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CAMBRIDGE EDUCATION RESEARCH REPORTS

Advantages of Multilingualism: What is the impact on school learning?

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**TRANSFORMING
SOCIETIES THROUGH
EDUCATION**



**UNIVERSITY OF
CAMBRIDGE**
Faculty of Education

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What is the impact on school learning?

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About the author

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Highlights

- ✚ Research suggests that multilingual competence plays a significant role in students' academic performance.
- ✚ Newcomer migrant students with no initial competence in the host language take up to 5 years to develop age-appropriate competence in speaking the language and up to 7 years to reach an appropriate level of academic competence in the language. Certain background factors have been found to affect the rate of acquisition. Age of arrival in the host country between 8 and 11 years, and prior educational experience and literacy in the L1 may accelerate the rate of acquisition of competence in the L2.
- ✚ Literacy in the home language has a positive effect on students' learning of other languages and other subjects.
- ✚ Transfer of competence between first and second language, and vice versa, is dependent on a threshold level of competence in the languages. Transfer of competence between the languages is also influenced by the nature of the subject matter task (e.g., a maths task or a text comprehension task).
- ✚ Additional language learning has a positive effect on first language literacy, including a greater use of learning strategies.
- ✚ Socio-economic background of students affects the success of medium of instruction policy implementation, with students in rural and less affluent communities responding less well to teaching of the curriculum in a language other than the mother tongue, due to limited resources, home support and early literacy practices.
- ✚ English as medium of instruction is more effective at post-primary school level in non-English speaking countries.
- ✚ Where students' home language is other than their school's medium of instruction, as in the case of migrant-background or students from indigenous minority language communities in developing countries, effective integration of the use and learning of the home languages leads to improved academic achievement.
- ✚ English as medium of instruction at secondary school level leads to improved proficiency in the English language. There is no strong evidence of an effect (positive or negative) on achievement in mathematics, but there is evidence of a negative effect on humanities subjects. Evidence of the effect on the learning of science subjects is mixed.
- ✚ CLIL (the integration of target language learning and subject learning) seems a more effective approach than EMI (subject content teaching in English with no integrated language learning focus).

Glossary

- BICS:** **Basic Interpersonal Competence Skills.** For newcomer migrant children, BICS largely takes the form of social, conversational communication and is 'context embedded' (i.e. supported by nonverbal cues such as visual or contextual information).
- CALP:** **Cognitive Academic Language Proficiency.** This refers to more abstract use of language, including the skill of writing, and is 'context reduced' (i.e. less dependent on nonverbal cues).
- CLIL:** **Content and Language Integrated Learning.** CLIL is 'about using a foreign language or a lingua franca, not a second language' as the medium of instruction in lessons which are 'timetabled as content lessons (biology, music, geography etc.)' (Dalton-Puffer, 2013, p.546). CLIL lessons are normally taught by subject specialists, while the target language continues to be taught separately as a foreign language by language teacher specialists. Nevertheless, the dual focus of CLIL on language and subject content entails a degree of explicit attention to the learning of the target language integrated within the process of teaching and learning the subject matter. Dalton-Puffer describes CLIL as 'a foreign language enrichment measure packaged into content learning' (2013, p.546). This dual focus is a key feature of the pedagogy which distinguishes it from other forms of content-based language teaching, such as EMI.
- EAL:** **English as an Additional Language.** In Australia, Ireland, New Zealand and the UK this term refers to migrant-background learners in English speaking countries whose home language is other than English. The equivalent term in the USA and Canada is English language learners (ELLs).
- EMI:** **English as Medium of Instruction.** This refers to the use of English as the language of instruction in schools and higher education to teach a range of subjects in national contexts where English is not the dominant language. Usually, the aim of EMI is broadly the development of economic and political profile of the population by improving competence in English. The subjects, for example science or mathematics, are taught by subject specialists through the medium of English.
- L1/L2:** **First/Second Language.** 'First' and 'Second' here can either refer to the order in which a language is learnt by an individual, or it can refer to the relative strength of proficiency the languages. 'Second language' differs from the term 'foreign language' in that the former can refer to the acquisition of a language in the country in which that language is spoken by the majority or where the language is an official language (such as Singapore or Pakistan).
- Multilingualism:** With regard to national settings, 'multilingualism' refers to the diversity of home or first languages spoken by the local population. In the context of the individual, 'multilingualism' refers to the ability to speak more than one language. Strictly speaking, 'multilingualism' refers to competence in more than two languages in order to distinguish it from the term 'bilingualism'. However, in this report it is used in the broader, more generic sense as indicated.

Introduction

There are few large scale systematic studies that have been carried out on the link between multilingual competence and academic performance in school and therefore there is relatively little evidence on which to base broad conclusions and policy recommendations. Within the available research corpus there is some conflicting evidence and there are important contextual factors which influence the findings.

Most of the empirical research on this topic has so far been conducted in Australia, Canada, Europe (in particular, Germany, Sweden, and the UK) and the USA. The specific features of these settings have an influence on the type of conclusions we can draw from research on the relationship between multilingualism and school learning. There is a host of complex factors affecting academic achievement in these conditions. The following are three broad areas which define the parameters of the research findings.

Firstly, in most cases the school language of instruction in the host context is English, a global language that some groups of immigrant children will already have had prior access to either through learning it as a foreign language in school or, as in the case of immigrants to the UK from Commonwealth countries, through its use as a second language in the country of origin. The context of schooling and multilingualism in low-income, developing countries is significantly different and therefore requires context-sensitive research evidence.

Secondly, different educational systems and practices operate in different countries (e.g. bilingual schools in Canada and the USA, mainstreaming in the UK, and introductory classes in host schools prior to mainstreaming in Sweden). These systems can affect the findings relating to multilingual competence and academic achievement.

Thirdly, it is important to note that the relationship between multilingualism and academic achievement cannot be separated from other socio-educational goals such as those of social cohesion and social integration.

Finally, multilingualism can also be defined in terms of competence in an additional language which is neither the individual's first language nor, if this is different, the language of the country in which he or she is living. There is emerging research on the advantages of the development of such multilingual competence and on how this might interact with language and academic performance more generally.

What follows is a set of assertions based on existing research evidence on the effect of multilingualism on learning in three broad contexts: the migrant context (where the learner's home language differs from the language of the host community); the context of indigenous multilingualism in developing countries (where there is a multiplicity of home languages spoken by the pupils but where the school learning has been primarily in a different, dominant, language); and the language of instruction context (such as CLIL or EMI where the school uses a foreign language to teach a range of subjects on the curriculum).

The context of migration in Western developed countries

First generation migrant children with no initial competence in the host country language of instruction require 3–5 years to acquire Basic Interpersonal Competence Skills (BICS) and 5–7 years to acquire Cognitive Academic Language Proficiency (CALP).

The distinction between conversational language proficiency (BICS) and more academic language competence (CALP), originating from Cummins's early work in Canada, is an assumption that has been widely adopted by researchers, practitioners and policymakers. The distinction is not based on a separate view of the two types of competence but rather they are seen as linked on a continuum of language development. Empirical evidence for the measurement of the time needed for acquisition of the two types of language competence, and which support the time frames suggested above, has been found in research by, for instance, Collier (1987) in the USA and Demie in England (2013). The implications of CALP, needed for performance in school academic assessment, for late arriving EAL children are self-evident.

Proficiency in reading and writing in the home (L1) and host (L2) languages correlates with academic achievement.

The evidence for this assertion is drawn from USA-based studies (e.g., García-Vázquez, 1997; Lindholm-Leary and Borsato, 2006; MacSwan et al., 2017; Ramírez et al., 1991; and Thomas and Collier, 2002.) examining links between competence in Spanish as a first language and English as a second language and performance in standardised tests in, most often, mathematics, science and nonverbal tests. This finding is qualified by the view that a 'threshold level' of literacy in both languages is required for the effect to be seen on academic performance. Researchers have argued that continuing the development of the L1 to a threshold level (approximately to the end of the elementary school years) allows for cognitive development that is naturally associated with L1 language development and 'provides a knowledge base transfer from L1 to L2' (Thomas and Collier, 2002, p.41). The findings therefore reflect a view of the relationship between L1 and L2 reading which is based on the dual perspective of the Linguistic Threshold Hypothesis (a threshold level in L2 reading is necessary) and the Linguistic Interdependence Hypothesis (transfer of reading competence in L1 to reading in L2) (Bernhardt and Kamil, 1995). In a study of 607 15-year-old students in a school in the Limoges area of France, Dahm and de Angelis (2018) found that 'school multilinguals' (i.e. learners of two foreign languages at school) outperformed students with home language in a French PISA mathematics test. They also found that school multilinguals and multilinguals with home literacy showed no significant difference in an UCLES English language test (reading and writing), but both groups did significantly better in this test than multilinguals without literacy in the home language.

In the USA, large scale comparative studies (e.g. Alanis, 2000; Collier and Thomas, 2017; Lindholm-Leary, 2001; Ramírez et al., 1991; Thomas and Collier, 2001, 2002) have examined performance of high school students following different support models (e.g. dual language, ESL pull-out

Effective bilingual education strategies are needed for the bilingual advantage in learning to be felt.

programs). Thomas and Collier (1997 and 2002) examined the performance data of over 42,000 grade 11 high school students with varying numbers of years of instruction in the L1 and following different modes of instructional support. Their findings showed that students who were in mainstream classes and were withdrawn for special lessons in English performed much worse in overall academic scores (only 11% of students scored above the mean) while students who had followed a 'one way bilingual program' (i.e. a bilingual classroom for speakers of a minority language) scored much higher (55% above the mean) and those on a 'two-way bilingual program' (i.e. a bilingual classroom for both minority and majority speakers) scored highest (70% above the mean). However, as some have questioned aspects of these findings, further research is needed to clarify 'whether bilingual education programmes have a quantifiable effect on second language acquisition and school performances' (Esser, 2006, p.76).

In 'hyper-diverse' migrant linguistic environments, such as in the UK, the practicality of organising dual language programs which involve the teaching of the wide variety of L1s represented by the multilingual pupil population is restricted. Statistical studies of the academic performance of English as a second language (EAL) students in state schools in England have shown a steady improvement in GCSE and A Level results. The most recent report concludes that 'In 2016, EAL pupils had an identical Attainment 8 score to the national average, made greater than average progress during school, and were more likely to achieve the English Baccalaureate than those with English as a first language (28 percent versus 24 percent)' (Hutchinson, 2018, p.7). However, scores are affected by a number of key variables such as age of arrival in the UK, regional variation (reflecting the effectiveness of schools in different authorities in supporting EALs), and identity of the first language (highest performing being L1 speakers of Tamil, Chinese and Hindi).



The context of multilingual education in low-income, developing countries

At primary school level, proficiency in L1 (home language) literacy is a predictor of L2 (English) literacy.

The most recurrent finding to support this assertion relates to the impact of L1 reading on L2 proficiency particularly in rural settings. Asfaha et al. (2009) analysed L1 and L2 reading of 254 fourth grade pupils randomly selected from schools with different languages and scripts and found that L2 reading proficiency and L1 comprehension significantly predicted L2 reading in English. Walter and Benson (2012) compared reading test scores of grade 3 pupils in rural schools in Eritrea (where the language of instruction was in the L1) with pupils in grades 3–6 in rural primary schools in Cameroon (where the medium of instruction in the schools was in the L2). They found that the grade 3 Eritrean pupils performed at levels comparable to the grade 6 pupils in Cameroon.



The effect of L1 writing competence on L2 proficiency in this context is less documented. However, Shin et al. (2015) have examined this relationship in a longitudinal study of grade 2 and 3 Malawi pupils following a curricular programme with L1 (Chichewa) medium of instruction in order to measure evidence of the interaction between L1 and L2 (English) literacy development. They conclude that across the two grades, ‘Chichewa reading emerged as the most powerful predictor of English writing’ (p. 269).

L1 medium of instruction in rural primary school contexts leads to better academic performance than L2 medium of instruction.

There have been a few intervention studies to test this hypothesis. One of the earliest intervention studies in Africa is Afolayan’s six-year longitudinal project in Nigeria (Afolayan, 1976). The project, focusing on grades 1–6 in primary schools, involved experimental (206 pupils) and control (233 pupils) classes, the former using Yoruba as medium of instruction for all subjects, and the latter using English. Pupils in the experimental classes outperformed those in the control groups across all subjects.

Walter and Dekker (2011) have similarly compared performance in different subjects (including English, Filipino, mathematics and science) between pupils in English-medium schools and those in Luluwagan, the mother tongue of the children in the Luluwagan region of the Philippines. The results showed ‘a consistent advantage’ for the pupils in the Luluwagan schools in all subjects, including English, with particularly strong gains at grade 3.

In a recent position paper on English language and medium of instruction in low- and medium-income countries, the British Council has recognised that primary school aged learners in such countries ‘if taught in their own or a familiar language, rather than English, [...] are more likely to understand what they are learning and be more successful academically’ (Simpson, 2017, p. 3) and therefore supports the teaching of English as a subject rather than as a medium of instruction of other subjects in this age range and context.

In a succession of reports since its initial report on this subject in 1953, UNESCO has also supported the promotion of a ‘multilingual ethos’ and the implementation of mother tongue teaching in schools in developing countries (Alidou and Ganz, 2015; Ball, 2010; UNESCO 2008, 2016).

The context of 'additional language learning' and CLIL

The EMI approach is less effective than L1 medium of instruction for content learning at school level.

↘ EMI in the Hong Kong context

Empirical studies conducted in Hong Kong on the relative effects of English (EMI) or Chinese (CMI) medium instruction on subject learning in secondary schools suggest a marginal gain for pupils following a Chinese medium programme. Lo and Lo (2014) completed a meta-analysis of reports of 24 empirical studies conducted in secondary schools in Hong Kong between 1970 and 2010. The authors sought, firstly, to draw conclusions about the difference in achievement between students following EMI and CMI programmes, and, secondly, to identify differences in the students' affective response to subject learning. They concluded that the EMI achieved significantly better in English language proficiency, there was no significant difference between EMI and CMI in achievement in mathematics, and CMI students performed significantly better in science, history and geography. On the other hand, EMI students had higher learning motivation and used more learning strategies than CMI students. Individual studies have shown varying results. Lo (1991), in a study of 2,638 students, found that the CMI (Cantonese) students outperformed the EMI and mixed code students in mathematics. Furthermore, Marsh et al. (2000) found that after controlling for prior ability and other variables, instruction in English had a moderately positive effect on the learning of Chinese and English (suggesting that learning an L2 can benefit an L1). However, there was a slightly negative effect on the learning of mathematics and an 'extremely negative' effect on results for history, geography and science. Similarly, Yip et al. (2000) tracked the progress in science of students in 100 secondary schools in Hong Kong over a period of three years. The findings showed that the EMI students' science achievement scores were inferior to those of the CMI students due to inadequate proficiency in English which limited the students' mastery of relevant terminology and application of higher order thinking skills.



The CLIL approach enhances learners' content learning as well as their competence in the additional language.

➤ CLIL in the European context

CLIL has largely been explored and researched in the European context. In her critical review of empirical studies on the effect of CLIL on content learning through comparative analysis of performance data with non-CLIL groups in primary and secondary schools, Pérez Cañado (2017) identified three 'batches' of studies identifying positive (e.g., Jäppinen, 2005; Madrid and Hughes, 2001; Serra, 2007; Wode, 1999; Xanthou, 2011), neutral (e.g., Admiraal et al, 2006; Bergroth, 2006; Stehler, 2006), or negative (e.g., Anghel et al. 2016; Dallinger et al., 2016; Fernández-Sanjurjo et al. 2017) findings in relation to the CLIL advantage. The author points to the effect of the socio-economic background of participants as an intervening variable, with pupils in rural schools performing less well academically than their urban counterparts. A further factor influencing the results was that students selected to participate in CLIL programmes tended to be more academically able learners. In her own cross-sectional study, Pérez Cañado (2017) examined the effects of CLIL on English (FL) language competence, Spanish (L1) language competence and content knowledge of Natural Science subjects in 6th grade, primary, and 4th grade, secondary schools in three autonomous regions in Spain. Her analysis of the performance of 2,024 students revealed that the CLIL students outperformed the non-CLIL students in Science in the secondary school sample but not in the primary school sample. She concludes that 'increased time and input come across as crucial for CLIL students to achieve either the same or superior content results as their monolingual peers – as many as ten years of content teaching through the foreign language' (p.9).

Policy recommendations

Language education policy-making should be guided by the following research-informed principles and practices:

- A clear rationale for the introduction of medium of instruction national policies based on evidence-based educational judgments rather than strategic considerations.
- Evidence-based planning of multilingual education sensitive to the linguistic needs and repertoires of learners in different national contexts.
- Provision of appropriate training in linguistic competence and language-related pedagogical practice for EMI and CLIL teachers.
- Appropriate training and knowledge of the integrated use of the L1 in EMI and CLIL settings.
- Shared practice between teachers in different sectors on best practice in language use and content learning.
- Careful planning of transition from L1-based instruction at primary school level to staged introduction of teaching of selected subjects through the medium of English at secondary school level.
- The development of an integrated assessment framework (language and subject knowledge) appropriate to the sociocultural context.
- The development of dual language resources and language awareness strategies for pupils at primary school level.

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