Economics of Education Review 50 (2016) 75–89

Contents lists available at ScienceDirect

Economics of Education Review

journal homepage: www.elsevier.com/locate/econedurev

Estimating the impact of language of instruction in South African primary schools: A fixed effects approach

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ARTICLE INFO

Article history:
Received 9 January 2015
Revised 8 January 2016
Accepted 11 January 2016
Available online 22 January 2016

JEL classification:
I24
I25
I28

Keywords:
Education
Language of learning and teaching
South Africa
Fixed effects

ABSTRACT

For many children around the world, access to higher education and the labour market depends on becoming fluent in a second language. In South Africa, the majority of children do not speak English as their first language but are required to undertake their final school-leaving examinations in English. Most schools offer mother-tongue instruction in the first three grades of school and then transition to English as the language of instruction in the fourth grade. Some schools use English as the language of instruction from the first grade. In recent years a number of schools have changed their policy, thus creating within-school, cross-grade variation in the language of instruction received in the early grades. Using longitudinal data from the population of South African primary schools and a fixed-effects approach, we find that mother tongue instruction in the early grades significantly improves English acquisition, as measured in grades 4, 5 and 6.

1. Introduction

Low quality education characterised by flat learning trajectories over time is a feature of education systems in many developing economies (Pritchett, 2013). Economists have pointed out that the causes of low quality schooling in these countries are at least partly those related to public service provision in general, such as provider absence and weak incentives (Kremer, Brannen, & Glennerster, 2013), but another factor more commonly cited amongst educationists is that children in these countries often face language disadvantages at school.

Questions regarding the impact of language on education outcomes are extremely relevant to South Africa, a country with 11 official languages[1] and large inequalities within the public school system. International surveys (such as the Progress in International Reading Literacy Study surveys of 2006 and 2011, as well as the Trends in International Mathematics and Science Study surveys of 1995, 1999, 2003 and 2011) have consistently demonstrated that South Africa's performance is amongst the lowest of all participating countries. The extent to which language factors contribute to this low performance is not clear, given that language disadvantages are so strongly correlated with other confounding factors such as historical disadvantage, socio-economic status, geography, the quality of school management and the quality of teachers.

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[1] This list includes nine African languages (isiZulu, isiXhosa, isiNdebele, Sepedi, Setswana, Sesotho, SiSwati, Xitsonga, Tshivenda) as well as the two European languages (English and Afrikaans, which evolved from the Dutch spoken by the early Cape settlers).

http://dx.doi.org/10.1016/j.econedurev.2016.01.003
0272-7757/

Although there are 11 official languages in South Africa, Afrikaans and English are the only languages with a developed academic literature and in which it is possible to write the secondary school leaving examinations. In addition, the advantages of English proficiency have been demonstrated by Casale and Posel (2011), who show that, in South Africa, English proficiency also improves labour market returns directly. Using a traditional earnings function methodology controlling for an individual's amount of education, they find a significant wage premium for black South Africans associated with being able to read and write English fluently.[2]

According to the 2011 census, only about 23% of South Africans speak Afrikaans or English as their first language (Statistics South Africa, 2012). In order to achieve educational as well as labour market success, the majority of South African children therefore need to become fluent in either English or Afrikaans. In reality, the vast majority choose to learn English rather than Afrikaans as the second language, given its status as a global language, as well as the fact that English is widely perceived to be the language of upward mobility, leading to a preference for instruction in English from as early as possible.

This situation presents a difficult policy question to South African policy makers: when and how should the teaching of English be introduced in schools, and when and how should a transition to English as the primary language of instruction in non-language subjects occur? Several models exist in theory, each with numerous variations that have been applied in different parts of the world.[3]

Pedagogical theory appears to be stacked more heavily in favour of using first language as language of instruction until a level of academic proficiency has been attained in that language (which may take three to six years) rather than using a second language from the start of school (Hakuta, Butler, & Witt, 2000).

However, there are often practical realities which may influence the relative effectiveness of alternative models such as logistical difficulties, a lack of teachers who are proficient in the various home languages, and the general capability and motivation of the teacher force. Similarly, the transition to English that must occur in bilingual models may be extremely disruptive and educationally damaging if a high quality of support materials and teacher expertise does not exist to manage this phase effectively – a concern that is often expressed in South Africa (e.g. Van der Berg et al., 2011).

There may be numerous other political or ideological motivations behind a particular language in education policy, such as using a single language to promote national unity or developing a diverse cultural heritage (World Bank, 2005). However, the question of which approach leads to better educational outcomes in a particular context is ultimately an empirical one.

South African legislation and education policy does not prescribe which of the 11 official languages should be used, but leaves the choice of language of instruction to School Governing Bodies, which are comprised by a parent majority as well as the school principal, several staff members and, in the case of secondary schools, pupils (South Africa, 1996). Currently, most schools in which the majority of pupils are not English- or Afrikaans-speaking opt to use first language in grades 1, 2 and 3 and then transition to English as the language of instruction in the fourth grade. This approach, though not compulsory in policy, has been encouraged by the national and provincial departments of education. Some schools, however, have chosen to go "Straight-For-English" as the language of instruction from the first grade.[4]

As the next section will show, there is a dearth of empirical work using credible methods to identify the causal impact of alternative language-of-instruction models on second language acquisition or on other educational outcomes. There is an even more acute shortage of such research done in developing countries, especially those in Africa. Consequently, as Slavin, Madden, Calderon, Chamberlain, and Hennessy (2011) observe, "ideology has often trumped evidence" in language policy debates.

Hulstijn (1997) explains the major limitation in the vast field of research studying second language acquisition, namely that confounding variables affect the comparability of groups who underwent different second language learning experiences. He argues that, "*One of the most difficult methodological challenges is to keep all such variables constant. This is almost impossible in "normal" classrooms with real L2 learners. It comes as no surprise, therefore, that the outcomes of studies conducted in natural learning environments, including classrooms, often form the object of considerable disagreement.*"

A further challenge that must be overcome in order to produce meaningful empirical evidence on the relative effectiveness of alternative language-of-instruction regimes is that studies must span several years. This is because the "treatment", which is either instruction in first language or instruction in second language, lasts for several years. Furthermore, the outcome of interest is not English proficiency at the end of the "treatment period" but at a later stage once those in a bilingual programme have transitioned to English as language of instruction. The outcome of interest is really educational outcomes, in particular second language acquisition, in the long run. The vast majority of studies have not used data with a long enough time span to address this fundamental research question.

In this regard, the South African system offers a unique opportunity to evaluate the impact of language policy on

[2] This echoes previous findings from a study by Angrist and Lavy (1997) examining the impact of French language acquisition on labour market outcomes in Morocco.

[3] The interested reader is referred to the working paper version of this article, where these alternative models are discussed in greater detail. The working paper version is available online at www.ekon.sun.ac.za/wpapers/2013/wp212013.

[4] The Curriculum and Assessment Policy Statements (CAPS) also prescribe that the teaching of English as a subject should be introduced from grade 1 in all schools (Department of Basic Education, 2011). Consequently, all schools should have some English being taught from the first grade, but for some schools English is also the language of instruction from grade 1 whereas in most schools this is only the case from the fourth grade.