Chapter 6 - Transforming Education in the 21ˢᵗ Century
Introduction

The 2012 Transforming Education Summit (TES 2012) is one of many forums where ideas are pooled and backed up by evidence on how to improve teaching and learning in different countries. These forums recognise that education for all people is fundamentally important, if not increasingly so in an information age, and that it can be difficult, expensive and slow to create constructive change. Experts describe the problem of incremental change, where small adjustments are made with the aim of influencing the final outcome. Adjusting the curriculum, reducing class sizes, training teachers in specific areas, changing testing systems are often subject to incremental change. But when the situation calls for profound change, then it requires looking at the whole situation, and a high degree of collaboration and commitment for action by stakeholders. This action then needs to be given sufficient support so that a development trajectory could be energised, and designed for the long term. Here we often face a problem. There is a saying that 'talk is cheap' which is particularly true of those countries where education is the responsibility of political bodies that operate with short-term horizons. You, the reader, are probably aware of many instances where visionary statements and promises about the importance of education and how things will change, have not been matched by resources or commitment. And for those at the interface, the teachers, and experience of this over the years can be highly demoralising creating yet another stress factor within a profession that, by its nature, requires continuous support and respect.

Transformation and CLIL

The European CLIL trajectory was initially energised by funding and support through the trans-national European Commission. The actual work was done by pioneers, many of them teachers, some of them working with committed local or regional administrators. A few years later around 2000, CLIL attracted the attention of the private sector and, increasingly, politicians. Each of these had differing reasons for getting involved, not all of which were in the genuine interests of enhancing the education of young people. Each also had the potential to destabilize the development trajectory. This could be caused through publishers adding the term CLIL on the front of a book designed for other purposes, or politicians making vacuous promises on fast improvement of education, especially with respect to language. Then came a period of friction where language teaching movements and communities, which already had their own interests to protect, would criticise this new 'kid on the block', search for fault, and reject constructive engagement. This was particularly the case with the field of English as a Foreign Language (EFL) because of the threats that CLIL posed to the hegemony of the native-speaker in language teaching provision. A similar situation applied to Content-based Instruction (CBI), another important part of the Anglo-American English language industry.

But throughout this period 1994-2013, there has been a steady flow of educators who have introduced CLIL, or become involved in research or resource building, that have maintained a strong and steady power base for its development. This has been the major power within the CLIL development trajectory, and it has been driven by commitment to change education and a sense that the types of teaching and learning practices embodied in CLIL not only work, but work with the generations of young people now in our schools and colleges.

There are rarely windows of opportunity where teachers and others involved with education at the grassroots of a country can embark on significant change for the sake of improvement of learning outcomes. One has been the introduction of technologies into classrooms that took place on a major scale during the last decade, but has not yielded significant results in a host of countries. And this was relatively easy to implement – talk the talk, invest in hardware, provide rudimentary teacher training, and then expect the teachers themselves to take responsibility for achieving improvement in performance. This was often done without the continuous support which technology demands because the industry thrives on planned obsolescence, so hard and software becomes quickly out-dated. The window of opportunity provided by CLIL has been different, mainly because it has required teacher knowledge, skills and commitment, and because the CLIL development trajectory overlaps with others which drive best practice for this new age of urgency to change educational practice, and improve learning for all.

Key change agents in rapidly developed educational systems share certain characteristics:

- Recognising that the demand for change now requires a response as significant as the setting up of basic education systems which occurred at least a century ago and that these systems have changed little in this time
- Adopting a holistic view of education which shifts towards learner-centricity
- Identifying key success factors such as equity and competence-based education involving problem-solving skills and pattern recognition, as opposed to rote learning and rewards for memorization
- Leveraging quality education through focus on creativity, critical thinking, communication and collaboration
- Changing curricula from emphasis on what to learn towards how to learn and activating this in rich learning environments which extend beyond the confines of a classroom and school hours
- Recognising the relevance of the newly emerging literacies that are now indisputable with respect to the impact of technology on the lives of young people

(Moujaes *et al.* 2012)

Evidence-based transformation, such as that reported by Moujaes *et al.* (2012) and Pearson (2012) reiterate that we are now in the middle of the greatest global challenge in education for a century where teaching, schooling and learning, are at a crossroads in enabling countries to redefine how young people should be supported and prepared for this new age. The world in which young people live has already been transformed though accelerative processes due to the availability and impact of technologies, mobility, and the changing working life landscape.

Examples of Transformation

If you consider countries and regions which have transformed their educational systems in the recent past and which score highly on international educational assessments, such as Finland, Singapore, Canada (Alberta) then it is evident that quality of teaching leading to enriched learning environments, equity of access, and relevance of both methodologies and content, are key drivers for achieving high quality results across a wide spectrum of school populations. It is a case of professional capital leading to the realization of human and social capital through education both compulsory and lifelong.

In education, professional capital is dependent on decisional capital (Hargreaves & Fullan 2012) because as in law sometimes judges need to make judgements where the situation is unclear because there is no precedent. The same principle applies to CLIL because so often practice preceded the building of an evidence-base to justify that practice. In the CLIL development trajectory teachers have led change processes often without educational structures providing a firm infrastructure or even guidelines on practice other than those that are bound to existing legislation.

Another widely held opinion is that it takes at least ten years to realize change in educational practices, and up to 30 years to have these scaled up through existing educational administrative structures in many countries. However, in contexts which are relatively small such as Alberta, Canada (population 3.5m, 2,000 schools, number of students 0.6m, number of teachers 39,535); Finland (population 5.3m, 3,30 schools, number of students 0.5m, number of teachers 44,000); New Zealand (population 5.4m, 2,600 schools, number of students 0.8m, number of teachers 38,312); Victoria, Australia (population 5.4m, 2,279 schools, number of students 0.9m, number of teachers 40,000), there is evidence that transformation can be swifter (Barber *et al.* 2011).

Education is the prime motor of economic growth and there are certain conditions that enable innovative practice such as CLIL to take root. In Finland, educational governance is conducted in close cooperation with other key government agencies, which are bound by consensus on direction for the benefit of the whole society and economy (Sahlberg 2011). Moujaes *et al.* 2012 describe the Finnish situation in this way.   'Finland has improved its educational system in recent decades, to such an extent that it has become a destination for those who wish to replicate its success. Finland's national core curriculum serves only as a framework and is not prescriptive. Instead, the curriculum is largely developed at local levels. This gives principals and teachers wide latitude and independence to decide how and what they will teach. The same holds true of accountability and performance monitoring, which is primarily handled by individual schools' (2012: 17).

This is the type of context in which educational innovation can take root because it enables the front-line educators and their administrators to make heavily localised decisions on how to respond to the needs and challenges of the communities they serve. It is very hard to achieve this in large centralized and authoritarian educational systems where regions and schools have limited autonomy. The needs of globalisation processes, including demand for English language, were major drivers

for accelerating additional language competences in Finland. Parents and young people wanted better access to English and the schools duly responded by looking at ways to integrate English language with other subject matter. The next step was to learn how to do it and this is one reason why Finland has been often cited as a primus motor for CLIL in Europe. The fact is that CLIL was only one type of integration that was taking place over the last thirty years. The Finnish core curriculum is both integrative and competence-based, and the environment was already primed to enable innovation to develop.

Mourshed, Chijioke and Barber (2011) argue that 'Almost every country has undertaken some form of school system reform during the past two decades, but very few have succeeded in improving their systems' (2011: 10). The authors report on high improvement performing systems in Singapore, Hong Kong, South Korea, Ontario – Canada, Saxony – Germany, England, Latvia and Lithuania. They find that in these systems where there is a shift towards excellence the following features can be found: peer-led learning for teachers and principals involving collaborative practice, decentralizing of pedagogical rights to schools & teachers, the creation of additional support mechanisms for educators, and supporting system-sponsored experimentation and innovation across schools. These are key features of CLIL-based school and regional activities common to the period 1994-2013 where CLIL has been introduced as a grassroots activity led by educators who create visions, develop solutions, and test various forms of implementation.

Teachers and Transformation

Hargreaves and Fullan (2012) argue that teachers are at the peak of their profession between 8-20 years of experience and that it takes about 10,000 hours of experience and development to reach this degree of professionalism.

This follows work done by the Swedish psychologist Anders Ericsson on how much time is required to become an elite violinist based on research at the Academy of Music in Berlin (see, Ericsson *et al.* 2006). His work gave rise to the 10,000-hour rule that was initially based on the development of musicians. Gladwell (2008) took up this concept and investigated it with respect to a range of high achievers, and it has now taken root as a baseline for high expertise, including teaching.

In my experience of teacher professional development in CLIL across Europe, many of the teachers I have encountered will have exceeded the 10,000-hour rule in relation to experience. There is no evidence to support such a conjecture, but it may be that one of the reasons for the successes reported in research may be that the type of teachers implementing CLIL were already highly experienced, carrying with them considerable insight into teaching excellence. The fact that they were interested in teaching through an additional language may be one aspect of high-powered teachers wanting to explore innovation and seeing CLIL as one means by which to do this.

Transformation of Education through CLIL

Many of the eclectic models of language and content integration which have emerged in Europe have required 'learning through experimentation' because of the lack of initial evidence-base to support decision-making. Now after some 18 years of practice not only is the evidence-base being steadily built up but types of practice are being consolidated and increasingly mainstream.

One of these issues relates to distributive leadership within schools, and how innovative practice is led by individuals who explore best practice *in situ* and who have specific qualities that help realize some degree of success. Evidence in available literature focuses on these personal attributes of quality educational leadership (as reported in Barber *et al.* 2011): focus on student achievement; resilient and persistent in goals, but adaptable to context and people; willing to develop a deep understanding of people and context; wiling to take risks and challenge accepted beliefs and behaviours; being self-aware and able to learn, and finally, being optimistic and enthusiastic.

These mirror closely teacher competences for CLIL as found in the European Framework for CLIL Teacher Education (Marsh *et al.* 2011). The practices outlined by Barber *et al.* (2011), and supported by a wide variety of studies such as found in Leithwood *et al.* (2006); OECD (2007, 2009); and Day *et al.* (2010), are reported as 'building a shared vision and sense of purpose; setting up high expectations for performance; role modelling behaviours and practices; designing and managing the teaching and learning program; establishing effective teams within the school staff, distributing leadership among the school staff; understanding and developing people; connecting the school to parents and the community, and recognizing and rewarding achievement (Barber *et al.* 2011: 6). As with personal attributes, the ability to implement practice within a school programme which involves often considerable change of conventional practice has required

involvement of exceptional individuals, both teachers and administrators, within a school, region or country.

A 2009 meta-analysis of over 800 studies involving some 200 million students (Hattie 2009) provides the most recent comprehensive review of educational practices, with respect to achieving quality of learning. Ranking such activities as cognitive mapping, focus on challenging goals, using visual-perceptive methodologies, peer teaching, cooperative learning and problem solving, the report also focuses on key success factors. These state that barriers linked to social class and prior achievement are surmountable and that the following are high return activities: challenging goals with scaffolding available to achieve these goals; language awareness; establishing high student expectations; formative assessment largely controlled by students; continuous critique/feedback; peer interaction and learning through interaction; and having learners seeing themselves as teachers with responsibility for achieving learning for themselves and peer cohorts. Having teachers able to see learning through the eyes of the students and being able to learn alongside the students is a recurrent finding with respect to teacher perception and attitudes. Qualities and practice such as these are embedded in quality CLIL teaching and learning practices as found in the European CLIL Teacher Education Framework (Marsh *et al.* 2011).

In 1989 Fishman observed that ʻBilingual education must justify itself philosophically as education' (1989: 447). In 2012 Wolff comments that CLIL is beginning to impact on institutionalized education and that it is a change agent. In describing how CLIL often emerged as a means for bolstering learning of widely used languages such as English, he argues that the methodologies that have been developed now apply to much wider contexts. Associating CLIL with the adoption of English has been understandable given the popularity of the language in Europe and beyond, and this has evoked widespread criticism from those warning of the domination of English to the detriment of multilingualism (see, for example, Pennycook 1998).

CLIL is not specific to English language. It has emerged as a very specific form of language supportive education that can apply in a variety of contexts where the learners have a deficit in one or more languages. Writing about the European Framework for CLIL Education Wolff comments that ʻCLIL teacher education, if taken seriously, constitutes a fundamental part of all teacher education, that every teacher should be educated, in fact, as a CLIL teacher (2002: 107). He argues for this because of the nature of modern classrooms in terms of demographics resulting from mobility. There is an additional issue here relating to modern young people and reading skills. That is with reading levels on the decline, and the emergence of digital literacies, there is a real need for education to take greater responsibility for literacy throughout the basic educational lifecycle, including tertiary level. Wolff further comments that ʻThe concept of language-sensitive content teaching is based on a set of different scientific concepts derived from second language acquisition research, from cognitive psychology and from constructivism. Empirical research in second language acquisition has shown that languages are learnt while they are used (language learning as language use); cognitive and constructivist psychologists have made it clear that language learning takes place when learners are involved in the content they are dealing with. These findings provide a sound theoretical basis for a CLIL approach which is content- and not language oriented' (2012: 108).

Much research on CLIL has been with respect to language development. There has been little on the fusion of language development and content learning, or on content learning itself. Briedbach and Viebrock (2012) comment that research on CLIL only become a full-fledged field in Germany after 2000, even though CLIL-type practice dates back to the 1960s. And even at this point in time ʻCLIL in Germany has been and still is framed within the context of foreign language learning' (2012: 6). Thus the major focus is not only on language, but also often within the domain of a foreign language. This has resulted in restricted fields of research which have reported on CLIL from rather narrow perspectives, particularly with respect to language development. As we have seen, the impact of CLIL on young people can go much further than language, and there is a deficit of research-driven understanding of the range of impact.

The field of research is beginning to be broadened to include facets of content learning, and cognition as in Heine (2010) who reports on semantic processing and problem-solving amongst CLIL learners, and Zydatiß (2012) who argues for the need for research on subject matter achievements alongside language learning development (2012: 28). Coyle (2007), and Coyle, Hood, Marsh (2010), also argue the case that language is only one part of the learning processes and outcomes that need attention within research frameworks so as to support transformation processes that go beyond the narrow field of language teaching.

Future Horizons

If we are to shape the future of languages in education around the best interests of young people then we need to recognise that knowledge of more than one language mobilises the potential for change that is linked to mental processes. The current indicators show that these are more positive than negative.

We have entered an age where non-invasive procedures enable us to look inside the brain on a scale never experienced before in the history of humankind. This is happening at a time when human skills and competences are viewed as key drivers for social and economic success in the Knowledge Society. The shift towards introducing an alternative way of learning, namely combining content and language, and in so doing extending the curricular space given for languages development, is an innovative form of practice. It suits the goals of educational systems which are prone to slow-moving incremental improvement and not the types of transformational change which is now required. CLIL acts as a catalyst for achieving enhanced opportunities for language learning and thus is closely connected to the emergent research on languages with respect to Mind, Brain and Education.

Future development and research will probably be both proactive and reactive. Pro-active factors are likely to include focus on educational technologies particularly with respect to knowledge gained within the neurosciences on learning processes and the emergent new literacies; how CLIL contributes to making schools more effective; the use of mobile devices to enhance language immersion and educational performance; and the development of media-rich environments which enhance learning through CLIL.

Reactive factors are likely to include strategic and policy decision-making with respect to migration and diversity of students in schools; inclusion of students with special and specific needs; maintaining and enhancing quality of educational operations during periods of economic and social stress; the demand for English language and possibly other emerging major languages; and competitiveness between higher education institutions leading to greater use of English as the language of instruction.

Integrated technologies and curricula (largely driven by the need for competence-based standards) are increasingly affecting how educational environments are designed. Research on how technologies can be utilized to provide learning experiences where content and language are integrated are likely to be determined by focus on digitalized classrooms; connectivity of devices; change in the role of teacher and teaching practice; developing innovative ways of embedding formative evaluation into learning resources with particular interest in gamification and digital platforms; change in the role of learner and learning practice through greater development of learner autonomy and peer to peer learning environments; and integration of gamification principals alongside language scaffolding in educational resources used outside the classroom.

The main disciplines involved with such research will be principally drawn from educational science; the educational neurosciences; language learning and applied linguistics; and distinct academic and subject fields such as mathematics and science.

The main activities in schools will be project-based modular courses operating through CLIL. These are likely to be on topics relating to global citizenship, environmental science, and health sciences, now popular at European primary level. Mathematics and science will probably continue to develop at secondary level. Globally we will see languages other than English being introduced such as Chinese in Australia, and possibly Spanish in Europe.

When you face young people today the future is always present. The future is one of information, language and literacies. Transformational teachers, of any subjects, will continue to explore integrative ways of enriching learning environments, and they will become the standard bearers of excellence in schools across the world.

I was once asked a question by a senior representative of the European Commission. She asked why CLIL was, in her opinion, the single most successful language learning initiative supported by the Commission since the decision to launch its language-dedicated LINGUA section in 1989. I answered that it was because the waves of change towards integrative practice were already active, and that the commission support was uniting pioneers riding this wave across the continent, enabling collaboration, and intensifying impact. I did not realise then that CLIL was also so deeply entrenched with transformation of education practices for the 21st century. Change happens when it is organic, collaborative and relevant. And it is happening now.

Recommended Further Reading
www.fluency21.com

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