

Pillars, Lintels and Foundations **a conference starter paper**

What is IDL?

Interdisciplinary Learning (IDL) is essentially a way of thinking about and understanding the world. It should be integral to - rather than distinct from – subject learning. This insight is fundamental to how it is organised, timetabled and taught within the curriculum. The principles and practice of IDL apply across the curriculum and all sectors of education.

In IDL, learners draw on knowledge, understanding and skills from two or more subjects in order to advance their understanding of a topic or problem that extends beyond the scope of any single subject. IDL enables the transfer and application of subject knowledge to new problems and to other areas of learning. When disciplines are in different curriculum areas, IDL is often referred to as 'cross-curricular' learning. Simply linking or juxtaposing discrete subjects with no immediate connection together around a theme is not by itself interdisciplinary but is described as *multidisciplinary learning*. IDL is often used (and misused) as a general term for various types of learning that involve the wider use, connection and application of disciplinary knowledge.

Good IDL requires knowledge and understanding to be developed and applied simultaneously in each component discipline. IDL cannot exist separately from disciplines but is founded on strong disciplinary knowledge, understanding and skills. It should complement and enrich subject learning, facilitate learning across subject boundaries, and enable students to use their learning beyond the situation in which the learning occurred. Learners tackle relevant and meaningful questions or problems that allow them not simply to make connections between two or more disciplines but also to draw on and develop their disciplinary knowledge, understanding and skills and thereby deepen their understanding of these disciplines.

Metaphors for IDL

Interdisciplinary working requires that all subjects should continue to be founded on deep and coherent pillars of knowledge and understanding. Interdisciplinary understanding will lack rigour and utility if it is not part of a structure in which the disciplines are the pillars with interdisciplinary working as the lintels. Without the pillars, the lintels will fall. These pillars and lintels are supported by foundations – routine competences, aptitudes, knowledge, skills and methods in and across subjects, including basic literacy and numeracy. A distinction may be made between using these competences to create a contrived IDL and using them as key elements in developing knowledge and understanding within an interdisciplinary problem or context.

Creativity

Having original ideas that have value - is the highest order skill in Bloom's Taxonomy. It is a foundation for innovation – the process of putting original ideas into practice. Creativity often happens when we make unusual or novel connections, bring together ideas or ways of looking at the world from different disciplines or perspectives not previously related, combine ideas in novel or unusual ways, or solve problems not previously considered to be associated. Creativity is often founded on interdisciplinary working, systems (or holistic) thinking and collaboration.

IDL in schools

Interdisciplinary learning (IDL) is one of the four contexts for learning in Curriculum for Excellence (CfE). It connects curriculum areas and subjects with the wider contexts and setting in which young people learn, develop and achieve. CfE guidance stresses the importance of making connections between all four contexts, including extra-curricular activities and learning beyond the school; it asserts that skills for learning, life and work should

be developed in interdisciplinary studies. The Standards for Registration (2012) of the General Teaching Council Scotland require teachers to “know how to work collaboratively with colleagues to facilitate IDL”, while HMIE (2016) expect teachers to “plan IDL to make natural links across learning”. A central role is clearly envisaged for IDL within CfE. This requires development of a creative tension or balance between increasing specialisation and depth and a recognition of the importance of exploring the rich learning potential and everyday relevance of contexts beyond discipline boundaries.

Disciplines and knowledge

The curriculum has been construed as a body of knowledge overlain by a disciplinary structure. As knowledge grows ever more rapidly, often in unexpected ways, what is to count as important or ‘powerful’ knowledge? How is curriculum coherence to be achieved? Disciplines give structure and rigour to the development of knowledge. They comprise groups of ‘like-minded’ people. They are vital to sustaining and curating that knowledge, and communicating it to non-experts and future generations. Disciplines continuously evolve from within, providing a reservoir of knowledge, understanding, skills and methods (‘expertise’). However, the accumulation of disciplinary knowledge may lead to increasing internal specialisation and division. Disciplines may be inward looking and fail to address new and relevant problems. Learners may find it difficult to make links between disciplines. The consistent focus on a single set of disciplinary phenomena may result in a lack of creative engagement with other disciplines and with the gaps between disciplines. Yet it is in these interdisciplinary areas that new insights occur.

IDL in higher and further education

Recent reports on the nature and extent of IDL provision in *higher education* conclude that HEIs remain dominantly organised along disciplinary lines. Although the number of disciplines and fields of study has grown continuously, and collaboration in research is commonplace, the slow and patchy progress in IDL development in HE has much in common with that in the school curriculum. IDL is happening only at the margins of HE, where it is typically driven by committed entrepreneurial academics, is more prevalent in arts, humanities and social sciences than in STEM subjects, and is more common at senior undergraduate and masters level. The state of development of IDL in *colleges* is unclear. With more students accessing Modern Apprenticeships and the college sector offering Foundation Apprenticeships, often delivered jointly with schools, learners should be exposed to IDL early in their learning to build and enhance skills for the workplace.

Conclusions

The majority of learners would appear to progress through most or all of their education without actively engaging in IDL, yet most jobs, even at graduate level, seldom require a background or qualification in any particular discipline. The transferable and higher-order skills that learners acquire throughout their education may be of more lasting importance. A systemic response to this challenge is required since the jobs of the 21st century will be increasingly project-driven rather than discipline-driven and will require the collaborative engagement of generalists and specialists. Understanding a complex and rapidly changing world requires a wide range of knowledge and an interdisciplinary perspective. It is, therefore, a responsibility of educators to try to ensure that learners become adept in both disciplinary and interdisciplinary learning.