

Afterword

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Over recent decades the development of integrated approaches to languages education in Europe has often preceded the availability of research-in-context. The lack of an in-situ evidence base at the outset inevitably affected early decision-making processes in the case of some programme design and processes. In an ideal world, a research cycle from identify and design, implement, evaluate and benchmark would be available prior to the launch of any innovative practice. Although commonplace, and often required for legal and approval purposes in fields such as medicine, pharmaceuticals, food and technology, a comprehensive pre-launch evidence base is rarely available during the introductory stages of innovation in education, even within a narrow sector in a specific region.

In education, the common innovation scenario is to pilot through scoping, identifying, testing, and then have these followed by evaluation. Over time, because of the scale and complexity of educational provision, evaluation processes start to run parallel to periods of piloting and cascade across different contexts. This, in turn, leads to concepts being refined, re-conceptualized, and practices expanded, reduced in scale, or abandoned.

During these decades, the global education sector has been disrupted, sometimes significantly. Demand for improvement in both public and private sectors has become more complex and intense. This has been partly driven by end-user demand for quality on the part of students, parents, employers and socio-economic expert entities, but also at a geo-political level by strategic interests focused on developing educational improvement, and sometimes transformation, to align with the needs of emergent knowledge-based societies. This has resulted in investment dedicated to testing such as PISA (Programme for International Student Assessment), and other international comparative assessments as in mathematics and science (TIMMS) and reading (PIRLS). The widespread publicity given to the outcomes of these international assessment processes has had a major impact on how different stakeholders view educational quality and performance. Then there is a third disruptive force. This results from technological advances, increased affordability of devices, and the controversial premise that digitalization offers a panacea by which to improve educational performance.

These types of disruption call for innovative practices to be realized through reducing the time lag between introduction and implementation, and having evidence of impact prior to investment and strategic decision-making by administrative bodies. Because of the scale of political, economic, technological and social integration in countries, it requires systemized exchange of knowledge and a higher level of connectivity across expert groups than found in previous periods of history. And in education, as other sectors, there is a demand for reducing time lag through an ever-closer inter-relationship between policy, practice, and research.

Integrating the learning of content derived from different subjects is a radical departure from traditional educational practices, particularly in large-scale public education systems. Integration of language learning with other subject-specific content through Content and Language Integrated Learning (CLIL) has now been developing for some twenty-five years.

In this time it has become an innovative educational praxis that acts as one of the flagships of 'learning across the curriculum' in schools, regions and countries. Cases of similar integrative practices are now increasingly gaining attention. One example is the transversal inter-disciplinary practice of phenomenon-based learning integral to the 2017 curriculum of the high performing Finnish educational system. There are others, particularly in the global private sector, where curricula are fully integrated and geared to forms of interactive project-based learning.

In the past, education has been broken down into fragmented content fields with little theoretical or applied overlap. Testing has been according to students' ability to show evidence of knowledge. The disruption we now experience is towards educational provision that involves deep theoretical subject learning that is inter-related to other subject fields, and which can be applied in real-life contexts. Student testing then involves an amalgamation of the measurement of knowledge and competence.

The subjects in the curriculum continue to stand alone, but there are strong transversal 'threads' that bind them together with respect to knowledge creation and skills development. These subjects need to be adaptive and integrative because much content is continuously evolving, particularly in relation to how it is relevant to learners' lives. Crossing subject boundaries also invites greater interplay between mind, brain and education, and lays focus on the personalization of learning. This is different to what has been termed 'individualized learning', which involves a mix of educational solutions not easily applied in real-life schools, and not supported by evidence of meaningful impact.

Personalized learning is about providing holistic educational teaching and learning sequences that emphasize relevance, responsibility, and realization. Whereas relevance involves learning about real-life contexts, responsibility concerns the building of self-confidence, interpersonal skills and autonomy, and realization is practice through construction and collaboration. Quality CLIL practice mirrors the learning practices and intended outcomes typical of personalized learning.

Holistic in focus and innovative in practice, CLIL introduces a paradigm shift from fragmented (a language taught as a separate isolated subject) to integrated (language learning embedded in subject learning, and vice-versa). This kind of shift requires systems-based research that examines the interrelated forces that govern how the educational ecosystem of a specific school or region operates. In systems-based thinking, change in one operational function will inevitably influence others. As innovative practice develops, research that examines how it impacts on different parts of the ecosystem is a pre-requisite for successful expansion and development.

In public sector schools, research is required on measurable learning outcomes, access and equity, learning environments, and the perspectives of professional providers (teachers and instructors) and end-users (students and families). And now, after some twenty plus years of scoping, identifying, and testing CLIL in different parts of Europe, we are at the point of multi-variant scientifically sound evaluation. This volume of *Porta Linguarum* is an example.

Reporting on key elements of the CLIL educational ecosystem, these articles report on students' educational achievement in language outcomes (drawing on longitudinal data); the perspectives of students and parents; contextual factors drawing on demographics of families and students; and the influence of extra-curricular activities on educational achievement at school.

Achieving successful educational change requires a balanced ecosystem. Imbalance creates disjuncture. Disjuncture creates resistance. Resistance can block progress. These are reasons why research of the type in this volume is essential to inform on inter-related complementary forces (such as the perspectives of students, parents and teachers), and provide evidence that is professionally and socially grounded. Just as each school is a microcosm of the surrounding society, so change and innovation within education needs to involve all stakeholders, and ensure that the ecosystem can adapt and change in a guided and informed manner.

The findings here enable advances to be made on developing performance frameworks that schools and regions can use to design and guide the development of CLIL. They provide further insight on how to design and utilize quantitative and qualitative scales and measurements to inform and ensure as high degree of balance with the educational ecosystem as change processes operate. The most common type of framework, comprising key performance indicators, can be designed drawing on previously available research findings on CLIL from Spain and elsewhere, the insights published here which are far-reaching in terms of depth and scientific rigor, and related evidence based on quality and change management processes in education.

One example of a performance framework is reported in *Teaching through English in Higher Education: Realizing Internationalization in Practice* (Díaz Pérez & Marsh, 2017). This resulted from an ecosystem-based analysis of the introduction of CLIL in a Latin American higher education context. Drawing on earlier work conducted on European higher education, *The Higher Education English Language Landscape: Ensuring quality in English language degree programmes* (Marsh, Pavón Vazquez, & Frigols Martin, 2013), both works have led to the creation of a benchmark evaluation tool which can be applied to the K-12 educational context.

The thematic categories of the KPI Framework *Shaping the Future: Building CLIL Environments* (Marsh & Díaz Pérez, 2017) reflect the foci of study found in this volume. These are Governance (administrative decision-making processes); Management (how processes are implemented with key stakeholders such as students, parents and teachers); Praxis (the methods and activities designed to enable CLIL to be realized in practice); and Performance Outcomes (in relation to the learning of both content and language). Each category has a number of indicators. Each framework is time-bound for a specific period, and thus indicators may vary year by year, and the weighting accorded to each subject to change. A high value overall indicates a balanced ecosystem. The values of each category indicate the nature of where and how that balance is being achieved. As the CLIL programme matures, then the number of indicators is reduced but the categories remain constant.

Innovation cannot be based on assumption. The future of any innovation depends on the identification of knowledge pathways which report on existing experience, and which can inform future decision-making. This volume is a welcome contribution to knowledge building on CLIL of relevance to both Spanish contexts and those in other countries.

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