

Working Paper No. 512 September 2015

Academic Achievement among Immigrant Children in Irish Primary Schools

Frances McGinnity* Merike Darmody and Aisling Murray

Abstract: Educational achievement is a key indicator of labour market success and other post-school outcomes. This success is unequally distributed across different groups of children, including those from immigrant backgrounds. The impact of parents' and their children's cultural capital on student grades and educational ambitions has been identified in both longitudinal and cross-sectional studies. This paper addresses a gap in research on Ireland by exploring the academic achievement of 9-year-old immigrant children from different national groups using data from the child cohort of the Growing Up in Ireland study. The Irish case is interesting as there was recent substantial immigration of a nationally diverse group of migrants to a school system that was predominantly White, Catholic and Irish. The immigrant 'penalty' in English reading achievement varies across national groups, though overall the gap is modest. Financial strain is associated with lower reading achievement, as is attending a disadvantaged school, though these play a limited role in explaining the immigrant penalty in achievement. Social and cultural capital plays a more salient role in understanding national group differences in English reading achievement, particularly for East Europeans, for whom the gap is greatest.

Keyword(s): Immigrant Children, Academic Achievement, Primary School, Growing Up In Ireland Data.

**Corresponding Author:* fran.mcginfinity@esri.ie

Acknowledgements: This paper analyses data from the Researcher Micro File (RMF) from the Child Cohort (at 9 years) of Growing Up in Ireland, made available through the CSO and DCYA. Growing Up in Ireland data have been funded by the Government of Ireland through the Department of Children and Youth Affairs; have been collected under the Statistics Act, 1993, of the Central Statistics Office. The project has been designed and implemented by the joint ESRI-TCD Growing Up in Ireland Study Team. © Department of Children and Youth Affairs. The classification of migrant children draws on work done for the Irish Integration Monitor (2012) funded by the Integration Centre. The authors would like to thank Emer Smyth and Antje Roeder for helpful comments on an earlier draft of the paper.

ESRI working papers represent un-refereed work-in-progress by researchers who are solely responsible for the content and any views expressed therein. Any comments on these papers will be welcome and should be sent to the author(s) by email. Papers may be downloaded for personal use only.

Academic Achievement among Immigrant Children in Irish Primary Schools

1 Introduction

Educational achievement is a key indicator of labour market success and other post-school outcomes. This success is unequally distributed across different groups of children including those from lower socio-economic status (SES), special educational needs and immigrant backgrounds. Empirical studies indicate that these groups are disadvantaged in most educational systems in terms of performance and attainment, though the extent of this disadvantage varies (Whelan and Hannan, 1999; Powell, 2003; Hillmert, 2013; Heath et al., 2008). Increasing migration across the world has increased interest in how immigrants fare in the educational systems of the receiving countries. The educational success of immigrant children is shaped by a complex interplay of micro (background), meso (educational system) and macro (society) level factors.

A growing body of literature has examined the different educational outcomes of immigrants in their host country. International studies have shown that some national-origin groups do better in school while others do not. However, why this is the case is an 'enduring sociological puzzle' (Feliciano, 2005: 841). Much of this work is grounded in the theories developed by Bourdieu (1979), particularly availability of different types of capital and their convertibility. According to some studies, the cultural capital among some groups of immigrants and their children tends to be strong, and it leads to a sustained upward drive. Other studies focusing on the involvement of immigrant parents indicate that the capitals that these individuals have (even when middle class professionals) do not necessarily have the same 'currency' in the schools of receiving countries (Vincent et al., 2012). Support from parents is crucial for immigrant children as, according to Domina (2005), parental involvement contributes to the socialisation of children into believing in the importance of education. Parental education is by far the most consistent predictor of children's academic performance in international studies (Schiller et al., 2002).

When considering academic outcomes, it is important to remember that immigrant children differ by their countries of origin and their socioeconomic background. Recent findings indicate achievement rates differ by nationality, even after controlling for other characteristics (Portes and Rumbaut, 2005). Low levels of academic achievement can be associated with the fact that many children from minority ethnic groups are from lower socio-economic groups, though this can vary considerably across different minority groups (ibid.). In addition, the educational success of immigrant children is influenced by their experience in the schools of the receiving countries. There is now a large body of work showing how schools reproduce the inequalities existing in wider society. School is the first major formal organization the child encounters and the school can be considered the most revealing setting in which to view the relative success or failure of newcomers and their children (Entwisle and Alexander, 1993). Largely middle-class institutions, schools acknowledge and reward middle class advantage, while the cultural background of immigrant children does not have similar 'currency', given language differences and country variation in the formal and informal 'rules' of education systems. The impact of parents' and

their children's cultural capital on student grades and educational ambitions has been identified in both longitudinal and cross-sectional studies (DiMaggio, 1982). Some authors have argued that the type of cultural capital produced and transmitted in minority ethnic families is far removed from the Bourdieuan conception (highbrow cultural participation) (Driessen, 2001) and that financial, and social capitals have more impact on immigrants (Tzanakis, 2011).

Taken together, these studies have considerably enhanced our understanding of how inequality between immigrant and native groups is maintained. However, considering that much of this research has been conducted in 'old' immigrant receiving countries, less is known about these processes in countries where large-scale immigration is a relatively new phenomenon. Unprecedented large scale immigration to Ireland since the 1990s has given rise to a body of research exploring the impact of immigration on Irish society and the situation of new arrivals in Ireland. In line with international studies, the existing research in Ireland suggests that immigrants to Ireland fare less well than Irish nationals in the labour market across a range of dimensions including access to privileged jobs, experiences of discrimination at work and levels of unemployment (Kingston et al., 2013). This generally translates into lower available income for immigrant workers; yet many immigrants to Ireland are highly educated, particularly West Europeans and also non-EU immigrants. Their educational attainment may influence their children's outcomes more than their lack of financial resources. The group is also diverse, comprising mainly EU immigrants but a substantial minority of non-EU immigrants. What is interesting in the Irish case is that non-EU immigrants from some African countries may be more ethnically distant from the Irish population than EU immigrants, but have better English language skills.

In order to understand how the children of newly arrived immigrants fare in Irish primary school, the paper seeks to answer the following questions:

- Is there an immigrant achievement penalty in Ireland in English reading and does it vary by group?
- How does socio-economic background, access to cultural and social capital and school characteristics impact on immigrant achievement?

Based on international research we hypothesize in this paper that different forms of capital lose some transferability through the process of migration. This is likely to impact on the academic and other outcomes of children as academic credentials and the social capital acquired in the receiving country are crucial for these young people later in their lives.

To address these questions, this paper examines the academic achievement in English reading of 9 year old immigrant children compared to native peers through the lens of the capital framework, drawing on a rich dataset from a child cohort study in Ireland, the *Growing Up in Ireland* child cohort. English is a core subject in the Irish education system but English reading is also very important for a range of other subjects in the primary school curriculum, and is also likely to be linked to oral language skills which are crucial for interactions with both teachers and peers.

The paper begins by discussing the theoretical perspectives that guide this paper and the hypotheses derived from them (Section 2). Section three presents the *Growing Up in Ireland* data and how socio-economic background and cultural capital vary among children from different backgrounds. Section four presents models of English reading achievement, comparing immigrant children to Irish children. Section five of this paper summarises the findings for Ireland and reflects on their implications.

2 Migrant Children: Socio-economic Background and Cultural Reproduction Theory

Explaining the relationship between parental background and children's educational achievement has been a dominant theme in the sociology of education (Bourdieu and Passeron, 1977). Stratification researchers generally agree that immigrant families – many of whom hold lower socio-economic positions - tend to have fewer resources at their disposal to support the academic achievement of their children compared to native parents (Heath, et al., 2008). From this perspective, once we control for economic resources, differences between immigrant and native groups will disappear.

The socio-economic disadvantage story may be challenged in a country with recent immigration of a highly-educated population. Yet, this education does not necessarily translate into high occupational positions and well-paying jobs. There is much evidence of immigrant over-education, in Ireland and elsewhere (Barrett and Duffy, 2008; OECD, 2007). Thus the 'match' between social class and education may not be the same for new immigrant families as for natives. Regarding recent immigrants, duration of stay may be a key factor in understanding their class and financial position: classic assimilation theory suggests that while the immigrant-native penalty will be strongest at the start, it is likely to weaken over time and eventually labour market outcomes will converge (Chiswick, 1978). More recent theories, including segmented assimilation (Portes et al., 2005) and new assimilation theory (Alba and Nee, 2003), have challenged this model and highlighted the variable patterns of integration of different groups of immigrants. Not all groups follow the same trajectory: duration doesn't matter equally for everyone and some groups may converge with the host population while others remain disadvantaged.

Individual-level financial disadvantage can also be exacerbated by living in a disadvantaged community, where community cohesion and facilities are low. Where immigrants live in areas with a high level of disadvantage and high concentrations of other immigrants, this can have an additional negative effect on educational outcomes. To the extent that children attend local schools, geographical concentration of disadvantage can feed into school segregation, with immigrants tending to be concentrated in schools with a poor school climate and learning environment (Kristen, 2008). However, other studies (Rumbaut, 2005) show that ethnic concentration may also have beneficial effects in terms of retaining one's language and customs.

Cultural reproduction theory argues that we need to consider a broader range of factors than financial resources alone. Educational systems have been found to reproduce inequalities already existing in the society. Bourdieu's cultural reproduction theory originated as a framework for understanding social class differences in the transmission of advantage from one generation to the next. However acquired, at home or in school or both, the cultural capital of the dominant group can be converted into social and economic advantage in later life. In contrast, the mismatch between home and school cultures, where home culture lacks recognized 'currency', contributes to the underperformance of working-class children and, hence, more limited life chances. For Bourdieu, cultural capital is a competence in society's high status culture; its behaviour, habitus and attitudes; and plays an important part in reproducing educational and social hierarchies. The amount of cultural capital that students "inherit" from their family of origin is a function of their socioeconomic status (Bourdieu, 1979). Equally important is social capital - the aggregate of the actual or potential resources that are linked to a durable network of somewhat institutionalised

relationships of mutual acquaintance and recognition. The inheritance of cultural capital, along with economic and social capital, enables members of the dominant classes to reproduce their socioeconomic position (Bourdieu, 1997).

While initially formulated in terms of social class, Bourdieu's theory of cultural capital has been expanded by subsequent theorists (see, for example, Lareau and Horvat, 1999; Goldstein, 2003; Monkman et al., 2005) to take account of cultural diversity in terms of nationality and/or ethnicity. These authors suggest that the policies and practices of the school are familiar to students from the dominant group, that is, the 'insiders' who possess this information as a part of their cultural capital, whereas members of minority immigrant groups, possessing different cultural capital, norms and values, are often in the position of 'outsiders' (Bourdieu, 1984). For immigrant children, the school is their primary source of contact with the majority culture, and thus an important site for acquiring knowledge of the *lingua franca* of the receiving country, and the culturally relevant knowledge, skills and attitudes of the receiving country (Park-Taylor, et al., 2007). Later, in his *Practical Reason: On the Theory of Action*, Bourdieu (1998) argues that the 'outsider' status of immigrants may differ across groups since some immigrant families are more likely than others to be in a position to access information on the education system of the receiving country and internalize its cultural preferences (Weine et al., 2004). The 'mismatch', or cultural distance, between home and school cultures may vary across nationalities or linguistic groups as well as social class depending on the various types of capitals at their disposal. In addition, immigrant children come to the "host" country with their own attitudes to learning and learning styles – influenced by practices in the home country - that may be dissimilar to the ones practiced in the receiving country (Darmody et al., 2011).

Research studies on the education of immigrant children rarely consider the interaction and conversion of different forms of capital. In education, family economic capital can be converted into cultural capital which, in turn, can later be turned into social capital when children acquire useful networks at schools that can be beneficial for them in the future. It is worth noting, however, that converting one form of capital is not straightforward, but is achieved by complex processes (Reay, 2004; Devine, 2009). Some individuals have more capital and so are dominant over those with less; others may have equal but different compositions of capital at their disposal which puts them in a different relationship to other individuals or institutions.

Bourdieu's work on social and cultural reproduction has frequently been criticized for being overly deterministic (see Jenkins, 2002) and therefore at odds with emerging educational research which emphasizes the importance of children's voice and agency (see Clark et al., 2003). Later refinements of Bourdieu's framework have allowed for the fluid nature of social reproduction, arguing that 'an individual's class and racial position affect social reproduction, but they do not determine it' (Lareau and Horvat, 1999, p. 50). We therefore also consider some of the perspectives of young people themselves on their school experiences and regard them as active agents in their own education.

Existing research has indicated that in exploring the academic achievement of immigrant children it is important to consider ethnic characteristics in terms of culture, attitudes, and economic opportunities (Borjas, 1992), parental expectations (Rumbault, 2005), teachers' expectations of minority students (Bernstein, 1975) and their misrecognition of minority cultural and social capital (Gibson and Ogbu, 1991), availability of resources (Kingdon and Cassen, 2010) and language proficiency (Turney and Kao, 2009).

Our first broad expectation is that there will be an achievement penalty for immigrant children in Ireland in both English reading and mathematics, with differences between national/ethnic groups in terms of this penalty (H1). Significant differences have been found in the cognitive home environment by poverty status (Bradley et al., 2001). Hypothesis 2 is that socio-economic background factors, in particular financial resources and duration in the country, will explain differences in achievement between different immigrant groups and Irish children.

While the concentration of immigrant children in particular schools in Ireland is not particularly pronounced relative to other European countries, Byrne et al. (2010) find more concentration at primary level than in secondary schools. Byrne et al. (2010) do find that immigrants are more often found in schools with a disadvantaged intake, and McCoy et al. (2014) find that there is an additional effect on achievement in Ireland of attending a disadvantaged school, even after taking into account the socio-economic background of the children. H3 then is that over and above individual socio-economic background, to the extent that immigrant children are more likely to attend schools with a disadvantaged intake, this will partly explain any achievement penalty.

Despite their disadvantaged background, authors have found that immigrant parents often have high aspirations for their children's education and greater school engagement (e.g., Rumbaut, 2005). Crosnoe (2013) in the US refers to the immigrant paradox whereby the children of immigrants in some cases perform well and even outperform children with native parents. While the parental role is important, it is also necessary to acknowledge the role of child's own agency in developing high aspirations and success (Saffigna et al. 2010).

Hypothesis 4 says that variations in cultural and social capital between immigrant groups, both capital acquired in their home country and capital in Ireland, will play an additional role in explaining differences in achievement. Cultural capital includes parents' education, linguistic background, their involvement in their child's education and their aspirations for their children. Social capital includes the number of parents and other children in the household, children's interactions at school, parents' interactions with the school and also wider community involvement.

Yet it may not be just the variation in cultural and social capital between groups. The previous discussion of the convertability of capitals suggests that the capital that immigrants possess may not have the same 'currency' in the receiving country. We explore this idea by testing whether mothers' education - acquired abroad for this cohort of immigrants - has less of an impact for the achievement of immigrant children than for Irish children (Hypothesis 5).

3 Investigating Immigrant Achievement using the *Growing Up in Ireland* Study

How do we examine these hypotheses? This article draws on the first wave of this longitudinal study of around 8,500 nine-year-olds from the *Growing up in Ireland* survey. This is a cohort study whose main aim is to paint a full picture of children in Ireland and how they are developing in the current social, economic and cultural environment. The study combines information from parents, school principals, teachers and children themselves. In doing so it provides valuable and detailed information about the home environment of these children, their family and peer relationships, their expectations and aspirations, and their engagement with the schooling process. The data were collected between September 2007

and June 2008; the majority of children in this study were born in 1998, some were born in 1997.

There were two main components to the fieldwork: school-based and household-based. The school-based fieldwork involved a self-completion questionnaire for the school principal and two self-completion questionnaires for the child's teacher. The principal questionnaires recorded school-level details on school characteristics including size, challenges, ethos etc., along with some personal details about the principal. The teacher-on-child questionnaire recorded child-level details on the child's temperament, academic performance, homework completion, language ability and peer relationships.¹ The final part of the school-based fieldwork involved the academic assessment tests (Drumcondra readings and Maths tests; see <http://www.erc.ie/?p=184> for details). These tests are developed for Irish school children, are linked to the curriculum and grade-specific.² For this article, both maths and reading scores were scaled to have a mean of 100 and a standard deviation of 15.

The informants in the household-based component of the fieldwork were the nine-year-old child, their primary caregiver (mostly mother) and father (if resident). Detailed information was collected from 9 year old children on their perceptions of school and their teachers. In addition to questions on income, employment and education, parents were asked about their involvement in their child's school. At school level a response rate of 80% was recorded. In general the completed sample was highly representative of the population at the level of school characteristics and gender mix. There was a slight overrepresentation of larger schools and disadvantaged schools. At household level (eligible child selected within the school), a total of 59% of targeted families participated in the study. At family level, the survey slightly under-represents children from a lower social class background and those whose mothers had lower levels of education. These representativeness issues were addressed using re-weighting (Williams et al., 2009).

In this paper the focus is on the children of immigrants, in line with the existing literature (OECD, 2009). Immigrant children are those whose mother was born abroad and defined herself as ethnically not Irish.³ The place of birth of mothers is used, as mothers are typically more closely involved with their children's education (Saracho, 2005). Countries of birth of the immigrant mother were divided into broad 'country groupings' based on region, cultural similarity and previous literature on the topic in Ireland.⁴ The groups comprise: Ireland, United Kingdom, Western Europe, Eastern Europe, Africa, Asia, Other Western countries including South America.⁵ Figure 1 presents the proportion of 9 year olds in each group.

¹ There was also a teacher-on-self questionnaire but this was not used in this paper.

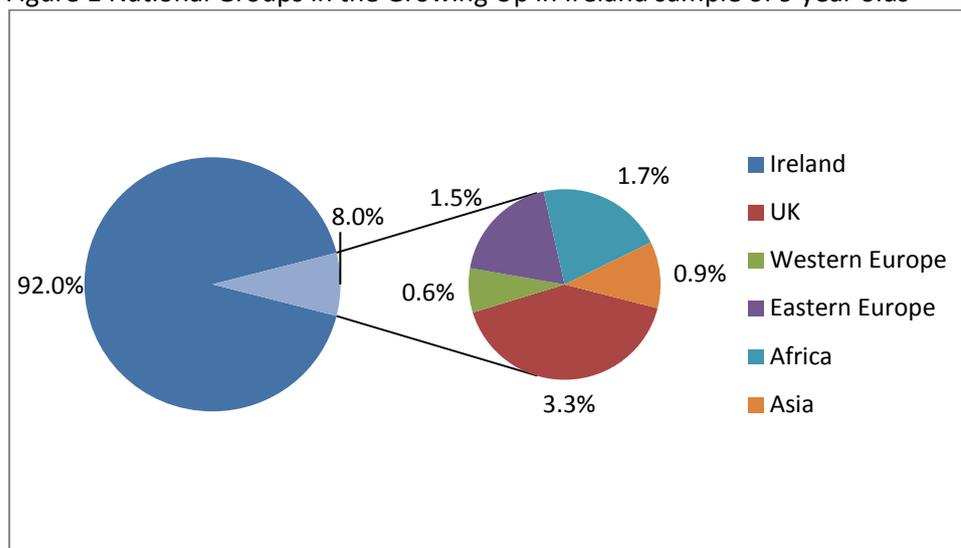
² Prior to analyses scores were adjusted according to class level and child's age to be comparable.

³ Their ethnicity could be White, non-Irish; African, Asian, Other, as in the Census. This rules out Irish people born abroad. The small number of Irish Travellers in the sample are coded as Irish for this analysis.

⁴ It is important to note here that the migrants in Ireland are a very diverse group, coming from over 180 countries (CSO 2008). These groups do include considerable diversity.

⁵ The latter group was so small in the sample they are not used for the analysis.

Figure 1 National Groups in the Growing Up in Ireland sample of 9 year olds



Note: Weighted data. 'Other Western' are excluded as the sample size is so small for further analysis.

Figure 1 shows 8 per cent of children in the sample are classified as immigrants using this definition, with 3.3 per cent having mothers born in the UK, 1.7 per cent having mothers born in Africa, 1.5 per cent Eastern Europe, around 1 per cent Asia and 0.6 per cent Western Europe. Mothers are used as they are often most involved in their children's education (Saracho, 2005), though models also control for whether the father is Irish or not. Table 1 shows how these groups vary by selected characteristics. Firstly, in terms of achievement in English reading, Irish children's mean score is very close to the overall mean of 100, as are the children of UK mothers. The mean achievement in English reading is somewhat higher for West Europeans (105), and considerably lower for East Europeans (90) (see Table 1). African children have a slightly lower mean than Irish children (98), Asian children too (96). Combining all the non-Irish groups gives a mean score of 98.⁶ Overall achievement differences are modest. In terms of background characteristics, economic disadvantage is measured using a question about making ends meet or financial strain.⁷ Some immigrant groups have great difficulty or difficulty making ends meet. Compared to 8 per cent of Irish mothers, 27 per cent reported of African mothers reported difficulty or great difficulty making ends meet (Table 1). Two thirds of East European families and half of Asian families have come to Ireland within the last 5 years. Other groups tend to be in Ireland for longer.

Table 1 shows marked differences in terms of the proportion of immigrant groups and Irish children attending disadvantaged schools. One quarter (25%) of African children go to a school classified as Urban DEIS band 1, compared to 9 per cent of Irish children.⁸ Smyth et al (2009) also found immigrant children were more likely to be attending disadvantaged schools (DEIS). Other measures of school characteristics included in the model but not

⁶ This difference is small but statistically significant using a one-way Anova test.

⁷ This measure is used in place of income quintile for two reasons. Firstly, there are fewer cases missing than on income quintile. Secondly, this measure captures families struggling to meet financial commitments on current resources as opposed to overall levels of income.

⁸ Migrant children are also overrepresented in DEIS Urban band 2 schools, which are at an intermediate level of disadvantage: 10% of African children, 15% East European and 19% of Asian children attend these school types, compared to 6% of Irish children in the sample.

presented in Table 1 are level of problems in the school compared to other schools as perceived by the principal⁹; whether the school is Catholic or non-Catholic and whether the school is co-educational or single sex.

As a measure of cultural capital, the study shows very high expectations among immigrant parents, particularly African and Asian parents, 90 plus per cent of whom expect their children to attain a third level qualification. The proportion of mothers with tertiary education in this sample of mothers is higher among immigrants than Irish mothers. It is particularly high among West Europeans (68%) but also Asians (59%) and Africans (54%), compared to around one third (32%) of Irish mothers. This partly reflects Irish immigration policy. While this restricted non-EU immigration into Ireland post-2004, it also meant that non-EU immigrants working in Ireland tended to be more highly educated than immigrants from Eastern Europe post 2004 (McGinnity et al., 2014).

Table 1 Immigrant Group by Selected Characteristics

	Irish	UK	West European	East European	African	Asian
	(%)	(%)	(%)	(%)	(%)	(%)
Economic disadvantage*	8	7	2	18	27	12
Family came to Ireland in last 5 years	2	20	18	64	30	49
Disadvantaged school (Urban, Band 1)**	9	1	2	14	25	5
Mothers' expectations (Third level)	70	73	78	80	92	90
Mothers' Education (third level)	32	41	68	45	54	59
Language difficulties (teacher report)***	2	0	6	40	24	36
Household type (one parent)	18	22	6	24	33	5
Achievement (English reading)	100.19	100.26	104.49	90.54	98.07	95.78
Valid N of cases, achievement (unweighted)	7760	170	63	120	111	87

Source: Growing Up in Ireland, Child Cohort, weighted. Other Western excluded.

Note: *Difficulty or great difficulty making ends meet;

** Delivering Equality of Opportunity in Schools (DEIS) the Action Plan for Educational Inclusion indicates that the school intake is socio-economically disadvantaged. The variables considered in DEIS allocation include unemployment, local authority accommodation, lone parenthood, Travellers, large families, pupils eligible for free books (see <https://www.education.ie/en/Schools-Colleges/Services/DEIS-Delivering-Equality-of-Opportunity-in-Schools-/FAQs.html>).

***Teacher reports child has limited knowledge of English language.

⁹ The school principal was asked: 'Compared with other Primary Schools of your size would you say that the scale of day-to-day problems in running the school are?' Much greater than in other schools/ Slightly greater/About the same /Slightly less/ Much less than in other schools. This measure correlates with disadvantaged status, but allows differentiation of non-disadvantaged schools.

Other measures of cultural capital used in the model are how many books are in the home (more than 20 compared to less than 20); whether the child participates in cultural activities outside school; whether the parent uses the public library for the child, whether the child has a computer at home. The child was also asked whether their mother expects them to do well at school, and whether they always like reading.¹⁰ Teachers were asked about language problems hampering learning and whether the child ever has homework not completed. Language problems, as reported by the teacher, differ substantially across the groups (see Table 1). Reports of language difficulties are very much higher among East Europeans (40% of children), and also Asians (36%) than Africans (14%). This is consistent with the fact that East European 9 year olds are typically more recently arrived in Ireland than African children. In addition, more African immigrants come from an English-speaking background (e.g. Nigeria or South Africa) than East European immigrants.

Social capital indicators relate to the home, school and community environment. There is a measure of parental involvement in local community groups and a measure of the quality of the local environment.¹¹ Family-based social capital is measured as the number of parents a child has and the number of siblings. In terms of household structure, one third of African mothers are single parents, compared to 18 per cent of mothers of Irish 9 year olds. School-based social capital is whether the parents attended parent-teacher meetings, whether the child likes their teacher (always), and the number of friends the child has, where 1 or no friends counts as low.

4 Modelling Achievement in English Reading

We now explore whether English reading achievement varies between immigrant groups, and to what extent this is linked to the various forms of capital. The fact that children were sampled within schools means that standard multiple regression techniques are not suitable, as resulting estimates of the standard errors are likely to be too small (Goldstein, 2003). We estimate multilevel models of achievement in English reading which explicitly take account of the clustering of children within schools. The multilevel estimates allow us to quantify the proportion of achievement variation at individual level and at school level. We introduce successive blocks of variables based on our hypotheses – background and economic factors, school characteristics, cultural and social capital and then the interaction between mothers' education and immigrant background. In each case Irish 9 year olds are the reference group. Tables 2a and 2b presents the model results, and also the proportion of variance accounted for by individuals and schools, as well as model fit statistics.

¹⁰ Taking everything into account, how far do you expect the Study Child will go in his/her education or training? High expectations are measured as degree or higher.

¹¹ Community involvement is measured in response to the question: 'Are you involved in any local voluntary groups?' Quality of environment is a sum of responses to the following four questions: 'How common in your area?' Rubbish & litter; homes & gardens in bad condition; vandalism; people being drunk/taking drugs, with possible responses: Very common/Fairly common/Not very common/Not at all common.

Table 2a English Reading Models (ethnicity, social background and school characteristics)

		Model 1: Add ethnicity		Model 2: Add background		Model 3: Add school characteristics	
		Estimate		Estimate		Estimate	
Ethnicity	Intercept	101.995	***	104.75	***	103.895	***
	NI & UK	0.682	n.s	0.377	n.s	0.044	n.s
	Western Europe	3.121	n.s	2.809	n.s	2.45	n.s
	Eastern Europe	-9.075	***	-9.093	***	-8.768	***
	Africa	-3.902	***	-3.402	**	-3.037	*
	Asia	-4.501	***	-4.854	**	-4.67	**
	Irish (ref)	0					
Gender (ref: boy)	Girl			0.459	n.s	0.452	n.s
Length of time in Ireland (ref: born in Ireland)	Last year			-3.015	n.s	-3.118	n.s
	1 to 5 years ago			0.785	n.s	0.705	n.s
	6 to 10 years ago			1.687	*	1.636	*
Primary Caregiver working hours (ref: <35 hrs)	Works more than 35 hrs p/w			0.303	n.s	0.272	n.s.
	Ease of making ends meet (ref: very easily)	Great difficulty		-9.862	***	-9.308	***
		Difficulty		-6.424	***	-5.93	***
		Some difficulty		-5.162	***	-4.776	***
		Fairly easily		-3.179	***	-2.945	***
		Easily		-1.89	**	-1.792	***
School problems (ref: average)	Greater than average					-1.057	n.s
	Slightly greater					-0.708	n.s
	Slightly less					1.48	*
	Less than average					2.587	***
	Problem info missing					5.083	***
DEIS status (ref: rural DEIS or non-DEIS)	DEIS Urban Band 1					-5.229	***
	DEIS Urban Band 2					-2.753	**
School denomination (ref: Catholic)	Non-Catholic school					4.556	***
School gender mix (ref: mixed)	Boys only					0.894	n.s
	Girls only					1.1	n.s
Individual level variance		185.71		183.44		183.6	
School level variance		29.51		26.72		20.96	
-2 log likelihood		65778		65619		65500	
Degrees of freedom		7		17		27	

Note: Significance levels. *= $p < .05$. **= $p < .01$. ***= $p < .001$.

Model 1 shows that for initial scores (that is without controls), there is no difference in English reading between UK and Irish 9 year olds. For others there are modest differences. The children of West Europeans have slightly higher English reading scores; those from Eastern Europe, Asia and Africa have lower scores. The findings are statistically significant and the gap is largest for East Europeans. Hypothesis 1 about variation between groups is supported, though differences are modest.

To what extent are these differences due to financial difficulties? There are marked effects of financial strain, with children in families experiencing greater difficulties making ends meet having lower scores in reading. Immigrant group differences are maintained, with little change in the scores for East Europeans, which are still around 9 points lower. The gap between Irish students and Africans is now somewhat lower (now 3.4 points lower), after controlling for background: this group reported the highest levels of financial strain. For Asians there is little change in the gap between Irish and Asian students between Model 1 and Model 2 (Table 2a). There is little support for hypothesis 3 about the role of socio-economic factors accounting for variation between immigrant groups, at least measured as financial strain.

When school characteristics are added (Model 3), we find those in disadvantaged schools having lower scores even after accounting for individual financial strain: additional individual controls for socio-economic background, such as social class, might reduce the school effect. Immigrant differences in achievement scores are reduced somewhat, particularly for Africans and also East Europeans (see Model 3). Overall the effect of socio-economic background and school characteristics is most pronounced for African children, though modest (hypothesis 2 and 3). For Asians, adding school characteristics has a negligible impact on the gap in English reading between them and their Irish peers.

Model 4 adds a range of variables to try to capture cultural capital (see Table 2b). As expected, mothers' encouragement and, in particular, mothers' expectations of attainment have a strong association with reading scores. Children whose mothers have high expectations have reading scores 7 points higher on average than children whose mothers had lower expectations. Having more than 20 books in the home, participating in cultural activities, having a computer and using the library are all associated with higher reading scores. For mothers with third level qualifications, there is a gain of 3 points in reading, though of course mothers' education is also strongly linked to aspirations and home learning environment. Children whose teachers report difficulties with English language score 11 points lower on average in English reading tests.

In Model 4, with these additional factors added, the West European advantage is reduced: their higher scores are explained by the higher cultural capital of this group. For East Europeans the gap in English reading is reduced substantially when we account for cultural capital, it is now just under 5 points lower. After accounting for cultural capital, the gap between African and Asian children and Irish children is small and marginally statistically significant.

Table 2b English Reading Models (adding cultural and social capital)

		Model 4 Add cultural capital		5: Add social capital	
		Estimate		Estimate	
	Intercept	88.738	***	89.544	***
Ethnicity	NI & UK	0.511	n.s.	0.643	n.s.
	Western Europe	1.699	n.s.	1.749	n.s.
	Eastern Europe	-4.607	***	-4.424	**
	Africa	-2.232	n.s.	-1.827	n.s.
	Asia	-2.421	n.s.	-1.959	n.s.
	Irish (ref)				
Mother encourages child at school (ref: sometimes/never)	Always	1.655	***	1.769	***
PCG expectations of child qualification (ref: below degree level)	Expects degree or higher	7.233	***	7.182	***
Number of children's books in the home (ref: 20 or fewer)	More than 20 books	3.303	***	3.281	***
Child participates in cultural activities outside school (ref: no)	Yes, cultural activities	1.333	***	1.343	***
Child has computer at home	Has computer	1.972	***	1.941	***
PCG uses public library for child	Yes, uses library	1.297	***	1.219	***
Educational level of PCG (1 to 5 - basic to postgrad)	PCG education	3.357	***	3.29	***
Teacher reports problem with language of instruction	Language problem	-10.861	***	-10.659	***
	Language info missing	-1.00	n.s.	-1.021	n.s.
Child likes reading (ref: never or sometimes likes)	Always likes reading	4.31	***	4.543	***
Problem completing homework (ref: always completed)		-3.932	***	-3.952	***
	missing info	1.389	n.s.	1.474	n.s.
PCG involvement in local community groups (ref: not involved)	Involved			0.401	n.s.
Quality of local environment (ref: not in bottom quartile)	Bottom quartile			0.052	n.s.
PCG attended formal meeting with teacher (ref: no)	Attended meeting			-0.199	n.s.
Number of friends child has (ref: 2 or more)	None or 1 friend			-1.235	*
Resident spouse/partner (ref:no)	Yes			-0.151	n.s.
Father's ethnicity (ref: not Irish)	Irish			-0.161	n.s.
	missing info			-0.239	n.s.
Number of siblings	None or 1 sibling			0.768	**
Likes teacher	Always likes				
Individual level variance		151.7		150.69	
School level variance		16		16.02	
-2 log likelihood		63347		63376	
Degrees of freedom		39		48	

Note: Model also includes controls in previous models for social background and school characteristics. Significance levels. *=p<.05. **=p<.01. ***=p<.001.

When social capital is added (model 5), we find that having one or no friends is also associated with lower test scores than having more. Children from single parent families also have significantly lower scores in reading, even after controlling for socio-economic background. Having fewer siblings is associated with higher reading scores. After accounting for individual differences there is no effect of living in a disadvantaged community. After accounting for cultural and social capital, the only significant difference between immigrant groups is now between East Europeans and Irish children, and the difference is much reduced compared to Model 1. Hypothesis 4 is broadly supported, that is, part of the achievement difference is accounted for by differences in cultural and social capital among migrants, though some measures of cultural and social capital play more of a role than others.

Finally, Model 6 introduces an interaction between mothers' education and immigrant group, to explore the idea that capital, in this case educational capital acquired in the country of origin, loses currency in the receiving country (hypothesis 5). The results are presented in Table 3. Model 6 (Table 3) shows that both the children of mothers from the UK and also Western Europe receive less return to their mothers' degree than the children of Irish mothers (indicated by the significant negative interaction term). For other immigrant groups we do not find this effect. This suggests that for more highly educated, privileged migrant groups they may not be able to 'convert' their high human capital effectively in the host country, at least in the short term.

Table 3 Model of English Achievement: Do Migrants Receive Lower Returns to Higher Education?

	Estimate	Sig.
Intercept	89.541	***
Ref: Irish		
UK	1.902	n.s
West European	7.171	**
East European	-5.382	**
African	-2.471	n.s
Asian	-1.441	n.s
Mother degree or higher	3.481	***
UK*Degree	-4.102	*
West European*Degree	-10.199	**
East European*Degree	2.050	n.s
African*Degree	1.313	n.s
Asian*Degree	-1.165	n.s
Individual Level	150.45	
School level	16.06	
-2 Log likelihood	63342	
DoF	54	

Note: Model also includes controls in previous models for background, school characteristics, social capital and cultural capital. Significance levels. *=p<.05. **=p<.01. ***=p<.001.

Another interesting finding in this model is that the main effect of West Europeans is now significant and positive. While West Europeans whose parents have higher education are not receiving the same returns relative to Irish children with highly educated parents, West European children with lower educated parents are scoring higher on English reading than Irish children. East Europeans still have somewhat lower scores on average in English reading than Irish children, and this is not related to lower returns to third level education.

Applying the same model to mathematics, we find a slightly different pattern of results (presented in an Appendix Tables A1a, A1b and A1c). For mathematics, there is no penalty for the children of East European mothers, even before controls. There is an initial modest difference between the children of African mothers and Irish children (-2.7 points), but this disappears once we control for background characteristics, including financial hardship. Once cultural and social capital differences are accounted for in the model, both West East European children actually have higher mathematics scores than Irish 9 year olds but these differences are not significant (Appendix Table A1b). As with English reading, we find West European children of highly educated mothers do worse in mathematics relative to Irish children of highly educated mothers, but the children from a lower educational background do better than their Irish counterparts (see Appendix Table A1c). This effect is not found for other national groups.

5 Discussion

Children of immigrants have been the fastest growing segment of the youth population in countries across the world and the educational attainment of immigrant children has been investigated in a growing number of studies. This body of research, mostly originating from the United States, has indicated that educational success tends to vary across national groups (Portes and Rumbaut, 2001). The explanations for these group differences have been noted to include financial and human capital, family structure, community resources, cultural relations, as well as external factors such as racial stratification and economic opportunities (Zhou, 1997). This paper aims to extend our knowledge of the academic outcomes of the children of a highly educated heterogeneous group of immigrants in Ireland. As a new immigrant-receiving country, Ireland and the Irish education system had little experience of ethnic and cultural diversity: the largely White Irish population was educated in predominantly Catholic primary schools. The arrival of a substantial number of immigrants from a range of countries challenged this education system. Using data from the Growing Up in Ireland study, a study based on a nationally representative sample of 9-year-old children, the present study extends prior research on the academic outcomes of immigrants' children by examining whether there is an achievement penalty for immigrant children in Ireland in English reading. The results of the study show that such a penalty exists for the children of immigrants in Ireland as a group, but scores vary substantially across different national groups for English reading (H1), and overall the 'immigrant penalty' is modest.

While children's academic success is shaped by a number of factors, various studies refer to the importance of parental background and characteristics. It is important to understand how the resources parents arrive with (various capitals) and the resources available in their host country impact on the academic achievement of immigrant children. This paper shows that family financial strain has a clear negative effect on reading achievement, though its role in understanding the differences between immigrant groups is very small.

Educational researchers have identified school composition as one of the key areas responsible for schools' differences in overall academic success. When schools are segregated by their socioeconomic status (SES), they may differ in many ways, including teacher quality, staffing ratios, school climate, and teachers' expectations. Previous research has found a school's mean SES to have a contextual effect on students' achievement and dropout rates, over and beyond the effects of individual students' background characteristics (Rumberger and Willms, 1992; Lee and Bryk, 1989). In Ireland, previous research had found that immigrant children are overrepresented in disadvantaged urban schools (DEIS) (see Smyth et al., 2009); this paper shows this is particularly true of African children. Inequalities in educational stratification and occupational achievement are reproduced via schools (Bourdieu and Passeron, 1977). Immigrants from Western Europe in Ireland are least likely to experience these effects. African and Eastern European immigrants are more likely to be found attending disadvantaged schools, thus supporting H3, though once again the role in achievement differences is modest.

Perhaps the largest part of the difference between groups is accounted for by differences in social and particularly cultural capital, though some measures have a much stronger association with reading than others. This role of social and cultural capital differences is particularly the case for East Europeans, for whom the gap in English reading is largest in Ireland. An important measure of cultural capital is parents' English-language proficiency. Parents who have difficulty with the English language are less likely to adopt strategies that contribute to academic achievement, such as reading at home, watching educational television, going to the library, or visiting museums (Pong and Landale, 2012). A foreign language spoken at home is the single most important factor associated with the educational gap (Dustman, et al., 2012). This study showed that low English language proficiency has a significant impact on reading scores, particularly for Eastern Europeans.

Existing studies suggest that immigrants from poorer countries tend to have lower levels of education. While immigrants in a number of countries tend to be less educated compared to natives, the situation is different in Ireland where immigrants tend to be highly qualified, partly due to migration policies regarding non-EU immigrants. On average, East European immigrants have lower qualifications in Ireland than non-EU immigrants. This study in the Irish context showed that despite the high levels of education of different groups of immigrant parents, and their high expectations for their children, this does not always translate into high achievement (measured here by reading scores) among their children. The children of mothers from the UK and also Western Europe receive less return to their mothers' degree than the children of Irish mothers, lending some support to arguments about the convertibility of capital. In other words, these groups find it difficult to convert their capitals into one valued in Irish schools.

One of the remarkable findings of this study is the high expectations of immigrant parents regarding the educational success of their children. A significant proportion across national groups expect their child to reach third level education. Recent immigrants may have greater faith in the use of education to achieve upward mobility than their more established racial or ethnic minority peers in the second or third generation (Gibson and Ogbu, 1991). Whether these high parental expectations can overcome the (albeit modest) disadvantage in achievement that immigrant children face, remains to be seen. The fact that this data is the first wave of a longitudinal cohort study will allow researchers to follow these children through the Irish education system and examine their transition to second-level education and their achievement there.

References

- Alba, R. and Nee, V. (1997), "Rethinking Assimilation Theory for a New Era of Immigration." *International Migration Review*, 31(4): 826-874.
- Barrett, A. and Duffy, D. (2008), Are Ireland's Immigrants Integrating into Its Labor Market? *International Migration Review*, 42, 3 (Autumn 2008):597-619
- Bernstein, B. (1975), "Sources Of Consensus and Disaffection in Education". *Class, Codes and Control*. London: Routledge and Kegan Paul.
- Borjas, G. J., Bronars, S. G. and Trejo, S. J. (1992), "Self-Selection and Internal Migration in The United States", *Journal of Urban Economics*, 32(2):159-185.
- Bourdieu, P. (1979), *Distinctions. A Social Critique of the Judgment of Taste*. Harvard University Press
- Bourdieu, P. (1998), *Distinctions: A Social Critique of the Judgement of Taste*. Massachusetts; Harvard University Press.
- Bourdieu, P. (1998), *Practical Reason: On Theory of Action*, Stanford University Press.
- Bourdieu, P. (1986), "The Forms of Capital", in J. G. Richardson (ed.) *Handbook of Theory and Research for the Sociology of Education*. New York: Greenwood Press. Pp. 241-258.
- Bourdieu, P. (1977), "Cultural Reproduction and Social Reproduction", in J. Karabel and A. H. Halsey (eds) *Power and Ideology in Education*. New York, NY: Oxford University Press. Pp. 487-511.
- Bourdieu, P. and Passeron, J. C. (1977), *Reproduction in Education, Society and Culture*. Beverly Hills: Sage.
- Bradley, R.H., Corwyn, R.F., McAdoo, H.P., Garcia, C. C. (2001), "The home environments of children in the United States Part I: Variations by age, ethnicity, and poverty status". *Child Development*, 72(6):1844-1867.
- Byrne, D., McGinnity, F., Smyth, E. and Darmody, M. (2010), 'Immigration and School Composition in Ireland'. *Irish Education Studies Journal*, Special Issue on 'Race', Migration and Education in A Globalised Context, 29:271 - 288.
- Chiswick, B. (1978), "The Effects of Americanization on the Earnings of Foreign-born Men." *Journal of Political Economy*, 86(5): 897-921.
- Clark, A., McQuail, S. and Moss, P. (2003), *Exploring the field of listening to and consulting with young children*, Research Report 445, London: DfES.
- Crosnoe, R. (2013), *Preparing the Children of Immigrants for Early Academic Success*. Migration Policy Institute: Washington DC.
- Darmody, M., Smyth, E., Byrne, D., & McGinnity, F. (2011), "New school, new system: The experiences of immigrant students in Irish schools". In Z. Bekerman & T. Geisen (Eds.), *International Handbook of Migration, Minorities, and Education – Understanding Cultural and Social Differences in Processes of Learning*. Amsterdam: Springer.
- Devine, D. (2009), 'Mobilising capitals? Migrant children's negotiation of their everyday lives in the primary school'. *British Journal of Sociology of Education*, 30 (5).
- DiMaggio, P. (1982), Cultural Capital and School Success: The Impact of Status Culture Participation on the Grades of US High School Students. *American Sociological Review* 47, 2, 189-201.
- DiMaggio, P. and Mohr, J. (1985), Cultural Capital, Educational Attainment and Marital Selection. *American Journal of Sociology* 90, 6, 1231-1261.
- Domina, T. (2005), Leveling the home advantage: Assessing the effectiveness of parental involvement in elementary school. *Sociology of Education*, 78(3), 233-249.
- Driessen, G. W. J. M. (2001), Ethnicity, Forms of Capital and Educational Achievement. *International Review of Education* 47, 6, 513-538.

Dustmann, C., Frattini, T., Lanzara, G. (2012), Educational achievement of second generation immigrants: an international comparison. *Economic Policy*, 69, 143-185.

Entwisle, D., & Alexander, K. L. (1993). Entry into school: The beginning school transition and educational stratification in the United States. *Annual Review of Sociology*, 19, 401-423.

Feliciano, C. (2005), Does Selective Migration Matter? Gaining Ethnic Disparities in Educational Attainment among Immigrants' Children, *IMR Volume 39 Number 4 (Winter 2005):841-871*

Gibson, M. A. & Ogbu, J. U. (1991) *Minority status and schooling; a comparative study of immigrant and involuntary minorities* (New York, London)

Goldstein, H.. (2003), *Multilevel Statistical Models*. Third Edition. London, Edward Arnold.

Heath A., C. Rethon, and E. Kilpi (2008), "The second generation in Western Europe: Education, unemployment, and occupational attainment", *Annual Review of Sociology*, Vol. 34: 211-35.

Hillmert, S. (2013), Links between immigration and social inequality in education: A comparison among five European countries, *Research in Social Stratification and Mobility*, Volume 32, June 2013, Pages 7–23

Jenkins, R. (2002), *Pierre Bourdieu*, revised edition, London: Routledge.

Kingdon, G. and Cassen, R. (2010), 'Ethnicity and low achievement in English schools', *British Educational Research Journal*, 36: 3, 403 — 431, First published on: 22 June 2009 (iFirst)

Kingston, G., O'Connell, P. And Kelly, E. (2013) [Ethnicity and Nationality in the Irish Labour Market: Evidence from the QNHS Equality Module 2010](#). Dublin: Equality Authority/ESRI.

Kristen, C., Reimer, D. and Kogan, I. (2008), Higher Education Entry of Turkish Immigrant Youth in Germany, *International Journal of Comparative Sociology*, 49 (2-3), 128-151

Lareau, A., & Horvat, E. M. (1999), Moments of social inclusion and exclusion: Race, class, and cultural capital in family–school relationships. *Sociology of Education*, 72, 37–53.

Lee, V. E., & Bryk, A. S. (1989). A multilevel model of the social distribution of high school achievement. *Sociology of Education*, 62, 172-192.

McCoy, S., Quail, A., Smyth, E.(2014), 'The Effects of School Social Mix: Unpacking the Differences', *Irish Educational Studies*, 33 (3): 307-330.

McGinnity, F., Quinn, E., Kingston, G., O'Connell, P. (2014), *Annual Monitoring Report on Integration 2013*. Dublin: Economic and Social Research Institute and The Integration Centre.

McGinnity, F., Quinn, E., Kingston, G., O'Connell, P. (2012), *Annual Monitoring Report on Integration 2011*. Dublin: Economic and Social Research Institute and The Integration Centre.

Monkman K.,R. M. and Théràmène,F. D.(2005), Social and Cultural Capital in an Urban Latino School Community. *Urban Education*, 40,1, 4-33.

OECD (2007) Matching Educational Background and Employment: A Challenge for Immigrants In Host Countries *Employment Outlook 2007*. Paris: OECD.

Park-Taylor, J., Ng, V., Ventura, A. B., Kang, A. E., Morris, C. R., Gilbert, T., ...Androsiglio, R. A. (2008). What it means to be and feel like a "true" American: Perceptions and experiences of second-generation Americans. *Cultural Diversity and Ethnic Minority Psychology*, 14, 128–137. doi: 10.1037/1099-9809.14.2.128

Portes, A. and Rumbaut, R. G. (2005), "Introduction: The Second Generation and the Children of Immigrants Longitudinal Study." *Ethnic and Racial Studies* 28(6):983-999.

Portes, A., Fernandez-Kelly, P. and Haller, W. (2005), Segmented Assimilation on the Ground: The New Second Generation in Early Adulthood." *Ethnic and Racial Studies*, 28(6): 1000-1040.

Powell, J. (2003), Constructing Disability and Social Inequality Early in the Life Course: the case of special education in Germany and the United States, *Disability Studies Quarterly* Spring 2003, Volume 23, No. 2 pages 57-75

Reay, D. (2004). 'It's all becoming a habitus': beyond the habitual use of habitus in educational research. *British Journal of Sociology of Education* [Special Issue on Pierre Bourdieu's Sociology of Education], 25 (4), 431–444.

Rumbaut, R. G., 2005 *Children of Immigrants and Their Achievement: The Roles of Family, Acculturation, Social Class, Gender, Ethnicity, and School Context, Addressing The Achievement Gap: Theory Informing Practice*, pp. 23-59, Ronald D. Taylor, ed., Information Age Publishing, Inc., 2005

Rumberger, R.W. & Willms, J. D. (1992) *Educ. Eval. Policy Anal.* 14, 377–396.

Saracho, O. (2005), *Contemporary Perspectives on Families, Communities, and Schools for Young Children*, Information Age Publishing.

Schiller KS, Khmelkov VT, Wang XQ. Economic development and the effects of family characteristics on mathematics achievement. *Journal of Marriage and the Family.* 2002;64(3):730–742.

Schnell P. and Azzolini, D. 2012, *The academic achievements of immigrant youths in new destination countries: Evidence from southern Europe Migration Studies*, pp. 1-24.

Saffigna, M., Church, A., Tayler, C. (2010), *High expectations for every child, Victorian early years learning and development network*, available online:
<http://www.education.vic.gov.au/Documents/childhood/providers/edcare/highexpect.pdf>

Smyth, E., Darmody, M., McGinnity, F., & Byrne, D. (2009). *Adapting to diversity: Irish schools and newcomer students*. Dublin: The Economic and Social Research Institute. Retrieved March 28, 2010, from http://www.esri.ie/publications/latest_publications/view/index.xml?id=2783

Turney, K. & Kao, G. (2009). Barriers to school involvement: Are immigrant parents disadvantaged? *The Journal of Educational Research*, 102: (4), 257-271.

Tzanakis, M. (2011), *Bourdieu's Social Reproduction Thesis and The Role of Cultural Capital in Educational Attainment: A Critical Review of Key Empirical Studies*, *Educate: Journal of Doctoral Studies in Education*, 11,1, available online at: <http://www.educatejournal.org/index.php/educate/article/view/251>

Vincent, C. Nicola Rollock, Stephen Ball & David Gillborn (2012): *Being strategic, being watchful, being determined: Black middle-class parents and schooling*, *British Journal of Sociology of Education*, 33:3, 337-354

Weine, S. M., Ware, N. And Klebic, A. (2004), *Converting cultural capital among teen refugees and their families from Bosnia-Herzegovina*, *Psychiatric Services*, 55, 923-927.

Whelan, Christopher T.; Hannan. Damian F. 'Class inequalities in educational attainment among the adult population in the Republic of Ireland'. - *Economic & Social Review*, Vol. 30, No. 3, July, pp. 285-307, Dublin: Economic & Social Research Institute

Williams, J., Greene, S., Doyle, E., Harris, E., Layte, R., McCoy, S., McCrory, C., Murray, A., Nixon, E., O'Dowd, T., O'Moore, M., Quail, A., Smyth, E., Swords, L. and Thornton, M. (2009). *Growing up in Ireland – National longitudinal study of children: The Lives of 9-year olds*. The Stationery Office: Dublin.

Zhou, Min. 1997. "Segmented assimilation: issues, controversies, and recent research on the new second generation." *International Migration Review*. 31, 4: 975–1008.

Appendix Table A1a: Models of Achievement in Mathematics

		Model 1: Add ethnicity		Model 2: Add background		Model 3: Add school characteristics	
		Estimate		Estimate		Estimate	
	Intercept	101.513	***	104.800	***	103.865	***
Ethnicity	NI & UK	1.053	n.s	1.058	n.s	0.935	n.s
	Western Europe	-2.244	n.s	2.145	n.s	2.025	n.s
	Eastern Europe	-0.655	n.s	-0.365	n.s	-0.041	n.s
	Africa	-2.714	*	-1.880	n.s	-1.558	n.s
	Asia	0.226	n.s	0.086	n.s	0.206	n.s
	Irish (ref)						
Gender (ref: boy)	Girl			-1.907	***	-1.790	***
Length of time in Ireland (ref: born in Ireland)	Last year			-1.834	n.s	-1.921	n.s
	1 to 5 years ago			0.651	n.s	0.567	n.s
	6 to 10 years ago			0.555	n.s	0.537	n.s
Primary Caregiver working hours (ref: <35 hrs)	Works more than 35 hrs p/w			-0.345	n.s	-0.393	n.s
Ease of making ends meet (ref: very easily)	Great difficulty			-8.890	***	-8.518	***
	Difficulty			-6.104	***	-5.751	***
	Some difficulty			-4.334	***	-4.057	***
	Fairly easily			-2.424	***	-2.254	***
	Easily			-0.529	n.s	-0.465	n.s
School problems (ref: average)	Greater than average					-0.366	n.s
	Slightly greater					0.976	n.s
	Slightly less					1.775	*
	Less than average					3.045	***
	Problem info missing					5.281	***
DEIS status (ref: rural DEIS or non-DEIS)	DEIS Urban Band 1					-6.040	***
	DEIS Urban Band 2					-1.477	n.s
School denomination (ref: Catholic)	Non-Catholic school					1.613	n.s
School gender mix (ref: mixed)	Boys only					1.266	n.s
	Girls only					0.531	n.s
Individual level variance		179.30		176.62		176.77	
School level variance		41.80		37.20		32.44	
-2 Log likelihood		66380		66197		66109	
Degrees of freedom		7		17		27	

Table A1b: Models of Achievement in Mathematics

		4: Add cultural capital		5: Add social capital	
		Estimate		Estimate	
	Intercept	92.180	***	93.577	***
Ethnicity	NI & UK	1.324	n.s	1.454	n.s
	Western Europe	2.000	n.s	2.357	n.s
	Eastern Europe	1.839	n.s	2.397	n.s
	Africa	-1.191	n.s	-1.110	n.s
	Asia	0.991	n.s	1.310	n.s
	Irish (ref)				
Mother encourages child at school (ref: sometimes/never)	Always	0.827	*	1.022	**
PCG expectations of child qualification (ref: below degree level)	Expects degree or higher	6.488	***	6.389	***
Number of children's books in the home (ref: 20 or fewer)	More than 20 books	2.165	***	2.138	***
Child participates in cultural activities outside school (ref: no)	Yes, cultural activities	1.254	***	1.211	***
Child has computer at home (ref: no)	Has computer	2.011	***	1.766	***
PCG uses public library for child (ref: no)	Yes, uses library	0.996	**	0.934	**
Educational level of PCG (1 to 5 - basic to postgrad)	PCG education	2.264	***	2.071	***
Teacher reports problem with language of instruction	Language problem	-6.520	***	-6.333	***
Child likes maths (ref: never or sometimes likes)	Always likes maths	2.876	***	3.175	***
Problem completing homework (ref: always completed)	Sometimes/regularly not completed	-4.552	***	-4.551	***
PCG involvement in local community groups (ref: not involved)	Involved			0.628	*
Quality of local environment (ref: not in bottom quartile)	Bottom quartile			-0.282	n.s
PCG attended formal meeting with teacher (ref: no)	Attended meeting			-0.550	n.s
Number of friends child has (ref: 2 or more)	None or 1 friend			-1.614	**
Resident spouse/partner (ref: no)	Yes			0.305	n.s
Father's ethnicity (ref: not Irish)	Irish			-0.039	n.s
Number of siblings (ref: 2 or more)	None or 1 sibling			-0.589	*
Likes teacher (ref: sometimes/never)	Always likes			-2.300	***
Individual level variance		156.85		155.55	
School level variance		27.89		27.48	
-2 Log likelihood		64613		64531	
Degrees of freedom		39		48	

Note: Model also includes controls in previous models for social background and school characteristics (see Table A1a). Also includes controls for missing information on language ability, homework completion and father's ethnicity. Significance levels. *= $p < .05$. **= $p < .01$. ***= $p < .001$.

Table A1c: Models of Achievement in Mathematics

	Estimate	Sig.
Intercept	93.540	***
Ref: Irish		
UK	2.444	*
West European	6.705	**
East European	1.646	n.s
African	-1.167	n.s
Asian	2.524	n.s
Mother degree or higher	2.279	***
UK*Degree	-3.211	n.s
West European*Degree	-8.315	**
East European*Degree	1.645	n.s
African*Degree	-0.080	n.s
Asian*Degree	-2.319	n.s
Individual Level	155.41	
School level	27.53	
-2 Log likelihood	64502	
DoF	54	

Note: Model also includes controls in previous models for background, school characteristics, social capital and cultural capital. Significance levels. *= $p < .05$. **= $p < .01$. ***= $p < .001$.

Year	Number	Title/Author(s) ESRI Authors/Co-authors <i>Italicised</i>
2015	511	Forward Price, Renewables, and the Electricity Price: The Case of Italy <i>Valeria di Cosmo</i>
	510	Carbon Dioxide (CO2) Emissions from Electricity: The Influence of the North Atlantic Oscillation <i>John Curtis, Muireann Á. Lynch, and Laura Zubiateg</i>
	509	The Impact of the North Atlantic Oscillation on Electricity Markets: A Case Study on Ireland <i>John Curtis, Muireann Á. Lynch, and Laura Zubiateg</i>
	508	Nudging Electricity Consumption Using TOU Pricing and Feedback: Evidence from Irish Households <i>Valeria di Cosmo, Denis O’Hara, and Niamh Devitt</i>
	507	Investment vs. Refurbishment: Examining Capacity Payment Mechanisms Using Mixed Complementarity Problems With Endogenous Probability <i>Muireann Á. Lynch and Mel T. Devine</i>
	506	Returns to Education and the Demand for Labour in Vietnam <i>Seamus McGuinness, Elish Kelly, Pham Thi Thu Phuong , Ha Thi Thu Thuyd</i>
	505	Analysing Residential Energy Demand: An Error Correction Demand System Approach for Ireland <i>John Curtis and Brian Stanley</i>
	504	Restructuring European Electricity Markets – A Panel Data Analysis <i>Marie Hyland</i>
	503	Assessing the Sustainable Nature of Housing - Related Taxation Receipts: The Case of Ireland <i>Diarmaid Addison-Smyth and Kieran McQuinn</i>
	502	Perceived Group Discrimination among Polish Migrants to Western Europe: Comparing Germany, the Netherlands, the UK and Ireland <i>Frances McGinnity and Merove Gijsberts</i>
	501	Europe’s Long-Term Growth Prospects: With and Without Structural Reforms <i>Kieran McQuinn and Karl Whelan</i>

For earlier *Working Papers* see http://www.esri.ie/publications/latest_working_papers/