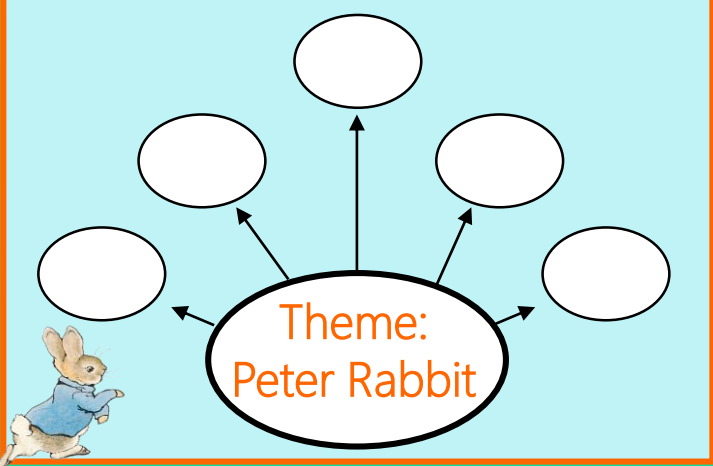


Cross-curricular teaching with the incorporation of literacy, numeracy and digital competence.
Applying two out of eight of Jonathan Barnes' theoretical models.

John Dewey and Friedrich Froebel recognised that cross-curricular teaching and learning allows children to foster their independent thinking, to be characterised by curiosity and to lead their own learning through interactions with others in real-life situations (Pound, 2010). All of these features within young children demonstrated that cross-curricular learning aids children in making connections between subjects and places a greater emphasis on the importance of children learning through outdoor and child-led opportunities, whilst highlighting that guidance from the teacher or an appropriate adult is also needed (Pound, 2010).

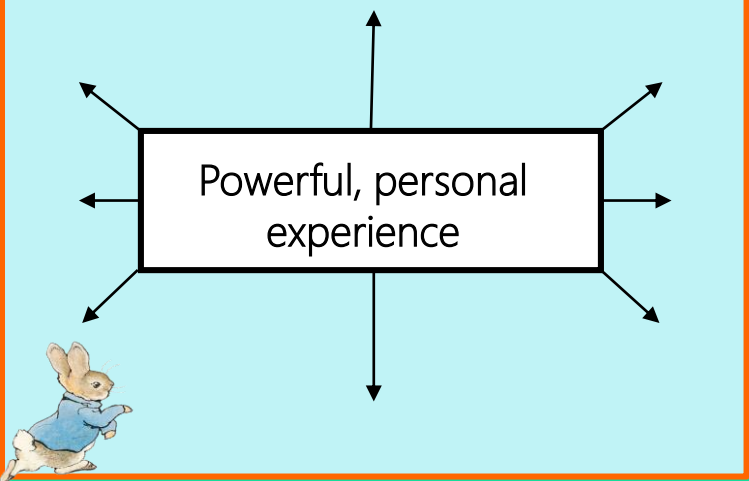
Theme based approach



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- Teaching Year 2 foundation phase children of 6-7 years of age.
- 'The world beyond the classroom is cross-curricular' (Barnes, 2011, p.63).
- Literacy and numeracy are universally acknowledged to be the essential foundations of education (Donaldson, 2015, p.18)

Opportunistic approach



Learning Objective: To be able to design and present a garden patch based on certain measurements

Learning Objective: To be able to digitally promote healthy eating in school

KUW

- Skill; Communicating observations and measurements
- Range; Identify some animals and plants that live in the outdoor environment.
- Task; To use the story of Peter Rabbit to gain understanding of the different plants and animals in the garden

Welsh Government (2015, p.41)

Literacy

- Reading skill; read aloud with attention to punctuation, including full stops, question, exclamation and speech marks, varying intonation, voice and pace.
- Oracy skill; speak clearly to a range of audiences.
- Task; To read aloud the story of Peter Rabbit, and use the information from the story to present their garden patch to the class as a group.

Learning Wales (2016b)

Numeracy

- Number skill; use different combinations of money to pay for items up to £1.
- Measuring skill; use standard units to measure: length, height and distance: metres, half metres or centimetres.
- Task; Design a vegetable patch using specific CM measurements and by only using the materials that can be bought with £1.

Learning Wales (2016b)

Digital competence

- Skill; Plan how to complete a task in relation to identified success criteria
- Skill; Identify what worked and what didn't, giving some of the reasons for their thoughts
- Task; To use J2E hwb to design a garden patch that would fit in the school garden, based on the measurements they are given.

Learning Wales (2016a)

Personal and social

- Skill; Develop an understanding that exercise and hygiene and the right types of food and drink are important for healthy bodies
- Range; Activities that allow them to make healthy choices and to develop and understand their own bodies and how to keep them safe and healthy.
- Task; To use the story of Peter Rabbit to develop an understanding of healthy eating and eating your 5 a day.

Welsh Government (2015, p.10)

Literacy

- Writing skill; experiment with different formats and layouts on-screen, using the facility to move text and pictures around easily.
- Reading skill; draw upon relevant personal experience and prior knowledge to support understanding of texts.
- Task; Following the planning of a school's vegetable patch, use your own knowledge to promote healthy eating, including 5 a day, through persuasive writing, and eye-catching presentations.

Learning Wales (2016b)

Numeracy

- Numerical reasoning skill; transfer mathematical skills to play and classroom activities.
- Numerical reasoning skill; interpret information presented in charts and diagrams and draw appropriate conclusions.
- Task; Independently or in groups, conduct a survey based on healthy eating and present the results in the form of a diagram or a chart.

Learning Wales (2016b)

Digital competence

- Skill; Create and edit multimedia components in order to develop text, image, sound, animation and video for a range of tasks.
- Skill; Save work using an appropriate file name, e.g. child's name and simple title.
- Task; Through their own planning and child lead learning, the children must promote healthy eating throughout the school on a digital application of their choice.

Learning Wales (2016a)

These cross-curricular methods of teaching, provide a whole weeks worth of learning for the children through the opportunities available within the theme of Peter Rabbit, both through teacher and child led learning.

The **theme based model** of cross-curricular learning generates learning within a variety of subjects, usually more than two, but only if the subject enables a child to develop a deeper understanding of the theme. For example, knowledge and understanding of the world (KUW), personal and social development, well-being and cultural diversity (PSWC), literacy, numeracy and digital competence further enhance the understanding that the children can make between the theme of Peter Rabbit and the links it has to their school and local area (Barnes, 2015).

The **opportunistic model** of cross-curricular learning provides the children with unpredictable learning opportunities that are child-led. Focusing on one specific shared learning experience, in this case, healthy eating within their school with the focus being on their own school vegetable patch, the children are able to guide their own learning on the basis of a simple success criteria provided from the teacher, that ensures the children are looking at the theme from different view points and developing their understanding of different subject areas in a cross-curricular manner (Barnes, 2015).

Benefits of the theme based model

- Children can **develop their knowledge and understanding of a wide variety of subjects** by making links through just one theme (Barnes, 2015). For example, the chosen theme of Peter Rabbit allows children to develop literacy, numeracy and digital competence through other subject area's such as KUW and PSWC, whilst also developing an understanding of the wider community.
- Improved levels of motivation and engagement** within learning (Barnes, 2015). Learning within a theme can often lead to children generating exploration within subjects as it becomes clearer that the teaching and learning that is taking places is unified and more informative (Barnes, 2015). By a teacher showing understanding of a theme that is of interest to the children, they will feel eager to learn more within each subject.

Benefits of the opportunistic model

- Enhancing children's creativity** by allowing them to lead their own learning without any restrictions in the way they promote healthy eating (Barnes, 2011). Therefore, they are able to think creatively to solve problems and fulfil their potential in all of their opportunities (Donaldson, 2012, p.29)
- The **children's voices become more prominent within the curriculum and planning process** that takes place from the teacher's (Barnes, 2011). For example, child-led learning can be encouraged through pupil voice, which allows children express their opinions and idea's which leads to higher levels of achievement and attendance (Department for education, 2014).
- Children are able to engage and interact with the world** around them through shared personal experience (Barnes, 2011). This further allows the children to gain knowledge and understanding of their own community (ACCAC, 2003).

Limitations of the theme based model

- Children's **learning can be limited by tenuous links and unclear aims** that are made the teacher if the theme is not chosen correctly. For example, themes must be authentic, related to community, sustained throughout a good time period and be well-planned (Barnes, 2015). Without all of these elements, the learning that takes place can become unclear.
- Teacher's may lack the confidence and knowledge** that is essential to making the theme based model successful (Barnes, 2015). One important example of this is outlined within the principles of the new curriculum, as one of the principles states that 'the curriculum should be based on subsidiarity', which commands the confidence of ALL within the teaching and learning process (Donaldson, 2015, p.14). Thus suggesting that there is a current lack of confidence by all within today's teaching and learning.

Limitations of the opportunistic model

- Difficulty for teacher's in feeling a strong level of professional trust** for the children and support staff when they are not in complete control of the learning that is taking place (Barnes, 2011). In this instance, the teacher may not have the confidence to allow the children to lead their own learning in the school gardens as it is based on such an important topic.
- Lack of teacher subject knowledge** - quite often the children's ideas are unpredictable and not initially thought of by the teacher. Therefore, the teacher may struggle to provide the children with the correct knowledge and support within that topic (Barnes, 2011).
- Lack of useful questioning can limit a child's progression** within a subject as the children may stray away from the theme or shared experience, therefore also affecting the questioning techniques used by teacher's (Barnes, 2011).