

Interdisciplinary Learning

Introduction

Interdisciplinary learning is an important element within Curriculum for Excellence. It constitutes one of the four contexts for learning in [Building the Curriculum 3](#).

- Life and ethos of the school as a community
- Curriculum areas and subjects
- Interdisciplinary learning
- Opportunities for personal achievement

All of these contexts are crucial if the potential of children and young people as successful learners, confident individuals, effective contributors and responsible citizens is to be fully developed.

Building the Curriculum 3 highlights the importance and place of interdisciplinary learning within the broad concepts of the curriculum that it promotes.

*'The curriculum should include space for learning beyond subject boundaries, so that children and young people can **make connections** between different areas of learning. Interdisciplinary studies, based upon groupings of experiences and outcomes from within and across curriculum areas, can provide relevant, challenging and enjoyable learning experiences and stimulating contexts to meet the varied needs of children and young people. Revisiting a concept or skill **from different perspectives** deepens understanding and can also make the curriculum more coherent and meaningful from the learner's point of view. Interdisciplinary studies can also take advantage of opportunities to work with partners who are able to offer and support enriched learning experiences and opportunities for young people's wider involvement in society.'*

(BtC3 pg 21)

What is interdisciplinary learning?

Interdisciplinary learning enables teachers and learners to make connections across learning through exploring clear and relevant links across the curriculum. It supports the use and application of what has been taught and learned in new and different ways. It provides opportunities for deepening learning, for example through answering big questions, exploring an issue, solving problems or completing a final project.

Building the Curriculum 3 states that:

“Effective interdisciplinary learning:

- > can take the form of individual one-off projects or longer courses of study*
- > is planned around clear purposes*
- > is based upon experiences and outcomes drawn from different curriculum areas or subjects within them*
- > ensures progression in skills and in knowledge and understanding*
- > can provide opportunities for mixed stage learning which is interest based.”*

(BtC3 pg 11)

There are two broad types of interdisciplinary learning which, in practice, often overlap.

- Learning planned to develop awareness and understanding of the connections and differences across subject areas and disciplines. This can be through the knowledge and skill content, the ways of working, thinking and arguing or the particular perspective of a subject or discipline.
- Using learning from different subjects and disciplines to explore a theme or an issue, meet a challenge, solve a problem or complete a final project. This can be achieved by providing a context that is real and relevant, to the learners, the school and its community.

For example this may mean:

- Teaching probability in mathematics co-ordinated with science work on DNA and genetics - so that pupils better understand both probability as a mathematical concept and its application to genetics.
- A project for P6/P7 to create informative and attractive information brochures (or a website) for pupils in schools in a twin town in France, by using knowledge and skills developed in the study of local history, geography, art and design and French language.

Learning and Teaching Scotland is working with a range of schools to provide further examples of interdisciplinary learning to support professional development. These will be added to our online support on a regular basis.



To be genuinely interdisciplinary, learning must support learners in using knowledge and skills from different disciplines, in applying and deepening their learning in relevant contexts, and help them to make real connections across subjects and disciplines, where appropriate.

WHY INTERDISCIPLINARY LEARNING?

What are the benefits for children and young people?

The advantages of interdisciplinary learning are similar to those of other high quality and effective learning and teaching situations.

- Learners are motivated and involved; they demonstrate an inquisitive attitude.
- Learners develop confidence in facing challenges, both intellectual and practical.
- Learning is connected and directly related to real life experiences.
- Learners work individually and collaboratively.

In addition, there are particular benefits of interdisciplinary learning.

- It allows more in-depth exploration of topics, issues and problems within and across subject areas and disciplines.
- It enables the understanding of different perspectives across subject areas and disciplines.
- It makes learners want to understand the different curricular areas in greater depth.
- It promotes critical thinking by supporting learners to:
 - grasp main ideas and consider different ways of working across subjects and disciplines.
 - compare and contrast what is learned in different subjects and disciplines.
 - identify the appropriate knowledge and skills needed to investigate a particular issue or problem.
 - bring together information and ideas from different subjects and disciplines, consider alternative ways of doing things or alternative solutions, predict outcomes and explain all of these.
 - practise critical literacy skills in context.
- It supports the development of skills for learning, life and work.

The above characteristics of interdisciplinary learning can support individual learners in integrating and using what they learn in different subject areas and disciplines. They also contribute to the development of high order thinking skills

*“It is important that **all** learners are given appropriate opportunities to develop their thinking skills. These skills can be developed across a range of contexts including through more practical or applied learning opportunities”*

(BtC4 p 11)

WHAT NEEDS TO BE CONSIDERED

PLANNING

Planning for Learning

The planning of interdisciplinary learning should provide a clear focus for learning and explore relevant connections across learning.

Interdisciplinary learning often requires collaborative planning which may involve:

- classes, year groups or departments
- capitalising on the contexts and connections which enhance learning within curriculum areas and subjects
- the input and ideas of children and young people
- working with partners

The starting point when planning for interdisciplinary learning will be the experiences and outcomes. However, there are occasions when planning might begin with a particular context, community or national event. If this is the case then the connections across learning and the relevant experiences and outcomes should be clearly identified.

All staff will require to continually review and adjust their plans as activities progress and as they respond to the needs of learners. Planning should:

- reflect the principles of Curriculum for Excellence
- build on prior learning, experiences and contexts to take into account progression and coherence
- clearly relate the planned learning to the experiences and outcomes
- clearly identify learning intentions, learning experiences, success criteria and the evidence of learning required as part of the assessment process
- make the connections across different subject areas and disciplines explicitly and frequently
- ensure that tasks are suitably challenging
- ensure that a suitable range of learning and teaching approaches are identified
- leave space and opportunity to respond to children and young peoples' learning and their proposals for further learning

Assessment is an integral part of the planning process. Through planning the learning, teaching and assessment together and ensuring that there are

opportunities to gather a wide range of evidence of learning, staff and learners can reflect on what has been achieved and agree next steps in learning and progression. This evidence can include examples of what the learners say, write, make or do. Judgements should be supported by criteria for success which have been agreed with the learners, so that they can actively contribute to the assessment process through self and peer assessment, and are clear about what they are learning and what they need to do to be successful. Recording of achievements should be manageable and include how much and how well the learner has met the identified experiences and outcomes, as well as next steps in learning.

[Building the Curriculum 5](#)

Planning for coherence and progression 3-18

There should be a balance of interdisciplinary learning and learning within the subject areas and disciplines across a term, year and phase. Individual schools and establishments are best placed to decide what the right balance is for them as they respond to their context and to the needs of their learners.

When planning for overall coherence and progression schools and establishments need to take account, where relevant, of factors such as Associated Schools Groups, transition arrangements, links with colleges and other partners and the possible roles of support for learning staff, visiting specialists and the wider community.

They also need to create the time and provide the support for teachers to plan collaboratively for interdisciplinary learning. Such provision of time and support makes a very important contribution to teachers' continuing professional development.

Across sectors it is possible to develop aspects of interdisciplinary work, whether within arrangements for curriculum planning in early years and primary or within timetable arrangements in the secondary sector that do not explicitly provide for interdisciplinary projects.

This may include:

- a subject specialist supporting the development of a theme in an early years department
- problem-based learning within curriculum areas e.g. drama and music or across several curriculum areas or departments
- team approaches, in which teachers of different subjects or different primary classes are acting as mentors and guides after teaching the disciplinary content and skills that learners are applying.

There should be systems in place to continually monitor the appropriateness of the balance between interdisciplinary learning and opportunities for learning in discrete subjects, areas and disciplines over the year.

Implications of Interdisciplinary Learning for different ages and stages

As learners progress in the different subject areas and disciplines the emphasis on interdisciplinary learning changes. This will have implications for schools and establishments as they consider the totality of the curriculum for their context.

Early years

“Early education in particular adopts a holistic approach to young children’s learning which responds to each child’s changing developmental needs and values a child’s prior knowledge from home. Centres have the scope to reflect the individuality of their local communities and to respond by providing unique, high quality learning experiences for all their children. From the outset, young children are partners in the learning process, actively participating in the planning, shaping and directing of their own learning.”

(BtC3 pg 29)

Examples will be added to our online support soon.

Primary

“Further planning should aim to organise structured programmes based on a suitable balance of learning through curriculum areas and subjects and through interdisciplinary learning, taking account of the design principles and the stage of development of the learners.

However, it remains important that coherence in learning is promoted. Well designed interdisciplinary studies at these stages often provide highly motivating contexts for learning which can help children to see links between and the relevance of different aspects of the experiences and outcomes.”

BtC 3 (pg 33)

Planning an interdisciplinary project on China – Glenlee Primary School

This study exemplifies the following characteristics of interdisciplinary learning:

- Has a clear focus on a small number of different curriculum areas and subjects
- Makes clear connections with literacy numeracy and health and wellbeing
- Involves learners in in-depth investigation drawing on various sources of information and developing experience and awareness of different curriculum areas in the process.

- Provides stimulating learning and teaching which includes frequent and explicit reference to the knowledge and skills being developed and the connections across and within curriculum areas and subjects
- Involves challenging, thought-provoking tasks

[See this case study on the LTS website.](#)

A P3 study about climate change in Antarctica – Orkney case study

This study exemplifies the following characteristics of interdisciplinary learning:

- Focuses on a few carefully selected and relevant experiences and outcomes
- Makes clear connections with literacy numeracy and health and wellbeing
- Involves learners in in-depth investigation drawing on various sources of information and developing experience and awareness of different curriculum areas in the process.
- Ensures that a suitable range of learning and teaching approaches is identified
- Involves challenging, thought-provoking tasks

In the Garden - a P2 study about plants, animals and insects – Wallace Primary School

This study exemplifies the following characteristics of interdisciplinary learning:

- Has a clear focus on a small number of different curriculum areas and subjects
- Makes clear connections with literacy numeracy and health and wellbeing
- Leaves space and opportunity to respond to children and young peoples' learning and their proposals for further learning.
- Provides stimulating learning and teaching which includes frequent and explicit reference to the knowledge and skills being developed and the connections across and within curriculum areas and subjects

- Involves challenging, thought-provoking tasks

Secondary

“The period from S1 to S3 has a clear purpose: that all young people will have a strong platform for later learning and for successful transition to qualifications at the right level for them. The experiences and outcomes include opportunities at this stage, as at other stages, for challenge and success in different contexts, for example cultural, physical and technological. The experiences and outcomes can be packaged in different ways appropriate to the individual child or young person. For example, some young people might learn about modern language outcomes as part of learning about hospitality or business, or outcomes related to mathematics in the context of learning about geography, or outcomes related to geography in the context of learning about science.”

BtC3 (Pg 35)

Bannockburn High School

Improving engagement by developing literacy and numeracy in social studies

This study exemplifies the following characteristics of interdisciplinary learning:

- Choosing a theme or problem which requires knowledge and skills from different curriculum areas, aspects of curriculum areas or subjects
- Makes clear connections with literacy numeracy and health and wellbeing
- Active, collaborative learning
- Involves learners in in-depth investigation drawing on various sources of information and developing experience and awareness of different curriculum areas in the process.
- Involves challenging, thought-provoking tasks
- Provides stimulating learning and teaching which includes frequent and explicit reference to the knowledge and skills being developed and the connections across and within curriculum areas and subjects

[See this case study on the LTS website.](#)

“In the senior phase interdisciplinary activities could also provide an opportunity to deepen learning, develop research and presentation skills and prepare for the next stage of lifelong learning. Interdisciplinary activities offer the opportunity to contextualise learning, make better connections between areas of study and

increase the relevance of learning. It is however recognised that the balance of these will be different for different circumstances.

The introduction of integrative projects in the Science and Language Baccalaureates is one way of encouraging interdisciplinary working. Other opportunities could be available in the senior phase through learning in and across subjects and in areas such as health and wellbeing.”

BtC3 (pp40/41)

Examples will be added to our online support soon.

Children and young people with severe and complex additional support needs

“For children who need additional support for their learning, this may involve interpretation of the curriculum in ways which address their particular needs and enable them to achieve to the highest levels of which they are capable. This may include planning for enrichment of learning within a particular level, rather than applying pressure to progress to a new level of cognitive development where this is inappropriate.”

BtC3 (pg17)

Kersland School - A night at the Oscars

- Has a clear focus on a small number of different curriculum areas and subjects
- Builds on prior learning, experiences and contexts to take account of progression and coherence
- Makes clear connections with literacy numeracy and health and wellbeing
- Choosing a theme or problem which requires knowledge and skills from different curriculum areas, aspects of curriculum areas or subjects
- Active, collaborative learning

GUIDING PRINCIPLES

Interdisciplinary learning enables teachers and learners to make connections in their learning through exploring clear and relevant links across the curriculum. It supports the use and application of what has been taught and learned in new and different ways and provides opportunities for deepening learning, for example through answering big questions, exploring an issue, solving problems or completing a final project.

Learning beyond subject boundaries provides learners with the opportunity to experience deep, challenging and relevant learning.

“Interdisciplinary studies, based upon groupings of experiences and outcomes from within and across curriculum areas, can provide relevant, challenging and enjoyable learning experiences and stimulating contexts to meet the varied needs of children and young people. Revisiting a concept or skill from different perspectives deepens understanding and can also make the curriculum more coherent and meaningful from the learner’s point of view.”

BtC3 (pg 21)

Practitioners can achieve this by:

- having a clear focus on a small number of different curriculum areas/aspects of a curriculum area or subjects. e.g. music and drama.
- making clear connections with literacy, numeracy and health and wellbeing across learning.
- focusing on a few carefully selected and relevant experiences and outcomes.
- involving learners in in-depth investigation drawing on various sources of information and developing experience and awareness of different curriculum areas in the process.
- choosing a theme or problem which requires knowledge and skills from different curriculum areas, aspects of curriculum areas or subjects.
- capitalising on themes for development across learning including developing global citizenship, financial education and outdoor learning
- responding to a significant event.

and through:

- Stimulating learning and teaching activities which include frequent explicit reference to the knowledge and skills being developed and the connections across and within curriculum areas and subjects.
- Involving learners in
 - active, collaborative learning;
 - challenging, thought-provoking tasks;

- critical thinking
- Clear planning across curriculum, learning, teaching and assessment which identifies
 - the specific learning intentions of the interdisciplinary work
 - the experiences and outcomes from each curricular area which are being developed
 - how a range of evidence of what has been learned will be gathered and assessed including through discussion with the learner
- Working towards an overall strategy for interdisciplinary learning, which may include consideration of:
 - appropriate balance of disciplinary and interdisciplinary learning;
 - appropriateness of learners' progression
 - coherence in learners' experiences
 - effective organisation of learning and/or timetabling;
 - provision of appropriate time and support for teachers' planning.
 - evaluation of learning

Links to further exemplars

LTS is working with a range of schools to provide further examples of [interdisciplinary learning](#) to support professional development. These will be added to our online support on a regular basis.