

Cross-Curricular Responsibilities

It is a priority for the Welsh Government to ensure that all learners have high levels of competence in Literacy, Numeracy and Digital competence skills so need to be frequently exposed to these skills across the curriculum in a meaningful way in order to develop them and for learners to be able to confidently participate in the modern world (Welsh Government, 2015a). Cross-curricular teaching is a holistic approach which puts the learner at the heart of the learning and more emphasis on effective teaching (Kerry, 2011). Barnes (2015) believes that developing skills such as Literacy, Numeracy and Digital Competence through a cross-curricular approach is more creative and learning is based on real problems and skills.

Model 1

The Barnes (2015) theme-based model will be used using a variety of areas of learning and cross-curricular responsibilities. The use of this model uses the theme Holes to explore the Knowledge and Understanding of the World area of learning which links to the Science and Technology and Humanities area of learning and experience in the new curriculum. Throughout this theme the cross-curricular responsibilities will be integrated in a cross-curricular way through the use of the theme Holes.

Knowledge and Understanding of the World

This area of learning links to the Science and Technology area of learning and experience in the new curriculum.

The learners would explore maps of their local area looking at the different symbols on maps and then create their own map of the school for the worm detective to explore the school's grounds to know where the best places to find worms are. This activity would develop the learners' skill of being able to "use and make simple maps to find where places are and how places related to other places" (Welsh Government, 2015, p. 41).

Numeracy

In order to link Numeracy to the theme of Holes the learners would give directions using words such as turn, straight ahead, stop, left and right using the maps they created and give the learners a choice of materials such as building blocks or pencils that they could use to measure the distance between each symbol on their map. Giving children the choice allows them to become independent and more likely to engage in the activity (Glasser, 2012). This activity would develop the learners' skill of "using non-standard units to measure distance" (Welsh Government, 2019b).

Literacy

Within the theme of Holes the learners would have to write instructions for planting flowers and herbs that they have previously planted themselves to help the school gardener to plant more flowers and herbs for the school. This activity would be supported by an adult if necessary, to scaffold the learning (Vygotsky, 1978) and would develop their skills to "communicate purposefully in writing", "sequence content correctly" and "follow a form modelled by the teacher" (Welsh Government, 2019b).

Digital Competence

Digital Competence within the theme of Holes will be a Beebot dressed up as a worm and the learners have to help the worm find its way home to its hole on the map using directions on the Beetbot. The use of the Beebot in the enhanced provision allows learners to develop their skill of being able to "follow a sequence of steps to solve a problem" and "change instructions to achieve a different outcome" (Welsh Government, 2019a).

Benefits

- Allows for a variety of skills to be applied across different contexts to develop a greater understanding (Welsh Government, 2017)
- Helps students to develop and build on their understanding in a organic way (Beane, 1995 cited in Roy, 2016)
- Bring lessons into the real world, preparing for the world
- Allows access for all to the knowledge as it solves pupils' difficulties and more understanding and insight in other subjects (Timmerman, 2017)
- More flexible teaching

Limitations

- Subjects can get lost within a theme
- Not all students will be interested in the theme
- "Teacher's lack of interest and willingness
- Very time consuming
- Teachers' insecurity and unfamiliarity" (Timmerman, 2017, p. 3)
- Areas of learning and experience may become forced into a theme when they do not always fit in

4 Purposes

Donaldson (2015)

12 Pedagogical Principles

Ethical, informed citizens – as the learners learn about their world around them by learning how to grow plants and different habitats that animals such as worms live in and how to look after worms.

Ambitious, capable learners – as they can explain how flowers and herbs grow through their observations which they can apply to other plants in a different contexts and building up a knowledge of skills that they can connect and use in different contexts such as map work and instruction making.

Reinforce Cross-curricular responsibilities, Literacy, Numeracy and Digital Competence – the 3 cross-curricular responsibilities are embedded within the theme of Holes developing their skills.

Create authentic contexts for learning – the theme Holes is based on everyday life so that the children can relate to it and see meaning behind the learning.

Make connections within and across Areas of Learning and Experience – with the Holes theme there are many connections between Humanities, Science and Technology, Languages, Literacy and Communication and Mathematics and Numeracy.

Encourage learners to take responsibility for their own learning – the enhanced provisions allow the learners to become independent and learn things by doing and exploring.

Model 2

The second model used is the opportunistic model where learning arises from a powerful experience in this instance a trip to the seaside which is child led and unpredictable (Barnes, 2015). The children explore the seaside and the teacher observes them and asks questions and gives them objects on the beach to see how they react. The opportunistic model encourages children to make their own choices and become independent learners while the teacher observes or facilitates. The use of this model allows for the exploration of all areas of learning and experience by the learners. Children learn more by giving them choice and learning through their own interest rather than teacher directed learning (Dewey, 1938 and Schiro, 2012).

Knowledge and Understanding of the World

The learners are allowed to explore the rockpools at the beach where they have sparked an interest at discovering what plants and animals live in the rockpools and the teacher facilitates their learning by giving them nets, trays and magnifying glasses to examine the animals' features and key words related to the rockpools. They discover how the animals move and the children choose to draw pictures of the plants and animals they found in the rockpools. Through the children leading this activity they will develop their "exploring and experimenting", "using and becoming familiar with common words and phrases for their world" and "making observations and measurements and keeping records" (Welsh Government, 2015, p. 41).

Numeracy

Whilst on the beach collecting shells for their sandcastle, the children decided that they wanted to group the shells they had collected in buckets into sizes and group them into different colours to show their findings. They done this by drawing circles in the sand to put the different sizes and colours into different circles according to their criterion. Using the outdoors for numeracy provides numerous opportunities for the children to see mathematics is 'real' and makes the learning more meaningful (Pound and Lee, 2015). This allowed for the children to develop their skills of being able to "sort and classify objects using more than one criterion" (Welsh Government, 2019b).

Benefits

- Based on the pupils' voice so more likely to engage the learners
- Encourages curiosity (Barnes, 2018)
- Produces more independent learners
- Real-world learning experience as they have more time to explore and experiment (Estyn, 2012)
- Learners become more reflective
- Allows for learners to collaborate in their learning (Donaldson, 2015)
- Less pressure on learners to learn, they do it at their own pace

Literacy

Literacy is evident throughout the powerful experience to the seaside through the use of talk and questioning by the learners. The children showed an interest in mark making in the sand using their finger as a pencil so the teacher asked if they children could write their own name in the sand. The children loved writing their own names in the sand as it is sensory and helps to build hand strength (Rodriguez, 2017). The children then wanted to write their friends name in the sand with the help of their friend to spell their name. Working with their peers helps to develop their learning further and is more effective (Vygotsky, 1978). Writing in the sand allowed the children to be able to "form upper- and lower-case letters that are usually clearly shaped and correctly orientated" (Welsh Government, 2019b).

Digital Competence

Whilst on their visit to the seaside the children decided that they needed to know what flavour ice-cream everyone likes in order to buy the correct amount from the ice-cream parlour and thought that J2E would be the best programme to use to create a pictogram for the classes favourite ice-creams on the i-Pad. The digital competence skill that the children would develop in this activity would be to "record data collected in a suitable format, e.g.... pictograms.... in a simple computing package" (Welsh Government, 2019a).

Limitations

- Teachers need good subject knowledge in order for this to be successful (Barnes, 2015)
- Teachers must have confidence in their own pedagogy
- Children may choose things they enjoy and not things they need to develop
- Children may take over and not let other children join in or learn
- Not always learning from a more knowledgeable other to develop their language skills
- The child does not always look like they are learning (Carr, 2009)

4 Purposes

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12 Pedagogical Principles

Enterprising, creative contributors – as the learners think creatively and use resources from the beach connecting knowledge they have learnt in the classroom and applying it to the seaside.

Healthy, confident individuals – as they form relationships with their peers from working together on activities and develop skills that help them in everyday life to become independent and learn from doing.

Encourage collaboration – as the children as free to make their own choices whilst on the beach, they have to work together to explore and experiment.

Reinforce Cross-curricular Responsibilities, Literacy, Numeracy and Digital Competence – the cross-curricular responsibilities are embedded in everyday life and evident through the powerful experience to the seaside.

Encourage learners to take responsibility for their own learning – as this model is a child led approach the children lead their own learning and choose what interests them at the seaside.

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