

NATIONAL STATEMENT: INTERDISCIPLINARY LEARNING IN THE 21ST CENTURY CLASSROOM

Interdisciplinary learning (IDL) is one of four contexts for learning identified in the Curriculum for Excellence (CfE). We strongly support this statement of intent and its adoption and implementation as a key feature of Scottish education, both within STEM learning and teaching and across the Curriculum.

What is IDL?

In IDL learners draw on knowledge and understanding from two or more disciplines in order to advance understanding of a subject or problem that extends beyond the scope of any single discipline. However, effective IDL depends on a prior understanding of the nature, benefits and limitations of disciplines and of the relevant ideas and principles from the contributing disciplines.

IDL enables and enhances the essential capacity of learners to transfer and apply disciplinary knowledge, understanding and skills to new and relevant problems and to other areas of learning, and thus gain a deeper understanding of the scope and importance of the fundamental disciplinary ideas themselves, and of their complementary relevance to understanding the inter-relatedness of phenomena.

Useful IDL requires that all subject learning be founded on deep and coherent disciplinary knowledge, understanding and skills. The disciplines give structure and rigour to IDL. The disciplines are the pillars of learning, with IDL providing the lintels. Without the pillars, the lintels will fall.

Why is IDL important?

IDL has the potential to stimulate the curiosity and motivation of learners, and enhance the development of all four capacities of CfE: successful learners; confident individuals; effective contributors; responsible citizens.

Major advances in STEM research typically occur at disciplinary interfaces, where progress depends on making interdisciplinary connections to gain new insights. Many commercially significant innovations and improvements across all workplace sectors are likely to result from the cross-disciplinary fertilisation of ideas.

An ability to apply higher order skills and values of IDL (systems thinking, creativity, adaptability, resilience) is a foundation of future work. These skills find their application in the ability of learners to discover, use, connect and disseminate knowledge, to identify new opportunities and to find solutions to problems. The key to success is the ability of people with different knowledge and skills to collaborate in teams, learning from one another and building on existing ideas. The characteristics of good IDL coupled with modern classroom practice resonate with the multi-disciplinary and flexible nature of careers in the 21st century in which there is a constant need to respond to change.

Implementation of IDL

The implementation of effective IDL depends on teachers actively engaging in dialogue with their local colleagues in different disciplines in order to plan appropriate IDL studies that apply and reinforce knowledge and skills being established within their core subject teaching. It is important that school leaders continue to encourage and support such dialogue and IDL practice within their own school, across its primary-secondary cluster and in wider learning communities.

A national five-year (2013-18) programme of action supporting the development and delivery of IDL in STEM subjects has been established, bringing together representatives from key agencies and organisations across Scottish education. Its purpose is to agree the principles, conditions and support necessary to enable teachers to deliver and sustain IDL in Scottish education and, working in partnership, to implement these, building on existing good practice. The principles of IDL should be applicable across all areas of the curriculum.