

Using Barnes' (2015) Cross-curricular Models to Promote Literacy, Numeracy and Digital Competence in the Foundation Phase

Barnes (2015) recognises that cross-curricular learning arises when children develop skills, attitudes and knowledge of different subject areas through a problem, experience or theme. Rowley and Cooper (2009) state that although cross-curricular teaching is beneficial for children, teachers should not force a subject if it does not fit within the theme.

Barnes (2015) identifies eight cross-curricular models that can be applied within teaching. They are:

- Tokenistic
- Hierarchical
- Single transferable subject
- Theme-based

- Multi-disciplinary
- Interdisciplinary
- Opportunistic
- Double focus

The models used to promote the use of literacy, numeracy and digital competence will be carried out in a Year 2 class.

Opportunistic Model

Donaldson (2015) highlights the importance of children being involved in the planning of their learning through discussion to ensure that the learning is relevant to them, and in turn allow for the children to dictate where they feel they are progressing in their learning. The opportunistic model creates an environment where the learner is given the opportunity to determine the direction of the learning taken from an experience (Barnes, 2015). Wollenberg, Edmunds and Buck (2000) state that as a result of opportunistic learning happening by chance it leads children to find creative strategies and solutions that they were unaware of previously.

Outdoor Learning

To incorporate the opportunistic model into the children's learning they would be taken on a visit to the local beach. Taking the children away from the classroom allows them to view learning from a different perspective. This is supported by Maynard and Waters (2007) who state that learning outdoors is one of the most powerful and natural methods of learning as children have the opportunity to experience the world hands on. Estyn (2017) further support the use of the outdoors as a learning environment, stating that schools who provide children with the opportunity to be active and learn outdoors see a greater improvement in pupil engagement and attainment whilst allowing teachers to find creative ways to incorporate numeracy and literacy into the learning.

On the beach

Barnes (2015) state that although opportunistic teaching is about the children taking responsibility, it should be recognised that some of the most successful opportunistic learning comes from the teacher deciding on a focus task which takes place outdoor. Therefore, the teacher could start a discussion about the litter that can be found on the beach. Questions such as how long has the litter been here for? or how did the litter end up on the beach? could arise from the discussion. The children, using gloves provided, will collect one piece of rubbish each and then regroup as a class. Some may say that there is too much risk in allowing children to be picking up litter. However, Higgins (2013) states that allowing children to engage with the outdoors allows them to develop their skills in risk assessment. As a group the children could then discuss recycling and the consequences that occur when people do not recycle. This gives the children the opportunity to take part in “activities that allow them to begin to understand how they can protect the environment and become environmentally friendly in their everyday lives”, which comes under the Personal and Social Development of the Foundation Phase (WG, 2015, p.10). To develop this further, the children will separate the litter into different types of materials. This will enable them to identify if more plastic or glass was found on the beach. The children will then create a visual representation of a pictogram for the different materials found on the beach which will be recorded via a photo on the ipad taken by the teacher. Christie (2012) emphasises the need for children to learn outdoors as they can create empathy and a positive attitude towards the environment as they see first-hand the consequences of not looking after the environment. The children might then discuss how long it would take for each of the materials to disintegrate. Giving an estimation each, based on the condition of the litter at the present time the teacher will record the estimations on a clipboard. Children in year 2 are expected to “use knowledge and practical experience to inform estimations” (WG, 2019B).

Theme-based model

Barnes (2015) states that an original theme or topic may be used to create learning through a range of two or more subjects in which learners can deepen their knowledge and understanding through the chosen theme.

Activity One

Using the shells collected from the beach, the children in pairs will work together to group the shells according to size, shape and colour using the desks as grids to sort the shells. This is in line with the Foundation Phase Framework which states children should be given the opportunity to “sort and classify objects using more than two criterion” (WG, 2015, p.35). Kutnick and Blatchford (2013) support the use of group work to enhance children’s learning as it creates an inclusive and positive learning environment. On completion, the children will take a picture of the grid using the iPad to save their work with a name and title (WG, 2019a). By doing so the children are given the opportunity to take ownership of their work which allows for an increase in confidence and aspiration (Glaxton, 2018). While carrying out this activity the children will be encouraged to discuss the different sea creatures that may have lived inside the shells and how it is used as a home. They will then be asked to identify the differences between the shell as a home for a sea creature and our homes as adults. This allows the children to participate in discussion of the topic and be aware of taking turns to speak, which the children should be achieving in year two according to the National Literacy and Numeracy Framework (WG, 2019b). Pupil discussion allows the teacher to identify the depth of knowledge and understanding without the children feeling pressured to give the correct answer (William and Black, 1998).

Activity Two

After the visit to the beach a possible area of interest may be shown by the children is what sea creatures eat. Therefore, in this activity the children will gain knowledge and understanding of a marine food chain. The children will be asked to use subject related words such as predators, herbivores and carnivores and use them appropriately, which is expected of a child in year 2 (WG, 2019b). The children will take part in a problem-solving activity where they will be given 5 pictures of various sea creatures and plants which they will need to place in the correct order in the food chain. Silton (2016) advocates problem solving skills for children to develop their creativity. With no prior knowledge of food chains the children are being given the opportunity to do this. Using a BBC bitesize clip of food chains the children will then use that information to complete a pictorial food chain in which they must write the correct name underneath. After completion, the class will come together to discuss the marine food chain. In groups of 4 the children will take it in turns to role play in front of the class discussing what animal they are, where they are in the food chain and why. Whitebread and Coltman (2015) state that effective use of role play shows great improvement in children's literacy skills.

Benefits

- Dillion (2011) states that opportunistic learning in the outdoors allows children to develop lifelong skills along with developing their emotional and social resilience
- Paterson, Tyler and Lexmond (2014) state that children can develop their soft skills which in turn will provide them with the opportunity to take part in a modern employment and everyday society
- Hughes, (2019) states that pupil led learning promotes critical thinking skills

Limitations

- Barnes (2015) states that opportunistic learning is unpredictable which comes with a degree of risk
- Zoul (2013) states that if the pupils themselves are not confident enough or prepared then the pupil led learning will be unsuccessful

Benefits

- McLaughlin et al (2015) supports/advocates theme-based learning as it heightens students' engagement and learning.
- Berry and Mindes (1993) states that theme-based learning creates a meaningful learning experience which in turn improves results in learning
- Turner (2012) states that theme-based learning gives the pupil a voice as to where their learning is now and identifies areas for progression

Limitations

- Talay-Ongan and AP (2005) state that theme-based learning does not cater for children's learning and instead it taints their progression as they are not given the opportunity to learn specific skills which are overlooked to fit specific subjects into a theme
- Schwartz (2001) states that a problem that could arise for a teacher carrying out theme-based learning is ensuring that each subject area is weighted equally to ensure that the children reach their potential

Estyn (2012) identified Ysgol Bryn Hedydd as displaying good practice of opportunistic learning. The primary school is located half a mile from the beach and therefore use this as an opportunity to engage and enhance the pupils' learning in an outdoor environment. The school have a beach theme throughout ensuring continuity through the learning. They found that since using the beach as a learning environment they have seen the greatest improvements in Foundation Phase where children's literacy improved by 9% with oracy and writing having the best results.

Estyn (2016) identified Ty'n y Wern Primary School as having good cross-curricular themes within their school. The primary school have launched cross-curricular themes which provide children with the opportunity to develop their literacy, numeracy and digital competence alongside other subject areas. They have held festivals and projects, so children are given the opportunity to showcase their work. They state that the cross-curricular themes have engaged children and continues to show progression in their learning.

Key References

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The future curriculum in Wales

Donaldson states that Literacy, Numeracy and Digital Competence are cross curricular responsibilities of all teachers and that they should be “embedded within the Areas of Learning and Experience” (Donaldson, 2015, p.43). This emphasises the importance of continuity to ensure that the children are getting equal opportunity to develop the skills needed to achieve the 4 purposes set out by Donaldson. This is supported by the draft curriculum for 2022 which states that the three cross-curricular responsibilities aid all learning and are crucial if learners are to participate successfully in the 21st century (Welsh Government, 2019c). However, cross-curricular teaching is not only beneficial for the pupils but also for the teachers. Estyn (2018) found that cross-curricular teaching allowed teachers to team plan for activities and reflect together on what they felt was successful and what could be changed to benefit the learning. Therefore, it is imperative that schools are ensuring that literacy, numeracy and digital competence are embedded in everyday school life.

Estyn good practice

REFERENCE LIST

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