
- Using the hierarchical model to support practitioners with the teaching of their weaker subjects could also make assessing pupils trickier. During PTE, children were developing CCR skills and not AoLE skills which had a detrimental impact on the children's understanding of the AoLE skills.
- During PTE, I used digital competence as a CCR in a hierarchical form to support the children's understanding of Welsh vocabulary. However, due to my lack of IT knowledge the children were not able to use the iPads.
- As this hierarchical method will utilise aspects of enquiry based learning, teachers must ensure that standards do not decline if the children are left to work independently (Gardner, 1993). Therefore, the teacher must still support the children in developing and using the vital skills.

Limitations

The children should develop an understanding about "my local area" (DCELLS, 2008c, p.12) as they explore what is in Wales. Additionally, the children will "identify and locate places" (DCELLS, 2008c, p.12) where they would take the family to visit on their holiday and also "estimate and calculate distances" (DCELLS, 2008c, p.12) when planning their trip around Wales. This session will be embedded into the Humanities AoLE in Donaldson's (2015) new curriculum.



(WAG, 2017a)



(Donaldson, 2015)

As part of the historical element of the Curriculum Cymreig, the children will be "Learning about the character of the built environment" (QCAA, 2003, p.5) as they research and select the places that they would like to send their family to. Therefore, the children will be gaining a deeper knowledge into what Wales has to offer.

Curricular Skills

This topic will take place a week before the school's Eisteddfod as an enquiry-based learning scenario for **Year Six students**. The children will be read a letter from their pen-pal in France asking for a Welsh holiday for five days. The children will have to plan and organise a holiday for a family of four. In utilising the Hierarchical Model (Figure Two), the children will develop Geographical skills by using the CCR skills that they would have been already introduced to in discrete sessions.

Wednesday: The children use the internet to research possible places for the family to visit. There will be a criteria for the children to follow, including a choice of three hotels, five different flights, board basis at the hotel and connecting transport that is the best option for the family.

Thursday: Using a grid reference of the map of Wales, the children will pinpoint locations ensuring they visit the breadth of Wales. They will measure the distance to travel using a map with a 1:25 scale calculating the cost of petrol at 40p per mile.

Friday: The children will be given information regarding the cost of foods from two supermarkets. The children will have to create a packed lunch for the five days with a £100 budget. The children will compare the cost of the supermarkets, calculating the percentage differences.

Monday: The children will use all of the information they have collected and input all of this data into an excel spreadsheet. Using the formula =SUM, the children will work out the total cost of the holiday including the flights, hotel, transfer, food, petrol and activities to present to the family.

Tuesday: The children must write a letter back to their pen pal convincing them to choose their particular holiday. They will practise their persuasive writing by trying to get their package holiday chosen, focussing on using paragraphs in their writing.

Barnes (2011) Hierarchical Model

Description of activities



Figure Two: Barnes (2011) Hierarchical Model

- Cross Cut (2018) assert that teachers must use their pedagogical knowledge to ensure that all pupils are able to access the curricular skills being taught. The hierarchical model can support

subjects as this approach can allow teachers to enhance their teaching by using their stronger subject knowledge to support them.

- As observed on PTE, there is a limited time frame for teachers to cover the vast curriculum. Therefore, the hierarchical model allows for teachers to plan for a wider range of subject content to be taught in the classroom.

- Barnes (2011), Pound and Lee (2015) states that combining subjects allows for a greater understanding. For example, by using the hierarchical approach in this exemplification, the numerical grid referencing skills can be understood in an authentic context.

- Haylock and Tangata (2007) assert that the curriculum can allow for mathematics to be both utilised and developed. Therefore, using the hierarchical model can be used for all subjects in developing the specific skills or to support the understanding of other skills.

Benefits

Model Two