



**The effects of language proficiency and related policy on student
outcomes for non-native English speakers: A case study of
Glasgow secondary schools**

Thesis submitted in partial fulfilment of the requirements for the degree of DPhil in
Social Policy in the Social Sciences Division at the University of Oxford

Hilary Term 2021

Stephen Dillon

New College

Approximate word count: 62,300

Supervisor: Professor Brian Nolan

Supervisor: Dr. Marii Paskov

Acknowledgements

In the first instance, I wish to thank Dr Paola Mattei for giving me the initial opportunity to enter such a wonderful institution. Second, Dr Elizabeth Frazer for pastoral support and academic advice at a crucial time, without which I could not have completed this academic journey. To an equal degree, I owe Dr Alexi Gugushvili eternal gratitude for his support, wisdom, and patience while I got to grips with a complete change of methodology. Similarly, I wish to thank my current academic supervisory team, Professor Brian Nolan, and Dr Marii Paskov. Changing supervisors is difficult for both parties at a crucial stage, but the experience of Brian ensured a seamless transition guiding me to completion. I am indebted to Dr Paskov for her thorough reading of my numerous drafts and constructive feedback. I am grateful to Mrs Mary Smith, Senior Graduate Studies Administrator, her efficiency, and helpfulness was exemplary during challenging times. It goes without saying family and friends have provided me with the support I needed during this long journey, in particular Xuan, for her many insightful discussions of methods and statistical analysis. Finally, I would like to thank the small group of 'new arrival' English as an additional language (EAL) students I met during my fieldwork. They allowed me an insight into the challenges they faced, helping me see beyond the data, but inspired me to keep going.

**The effects of language proficiency and related policy on student outcomes
for non-native English speakers: A case study of Glasgow secondary
schools**

Abstract

Lack of English language proficiency impedes access to the curriculum in UK schools. The objective of this thesis is to determine (a) the nature of the association between English language proficiency and educational outcomes, (b) its implications for policy (c) and the impact on students' life chances. Improved outcomes follow improved proficiency, to the extent that some English as additional language (EAL) students are among the top performers. However, the point where EAL shifts from disadvantage to advantage is unclear, and research on the topic more broadly across the UK is limited. Focusing on the city of Glasgow, with a bespoke dataset including a disaggregated measure of language proficiency, student background characteristics, years (2007-2016), and school characteristics, this thesis investigates in depth the relationships between English language proficiency and educational outcomes of 15-16 years-old students as well as their subsequent initial post-school destinations. This is accomplished in four empirical papers. Paper 1 investigates the association between language proficiency and educational performance using fixed effects regression models. Paper 2 explores differences between schools in that relationship via multilevel regression models. Paper 3 considers how consistent the association between proficiency and educational performance has been over time and the impact of a policy shift towards mainstreaming using multilevel difference-in-differences regression. Paper 4 assesses post-secondary school transitions within a

multinomial regression framework. Each paper hypothesises an intermediate EAL level as the proficiency threshold at which those students match English as first language student outcomes. They confirm the association and hypothesised threshold. The first paper shows a positive association between higher language proficiency and attainment, which holds with a range of statistical control variables. The second paper identifies and highlights differences across schools, particularly in effectiveness for English language beginners, as well as finding an association between increased numbers of EAL students and worse outcomes for beginners. The third paper shows that those beginners may benefit from separate instruction. The fourth paper finds that a shift from further education to higher education as initial post-school outcome is associated with greater English language proficiency. This thesis contributes to scholarship by studying EAL in the distinctive Scottish context, adding to the very limited UK literature on educational performance incorporating various levels of English language proficiency rather than relying on a binary variable, exploring whether a language proficiency threshold in terms of that performance can be identified, and extending this analysis beyond schooling to encompass initial post-school destinations. By doing so it substantially adds to understanding of how lower levels of English language proficiency shape students' outcomes in Glasgow secondary schools, with relevance to policies and practices across the UK.

Table of Contents

List of Abbreviations	9
Introduction.....	10
Paper 1: The Association Between English Language Proficiency and Educational Attainment.....	41
Abstract	41
1. Introduction.....	43
2. Literature Review.....	46
3. The Research Question	52
4. Data and Methods.....	54
5. Results.....	61
6. Discussion	69
7. Conclusions and implications.....	74
References	76
Appendix A	90
Appendix B	91
Appendix C	92
Paper 2: English Language Proficiency and Attainment in Secondary Schools: A Multilevel Regression Model.....	94
Abstract	94
1. Introduction.....	96
2. Review of literature	99
3. The Research Question	105
4. Data and Methods.....	106
5. Results.....	112
6. Discussion	126
7. Conclusions and implications.....	130
References	132
Appendix A	143
Paper 3: The Effect of Mainstreaming Policy on English as an Additional Language Student Outcomes and Key Thresholds of Proficiency: A Multilevel Difference-in-Differences Regression Model.....	144
Abstract	144
1. Introduction.....	146
2. The Policy Context and Literature	151
3. The Research Question	158
4. Data and Methods.....	160
5. Results.....	167
6. Discussion	177

7. Conclusion and implications.....	181
References	183
Appendix A	196
Appendix B	197
Appendix C	198
Paper 4: The Association Between English Language Proficiency and Initial School Leaver Destinations: A Multinomial Logistic Regression Model.....	200
Abstract	200
1. Introduction	202
2. The Research Literature	205
3. The Research Question	213
4. Data and Methods.....	216
5. Results.....	222
6. Discussion	232
7. Conclusions and policy implications.....	241
References	243
Appendix A	255
Appendix B	256
Appendix C	257
Overview of Thesis and Conclusions.....	258
Appendix A	281

List of tables

Introduction

Table 1: Students by Sub-fluent Levels of English Language Proficiency in Glasgow City Local Authority Schools 2006-2016.....	19
--	----

Paper 1

Table 1: Distribution of variables within population at S4 across 29 schools.....	56
Table 2: Effects of Student-level Predictors on Scores at S4	66
Table 3: Measures of English Language Proficiency.....	90
Table 4: Ethnicity Variable.....	91

Paper 2

Table 1: Descriptive Statistics.....	109
Table 2: Null Models Estimates of Covariance Parameters for Outcomes at S4.....	113
Table 3: Multilevel Models for outcomes at S4 in 26 Schools (SE in brackets).....	115
Table 4: Ethnicity Variable.....	143

Paper 3

Table 1: DiD Parameter Estimates for New to English and English as First Language Student Groups for 2009-2011 and 2014-2016 at S4.....	171
Table 2: Parameter Estimates for Model 1 (No Predictors) at S4.....	196

Paper 4

Table 1: Data Summary.....	223
Table 2: Multinomial Logistic Regression on Initial Destinations of School Leavers.....	228
Table 3: The categorisation used in published outputs for positive and negative Destinations of School Leavers categories.....	255
Table 4: Positive and negative Destinations of School Leavers categories used in Scottish Government publications.....	256
Table 5: Ethnicity Variable.....	257

Overview of Thesis and Conclusions

Table 1: FSM entitlement recorded and level of English language proficiency at S4.....	281
--	-----

List of figures

Introduction

Figure 1: English language proficiency and ethnicity.....	21
---	----

Paper 1

Figure 1: Hypothesised association between English language proficiency and educational achievement and threshold.....	54
Figure 2: Mean scores of English as first language and EAL groups at S4.....	61
Figure 3: Mean scores by cohort level of English language proficiency.....	62
Figure 4: Estimated outcomes by English language proficiency.....	68
Figure 5: Outcomes at S4 by level of English language proficiency at S1.....	93

Paper 2

Figure 1: Composition variables: Correlations.....	117
Figure 2: Predicted scores by language proficiency at S4 by School EAL composition..	120
Figure 3: Comparison of Predicted Scores by Schools and EAL level 1-5.....	122
Figure 4: Predicted scores from Model 3 by schools and level of English language proficiency.....	125

Paper 3

Figure 1: Predicted Values from Difference-in-Differences Model.....	172
Figure 2: Mean scores at S4 (2008-2016) by English language proficiency at S4.....	174
Figure 3: S1 Cohorts English as an additional language progress.....	176
Figure 4: Glasgow Secondary Schools Census Population 2007-2016.....	197
Figure 5: Mean scores of S1 2007-2012 cohorts at S4.....	199

Paper 4

Figure 1: Initial Destination by Level of English Language Proficiency at S4.....	225
Figure 2: Estimated Probability of Initial Destination by EAL level.....	231

List of Abbreviations

Language proficiency

EAL English as an additional language

NE New to English

EA Early Acquisition

C Competent

DC Developing Competence

F Fluent

EN English as a first-language

L1 First language

L2 Second language

Additional student background variables

ASN Additional Support Needs

FSM Free School Meals

SEN Special Education Needs

SES Socioeconomic status

School and examinations

ESOL English for Speakers of Other Languages

S1-S6 Denotes stage of secondary school of student (first year to sixth year)

SCQF Scottish Credit and Qualifications Framework

SQA The Scottish Qualifications Authority

Tariff Points awarded for performance in Scottish Qualifications Authority (SQA) examinations

Policy

EMAG Ethnic Minority Achievement Grant

Destinations of school leavers

FE Further Education

HE Higher Education

SDS Skills Development Scotland

Introduction

1. The Importance of language proficiency in education

A lack of linguistic proficiency in the language of instruction in school impedes access to the curriculum. This thesis focuses on the association between English language proficiency and educational outcomes in UK secondary schools. It addresses the important topic of potential inequality in educational outcomes for non-native language speakers. International migration has increased ethnic and linguistic diversity in UK secondary schools, increasing the number of students who are not proficient in the English language (GCC, 2010). Although not all migrants lack proficiency in English, and conversely not all school age students who do not have English as their first language are migrants, studies focusing on students with an immigrant background indicate not being a native language speaker is negatively associated with educational outcomes. Attainment gaps for students with an immigration background and non-native language proficiency are found in international and UK contexts (Christensen and Stanat, 2007; Dronkers and De Heus, 2012; Dustmann et al., 2010; Jensen and Rasmussen, 2011; Lenkeit et al., 2015; Marks, 2005; Mullis et al., 2007; OECD, 2010; Ohinata and van Ours, 2013; Shapira, 2012; Strand, 2014). Christensen and Stanat (2007) show that students who do not use the language of instruction at home and are approaching the crucial assessment phase (aged 15) are one year behind their native language speaking peers.

Yet, there is inherent contradiction in the literature. On the one hand, students who do not speak the language of instruction at home are found in some studies to underperform, while others found them to be among the top performers

INTRODUCTION

in England (See Demie and Lewis, 2018). The contradiction may in part be due to studies using aggregated language proficiency data, reduced to a binary variable, in contrast to studies using various levels of language proficiency in their analyses. If so, this would indicate that levels of linguistic proficiency, and perhaps an underlying threshold of proficiency, might be key to understanding this puzzle.

The effect of linguistic competence may also play out in economic outcomes for school leavers as seen in analysis of UK labour market data. There, disparity is found between “the assimilation patterns of ethnic minority immigrants and white immigrants” (Dustmann and Fabbri, 2003, p.714),¹ yet unsubstantiated for ‘English as an additional language’ (EAL) students in the literature. Despite a growing body of literature on the topic of EAL education, knowledge gaps remain on: (a) how EAL students perform in different educational contexts across the UK, (b) how effectively they are supported by policy, and (c) their social and economic integration after leaving secondary school.

This thesis considers similar questions to those posed in some studies of England. They are explored here in the Scottish educational context which differs in important respects, but also widens the scope of inquiry, thereby contributing knowledge to the field. Its strength rests on a bespoke database derived from data released by the Scottish Government for the purpose of this thesis. The database was subsequently tailored to facilitate analysis of the central questions posed. It introduces new data, with the full range of recorded English language proficiency of students, educational outcomes, school leaver destinations, and student background variables, across all 30 state funded secondary schools in the city of

¹ For an overview of the English language proficiency of migrants in the UK, see Reino (2019).

INTRODUCTION

Glasgow (2007-2016).² This allows not only the key variable of interest to be studied (English language proficiency), but also the retrospective tracking of students' linguistic progress and assessment of change in educational performance over time.

The English language is the medium of instruction and examination throughout the United Kingdom. English language skills are fundamental to listening, reading, and writing in UK classrooms. As such, the findings of this thesis are relevant and important well beyond the city of Glasgow. This thesis argues English language proficiency is the key explanatory variable for EAL students' outcomes in Glasgow secondary schools. It is the first study to explore the association between English language proficiency and educational outcomes in the Scottish setting, incorporate the possibility of a universal threshold of proficiency as an explanatory mechanism for EAL student outcomes in the UK context, and investigate subsequent destinations of EAL school leavers.

2. Key Gaps in Knowledge

Research Gaps

There are English as additional language (EAL) students in secondary schools in cities throughout the United Kingdom. Yet, beyond London there is little empirical research on the association between English language proficiency and educational attainment.³ In Scotland, in keeping with the findings of Christensen and Stanat (2007), secondary school EAL students as a group are behind

² The focus of this study is on secondary schools funded by Glasgow City Council. Although the city does have independent schools, they are not publicly funded. Nationally, private education accounts for approximately 5% of students educated in Scotland (Forbes and Weiner, 2008; OECD, 2015). Most independent schools are situated in urban areas such as Edinburgh and the city of Glasgow (OECD, 2015).

³ The UK does not have a unified education system.

INTRODUCTION

students with English as their first language in reading, writing, listening, and talking prior to entering the senior assessment phase (Scottish Government, 2016a).⁴ Although no study to date has explored the association in the Scottish context, the evidence from England suggests higher levels of English language proficiency equate to better outcomes in secondary schools, confirmed in inner London (Demie, 2017; Demie, 2018; Demie and Lewis, 2018; Demie and Strand, 2006), and across England (Strand and Hessel, 2018). Moreover, fluent EAL students outperform monolingual students (Demie and Lewis, 2018). To find EAL students among the top performers in UK schools is to some extent contrary to what one would intuitively expect, given English is the language of instruction, and native English language speakers the benchmark.⁵

The association between English language proficiency and improved outcomes is not unexpected. However, in isolation, the association is of limited value from a policy perspective. Further information is required on the underlying mechanisms. For instance, it is conceivable learners reach a threshold of linguistic proficiency that allows matching, then overtaking native English language students.⁶ A clear articulation of that pivotal point and confirmation of the association between proficiency and attainment in other UK educational contexts, such as Scotland, is missing from the literature.

⁴ There are no published attainment summaries by level of English language proficiency in Scotland.

⁵ Though, no less susceptible to the pernicious effects of established determinants of educational inequality as native language students, particularly socioeconomic factors (Burgess, 2014; McKinney et al., 2012; Strand et al., 2015).

⁶ This hypothesis is the thread which ties together each of the papers presented in this thesis.

INTRODUCTION

Scotland presents a different educational, social, and political landscape than in England.⁷ For instance, the education system in England is decentralised. It comprises a range of different school types, some opting out of local education authority control. In contrast, public funded schools are part of a predominantly comprehensive, non-selective state education system in Scotland, even prior to devolution (Raffe et al., 1999; Sawkins, 2002). Post-devolution, Scottish education is still characterised as a non-selective system, moreover, while schools in England have diversified in type and acquiring greater autonomy, local authorities in Scotland retain a strong influence on educational provision (Machin et al., 2013). Therefore, market mechanisms are not a feature of the Scottish system (OECD, 2015). In terms of their curricula, Scotland is more prescriptive with a decentralised non-statutory curriculum, vis-à-vis a national statutory curriculum implemented in England (Machin et al., 2013). As of 2011, the city of Glasgow was the most ethnically diverse urban area in Scotland (12%), but considerably less so than London (40%), which stood out in the UK context with the most ethnically diverse local authorities in England (GCPH, n.d.; UK Government, 2020a). Similarly, although the proportion of EAL students are approximately 20% of the school population in Glasgow, it is considerably less than inner London which extends to 56% (McKenna, 2020; Strand et al., 2015). Nevertheless, the key questions addressed by scholars elsewhere in the UK are no less relevant to the Scottish context.

EAL students are at different points on the English language proficiency continuum, ranging from complete beginners to fluent. Therefore, a disaggregated

⁷ For example, "Proportionately, much higher numbers of some of the key ethnic minority groups (e.g. Chinese, Indian, Pakistani) live in much less socioeconomically disadvantaged circumstances in Scotland compared with the rest of Britain." (Walsh, 2017, p.4).

INTRODUCTION

language variable is essential to understand language proficiency's association with attainment, going beyond a binary distinction between proficient or not. Yet, shortcomings are evident in key studies without separated levels of English language proficiency data or temporal analysis (Strand et al., 2015); with separate levels of English language proficiency but no temporal analysis (Demie, 2013; Demie, 2018; Demie and Strand, 2006; Strand and Hessel, 2018), tracking students over time with a binary EAL variable (Gorard and Siddiqui, 2019); or longitudinal tracking of English language proficiency, but in the primary school context (Strand and Lindorff, 2020).

Policy Gaps

There is a need identified by Arnot et al (2014), to improve understanding in a UK context how different policy approaches to EAL best support learning and student outcomes. A shift towards local stakeholder provision has placed the onus on schools and ultimately teachers (Anderson, et al., 2016; Jensen and Gidley, 2014). The mainstreaming approach, a cornerstone of education policy in the UK since the 1980s, requires the universal inclusion of groups rather than targeted intervention. However, whether mainstreaming is appropriate for all groups is open to question (Maan et al., 2015). Moreover, it is unreported in the literature how the shift from instructing newly arrived, 'new to English' secondary school students initially in separate educational units (noticeably in inner London and in the city of Glasgow until 2011) to direct enrolment in local schools impacted on educational outcomes. No empirical evidence has been presented attesting to academic success or otherwise of mainstreaming EAL policy in the UK, coupled with a lack of tracking students' linguistic progress in the secondary school context. In addition, the effect of increased non-proficient English language speaking

INTRODUCTION

students on peers has not been empirically studied in the UK secondary school context. Effective policy is vital for the most vulnerable. In the secondary school setting, newly arrived students without full command of the English language have limited time to simultaneously learn English and learn in English to engage with the curriculum in preparation for public examinations at age 15-16.⁸

Post-secondary school transitions

In addition to performance in school, post-compulsory schooling transitions indicate how well education systems are preparing students for the labour market. Participation is important for social cohesion and the economy – essential for immigrant populations to establish themselves and access the social, and economic benefits afforded to their native peers (Budría et al., 2019; Froy and Pyne, 2011). There are unexplained gaps in school leaver outcomes for migrants with similar educational attainment to native students, and “persistent barriers present in the transition from education to work.” (Froy and Pyne, 2011, p.53). Dustmann and Fabbri (2003) found a lack of English language proficiency in the UK resulted in lower earnings from employment. Discussion of those transitions is missing from the EAL and educational inequalities literature, and yet increasingly salient due to current migration trends.

Thus, to ascertain the association between English language proficiency and post-secondary school destinations is important: (a) from an integration perspective to compare how closely EAL student outcomes match native English language speaking students;⁹ and (b) to gauge how effective the education system is for all students, as a matter of equality. There may be a higher risk of

⁸ Progression EAL students make through S5 and S6 is beyond the scope of this thesis.

⁹ The integration of non-native English speakers into society, education, and labour market.

unemployment for those who have not acquired full proficiency, but without empirically studying the association between English language proficiency and post-school transitions that remains a conjecture.

3. Background to the case study

Immigration

Increased diversity in the city of Glasgow stems from the UK's colonial past, recent economic migration from the European Union (EU), and asylum seekers from across the globe (Geay et al., 2013; GCC, 2011b; Jensen and Gidley, 2014). In 2014 for example 37,820 economic migrants arrived in Scotland mostly from EU or EU Accession States, Asia, Middle East, Africa, and the Americas, 18% of whom registered in Glasgow (Migration Scotland, n.d.).¹⁰ The city is a participant in the Home Office Asylum Dispersal programme (CSMP, 2019; GCC, 2011b),¹¹ and housed 11% of the UK's dispersed asylum seeker population, of which 40% arrived with their family in 2014 from approximately 70 different countries of origin (Migration Scotland, n.d.).

The 2011 census showed 7% of Scotland's population were not born in the UK, with the city of Glasgow having the highest percentage of ethnic minorities (12%) (Scotland's Census, 2021). Over 12% of residents recorded in Glasgow in 2011 were born outside of the United Kingdom or Republic of Ireland (Scotland's Census, 2021). The largest ethnic group within the city are of Pakistani origin (GCPH, n.d.). In Glasgow, between 2001-2011 the proportion of ethnic minorities doubled: in particular, the African ethnic group increased from 1,257 to 12,440, an

¹⁰ The data is based on National Insurance Number (NINo) registration and does not include dependents.

¹¹ Scotland has been participant to the UK Governments Syrian Resettlement Programme since 2015 (Scotland, n.d.a).

INTRODUCTION

increase of 890% (GCPH, n.d.). An increase in 'White-Other' ethnicity is attributed to migrants arriving from Poland (Scotland's Census, 2021). The city's non-UK born had increased further to 15.3% of the total population by 2017 (GCPH, n.d.).

In 2011, there were only a few percentage points between those resident for less than 2 years (26%) and those resident for 10 years or more (30%) (Scotland's Census, 2021). With a well-established Pakistani ethnic group within the city for several decades (Bowes et al., 1990), the 2011 census therefore indicates a population that includes a mix of recent and established immigrant background residents settled in Glasgow. The 2011 census also measured the English language proficiency of Glasgow's population of whom 3% lacked proficiency in English, while approximately 4% used a language other than English at home (Scotland's Census, 2021).

Non-native English language student population

Reflecting the patterns of immigration, students with English as an additional language in Glasgow secondary schools are not all migrants. They include children of economic migrants, and asylum seekers (including unaccompanied minors) but also locally born students from established communities who speak a language other than English at home. They are therefore a heterogeneous group varying in social class and educational background. There are over 14,000 children from ethnic minority groups, and 12,500 with EAL in all educational establishments across the city (Education Scotland, 2019). Table 1 shows a sub-fluent EAL student population increase of 363% during 2006-2016. By 2020, almost 20% of the school population in the city of Glasgow were recorded as EAL students (McKenna, 2020).

Table 1: Students by Sub-fluent Levels of English Language Proficiency in Glasgow City Local Authority Schools 2006-2016

English language proficiency	2006		2016	
	N	%	n	%
New to English	641	24	2,241	18
Early acquisition	724	27	3,657	29
Developing competence	803	30	4,608	36
Competent	523	19	2,237	18

Note. Data obtained from Scottish Government (2007); Scottish Government (2016) Pupil census 2016 supplementary data.

Note. Although a five-point scale is used in Scotland with the fifth category denoting fluency, students recorded as fluent are omitted from Scottish Government outputs.

The relationship between EAL, ethnicity and immigrant background

Although the data used in this study does not provide information on whether a student was born in or outside of the UK, it indicates that having EAL and a non-white UK background are closely related, congruent with the literature (See Burgess, 2014; Strand et al., 2015). Figure 1 shows white-UK students are barely present in the EAL categories. The majority of EAL students are Asian, Other Ethnicity, White-Other, African or Caribbean, and poorly represented in the English as a first language population. However, non-white ethnicity does not equate to not having English as a first language. For example, although in Figure 1 the non-white proportion of students with English as a first language constitute only 4.5%, this equates to 1,664 students. The students in question are likely to be from established communities, therefore with an immigration background but beyond first-generation. For instance, within the 'Asian' category, Pakistani ethnicity students are the largest group recorded as having EAL in the city of Glasgow in the data analysed in this thesis.

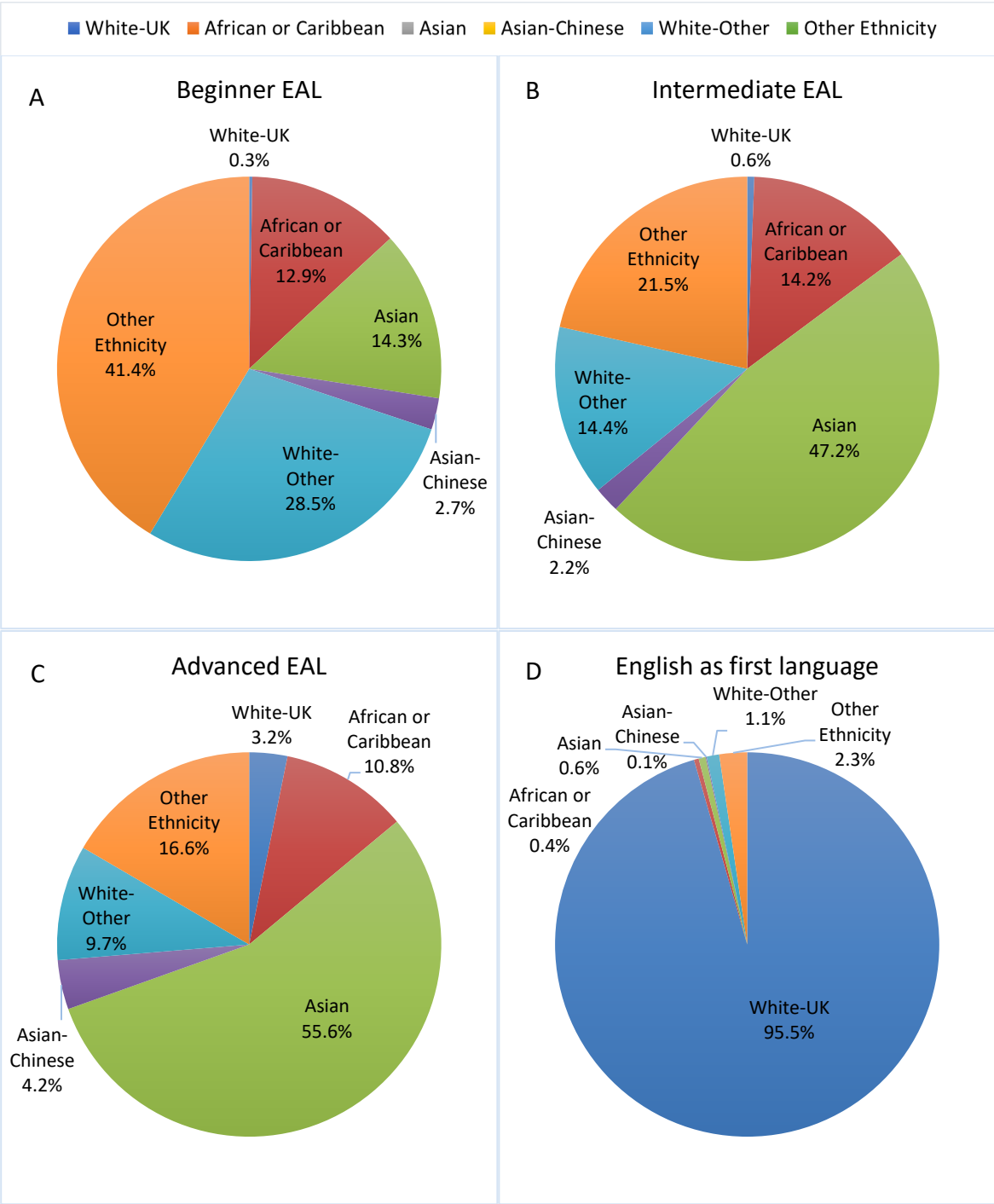
INTRODUCTION

Figure 1 also shows notable trends. There is an increase in Asian students as EAL proficiency increases from beginner level to fluent at the S4 stage. In contrast, the opposite trend is evident for 'Other Ethnicity' and 'White-Other', who are proportionally less well represented as EAL level increases. The lower representation in higher proficiency levels indicates more recent arrival rather than for example second generation students using a language other than English at home. The differences in trends between these two groups may indicate the majority of the Asian (Pakistani) group as born locally,¹² using a language other than English at home,¹³ thereby having experienced longer exposure to the English language. In contrast, the 'White-Other' category would be representative of students with a Polish ethnic background, more likely to be recent arrivals than locally born in the time frame of the data 2007-2016. Therefore, there is a firm relationship between EAL and ethnicity, and by association, also immigration background, whether first, second or later generations.

¹² Pakistani students comprised 74% of the Asian ethnic group, of whom 87% were either 'developing competence' or 'competent' in the English language at S4.

¹³ See for example Bowes et al., 1990, for a case study of Glasgow including discussion of languages spoken at home.

Figure 1: English language proficiency and ethnicity



Note. Beginner = new to English and early acquisition; Intermediate = developing competence; Advanced = competent and fluent; N = 42,817.

INTRODUCTION

Current Policy for EAL secondary school students

In Scotland, education is a devolved matter overseen by the Scottish Government. At the local authority level, Glasgow City Council are responsible for educational provision for the city's 30 state-funded secondary schools.¹⁴ The current EAL strategy advocates assisting students in mainstream at the earliest opportunity. Short withdrawal periods for language instruction are reduced over time depending on need and progress. The English as an Additional Language Service (EAL) provides language support in schools without EAL teaching staff or increased need¹⁵ (Walker, n.d.). The service supports recently arrived and locally born students who use a language other than English in their home environment, whether new to English or to further develop their language skills (GCC, n.d.; GCC, 2015).¹⁶ It is thus intended to facilitate access to the curriculum and allow more advanced students the opportunity to maximise their educational potential.

Previous policy: the EAL Secondary Support Service

Prior to 2012, students without access to EAL support in school were instructed by the EAL Secondary Support Service. Within a separate educational unit, intensive language support helped students gain a level of capability in English before entering mainstream classes (GCC, 2011a). Between 2008-2011, 300 students were referred to the unit from secondary schools (just 12% were short term referrals for only one school term) (GCC, 2011b). Although the number of referrals varied between schools, 87% of secondary schools referred students

¹⁴ The Education (Scotland) Act 1980 outlines local authorities' responsibility for educational provision (UK Government, 2020b).

¹⁵ "Annually, we use English Language Acquisition Level to calculate the level of English as an Additional Language (EAL) resourcing for each school that has significant numbers of children with English as an Additional Language." (GCC, 2013, p.11).

¹⁶ It is improbable a student born in the UK would be 'new to English' in secondary school.

during 2008-2011 (GCC, 2011b).¹⁷ Full time EAL teachers were allocated to schools based on need in addition to the central language support unit. Therefore, some students were assisted in their local school, while others were transported across the city to the support unit (GCC, 2011a; GCC, 2011b). The closure of the unit in 2011 was posited as a means of increasing EAL provision in schools (GCC, 2008; COSLA, 2011). This is the key change in policy during the period explored in this thesis, which may have impacted on student outcomes.¹⁸

4. Overview of the thesis

With student attainment and levels of English language proficiency, this thesis provides a unique opportunity to compare the efficacy of contrasting policy approaches and related outcomes over time. The overarching objective is to better understand (a) the nature of the association between English language proficiency and educational outcomes of 15-16 years-old students, (b) and its implications for policy and (c) for EAL students' life chances. Several research aims are addressed under this goal in four stand-alone empirical papers. Paper 1 first ascertains the association between English language proficiency and educational outcomes in the Scottish secondary school context. Paper 2 builds on Paper 1 exploring differences between schools in that association. Next, Paper 3 extends the analysis to consider how consistent the association and the effect of policy has been over time. Finally, Paper 4 concludes with an assessment of the relevance of the association on post-secondary school transitions.

¹⁷ Students 'new to English' were the most likely to have been referred to the Secondary Bilingual Support Unit.

¹⁸ Glasgow City Council documents are accessible online:
<https://www.glasgow.gov.uk/councillorsandcommittees/default.asp>

As a quantitative thesis, statistical techniques appropriate for the aims of each individual paper are used. They control as far as available data and variables permit for the possibility of confounding factors, to enhance the validity of identified associations.¹⁹ Although one would ideally want additional variables such as level of parental education and other family related data on students' home environment, or first language literacy, statistical controls are in place to mitigate other influences as far as possible. The associations between EAL levels and educational outcomes are compared against English as first language students as a benchmark. The individual statistical techniques used are stated in the following overview of the four individual papers.

Paper 1 *The Association Between English Language Proficiency and Educational Attainment*

Paper 1 seeks to explain the contradiction found in the literature that on the one hand not having the language of instruction is a source of educational disadvantage, and on the other, having English as an additional language is an advantage for some students' educational attainment in UK secondary schools. The paper studies the effects of English language proficiency on scores in national public examinations at the end of compulsory schooling (for 15-16 year olds): measured in (a) 'all subjects combined'²⁰ (b) English as a subject (c) in mathematics. It uses a stratified English language proficiency variable, controlling for student background characteristics, with years and schools as fixed effects in a multiple regression model.

¹⁹ Winship and Morgan (1999) note in non-experimental research there remains the possibility of unobserved confounding factors.

²⁰ Total scores in all subjects taken.

INTRODUCTION

The questions addressed are: (1) What is the association between levels of English language proficiency and educational outcomes in Glasgow secondary schools at S4? (2) To what extent does English language proficiency explain outcomes after controlling for other known predictors: in other words, how much does proficiency matter? (2) What level of EAL proficiency allows students to match the educational performance of English as first language students? The primary hypotheses predict that: (1) as linguistic competence increases within the EAL population, so too does attainment, but any gap between EAL and students with English as a first language outcomes will reduce as proficiency increases; and (2) English language proficiency will be the most important explanatory variable for EAL student outcomes. The secondary hypotheses predict (1) the role of English language proficiency will be more important for performance in English as a subject compared to mathematics;²¹ (2) the level of ‘developing competence’ allows EAL students to match the educational outcomes of English as a first language students.

Paper 2 *English Language Proficiency and Attainment in Secondary Schools: A Multilevel Regression Model*

Paper 2 examines variation in educational attainment between secondary schools.²² It sets out to explain: (1) How much variation in student outcomes between schools is explained by English language proficiency? (2) How much does school EAL composition explain variation in student outcomes between schools? (3) To what extent is there a universal threshold of English language

²¹ Strand and Hessel (2018). Strand and Hessel (2018) find evidence of discriminant validity in English as a subject and mathematics in England.

²² To some extent, Paper 2 flips what was previously explored by Dillon (2013) on the impact of migrant children in Glasgow schools, to, what is the impact of Glasgow schools on migrant children.

INTRODUCTION

proficiency that allows students with English as an additional language match English as a first language student outcomes across all schools? The primary hypothesis predicts variation in outcomes by level of English language proficiency between schools (in other words, some schools may be more effective for students at different proficiency levels than others). It is also hypothesised that an 'intermediate' level of proficiency allows students to match the outcomes of English as first language students across schools. An exploratory hypothesis predicts that a higher percentage of EAL students in schools will not explain differences between schools. It uses a multilevel statistical model, allowing simultaneous analysis of student-level and school-level explanatory variables.²³

Paper 3 *The Effect of Mainstreaming Policy on English as an Additional Language Student Outcomes and Key Thresholds of Proficiency: A Multilevel Difference-in-Differences Regression Model*

Paper 3 evaluates the policy of mainstreaming and student outcomes over time. The paper studies (a) the effect on educational attainment of direct enrolment of 'new to English' students into mainstream schools versus a separate educational language instruction unit;²⁴ (b) the consistency of the association between English language proficiency and educational attainment (2008-2016); and (c) the level of English language proficiency required at the beginning of secondary school to match native English language speakers' outcomes by the

²³ Multilevel statistical models provide the sophisticated techniques required to measure school effects (Goldstein, 1987; Gray et al, 1990; Leckie and Goldstein, 2019; Nuttall et al, 1989; Raudenbush and Willms, 1995; Reynolds et al., 2014). They facilitate simultaneous analysis of the relationship between outcomes and level-1, and level-2 explanatory variables, to establish whether the school context matters grounded on the estimated variance (Bell et al., 2019).

²⁴ English as first language students were the control group. Although other levels of linguistic proficiency could have been employed, native English language speakers provided a benchmark and a constant for difference-in-differences regression analysis.

end of compulsory schooling. The paper theorises ‘developing competence’ was a constant threshold over time matching native English language speakers’ outcomes. Although the paper cannot accommodate all factors associated with the rate of acquisition of the English language,²⁵ the analysis is strengthened by an analytical framework based on a multilevel difference-in-differences regression model.

Paper 4 *The Association Between English Language Proficiency and Initial School Leaver Destinations: A multinomial Logistic Regression Model*

Paper 4 focuses on students’ post-secondary school transitions. The paper addresses one main research question and two related sub-questions: What is the association between English language proficiency and initial post-secondary school destinations controlling for student characteristics and public examination outcomes at age 15-16? What are the probabilities of destination outcomes by level of English language proficiency, and how important is the level of ‘developing competence’ of English language proficiency for destination outcomes? The paper hypothesises that increased English language proficiency increases the likelihood of being employed or entering higher education. Background characteristics, educational attainment at age 15-16, and school-level composition variables are considered within a multinomial regression framework to better understand the possible life course of EAL students.²⁶

²⁵ Strand and Lindorff (2020) found gender and ethnicity had a weak relationship with linguistic progression.

²⁶ One practical application of the paper’s findings may be development of a tool to potentially help students make choices about their future.

INTRODUCTION

Key concepts, contribution and structure

The key concepts used throughout this thesis are (1) English as an additional language (EAL) – The local authority define an EAL student as new to English or ‘use a language other than English at home’ (GCC, n.d., non-paginated). (2) English language proficiency – six categories are employed, offering greatly improved analytical utility than a simple EAL versus non-EAL variable commonly used in prior studies. Students are likely to display overlapping between proficiency stages in different aspects of competencies, whether listening, reading, writing etcetera. The proficiency levels used for analytical purposes are based on judgements of teachers or EAL staff, recorded in school census returns. However, these proficiency levels are used to annually allocate language resources (GCC, 2013) which may enhance the reliability of the data. (3) Migrants – not all EAL students are migrants, though, students with low proficiency levels in secondary school would indicate relatively recent arrival to the UK, hence considered here as ‘new arrivals’.²⁷ (4) Immigrant background – A broad term referring to students who may have an ethnic minority background or English as an additional language, without differentiating by generations.

Using the city of Glasgow as a case study, this thesis aims to make an important contribution to knowledge. It offers several contributions to scholarship. Paper 1 for instance **widens the scope** of existing literature conducted in England, (principally in inner London) by extending empirical study to the Scottish educational context. A comprehensive discussion on the role of school effects for EAL students is entirely missing from the literature. Paper 2 bridges that gap,

²⁷ Precise dates of entry of ‘new arrivals’ to the UK are unavailable, as is immigration status – which was requested but release was declined by the data holder.

connecting the educational effectiveness research, and educational inequalities literatures with the existing literature on EAL education. It makes an original contribution as the first paper to present quantitative empirical analysis of educational attainment comparing the effectiveness of secondary schools for student outcomes differentiated by level of English language proficiency in a **Scottish educational context**.

Paper 3 introduces for the first time in the Scottish context empirical analysis of cross-sectional time series data, including levels of English language proficiency, and secondary school educational outcomes. In doing so, the paper makes an important contribution to the literatures on EAL education, migrant integration, and educational inequality²⁸ as the first paper to empirically assess (a) the **impact of mainstreaming** on the educational outcomes of students with English as an additional language (EAL) and **efficacy of a separate language instruction unit**, (b) the level of English language proficiency required entering secondary school to match native English language speakers' outcomes by the end of compulsory schooling. Paper 4 contributes a better understand of the possible **life course of EAL students**.²⁹ It is the first paper to consider the effects of levels of English language proficiency and background variables on **destinations of school leavers** in a UK context, thereby offering an original and important contribution to the EAL and integration literatures.

The four empirical papers use a **bespoke dataset** to conduct quantitative analysis adjusted accordingly for each paper. They individually examine different

²⁸ Linguistic advantage brings “economic and political advantage since members of the dominant cultural community have a leg up in schools, the workplace, and politics.” (Song, 2017, 2.2).

²⁹ One practical application of the paper's findings may be development of a tool to potentially help students make choices about their future.

INTRODUCTION

aspects of the issue in hand providing new insights into the association between English language proficiency and educational outcomes of 15-16 years-old students, and subsequent life chances. In sum, the aim is to contribute to knowledge through extending existing scholarship into an until now under researched educational context, while also broadening the scope and addressing new questions. This thesis contributes to scholarship by studying EAL in the distinctive Scottish context, adding to the very limited UK literature on educational performance incorporating various levels of English language proficiency rather than relying on a binary variable, exploring whether a language proficiency threshold in terms of that performance can be identified, and extending this analysis beyond schooling to encompass initial post-school destinations. While this is not the first study to incorporate disaggregated English language proficiency levels in the UK context, nonetheless in doing so it adds to a very narrow set of literature, introducing new data analysed by way of a bespoke dataset.

The subsequent four sections contain the four empirical papers which comprise the main body of the thesis. Though self-contained and addressing separate research questions, they are linked together through exploring the hypothesised existence of a threshold of English language proficiency, posited as central to EAL students matching the performance of English as a first language student outcomes. As each is effectively a 'stand-alone' paper, references and appendices are included at the end of each relevant section, followed by supplementary material. Correspondingly, tables, figures, and footnotes are numbered in relation to each paper.

The empirical papers are followed by a concluding section offering a concise summary of the thesis, outlining key findings and contribution to

INTRODUCTION

scholarship by drawing together the results, summarising key findings and policy implications. The conclusion also reflects on limitations to the empirical analysis, as well as directions for future research. Together, these papers address what may be an advantage for some, and a source of disadvantage and educational inequality for others: the role of English language proficiency for EAL students' educational outcomes in UK secondary schools.

References

- Anderson, C., Foley, Y., Sangster, P., Edwards, V. and Rassool, N. (2016) *Policy, Pedagogy and Pupil Perceptions: EAL in Scotland and England*. Cambridge, UK: University of Edinburgh and The Bell Foundation.
- Arnot, M., Schneider, C., Evans, M., Lieu, Y., Welply, O., & Davies-Tutt, D. (2014). *School approaches to the education of EAL students: Language development, social integration and achievement*. Cambridge: The Bell Educational Trust Ltd.
- Bowes, A., McCluskey, J. & Sim, D. (1990) The changing nature of Glasgow's ethnic-minority community, *Scottish Geographical Magazine*, 106:2, 99-107, DOI: 10.1080/00369229018736782
- Budría, S., Colino, A. & Martínez de Ibarreta, C. (2019) The impact of host language proficiency on employment outcomes among immigrants in Spain. *Empirica* 46, 625–652.
- Burgess, S. (2014) Understanding the success of London's schools. *Centre for Market and Public Organisation (CMPO) Working Paper*, 14, 333.

INTRODUCTION

Christensen, G., & Stanat, P. (2007) Language policies and practices for helping immigrants and second-generation students succeed. *The Transatlantic Taskforce on Immigration and Integration, Migration Policy Institute (MPI) and Bertelsmann Stiftung*, 1-15.

Codiroli, N. and McMaster, R. C. (2019) The contribution of intersectionality to quantitative research into educational inequalities. *Review of Education* 7:2, pages 271-292.

COSLA. (2011) *Glasgow City Council: EAL Service – supporting children and young people*. The COSLA Excellence Awards [Online] Available: <http://awards.cosla.gov.uk/2011/03/bronze-awards-category-5-%E2%80%93-excellence-in-adversity/> [Accessed: 4th Mar 2015].

CSMP. (2019) *Asylum Dispersal*. COSLA Strategic Migration Partnership (CSMP). Online Available: <http://www.migrationscotland.org.uk/our-priorities/current-work/asylum-dispersal> [Accessed: 13 May 2020]

Demie, F., & Lewis, K. (2018) Raising achievement of English as additional language pupils in schools: Implications for policy and practice. *Educational Review*, 70(4), 427-446. 10.1080/00131911.2017.1344190

Demie, F., & Strand, S. (2006) English language acquisition and educational attainment at the end of secondary school. *Educational Studies*, 32(2), 215-231. 10.1080/03055690600631119

Demie, F. (2013) English as an additional language pupils: how long does it take to acquire English fluency? *Language and Education*, 27:1, 59-69. 10.1080/09500782.2012.682580

INTRODUCTION

- Demie, F. (2017) *English as an Additional Language: Good Practice to Raise Achievement in Schools*. Lambeth LA: Lambeth Research and Statistics Unit.
- Dillon, S. (2013) *The Impact of Migrant Children in Glasgow Schools*. Final Report. Online Available:
http://www.migrationscotland.org.uk/uploads/files/documents/stephen_dillon_research_report_final_0.pdf [Accessed: 30 Dec 2020]
- Dronkers, J. & De Heus, M. (2012) The educational performance of children of immigrants in sixteen OECD countries. *Centre for Research and Analysis of Migration, Discussion Paper Series CDP No.10/12*.
- Dustmann, C. and Fabbri, F. (2003) Language Proficiency and Labour Market Performance of Immigrants in the UK, *The Economic Journal*, 113;489, 695–717, <https://doi.org/10.1111/1468-0297.t01-1-00151>
- Dustmann, C., Machin, S. & Schönberg, U. (2010) Ethnicity and Educational Achievement in Compulsory Schooling. *Economic Journal*, 120(546), 272-297.
- Education Scotland. (2019) *Inspection of local authorities How well is Glasgow City Council improving learning, raising attainment and closing the poverty-related attainment gap?* Education Scotland. Online Available:
<https://www.glasgow.gov.uk/CHttpHandler.ashx?id=44550&p=0> [Accessed: 18 May 2020]
- Forbes, J. and Weiner, G. (2008) Under-stated powerhouses: Scottish independent schools, their characteristics and their capitals, *Discourse*:

INTRODUCTION

Studies in the Cultural Politics of Education, 29:4, 509-525, DOI:
10.1080/01596300802410235

Francis, B., Mau, A., & Archer, L. (2017) The construction of British Chinese educational success: Exploring the shifting discourses in educational debate, and their effects. *Journal of Ethnic and Migration Studies*, 43(14), 2331-2345.

Froy, F., and Pyne, L. (2011) *Ensuring Labour Market Success for Ethnic Minority Children and Immigrant Youth*. Paris: OECD Local Economic and Employment Development Working Papers 2011/09.

GCC. (2008) Supporting Learners with English as an Additional Language in Glasgow. Glasgow City Council: Education Services

GCC. (2011a) Consultation on the Proposed Reconfiguration of English as an Additional Language Service. Glasgow City Council. Online Available: <https://www.glasgow.gov.uk/councillorsandcommittees/viewSelectedDocument.asp?c=P62AFQZLNT2UDN2U> [Accessed: 21 May 2020]

GCC. (2011b) *Children and Families Policy Development Committee*. Report by Executive Director of Education. Glasgow City Council. Online Available: <http://www.glasgow.gov.uk/Councillorsandcommittees/viewSelectedDocument.asp?c=P62AFQZ3T12UUTNT> [Accessed: 12 May 2020]

GCC. (2013) Equality Mainstreaming Report. Glasgow City Council. Online Available: <https://www.glasgow.gov.uk/councillorsandcommittees/viewDoc.asp?c=P62AFQ818181ZLZ3> [Accessed: 21 May 2020]

INTRODUCTION

GCC. (2015) Equality Progress Report 2015: Mainstreaming Equality in Service Delivery and Progress towards the Equality Outcomes. Glasgow City

Council. Online Available:

<https://www.glasgow.gov.uk/councillorsandcommittees/viewSelectedDocument.asp?c=P62AFQUTNTDX2UUT> [Accessed: 21 May 2020]

GCC. (n.d.) English as an Additional Language Service (EAL). Glasgow City

Council. Online Available:

<https://www.glasgow.gov.uk/index.aspx?articleid=17860> [Accessed: 18 May 2020].

GCPH. (n.d.) *Population*. Glasgow Centre for Population Health (GCPH). Online

Available:

<https://www.understandingglasgow.com/indicators/population/overview>
[Accessed: 19 Feb 2021]

Geay, C., McNally, S. and Telhaj, S. (2013) Non-native Speakers of English in the

Classroom: What Are the Effects on Pupil Performance? *Econ J*, 123:

F281-F307. doi:10.1111/ecoj.12054

Goldstein, H. (1987) *Multilevel Models in Educational and Social Research*.

London: Oxford University Press.

Gorard, S. and Siddiqui, N. (2019) 'How trajectories of disadvantage help explain

school attainment.', *SAGE open.*, 9 (1). pp. 1-14.

Gray, J., Jesson, D. and Sime, N. (1990) Estimating differences in the examination

performances of secondary schools in six LEA'S: a multilevel approach to

school effectiveness, *Oxford Review of Education*, 16, 2, pp. 137-158.

INTRODUCTION

Jensen, O. and Gidley, B. (2014) *The Politics of Mainstreaming Immigrant Integration Policies: Case study of the United Kingdom*. Center on Migration, Policy and Society (COMPAS): University of Oxford.

Jensen, P. & Rasmussen, A. W. (2011) The effect of immigrant concentration in schools on native and immigrant children's reading and math skills. *Economics of Education Review*, 30, 1503– 1515.

Leckie, G. and Goldstein, H. (2019) The importance of adjusting for pupil background in school value-added models: A study of Progress 8 and school accountability in England. *British Educational Research Journal*, 45: 518-537. doi:10.1002/berj.3511

Lenkeit, J., Caro, D. H. & Strand, S. (2015) Tackling the remaining attainment gap between students with and without immigrant background: An investigation into the equivalence of SES constructs. *Educational Research and Evaluation*, 21(1), 60-83. 10.1080/13803611.2015.1009915

Maan, X., van Breugel, I. and Scholten, P. (2015). *The Politics of Mainstreaming: A comparative analysis of migrant integration governance in Europe*. UPSTREAM Report. Rotterdam: Erasmus University.

Machin, S., McNally, S. and Wyness, G. (2013) Education in a Devolved Scotland: A Quantitative Analysis. Report to the Economic and Social Research Council. CEP Special Paper No. 30. Online available: <http://cep.lse.ac.uk/pubs/download/special/cepsp30.pdf> [Accessed: 12 Feb 2021]

Marks, G. N. (2005) Cross-national differences and accounting for social class inequalities in education. *International Sociology*, 20, 483–505.

INTRODUCTION

McKenna, M. (2020) Improving Educational Outcomes through Getting It Right for Every Child in Glasgow. *European Review*, 28(S1), S86-S92.

McKinney, S., Hall, S., Lowden, K., McClung, M. and Cameron, L. (2012) The relationship between poverty and deprivation, educational attainment and positive school leaver destinations in Glasgow secondary schools, *Scottish Educational Review* 44 (1), 3-45

Migration Scotland. (n.d.) Migration to Scotland. COSLA Migration, Population and Diversity. Online available: <http://www.migrationscotland.org.uk/migration-information/migration-statistics> [Accessed: 2 Oct 2020]

Mullis, I. V. S., Martin, M. O., Kennedy, A. M., & Foy, P. (2007) *PIRLS 2006 international report: IEA's Progress in International Reading Literacy Study in primary schools in 40 countries*. Chestnut Hill, MA: Boston College.

Nuttall, D. N., Goldstein, H., Prosser, R. and Rasbash, J. (1989) Differential school effectiveness, *Journal of Educational Research*, 13, pp. 769-776.

OECD. (2010) *PISA 2009 results: Overcoming social background (Vol. II)*. Paris: Organisation for Economic Co-operation and Development.

OECD. (2015) OECD-Scotland Education Policy Review: A background report by the Scottish Government. [Online] Available: <http://www.oecd.org/education/school/OECD-Scotland-Education-Policy-Review-Background-report.pdf> [Accessed: 7 Aug 2019]

Ohinata, A., & Van Ours, J. C. (2013). How immigrant children affect the academic achievement of native Dutch children. *The Economic Journal*, 123(570), F308-F331.

INTRODUCTION

- Raffe, D., Brannen, K., Croxford, L., & Martin, C. (1999) Comparing England, Scotland, Wales and Northern Ireland: The Case for 'Home Internationals' in Comparative Research. *Comparative Education*, 35(1), 9-25.
- Raudenbush, S. W. & Willms, J. (1995) The estimation of school effects, *Journal of Educational and Behavioral Statistics*, 20, 307–335.
- Reino, M. F. (2019) *English language use and proficiency of migrants in the UK*. The Migration Observatory, University of Oxford. Online Available: <https://migrationobservatory.ox.ac.uk/wp-content/uploads/2019/07/Briefing-English-language-use-and-proficiency-1.pdf> [Accessed: 2 Nov 2020]
- Reynolds, D. Sammons, P. Fraine, B. D. Van Damme, J. Townsend, T. Teddlie C. and Stringfield, S. (2014) Educational effectiveness research (EER): a state-of-the-art review, *School Effectiveness and School Improvement*, 25:2, 197-230, DOI: 10.1080/09243453.2014.885450
- Sawkins, J. W. (2002) Examination performance in Scottish secondary schools: an ordered logit approach, *Applied Economics*, 34:16, 2031-2041, DOI: 10.1080/00036840210124559
- Scotland. (n.d.a) *Scotland Welcomes Refugees*. Scotland.org, Scottish Government. Online available: <https://www.scotland.org/about-scotland/scotlands-stories/scotland-welcomes-refugees> [Accessed: 29 Oct 2020]
- Scotland's Census. (2021) *Area Profiles*. National Records of Scotland. Online Available: <https://www.scotlandscensus.gov.uk/ods-web/area.html> [Accessed: 19 Feb 2021]

INTRODUCTION

Scottish Government. (2016a) *Achievement of Curriculum for Excellence (CfE) Levels 2015/16*. Edinburgh: Scottish Government.

Scottish Government. (2007) *Pupils in Scotland, 2006*. [Online] Available: <http://www.gov.scot/Publications/2007/02/27083941/0> [Accessed: 10 Jan 2017]

Scottish Government. (2016) *Pupil census 2016 supplementary data*. [Online] Available: <http://www.gov.scot/Topics/Statistics/Browse/School-Education/dspupcensus/dspupcensus16> [Accessed: 10 Jan 2017]

Shapira, M. (2012) An exploration of differences in mathematics attainment among immigrant pupils in 18 OECD countries. *European Educational Research Journal*, 11, 68–95.

Song, S. (2017) Multiculturalism. In: *The Stanford Encyclopedia of Philosophy* (Spring 2017 Edition), Edward N. Zalta (ed.). <https://plato.stanford.edu/archives/spr2017/entries/multiculturalism/>

Strand, S. (2014) Ethnicity, gender, social class and achievement gaps at age 16: Intersectionality and “getting it” for the white working class. *Research Papers in Education*, 29, 131–171.

Strand, S. & Hessel, A. (2018) *English as an additional language, proficiency in English and pupils’ educational achievement: An analysis of Local Authority data*. London: Bell Foundation.

Strand, S. & Lindorff, A. (2020) *English as an Additional Language: Proficiency in English, educational achievement and rate of progression in English language learning*. Oxford: Department of Education.

INTRODUCTION

Strand, S., Malmberg, L., & Hall, J. (2015) *English as an additional language and educational achievement in England: An analysis of the national pupil database*. London: Educational Endowment Fund.

UK Government. (2020a) Regional ethnic diversity. Online Available: Regional ethnic diversity - GOV.UK Ethnicity facts and figures (ethnicity-facts-figures.service.gov.uk) [Accessed: 21 Feb 2021]

UK Government. (2020b) Education (Scotland) Act 1980. [Online] Available: <http://www.legislation.gov.uk/ukpga/1980/44/contents> [Accessed: 11 Jan 2020].

Walker, M. (n.d.) EAL Service. Glasgow City Council. Online Available: <https://www.scilt.org.uk/Portals/24/2.7%20Maria%20Walker.pdf> [Accessed: 18 May 2020].

Walsh, D. (2017) The changing ethnic profiles of Glasgow and Scotland, and the implications for population health. Glasgow Centre for Population Health (GCPH). Online Available: https://www.gcph.co.uk/assets/0000/6255/The_changing_ethnic_profiles_of_Glasgow_and_Scotland.pdf [Accessed: 19 Feb 2021]

Winship, C, & Morgan, S. L. (1999). The estimation of causal effects from observational data. *Annual Review of Sociology*, 25, 659-706.

Paper 1: The Association Between English Language Proficiency and Educational Attainment

Abstract

There are English as additional language (EAL) students in cities throughout the United Kingdom, but beyond London there is limited empirical research on the association between English language proficiency and educational attainment. Although there are many contributing factors in educational inequality, 15 year old non-native English language speakers with an immigrant background have lower attainment than their peers. However, EAL students may gain an advantage once a threshold of proficiency is reached, as fluent EAL students outperform monolingual students. The present study explores that hypothesis by studying the relationship between language proficiency and school performance in Glasgow secondary schools. Independent t-tests, ANOVA and multiple regression analysis controlled for level of English language proficiency, a range of student background variables, years (2008-2016), and schools ($n = 29$) as fixed effects in quantitative analysis. Educational outcomes of students aged 15-16 years ($N = 42,817$) are measured in all subjects combined, in English as a subject, and in mathematics using a bespoke dataset constructed from Scottish Government data. The paper finds that level of English language proficiency is the key predictor of attainment, with performance increasing as English proficiency increases. The proficiency level of 'developing competence' is identified as the threshold that allows students to match the educational achievement of English as first-language students ($p < .001$). These results underscore the need for disaggregated language proficiency data, and implications are discussed.

Keywords: educational attainment, English as an additional language (EAL), language proficiency, migrant integration

1. Introduction

Immigration will remain a central feature of Western societies for the foreseeable future (Alba and Foner, 2014). The significant rise in non-native language speakers in Europe is reflected in the English as an additional language (EAL) student population throughout the United Kingdom (UK) (Demie, 2018; Flynn and Curdt-Christiansen, 2018; Leung, 2016). The past decade has witnessed a 161% increase in the size of this group in England, with now over 1.3 million EAL students (Demie, 2018). Similarly, in Scotland there has been a substantial increase in students requiring language support (OECD, 2015b). Almost 20% of the school population in the city of Glasgow are currently EAL students (McKenna, 2020), a figure that reaches 56% in inner London (Strand et al., 2015). Although legislation ensures access to education, some students are assessed in a language they are still learning (Kibler et al., 2014). A lack of official data on outcomes separated by levels of language proficiency (Demie, 2013; Demie, 2018), leaves unanswered the extent to which EAL students, while afforded the legal opportunity for equal access, are achieving equal outcomes across the UK.

Despite established sociological explanations with respect to educational inequality and disadvantage, particularly pertaining to student characteristics (Codioli and McMaster, 2019), the association between proficiency in the English language and educational inequality has not been adequately explored. Language is an important feature of immigrants' identity and cultural capital (Alzayed, 2015; Hall, 2013; Rubin, 2017), but in UK educational settings the central elements of listening, reading, and writing require English language skills. Linguistic competence is an important consideration – the association between higher

language ability and higher outcomes in both English as a subject and mathematics indicates vocabulary and spoken linguistic skills may help reduce educational inequality (Spencer et al., 2017).

Some of the available literature suggests students with an immigrant background, or without the language of instruction as their first language, are disadvantaged. Analysis of the Programme for International Student Assessment (PISA) data (including data from England) confirms 15-year old first-generation immigrant students and non-native language speakers generally have lower scores than their peers (Christensen and Stanat, 2007; OECD, 2015a). National data from Scotland indicates EAL secondary school students are behind English as first language students in reading, writing, listening, and talking, but level with them in numeracy (Scottish Government, 2016a). Likewise, gaps in achievement between EAL students with low English language proficiency and non-EAL students are found in inner London (Demie, 2018). Thus, a lack of linguistic proficiency in the language of instruction is a disadvantage for non-native language speaking students with an immigrant background.

Yet there is growing evidence that for some, EAL is not a barrier. In London for instance, fluent EAL students consistently outperform monolingual English speakers (Demie and Strand, 2006; Demie and Lewis, 2018; Spencer et al., 2017).¹ That native English speakers are not as a group the highest performers seems contrary to what one would expect. The literature however offers tentative signs that the intermediate EAL level of 'Developing Competence' may be a

¹ Spencer et al (2017) used a binary language proficiency variable.

threshold upon which students draw level with native English language speakers (See Strand and Hessel, 2018).²

The aim of this paper is to understand how much language proficiency matters for EAL student outcomes beyond London. It seeks to explain the contradiction, why not having the language of instruction is a source of educational disadvantage, while having English as an additional language is an advantage for some students' educational attainment in UK secondary schools. The paper studies the effects of English language proficiency controlling for student background characteristics³ on student scores in national public examinations at the end of compulsory schooling, for 15-16 year olds in the city of Glasgow,⁴ measured in (a) all subjects combined (b) English as a subject (c) mathematics.

This paper widens the scope of existing literature conducted in England,⁵ principally in inner London. It uses a new bespoke dataset, including 9 years of attainment data, a stratified English language proficiency explanatory variable, student background variables, with calendar years and schools as fixed effects. This will in the first place enhance knowledge on the generalisability of findings from England to other UK contexts. It also explores what may be an advantage for some but a source of disadvantage and educational inequality for others. The contribution of this paper is to re-evaluate the association between language

² There are 5 EAL levels, described further during discussion of the methods used in this paper.

³ Although implemented as controls to study the independent effects of language proficiency by comparison of statistical models, to in effect gauge how much language matters, their inclusion also allowed studying their effects.

⁴ The city of Glasgow with a sizeable and diverse EAL student population is a suitable site for empirical study.

⁵ For example, more than one year of data but no disaggregated language proficiency data (Gorard and Siddiqui, 2019): disaggregated language proficiency data but no longitudinal data (Demie and Strand 2006; Strand and Hessel, 2018).

proficiency and educational outcomes in a new context, and to consider a threshold of language proficiency as a potential stepping-stone associated with superior educational outcomes as the explanatory mechanism.

The next section provides an overview of the current literature focusing on (a) the reasons for disadvantage and educational inequality (b) English language proficiency and educational attainment. Section 3 sets out the research questions to be addressed. Section 4 then describes the data, the methods, and variables for the empirical analysis. Section 5 presents the empirical results and Section 6 discusses them, establishing (1) the association between levels of English language proficiency and educational outcomes; (2) the extent English language proficiency explains outcomes after controlling for other known predictors; (3) the EAL proficiency level (threshold) that allows students to match the educational performance of English as first language students, followed by suggestions for further research. Section 6 discusses the findings and their implications for policy, while section 7 summarises.

2. Literature Review

2.1. Determinants of educational inequality

Educational disadvantage is multifaceted with pervasive inequality in outcomes (Demie, 2019; Sammons et al., 2014). Educational inequality may be perceived as lower than average outcomes resulting from unequal access or provision of education for individuals or marginalised groups, consequently restricting their opportunities in life.⁶ It presents challenges and concerns for students, parents, teachers, and policy makers (Codioli and McMaster, 2019).

⁶ For an in-depth discussion of sociological approaches and debates on educational inequality, see Tyler (2012).

Explanations have been sought on socioeconomic causality (Van der Werfhorst, 2019; Betthäuser, 2019; Blossfeld, 2018), on gender and genetics (Herd et al., 2019) and teacher quality (Goldhaber et al., 2015).⁷ The existing scholarship also identifies education systems, policy, and how schools can mitigate inequality (Schmidt et al., 2015). The transmission of multigenerational educational inequality has been studied (Møllegaard and Jæger, 2015; Fiel, 2019), as has social origin and cognitive ability of students (Bukodi et al., 2019). Scholars identify parental background factors such as social class and education associated with inequality in educational attainment (Bukodi and Goldthorpe, 2013), with a strong association between parental occupation and student attainment (Van der Werfhorst, 2018). In isolation, such factors do not fully capture disadvantage (Lenkeit et al., 2018). Thus, interactions and intersectionality have been explored (Bécares and Priest, 2015; Codioli and McMaster, 2019; Strand, 2014; Sime, et al., 2018). However, the literature also indicates ethnicity and immigration background as important determinants of educational inequality (Bécares and Priest, 2015; Christensen and Stanat, 2007).

Immigrant background, ethnicity, and educational attainment

In the international context attainment gaps are found between students with an immigrant background and those without (Mullis et al., 2007; Ochs, 2006; OECD, 2010). In UK based and other European studies diverging outcomes are found (Dronkers and De Heus, 2012; Jensen and Rasmussen, 2011; Lenkeit et al., 2015; Ohinata and van Ours, 2013; Marks, 2005; Shapira, 2012; Strand, 2014). Christensen and Stanat (2007) established “15-year-old immigrant students

⁷ The establishing of incentives to recruit and retain high quality teachers has been identified as a key factor for disadvantaged schools in England (Jerrim et al., 2018).

who do not speak the language of instruction at home are, on average, one year behind nonimmigrant students” (Christensen and Stanat, 2007, p.1).⁸ As a result, Lenkeit et al. assert the evidence “is compelling and presents a major challenge for policy makers and practitioners aiming to reduce educational inequalities” (Lenkeit et al., 2015, p.60).

The UK has a significant history of immigration and ethnic diversity (Dustman et al., 2010; Georgiadis and Manning, 2012; Platt and Nandi, 2018). There is an association between an immigration background, by way of ethnicity, and having EAL. For instance, the literature confirms EAL and non-white UK ethnic background are closely related (See Burgess, 2014; Strand et al., 2015), consistent with the data used in this paper.⁹ Ethnicity features prominently in integration and educational studies (Burgess, 2014; Dustmann et al., 2010; Gillborn et al., 2017; Strand, 2014). Burgess’s (2014) study of educational attainment in London found consistently higher levels of achievement among ethnic groups compared to white British students, attributable to differences in ethnicity and motivation (Burgess, 2014). Likewise, assessment of national attainment in England by Dustmann et al. (2010), established attainment of ethnic minority students was generally higher than native white students. However, language was a “powerful” explanatory variable as to why some groups closed the attainment gap during later stages (Dustmann et al., 2010, p.285). Yet, with a binary language variable (having EAL or not), no inference on the influence levels of language proficiency might have on outcomes can be drawn from those studies.

⁸ Non-native language speakers are, by and large, embedded in aggregate data with levels of language proficiency missing from analysis.

⁹ For example, only 4.5% of non-white UK ethnicity students in the sample (N = 42,817) were recorded as having English as a first language.

Likewise, Burgess (2014) omitted EAL in favour of ethnicity in regression analysis on the premise of collinearity.¹⁰ Without incorporating language proficiency together with background variables, the effect of language cannot be disentangled.

Gender, socioeconomic factors, and special education needs

In isolation, the gender gap appears lower than gaps defined by social class or ethnicity (Strand, 2014).¹¹ In England, girls outperform boys at KS4 by 10 percentage points (Strand, 2014), although no significant variation in outcomes by gender between schools (Strand, 2016a).¹² Socioeconomic factors are well established influences on student attainment (Caro and Lenkeit, 2012; Christensen and Stanat, 2007; Pinot de Moira et al., 2019; Strand, 2016). Poverty and deprivation are associated with lower educational outcomes across the UK (See Goodman and Gregg, 2010; Machin and McNally, 2005; McKinney et al., 2012; McNally and Blanden, 2006; Strand, 2010), with free school meal eligibility the most frequently used measure of disadvantage (Gorard and Siddiqui, 2019; Jerrim et al., 2018; Taylor, 2018).

Gorard and Siddiqui (2019) find special education needs (SEN) have some of the largest negative effects on attainment at KS4. Although there is a lack of literature on this aspect of EAL education (Tan et al., 2017; Whiteside and Norbury, 2017), SEN has been found to negatively impact on EAL student outcomes (Strand et al., 2015). Approximately 12.5% of England's secondary

¹⁰ Strand et al. (2015) found a similar close relationship between ethnic group and EAL.

¹¹ Social class is identified as a key source of educational inequality (Hobbs, 2016; Reay, 2017; Thompson, 2019), and religious affiliation cited (Kortt and Drew, 2019; Moffat and Yoo, 2019).

¹² Student-level explanations explain more variance in student outcomes than differences between schools in the UK (Wilkinson et al., 2018, R14).

school EAL students are recorded as having special education needs, compared to 14% of students with English as their first language (DfE, 2018). A challenge identified by Cline and Shamsi (2000) is in some instances disentangling difficulties an EAL student has in learning English from an underlying learning difficulty.

2.2 English language proficiency and educational attainment: advantage or disadvantage?

Studies with EAL students as a group.

Although the topic of EAL education is well researched (Demie, 2018), a problematic aspect in the literature and national government publications is presentation of EAL students as a group. A study which used aggregated levels of EAL proficiency, Gorard and Siddiqui (2019), found EAL to be a disadvantage in primary school, but less so by secondary school Key Stage 4 (KS4) examinations.¹³ Without disaggregated EAL data, poor performance is cited as either due to lack of proficiency in English or recent arrival to the UK. Consequently, that study was unable to confirm why EAL is an advantage for some yet disadvantage for others. In Scotland, national data for secondary school students prior to the senior assessment phase, show EAL students collectively 6 percentage points behind English as first language or fluent EAL students, in reading and writing, yet level in numeracy (Scottish Government, 2016a).¹⁴ These examples highlight the problematic aspect of binary English language proficiency data. Disaggregated data capturing levels of English language proficiency of

¹³ The stage of secondary school where students take GCSE examinations in England (UK Gov, n.d.), comparative to S4 in Scotland.

¹⁴ It is also suggestive that comparing outcomes in English as a subject and mathematics might be the areas where the effects of English language proficiency are seen more clearly.

students is essential to understanding the association between linguistic proficiency and educational attainment.

In one of the most comprehensive quantitative studies of EAL students, Strand et al. (2015) used England's National Pupil Database (NPD) to determine what predicts low academic achievement using a binary EAL variable. Recent international arrival was associated with higher risk of lower attainment (Strand et al., 2015), however new arrivals were identified by a rather broad proxy. As dates of entry to the UK are unavailable, the "absence of a prior attainment score (either at age 5, 7, 11 or 16)" was taken to indicate a student arrived from overseas (Strand, 2016b, p.3). The problematic aspect is while students ought to make progress over time, holding all other variables equal such as socioeconomic status, cognitive ability and so forth, the starting point of a student with a competent English language level is not comparable to a new to English student arriving at the same stage. It implies a simple association – the longer in the UK the better they will attain. A plausible alternative mechanism may be level of English language proficiency at the time of entry into secondary school is of greater importance for subsequent academic outcomes.

Studies with separate EAL proficiency levels.

When separate language proficiency levels are introduced, research in England suggests a hierarchy of performance. Demie and Strand (2006), analysed the association between English language proficiency and inner London secondary school student attainment. After controlling for student background characteristics in regression models, the authors found attainment increased as levels of language proficiency increased. Moreover, Demie (2018) found that inner

London secondary school student gaps in outcomes narrowed as levels of proficiency increased. It would be reasonable to expect native English language speakers to be the top performers in UK schools, after all English is the language of instruction, yet fluent EAL students outperform monolingual students (Demie and Lewis, 2018; Spencer et al., 2017),¹⁵ consistently over time (Demie and Strand, 2006).

These results are uniform, across all subjects a substantial gap in achievement is found between EAL students with low English language proficiency and non-EAL students (Demie, 2013; Demie, 2018). Therefore, not only does academic achievement improve as linguistic competence in the English language improves, but higher proficiency (Competent and Fluent levels) appears to be associated with above average outcomes, including those of native English speakers (Strand and Hessel, 2018). Thus, there is material evidence of a strong association between levels of English language proficiency and educational attainment in England.

3. The Research Question

A discrepancy between theory in terms of what would be expected and what appears to be contradictory evidence emerges from the literature. As English is the language of instruction, native English language speakers the benchmark, thus somewhat counterintuitive EAL students are the top performers in UK schools. EAL students are at different points of the English language proficiency continuum, from complete beginners to fluent. It is conceivable learners reach a

¹⁵ Spencer et al (2017) used a binary language proficiency variable.

threshold of proficiency that allows matching, then overtaking native English language students which may help explain the contradiction. A clear articulation of that point and confirmation of the association between language proficiency and attainment in other UK educational contexts such as Scotland, is entirely absent from the literature. This is the first paper to explore this topic in the Scottish context.

Research Questions and Hypotheses

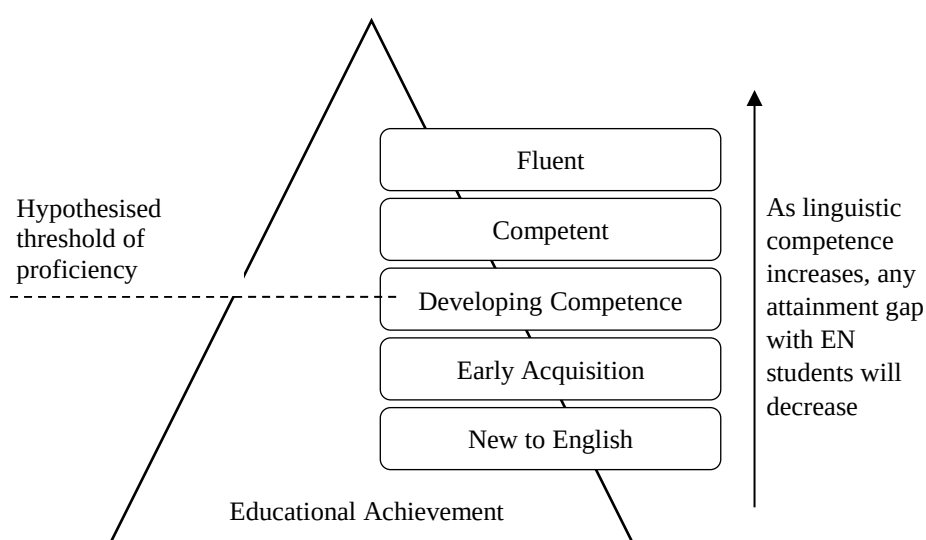
The key questions this paper seeks to answer are:

1. What is the association between levels of English language proficiency and educational outcomes in Glasgow secondary schools at S4?
2. To what extent does English language proficiency explain outcomes after controlling for other known predictors: in other words, how much does proficiency matter?
3. What level of EAL proficiency allows students to match the educational performance of English as first language students?

English language skills are fundamental to listening, reading, and writing in UK classrooms. The primary hypotheses in this paper therefore are that (1) as linguistic competence increases within the EAL population, so too does attainment, but any gap between EAL and students with English as a first language (EN) outcomes will reduce as proficiency increases (See Figure 1). (2) Furthermore, English language proficiency will be the most important explanatory variable for EAL student outcomes. The secondary hypotheses predict that (1) the role of English language proficiency will be more important for performance in

English as a subject than mathematics;¹⁶ and (2) the EAL level of developing competence allows students to match the educational outcomes of English as first language students.

Figure 1: Hypothesised association between English language proficiency and educational achievement and threshold



Note. EN = English as first language.

4. Data and Methods

4.1. Data

The datasets used in this study were obtained from the Scottish Government: (1) Pupils in Scotland Census 2002-2015 and (2) SQA examination results in Scottish Schools 2002-2015. The final data coverage (2007-2016) and release of specific variables held within the census dataset were negotiated. This included additional support needs (ASN) datasets which indicated a learning

¹⁶ Strand and Hessel (2018). Strand and Hessel (2018) find evidence of discriminant validity in English as a subject and mathematics in England.

disability, health issue, physical difficulty, or disorder which required support for learning. The datasets were merged to form a unique database. Linkage was possible by way of students individual Scottish Candidate Numbers (SCN), re-coded by the data holder prior to release to retain anonymity. The sample comprised students who sat examinations at S4 nested in 29 state funded secondary schools, bounded by time 2008-2016, geographically and by local authority jurisdiction within Glasgow City Council boundaries (N = 42,817). Only students with robust matches between datasets were retained.¹⁷ Examinations are taken in fourth year (S4), or fifth (S5) and sixth year (S6) if a student chooses to remain (McKenna, 2020).¹⁸ This paper focuses on S4, the final year of compulsory schooling. A sub-sample was used for tracking cohorts from S1 to S4 in all subjects combined N = 25,830; English as a subject N = 24,476; Mathematics N = 23,186. Those results are provided as supplemental material, in Appendix C.

Ideally, one would want additional variables such as level of parental education and other family related data on students' home environment, or for instance information on how literate a student was in their first language. However, this was beyond the scope of the dataset. The variables selected as control variables were based on theoretical reasoning derived from the literature, constrained by availability. Table 1 provides the distribution of the variables from the dataset, which are now described.

¹⁷ Students with English language proficiency recorded as limited communication (LC) or not assessed (NA) were omitted as linguistic competence could not be ascertained.

¹⁸ The transition to higher study from S4 to S6 may be conditional on the association between level of English language proficiency, and under researched.

Table 1: Distribution of variables within population at S4 across 29 schools

	Frequency	Percent
Students level of English language proficiency		
New to English	213	0.5%
Early Acquisition	541	1.3%
Developing Competence	2178	5.1%
Competent	2115	4.9%
Fluent	535	1.2%
English as a first-language	37235	87.0%
Gender of student		
Female	21572	50.4%
Male	21245	49.6%
Whether student is registered as entitled to free school meals		
Student not registered as entitled to free school meals	25432	59.4%
Student registered as entitled to free school meals	17385	40.6%
Additional Support Need		
No Additional Support Needs	32644	76.2%
Additional Support Needs	10173	23.8%
Ethnicity		
African or Caribbean	843	2.0%
Asian	2827	6.6%
Chinese ^a	209	0.5%
White-Other	1179	2.8%
Other-Ethnicity	2088	4.9%
White-UK	35671	83.3%
Educational Attainment		
All subjects combined at S4	42817	100.0%
English as a subject at S4	39800	93.0%
Mathematics at S4	38494	89.9%

Note. N = 42,817

Note. The above data is aggregated by years 2007-2016.

Note. Other-Ethnicity includes: Not Disclosed, Mixed, Asian-Other, Traveller, Not Known, Other.

Note. The missing data comprised students recorded with an English language category of Limited Communication (LC) or Not Assessed (NA) which were omitted from analysis.¹⁹

a. Included as a separate group as literature indicates high academic achievement.

¹⁹ Although not reported in this paper, students with LC had the lowest mean scores out of all recorded categories of language proficiency.

4.2 Variables

Educational Performance

Three dependent variables captured educational attainment, comprising total scores in (a) all subjects combined²⁰ (b) English as a subject, and (c) mathematics. The all subjects combined measure included English for Speakers of Other Languages (ESOL), part of the syllabus in Scotland (SQA, n.d.a),²¹ but filtered out of the English as a subject measure. The inclusion of separate English as a subject and mathematics outcomes reflected first-generation immigrant students are generally lower in reading than in mathematics (OECD, 2015a).²² Total scores were derived from performance in national examinations overseen by the Scottish Qualifications Authority (SQA).²³ The Curriculum for Excellence (CfE) implemented across Scotland effected changes to points awards (Shapira and Priestley, 2019). As a result, scores were standardised with a mean of zero and standard deviation of 1.

English Language Proficiency

The measures of English language proficiency used by Scottish schools are provided in Appendix A, Table 3. They represent the spectrum of proficiency, scaled 1-5, from complete beginner to fluent. Students with English as a first language are coded 6. Although across the UK different criteria are in place to indicate linguistic progress, one of the most common and adapted for purpose are the Hilary Hester scales (Griffin, 2004). These form the basis of the model adopted

²⁰ For the full range of national qualifications subjects, see SQA (n.d.b).

²¹ A distinct difference between secondary schools in Scotland compared to England.

²² National data in Scotland indicates less difference in outcomes between EAL and EN students in numeracy compared to more language based assessments (Scottish Government, 2016a).

²³ Calculated by allocating a score to each award using the Unified Points Score Scale, which is “an extended version of the Universities and Colleges Admissions Service (UCAS) Scottish Tariff points system” (Scottish Government, 2016b, 3.3).

in Scotland with an additional fifth stage to indicate fluency (ScotXed, 2016). The responsibility of recording levels of proficiency rests with schools.²⁴ The analysis sourced proficiency at S1 and at S4, the first and final stages of compulsory secondary school education. English language proficiency at S1 was used in the supplemental material to assess the construct validity of the language proficiency variable. The S1 results are provided in Figure 5, in Appendix C.

Free School Meal (FSM) Entitlement

Free school meals (FSM) coded as 1, indicated a student registered as entitled to free school meals, 0 as not registered. The variable indicates entitlement rather than receipt of FSMs. To capture the changeable nature of such a measure, the variable was reconstructed to represent whether a student was entitled at any point during their secondary school education. This increased the percentage of students flagged as entitled to FSMs.²⁵ The validity of FSM as a socioeconomic variable has been questioned. For instance, it may not be taken up due to social stigma or lack of awareness of entitlement (McKinney et al., 2012). However, entitlement to FSM is “a commonly used measure of family economic disadvantage” (Demie and Strand, 2006, p.218). It is an important indicator for the case of Glasgow: 13% of students in Scotland were registered for FSMs in 2007/8 while the figure was considerably higher at 30% for Glasgow (Scottish Government, 2008).²⁶

Additional Support Needs (ASN)

²⁴ Recording levels of proficiency “... should reflect the professional assessment of the ... school EAL co-ordinator or other teacher to whom the responsibility has been delegated, and should not be amended by parents.” (ScotXed, 2016, p.64).

²⁵ Such an increase was also found using the same measure by Strand and Hessel (2018).

²⁶ Entitlement within individual secondary schools ranged from 7.6% to 43.8%.

The additional support needs variable (ASN) in its original format covered a range of support recorded in each annual school census.²⁷ These were subsequently aggregated to form a binary variable, 1 indicating ASN and 0 indicating no ASN, constructed to take account of a student may not have additional needs throughout their time in secondary school. This increased the percentage of ASN in the sample from 19% to 24%.

Ethnicity

Ethnicity categories in the original datasets were not comparable over time due to coding changes in 2011. Some categories had a low count, particularly Bangladeshi and students of Caribbean heritage. The inconsistency was addressed by construction of a six category ethnicity variable, coded as: (1) African or Caribbean (2) Asian (3) Chinese (4) White-Other (5) Other-ethnicity (6) White-UK. While acknowledging the contested aspect of categorising students by ethnicity (Powney et. al., 1998), the labelling is consistent with the original data. Although Chinese students were also few, they were retained as a group as the literature indicates strong academic performance. The sub-categories are available in Appendix B, Table 4.

Additional control variables

Boys were coded 1 and female 0, distributed 50.4% girls and 49.6% boys.²⁸ For the purpose of regression analysis, dummy variables were constructed for schools and years, treated as fixed effects. School identifiers are not reported to

²⁷ Support needs may include, but not limited to: learning disability, dyslexia, visual or hearing impairment, deafblind, physical or motor impairment, speech disorder, autistic spectrum disorder, social, emotional and behavioural difficulty, physical health problem, mental health problem, interrupted learning, bereavement, substance misuse, and family issues (OECD, 2015b).

²⁸ Gender is recognised in the literature as having an association with educational outcomes (Georgiadis and Manning, 2012; Machin and McNally, 2005; Strand, 2014).

prevent possible matching with publicly available lists. 'Years', in this paper refer to the year examinations were taken. For example, year 2008 represents the school year 2007/08 with combined census data for 2007 and examination data from 2008, aggregated in all analyses.

4.3 Analytical Methods

This paper uses a range of analytical methods. The first is a comparison of mean scores net of explanatory variables between EAL students collectively with those of English as a first language students, by way of independent t-tests. Next, a comparison of mean scores is presented differentiating groups by level of English proficiency to determine patterns in the simple association net of explanatory variables between language proficiency and outcomes, with statistical significance assessed using ANOVA. Finally, linear regression with three analytic models was applied.²⁹ This approach cut through the complex individual relationships between predictors to identify the unique association between English language proficiency and attainment. In Model 1, level of English language proficiency was entered as the sole predictor using dummy variables with English as a first language students as the reference category. Model 2 included all student predictors excluding English language proficiency. In Model 3 all variables were entered.³⁰ Schools and years were controlled for in all three models as fixed effects and not reported.

²⁹ Regression analysis is particularly suited to analysis of academic outcomes (Mingat et al., 2003). For a similar example, see the study conducted in London schools by Demie and Strand (2006).

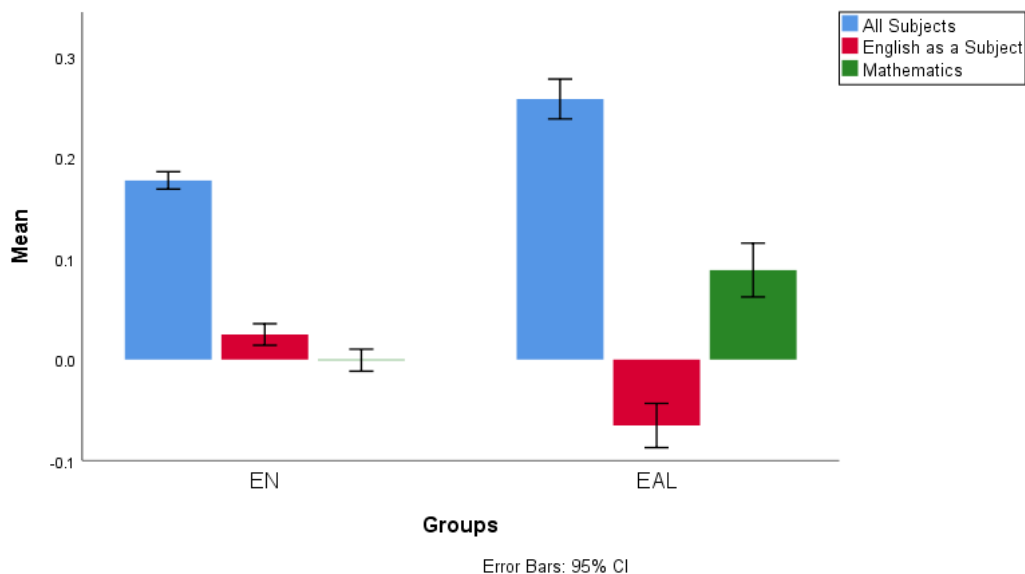
³⁰ The predictors, gender, ASN, FSM and ethnicity were entered in Models 2 and 3.

5. Results

5.1 What is the association between level of English language proficiency and educational outcomes in Glasgow secondary schools?

The descriptive analysis in Figure 2 shows EAL students collectively attained higher scores in all subjects combined and in mathematics compared to students with English as first language (net of explanatory variables). English as first language students averaged higher scores in English as a subject. Independent t-tests confirmed statistically significant differences between groups.³¹

Figure 2: Mean scores of English as first-language and EAL groups at S4



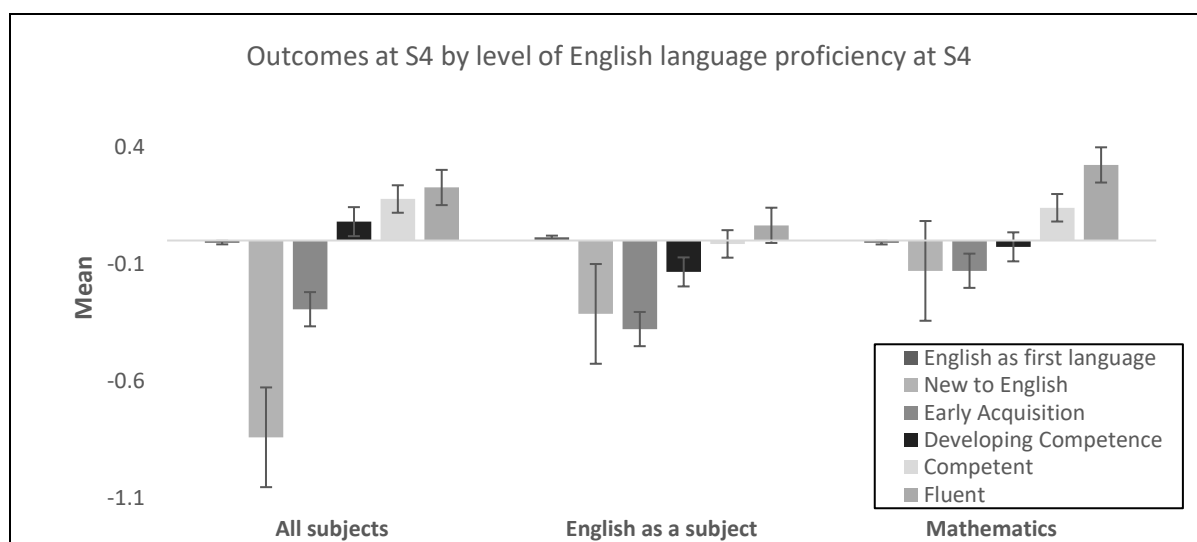
Groups		All Subjects	English as a Subject	Mathematics
EN	Mean	-0.012	0.005	-0.011
	N	37,235	34,713	33,439
EAL	Mean	0.060	-0.093	0.061
	N	5,582	5,087	5,055
Total	Mean	-0.003	-0.008	-0.001
	N	42,817	39,800	38,494

Note. EN = English as first language; EAL = English as an additional language.

³¹ Equal variances not assumed: all subjects combined, $t(7,564) = -5.19$, $p < .001$; English as a subject, $t(7,625) = 7.71$, $p < .001$; mathematics $t(6,937) = -5.02$, $p < .001$.

It was hypothesised that attainment increased as linguistic proficiency increased, reducing the gap between EAL and English as first language students. The results signposted an association between EAL level and scores in all three outcome measures. In Figure 3, a general pattern emerged – as proficiency increased so too did average scores (net of explanatory variables). Intermediate to advanced levels (developing competence to fluent) had higher scores than students with English as a first language in all subjects combined. Advanced levels (competent to fluent) had the highest scores in mathematics. Fluent students outperformed native English language speakers in English as a subject. A one-way between subjects' ANOVA confirmed statistically significant differences between groups.³²

Figure 3: Mean scores by cohort level of English language proficiency



Note. S4 cohorts: All subjects combined N = 42,817; English as a subject N = 39,800; Mathematics N = 38,494.

³² The assumption of homogeneity of variance was violated, hence Welch's ANOVA is reported: all subjects combined, $F(5, 1279.96) = 56.00$, $p < .001$; English as a subject $F(5, 908.75) = 28.47$, $p < .001$; mathematics $F(5, 1033.03) = 27.62$, $p < .001$.

5.2 To what extent does English language proficiency explain outcomes after controlling for other known predictors?

English language proficiency was hypothesised as the most important explanatory variable for EAL student outcomes. Linear regression models controlled for student characteristics, with schools and years as fixed effects. Scores in all subjects combined, English as a subject and mathematics were incorporated as the dependent variables. Collinearity statistics indicated VIF scores below 3 and tolerance scores above 0.2. No predictors were correlated above $r = 0.8$. The Durbin-Watson statistic, to test residuals were independent or uncorrelated, gave a value below 2. Although not presented here, plots of standardised residuals versus standardised predicted values showed no obvious signs of funneling, suggesting the assumption of homoscedasticity had been met. The potential influence of outliers was assessed using Cook's Distance: no values over 1 indicated no individual cases unduly influenced the models. Outliers were retained as valid scores.³³

The separate effects of language compared to other predictors in all subjects combined (Models 1 & 2)

The key finding from the regression models in Table 5 was the significance of English language proficiency. The simple association, assessed in Model 1, found language at S4 accounted for as much variation in outcomes at S4 ($R^2 = 8\%$) as other predictors combined in Model 2 ($R^2 = 9\%$). All language level coefficients were statistically significant. The largest negative effects were seen for new to English and early acquisition compared to English as first language

³³ Community language qualifications may have inflated some EAL student scores, however, separate analysis of English as a subject and mathematics outcomes addressed this aspect.

students as the reference group. Model 1, isolating the effect of English language proficiency, exposed a clear stepped, hierarchical pattern, with new to English the lowest predicted score, then early acquisition, English as first language, developing competence, then competent, with the highest coefficient for fluent students. Model 2 (which excluded language proficiency) yielded statistically significant negative effects on student scores by gender, additional support needs (ASN) and FSM entitlement. The gender gap was modest in favour of girls, while the negative effects of ASN and FSMs were moderate. All ethnic groups were statistically significantly different from white-UK except the other-ethnicity category.

The combined effects of language and other predictors in all subjects combined, English as a subject and mathematics scores (Model 3)

Model 3 included all the available explanatory variables. The language proficiency coefficients reconfirmed the association between level of proficiency and examination results. The hierarchical pattern of outcomes by English language proficiency seen in Model 1 held in Model 3 (with an increase in R^2 from 8% to 10%). The lowest to highest scores were new to English, early acquisition, English as a first language, developing competence, competent then fluent. Generally, outcomes increased as linguistic proficiency improved, with patterns suggesting beginners (new to English and early acquisition levels) had similar outcomes, intermediate (developing competence) were on a par with native English language speakers, and advanced levels (competent and fluent) the highest performers.

It was hypothesised that linguistic proficiency would be more important for performance in English as a subject than in mathematics. The results from Model 3 in Table 2 presented evidence of discriminant validity. In English as a subject, all EAL levels of proficiency were statistically significantly different from English as first language students except the level of developing competence. Although developing competence also appeared a pivotal point for mathematics outcomes, the lower outcomes for new to English and early acquisition were not statistically significantly different from English as first language students. This confirmed English language proficiency was more important for performance in English as a subject than in mathematics.

The Effects of control variables

In all subjects combined and in English as a subject the advantage for girls remained statistically significant, although the effect size was small. In mathematics, there was no statistically significant difference in scores between boys and girls. A negative effect of having additional support needs or FSM entitlement at any point during secondary school on examination outcomes in all subjects combined was consistent with Model 2. The negative effect size of ASN was consistent in English as a subject and in mathematics. Likewise, FSM entitlement had a consistent negative effect across attainment measures. Ethnicity was statistically significant overall in all subjects combined, but the effect size and direction varied between ethnic groups. There were weak negative coefficients for white-other and other-ethnicity compared to white-UK students. Overall, ethnicity did not greatly contribute to explaining EAL student outcomes in English as a subject or mathematics, except for a statistically significant positive effect for Chinese students (in mathematics but not in English as a subject).

Table 2: Effects of Student-level Predictors on Scores at S4

	All Subjects						English as a subject			Mathematics		
	Model 1		Model 2		Model 3		Model 3		Model 3		Model 3	
	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE
S4 (Constant)	-0.065	0.18	-0.026	0.18	-0.019	0.17	-0.118	0.18	0.062	0.18		
Language proficiency^a												
New to English	-0.779 ^{***}	0.07			-0.736 ^{***}	0.07	-0.214 ^{**}	0.08	-0.08	0.08		
Early Acquisition	-0.258 ^{***}	0.04			-0.174 ^{***}	0.05	-0.246 ^{***}	0.05	-0.069	0.05		
Developing Competence	0.108 ^{***}	0.02			0.171 ^{***}	0.03	0.022	0.03	0.054 [†]	0.04		
Competent	0.195 ^{***}	0.02			0.211 ^{***}	0.03	0.138 ^{***}	0.03	0.187 ^{***}	0.04		
Fluent	0.310 ^{***}	0.04			0.291 ^{***}	0.05	0.175 ^{***}	0.05	0.314 ^{***}	0.05		
Explanatory variables^b												
Boys			-0.097 ^{***}	0.01	-0.095 ^{***}	0.01	-0.078 ^{***}	0.01	0.003	0.01		
ASN			-0.199 ^{***}	0.01	-0.205 ^{***}	0.01	-0.119 ^{***}	0.01	-0.133 ^{***}	0.01		
FSM			-0.212 ^{***}	0.01	-0.214 ^{***}	0.01	-0.118 ^{***}	0.01	-0.151 ^{***}	0.01		
African or Caribbean			0.311 ^{***}	0.03	0.214 ^{***}	0.04	0.084 [*]	0.04	0.078 [†]	0.04		
Asian			0.228 ^{***}	0.02	0.068 [*]	0.03	-0.017	0.03	-0.05	0.04		
Chinese			0.360 ^{***}	0.07	0.239 ^{***}	0.07	-0.011	0.07	0.202 ^{**}	0.08		
White-Other			-0.064 [*]	0.03	-0.089 ^{**}	0.03	0.003	0.04	-0.041	0.04		
Other-Ethnicity			-0.015	0.02	-0.048 [†]	0.03	-0.01	0.03	-0.018	0.03		
Model fit												
R ²		8%		9%		10%		9%		5%		

†p < .10. *p < .05. **p < .01. ***p < .001. Note. English as first language, White-UK reference categories, schools and years fixed. a. English as first language as reference category; b. White-UK as reference category for ethnicity.

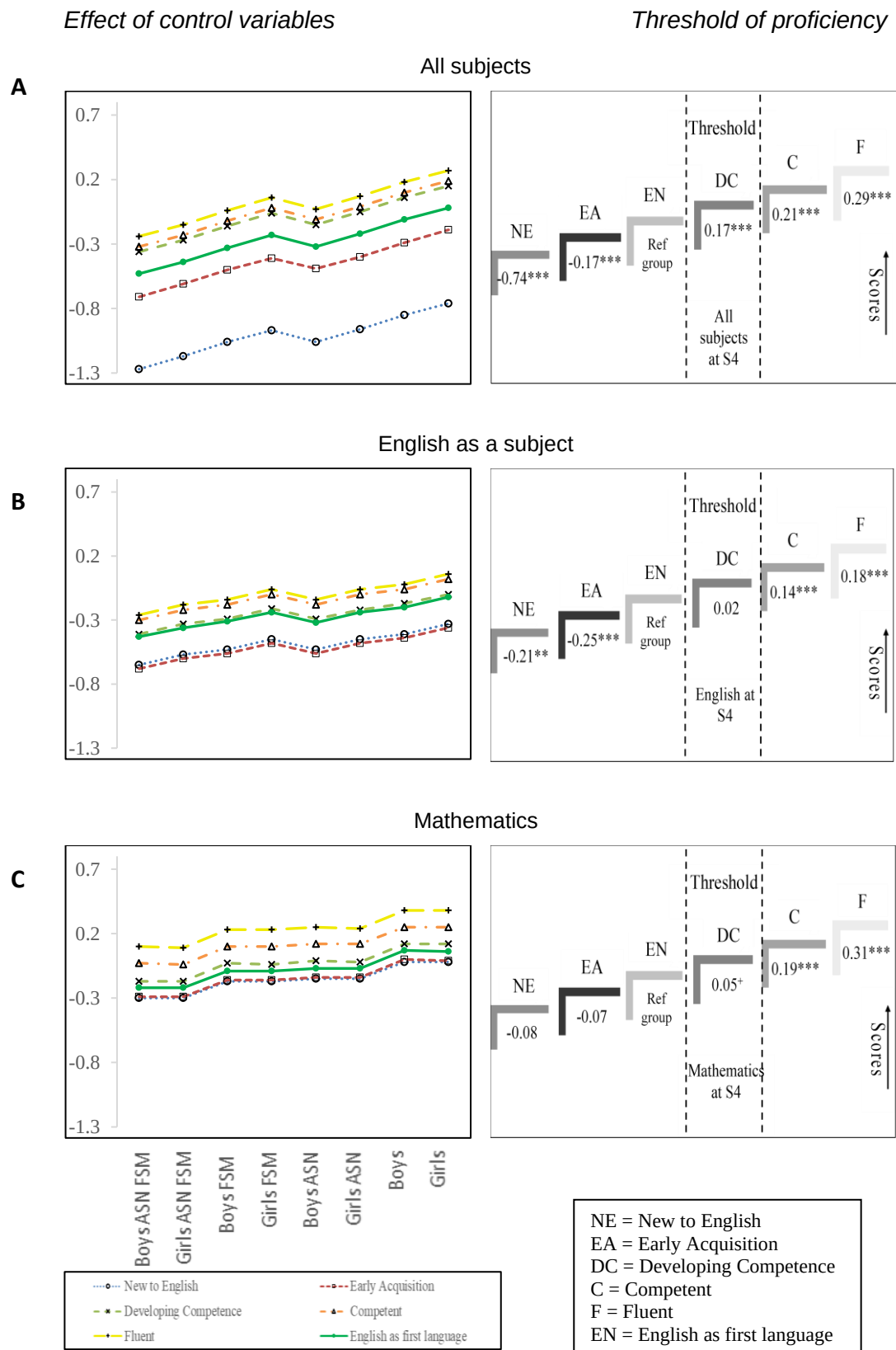
5.3 What level of EAL proficiency allows students to match the educational performance of English as first language students?

It was hypothesised that ‘developing competence’ would allow students to match English as first language student outcomes. The regression results from Model 3 in Table 2 revealed all EAL levels statistically significantly different from English as first language students in all subjects combined. Developing competence allowed students to nudge ahead of English as first language students. Model 3 also revealed all EAL levels as statistically significantly different from English as first language students in English as a subject, except the level of developing competence.³⁴ In mathematics, developing competence scores were comparable to English as first language student scores, with less differences between lower proficiency levels. The results thus show developing competence as the threshold that allowed EAL students to match English as first language student scores across all three measures, confirming the threshold hypothesis.

The implications of the threshold, explanatory and control variables are presented in Figure 4. The regression analysis revealed the top performers (fluent students) and the most vulnerable (new to English and early acquisition students). The statistical models established variation within the EAL group explained by levels of proficiency, but also differences by gender, ASN, FSM entitlement and ethnicity. The examples with predicted scores for different combinations of variables net of ethnicity, illustrate the implications for student scores. The addition of ethnicity coefficients would increase or decrease the examples depending on ethnic group membership.

³⁴ Although fluent students comprise 1.2% of the sample, sub-fluent levels (developing competence and competent) are 5.1% and 4.9% respectively.

Figure 4: Estimated outcomes by English language proficiency



Note. FSM = Free school meal; ASN = Additional Support Need.

6. Discussion

The purpose of this study was to improve understanding of EAL education beyond inner London, by exploring how much language proficiency matters for EAL student outcomes in Glasgow secondary schools. The findings are consistent with the primary hypothesis, suggesting English language proficiency is the most important explanatory variable for EAL student outcomes. Although comparison of groups indicated EAL students collectively outperformed English as a first language students in all subjects combined, and in mathematics, disaggregating the data by proficiency level established not all achieve better outcomes. Binary EAL masked the vulnerability of beginners. The key point to emerge was English language proficiency explains more differences between student outcomes than other control variables, particularly in English as a subject. Most striking are the negative effects of being new to English or early acquisition, larger than any effect of ethnic group membership on outcomes at S4. This chimes with Demie (2013) but contradicts studies which place emphasis on ethnicity as more important than EAL for student outcomes (see for example Burgess, 2014).

A further goal of this paper was to explain the apparent contradiction that on the one hand not having the language of instruction is a source of educational disadvantage, and on the other, having English as an additional language is an advantage for some students' educational attainment in UK secondary schools. The incongruity between theory and evidence was resolved by the stepped pattern in attainment explained by the association between English language proficiency and established threshold, a pivotal point which determines above, or below average outcomes compared to English as first language students.

The effects of language proficiency

The results supported the primary hypothesis that an increase in linguistic competence increases attainment, reducing the gaps between EAL and native English language speakers. This association between attainment and proficiency in the English language, and patterns of EAL performance, is consistent with the literature in England (Demie, 2013; Demie, 2018; Demie and Lewis, 2018; Demie and Strand, 2006; Strand and Hessel, 2018).

The findings validated the secondary hypothesis English language proficiency is more important for performance in English as a subject than mathematics. The findings align with the OECD's (2015a) thesis that differences in performance for students with an immigrant background in text based subjects compared to mathematics, are explained by language proficiency, and are consistent with Strand and Hessel (2018). It is also consistent with Scottish secondary school data on EAL student performance indicating parity in numeracy but a gap in English language skills prior to S4 (Scottish Government, 2016a). That higher proficiency levels (competent and fluent) also signpost higher outcomes in mathematics, is congruent with the findings of Spencer et al., (2017). English language proficiency provides a strong indicator of outcomes, but more important in English than mathematics for the majority of EAL students.

The results helped resolve the paradox between theory, that English as first language students ought to be the highest performers and evidence many EAL students outperform English as first language students. That students with English as a first language are not on average the top performers, indicates full command of the English language is not singularly a determinant of success. The predicted scores in the regression models for ethnic groups suggest an additional cultural

boost in line with Burgess (2014), of perhaps a motivation among ethnic and immigrant groups.³⁵ However, it may also be bilingualism. Although a proportion of native English language speakers may be fluent in other languages, it is unlikely the norm and thus that fluent and for that matter students approaching fluency outperform English as first language students, does present robust evidence of bilingualism as an indicator of higher academic achievement, consistent with the literature (Demie and Strand, 2006; Demie and Lewis, 2018; Spencer et al., 2017; Strand and Hessel, 2018; Strand et al., 2015).

The effects of other predictors

The strong performance of some ethnic groups concurs with existing literature on minority groups outperforming native white students in England (Burgess, 2014; Dustmann et al., 2010; Thompson, 2019). Chinese students with a strong positive showing in mathematics in line with the literature (Gates and Guo, 2014; Francis et al., 2017). That ethnicity is not significant in English as a subject, underscores the primary place of language proficiency over a boost gained from an EAL students ethnic background, attesting to language as the foremost explanatory variable. What the ethnicity variable allows is further differentiation within the EAL population to better understand outcomes. Thus, the findings of this paper offer a potential refinement of previous studies of disadvantage which omitted or included only a binary EAL variable (for instance Burgess, 2014; Gorard and Siddiqui, 2019). For example, although special Education Needs (SEN) and entitlement to free school meals have the largest

³⁵ It is possible immigrant students have higher motivation to succeed than non-immigrant students. Their origin, parental levels of social class, skilled or unskilled, may have some bearing on the composition of EAL population. See Gates and Guo (2014) for an example of Chinese students.

pernicious effect on attainment at KS4 in England (Gorard and Siddiqui, 2019), this paper confirms this applies to the majority of EAL students in Glasgow, but it is not the case for new to English students. English language proficiency provides the strongest prediction of their outcomes, notwithstanding the cultural boost from ethnic background, supported by the regression results for ethnicity, and the motivation of some ethnic groups cited by Burgess (2014).

Developing Competence: a key threshold

The findings support the papers secondary hypothesis that the level of developing competence is the key threshold of proficiency. Developing competence is a pivotal point, once reached the path is at least equal to the educational outcomes of native English language speakers at S4. The results hold after controlling for student background variables, for student scores in all subjects combined, English as a subject, and in mathematics.

Strengths and limitations of the analysis

The positioning of language proficiency as the central explanatory variable, eschewed the dominant ethnicity or socio-economic paradigms found in the literature on integration and educational inequality. The first paper to use a decade of disaggregated EAL proficiency data together with student background variables in the Scottish secondary school context, it covered progression from S1 (See Appendix C) to the end of compulsory education at S4. Rather than replication of existing studies in a new context with new data, it provides robust and reliable results beyond what has been previously available in the Scottish context. By making language the central feature of the analysis, this paper makes a significant contribution on why immigrant and ethnic minority children who do not have full

command of the language of instruction are doing better or worse at school than native English language speakers.

There are however limitations to this study. The results do not account for differential school effectiveness or temporal change, as schools and years were fixed throughout the analyses. Information on family background, parental education, and home learning environment for students is missing. The lack of background data on students first language literacies and underlying cognitive ability, are arguably detrimental to fair comparison between students. Interaction effects between predictors were also not explored (See Strand, 2014). The results show the association between English language proficiency at the beginning of the school year in which examinations were taken, not precisely at examination. Students had an academic year to improve proficiency before taking examinations, thus the measure is accurate to within one school year. Nonetheless, confidence is found in the consistency of the results with studies conducted elsewhere in the UK,³⁶ established reporting in census returns in Scottish schools, and strengthened by analysis of S1 cohorts provided in the supplemental materials.

Suggestions for further research

The association between English language proficiency and attainment is a positive story for the cultural integration of the majority of EAL students. What remains to be explored are the effects of policy over time on student outcomes,

³⁶ The results are consistent with London (Demie, 2017; Demie, 2018; Demie and Lewis, 2018; Demie and Strand, 2006): that DC appears a key point chimes with Stand and Hessel (2018). Consideration should be made of the Scottish education system, social and economic background (see OECD, 2015b) on whether the results are generalisable in the first instance to other parts of Scotland, and second to other parts of the UK. London and Glasgow are contrasting contexts, yet results are similar.

particularly against the backdrop of mainstreaming (See Jensen and Gidley, 2014).³⁷ Moreover, does the advantage of reaching the linguistic threshold seen in attainment scores extend to destination outcomes post-compulsory education? More immediately pressing is the need to further explore the differential effectiveness of schools. Studies accounting for demographic composition and consistency of the threshold across schools would be one way of measuring school effectiveness for EAL students. Such analysis would advance understanding of how best to support EAL students in UK schools, to mitigate the negative effects of lack of language proficiency and educational inequality for the most vulnerable.

7. Conclusions and implications

The findings presented in this paper highlight that English language proficiency is a key predictor of success or failure for EAL secondary school students in Glasgow. Both the primary hypotheses advanced were confirmed: (1) attainment increased as EAL student linguistic competence increased with the gap between EAL and students with English as a first language outcomes correspondingly reducing; and (2) English language proficiency was the most important explanatory variable for EAL student outcomes. The secondary hypotheses advanced and confirmed, were that (1) the role of English language proficiency was more important for performance in English as a subject than mathematics; and (2) the EAL level of developing competence allowed matching educational outcomes of English as first language students. Regression models

³⁷ The important message which comes through from the analyses, is while the presence of EAL students in UK schools has in some quarters been viewed as problematic, EAL is clearly advantageous for many, providing the support is there.

established the association between language proficiency and educational attainment explains as much variation in student outcomes as other explanatory variables combined. Ethnicity has an effect, but the effect size is not greater than the effect of EAL for students at the extremity of the proficiency spectrum (new to English and fluent students), consistent with Demie (2013).

What these results show is for the most part a positive association between higher proficiency in the English language and educational attainment for EAL students in Glasgow schools. The results remain statistically significant after controlling for student background characteristics, and congruent with the literature based on England (Demie, 2013; Demie, 2018; Demie and Lewis, 2018; Demie and Strand, 2006; Strand and Hessel, 2018). An increase in English language proficiency predicts for the majority higher scores than native English language speakers. The exceptions are students who enter the senior (assessment) phase of secondary school at the very early stages of their journey towards proficiency. For those students, EAL remains an indicator of below average outcomes at S4 in all subjects combined, in English as a subject and in mathematics. However, as this study demonstrates, compared to native English language students EAL is not an inescapable barrier to academic success once the threshold of developing competence has been met.

These findings have major implications for the collection and use of language proficiency data. This study conclusively shows the necessity of disaggregated language proficiency data for analysis of EAL student outcomes. It demonstrated in line with Hutchinson (2018) that binary applications of EAL offer little empirical value and are inadequate to understand outcomes of new arrivals with lower levels of proficiency. The disaggregated data made available by the

Scottish Government for use in this paper allowed a vital light to be shone on this heterogeneous group, uncovering vulnerable subgroups. The findings therefore underscore the need to maintain collecting data on students' level of English language proficiency. It supports calls made by Demie (2017) and Strand and Hessel (2018) in England, that proficiency in English should be reintroduced in the National Pupil Database and made accessible to the research community.

References

- Alba, R., & Foner, N. (2014) Comparing Immigrant Integration in North America and Western Europe: How Much Do the Grand Narratives Tell Us? *IMR* 48(S1), S263–S291.
- Alzayed, N. (2015) Preserving Immigrants Native Language and Cultural Identity in Multilingual and Multicultural Societies. *International Journal of Humanities and Social Science*, Vol. 5, No. 2; 263-267.
- Bécares, L., and Priest, N. (2015) Understanding the Influence of Race/Ethnicity, Gender, and Class on Inequalities in Academic and Non-Academic Outcomes among Eighth-Grade Students: Findings from an Intersectionality Approach. *PLoS ONE*, 10(10): e0141363.
- Bethhäuser, B. A. (2019) The Effect of the Post-Socialist Transition on Inequality of Educational Opportunity: Evidence from German Unification. *European Sociological Review*, 35(4), pp461-473.
- Blossfeld, P. (2018) A multidimensional measure of social origin: theoretical perspectives, operationalization and empirical application in the field of

educational inequality research. *Quality & Quantity*. 53. 10.1007/s11135-018-0818-2.

Bukodi, E., Bourne, M., Betthäuser, B. A., & Goldthorpe, J. H. (2019). Social origins, cognitive ability, educational attainment and social class position in Britain: A birth cohort and life-course perspective. [Online] Available: https://ora.ox.ac.uk/objects/uuid:5d098810-792f-4c35-9a0e-8ad3df633743/download_file?file_format=pdf&safe_filename=SUMMARY_REPORT_Nuffield_grant_EB%2BFinal.pdf&type_of_work=Report [Accessed: 12 Feb 2020].

Bukodi, E., & Goldthorpe, J. (2013). Decomposing 'Social Origins': The Effects of Parents' Class, Status, and Education on the Educational Attainment of Their Children. *European Sociological Review*, 29(5), 1024-1039.

Burgess, S. (2014) Understanding the success of London's schools. *Centre for Market and Public Organisation (CMPO) Working Paper*, 14, 333.

Caro, D. H. & Lenkeit, J. (2012) An analytical approach to study educational inequalities: 10 hypothesis tests in PIRLS 2006, *International Journal of Research & Method in Education*, 35:1, 3-30, DOI: 10.1080/1743727X.2012.666718

Christensen, G., & Stanat, P. (2007) Language policies and practices for helping immigrants and second-generation students succeed. *The Transatlantic Taskforce on Immigration and Integration, Migration Policy Institute (MPI) and Bertelsmann Stiftung*, 1-15.

- Cline, T. and Shamsi, T. (2000) *Language needs or special needs? The assessment of learning difficulties in literacy among children learning English as an additional language: a literature review*. Great Britain: Department for Education and Employment.
- Codioli, N. and McMaster, R. C. (2019) The contribution of intersectionality to quantitative research into educational inequalities. *Review of Education* 7:2, pages 271-292.
- Demie, F. (2013) English as an additional language pupils: how long does it take to acquire English fluency? *Language and Education*, 27:1, 59-69.
10.1080/09500782.2012.682580
- Demie, F. (2017) *English as an Additional Language: Good Practice to Raise Achievement in Schools*. Lambeth LA: Lambeth Research and Statistics Unit.
- Demie, F. (2018) English language proficiency and attainment of EAL (English as second language) pupils in England. *Journal of Multilingual and Multicultural Development*, 1-13. 10.1080/01434632.2017.1420658
- Demie, F. (2019) *Educational Inequality: Closing the Gap*. London: UCL Institute of Education Press.
- Demie, F., & Lewis, K. (2018) Raising achievement of English as additional language pupils in schools: Implications for policy and practice. *Educational Review*, 70(4), 427-446. 10.1080/00131911.2017.1344190

- Demie, F., & Strand, S. (2006) English language acquisition and educational attainment at the end of secondary school. *Educational Studies*, 32(2), 215-231. 10.1080/03055690600631119
- DfE. (2018) Special educational needs in England: Information from the school census on pupils with special educational needs (SEN), and SEN provision in schools. Department for Education, UK Government. [Online] Available: <https://www.gov.uk/government/statistics/special-educational-needs-in-england-january-2018> [Accessed: 12 Feb 2020].
- Dronkers, J. & De Heus, M. (2012) The educational performance of children of immigrants in sixteen OECD countries. *Centre for Research and Analysis of Migration, Discussion Paper Series CDP No.10/12*.
- Dunne, D., Humphreys, S., Sebba, J., Dyson, A., Gallannaugh, F., and Daniel Muijs (2007) *Effective Teaching and Learning for Pupils in Low Attaining Groups* Research Report No DCSF-RR011. Department for Children, Schools and Families.
- Dustmann, C., Machin, S. & Schönberg, U. (2010) Ethnicity and Educational Achievement in Compulsory Schooling. *Economic Journal*, 120(546), 272-297.
- Fiel, J E. (2019) The transmission of multigenerational educational inequality. *Social Forces*, Vol:97(4), pp:1455 -1486.
- Flynn, N., & Curdt-Christiansen, X. (2018) Intentions versus enactment: Making sense of policy and practice for teaching English as an additional language. *Language and Education*, 1-18. 10.1080/09500782.2018.1475484

- Francis, B., Mau, A., & Archer, L. (2017) The construction of British Chinese educational success: Exploring the shifting discourses in educational debate, and their effects. *Journal of Ethnic and Migration Studies*, 43(14), 2331-2345.
- Gates, P. and Guo, X. (2014) How British-Chinese parents support their children: a view from the regions, *Educational Review*, 66:2, 168-191, DOI: 10.1080/00131911.2013.768958
- Georgiadis, A., & Manning, A. (2012) Cultural Integration in the United Kingdom. In: Algan, Y., Bisin, A., & Verdier, T. (Eds) *Cultural integration of immigrants in Europe*. Oxford: Oxford University Press.
- Gillborn, D., Demack, S., Rollock, N. and Warmington, P. (2017) Moving the goalposts: Education policy and 25 years of the Black/White achievement gap. *British Educational Research Journal* 43:5, pages 848-874.
- Goldhaber, D., Lavery, L. and Theobald, R. (2015) Uneven Playing Field? Assessing the Teacher Quality Gap Between Advantaged and Disadvantaged Students. *Educational Researcher*, Vol 44(5), pp. 293-307.
- Goodman, A. & Gregg, P. (2010) (eds) *Poorer Children's Educational Attainment: How important are attitudes and behaviour?* York: Joseph Rowntree Foundation.
- Gorard, S. and Siddiqui, N. (2019) 'How trajectories of disadvantage help explain school attainment.', *SAGE open.*, 9 (1). pp. 1-14.
- Griffin, M. (2004) Bilingual Learners: Inclusive Practice. In: Bold, C. (Ed) *Supporting Learning and Teaching*. Abingdon: David Fulton Publishers.

Hall, J.K. (2013) *Teaching and Researching: Language and Culture*. Abingdon: Routledge.

Herd, P., Freese, J., Sicinski, K., Domingue, B. W., Harris, K. M., Wei, C., & Hauser, R. M. (2019) Genes, Gender Inequality, and Educational Attainment. *American Sociological Review*, 84(6), Pp1069-1098.

Hobbs, G. (2016) Explaining social class inequalities in educational achievement in the UK: quantifying the contribution of social class differences in school 'effectiveness', *Oxford Review of Education*, 42:1, 16-35, DOI: 10.1080/03054985.2015.1128889

Hutchinson, J. (2018) *Educational Outcomes of Children with English as an Additional Language*. The Bell Foundation and Education Policy Institute. [Online] Available: https://epi.org.uk/wp-content/uploads/2018/02/EAL_Educational-Outcomes_EPI-1.pdf [Accessed: 1 Dec 2019].

Jensen, O. and Gidley, B. (2014) *The Politics of Mainstreaming Immigrant Integration Policies: Case study of the United Kingdom*. Center on Migration, Policy and Society (COMPAS): University of Oxford.

Jensen, P. & Rasmussen, A. W. (2011) The effect of immigrant concentration in schools on native and immigrant children's reading and math skills. *Economics of Education Review*, 30, 1503– 1515.

Jerrim, J., Greany, T. and Perera, N. (2018) *Educational disadvantage: how does England compare?* London: Education Policy Institute.

- Kibler, A., Valdes, G., & Walqui, A. (2014) What does standards-based educational reform mean for English language learner populations in primary and secondary schools? *TESOL Quarterly*, 48(3), 433-453. 10.1002/tesq.183
- Kortt, M. A., and Drew, J. (2019) Does Religion Influence Educational Attainment?, *Religion & Education*, 46:4, 458-481.
- Lenkeit, J., Caro, D. H. & Strand, S. (2015) Tackling the remaining attainment gap between students with and without immigrant background: An investigation into the equivalence of SES constructs. *Educational Research and Evaluation*, 21(1), 60-83. 10.1080/13803611.2015.1009915
- Lenkeit, J., Schwippert K. and Knigge, M. (2018) Configurations of multiple disparities in reading performance: longitudinal observations across France, Germany, Sweden and the United Kingdom, *Assessment in Education: Principles, Policy & Practice*, 25:1, 52-86, DOI: 10.1080/0969594X.2017.1309352
- Leung, C. (2016) English as an additional language – a genealogy of language-in-education policies and reflections on research trajectories. *Language and Education*, 30(2), 158-174. 10.1080/09500782.2015.1103260
- Machin, S., & McNally, S. (2005) Gender and student achievement in English schools. *Oxford Review of Economic Policy*, 21(3), 357-372. 10.1093/oxrep/gri021
- McKenna, M. (2020) Improving Educational Outcomes through Getting It Right for Every Child in Glasgow. *European Review*, 28(S1), S86-S92.

- McKinney, S., Hall, S., Lowden, K., McClung, M., & Cameron, L. (2012). *The relationship between poverty and deprivation, educational attainment and positive school leaver destinations in Glasgow secondary schools*. Retrieved from <http://eprints.gla.ac.uk/66244/>
- McNally, S. & Blanden, J. (2006) Mind the gap: child poverty and educational attainment. *Poverty*, 123, 10-13.
- Marks, G. N. (2005) Cross-national differences and accounting for social class inequalities in education. *International Sociology*, 20, 483–505.
- Mingat, A., Jee-Peng, T. & Sosale, S. (2003) *Tools for Education Policy Analysis*. Washington, DC: The World Bank.
- Møllegaard, S., and Jæger, M. (2015) “The Effect of Grandparents’ Economic, Cultural, and Social Capital on Grandchildren’s Educational Success.” *Research in Social Stratification and Mobility*, 42:11–9.
- Moffat, J., and Yoo, H. I. (2019) Religion, religiosity and educational attainment: evidence from the compulsory education system in England, *Applied Economics*, 52:4, 430-442
- Mullis, I. V. S., Martin, M. O., Kennedy, A. M., & Foy, P. (2007) *PIRLS 2006 international report: IEA’s Progress in International Reading Literacy Study in primary schools in 40 countries*. Chestnut Hill, MA: Boston College.
- Ochs, K. (2006) International Migration and Its Impact on Education: a look at Germany and the USA. *Research in Comparative and International Education*, 1(4), 381-392.

OECD. (2010) *PISA 2009 results: Overcoming social background (Vol. II)*. Paris: Organisation for Economic Co-operation and Development.

OECD. (2015a) *Helping immigrant students to succeed at school – and beyond*. The Organisation for Economic Co-operation and Development (OECD), Online Available: <http://www.oecd.org/education/Helping-immigrant-students-to-succeed-at-school-and-beyond.pdf> [Accessed 15 July 2020]

OECD. (2015b) OECD-Scotland Education Policy Review: A background report by the Scottish Government. [Online] Available: <http://www.oecd.org/education/school/OECD-Scotland-Education-Policy-Review-Background-report.pdf> [Accessed: 7 Aug 2019]

Ohinata, A., & Van Ours, J. C. (2013). How immigrant children affect the academic achievement of native Dutch children. *The Economic Journal*, 123(570), F308-F331.

ONS. (2019) *International migration and the education sector – what does the current evidence show?* Office For National Statistics [Online] Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/articles/internationalmigrationandtheeducationsectorwhatdoesthecurrentevidenceshow/2019-05-03> [Accessed: 1 Dec 2019].

Pinot de Moira, A., Meadows, M. and Baird, J. (2019) The SES equity gap and the reform from modular to linear GCSE mathematics. *British Educational Research Journal*. doi:10.1002/berj.3585

Platt, L. and Nandi, A. (2018): Ethnic diversity in the UK: new opportunities and changing constraints, *Journal of Ethnic and Migration Studies*, DOI: 10.1080/1369183X.2018.1539229

Powney, J., McPake, J. Hall, S. and Lyall, L. (1998) *Education of Minority Ethnic Groups in Scotland: A Review of Research*. SCRE Research Report Series. Report No. 88: Edinburgh.

Reay, D. (2017) *Miseducation: inequality, education and the working classes*. Bristol: Polity Press.

Rubin, A. (2017) Beyond identity: the desirability and possibility of policies of multilingualism, *Journal of Multilingual and Multicultural Development*, 38:7, 632-644.

Sammons, P., Sylva, K., Melhuish, E., Siraj, I., Taggart, B., Toth, K. & Smees, R. (2014) *Influences on students' GCSE attainment and progress at age 16: Effective Pre-School, Primary & Secondary Education Project (EPPSE)*. Online Available: https://dera.ioe.ac.uk/20875/1/RR352_-_Influences_on_Students_GCSE_Attainment_and_Progress_at_Age_16.pdf [Accessed: 23 July 2020]

Schmidt, W. H., Burroughs, N. A., Zoido, P. and Houang, R. T. (2015) The Role of Schooling in Perpetuating Educational Inequality: An International Perspective. *Educational Researcher*, Vol. 44 No. 7, pp. 371 –386.

Scottish Government. (2007) *Pupils in Scotland, 2006*. [Online] Available: <http://www.gov.scot/Publications/2007/02/27083941/0> [Accessed: 10 Jan 2017]

Scottish Government. (2008) *School Meals in Scotland 2008*. The Scottish

Government. Online available:

<http://scotland.gov.uk/Publications/2008/06/24125730/0> [Accessed 8/8/2018].

Scottish Government. (2016a) *Achievement of Curriculum for Excellence (CfE) Levels 2015/16*. Edinburgh: Scottish Government.

Scottish Government. (2016b) *Attainment and Leaver Destinations Supplementary Data 14/15*. [Online] Available:

<http://www.gov.scot/Topics/Statistics/Browse/School-Education/leavedestla/follleavedestat/attainmentandleavers1415>
[Accessed: 1 Mar 2017]

Scottish Government. (2016c) *Pupil census 2016 supplementary data*. [Online] Available: <http://www.gov.scot/Topics/Statistics/Browse/School-Education/dspupcensus/dspupcensus16> [Accessed: 10 Jan 2017]

ScotXed. (2016) *Data Collection Documentation: School and Pupil Census*. Education Analytical Services Division. Edinburgh: Scottish Government.

Shapira, M. (2012) An exploration of differences in mathematics attainment among immigrant pupils in 18 OECD countries. *European Educational Research Journal*, 11, 68–95.

Shapira, M. & Priestley, M. (2019) Do schools matter? An exploration of the determinants of lower secondary school subject choices under the Scottish Curriculum for Excellence. *Review of Education*.
<https://doi.org/10.1002/rev3.3180>

Sime, D., Fassetta, G. and McClung, M. (2018) 'It's good enough that our children are accepted': Roma mothers' views of children's education post migration, *British Journal of Sociology of Education*, 39:3, 316-332.

Smithers, A. & Robinson, P. (2010) *Worlds Apart. Social variation among schools*. London: The Sutton Trust.

Spencer, S., Clegg, J., Stackhouse, J., & Rush, R. (2017) Contribution of spoken language and socio-economic background to adolescents' educational achievement at age 16 years. *International Journal of Language & Communication Disorders*, 52(2), 184-196.

SQA. (n.d.a) *ESOL*. The Scottish Qualifications Authority.
<https://www.sqa.org.uk/sqa/45678.html>

SQA. (n.d.b) *National Qualifications subjects*. The Scottish Qualifications Authority. Online available: <https://www.sqa.org.uk/sqa/45625.3728.html>
[Accessed: 4 July 2020]

Strand, S. (2010) Disadvantage, ethnicity, gender and attainment. In: *The Routledge International Encyclopaedia of Education*. Routledge. 471-473.

Strand, S. (2014) Ethnicity, gender, social class and achievement gaps at age 16: Intersectionality and "getting it" for the white working class. *Research Papers in Education*, 29, 131–171.

Strand, S. (2016a) Do some schools narrow the gap? Differential school effectiveness revisited, *Review of Education*, Vol. 4, No. 2, pp. 107–144.

Strand, S. (2016b) *Educational Outcomes Among Children with English as an Additional Language (EAL)*. Migration Observatory Briefing, COMPAS,

University of Oxford [Online] Available:

http://www.migrationobservatory.ox.ac.uk/wp-content/uploads/2016/06/Briefing-Educational_Outcomes_EAL-1.pdf

[Accessed: 12 Sep 2016].

Strand, S. & Hessel, A. (2018) *English as an additional language, proficiency in English and pupils' educational achievement: An analysis of Local Authority data*. London: Bell Foundation.

Strand, S. & Lindorff, A. (2020) *English as an Additional Language: Proficiency in English, educational achievement and rate of progression in English language learning*. Oxford: Department of Education.

Strand, S., Malmberg, L., & Hall, J. (2015) *English as an additional language and educational achievement in England: An analysis of the national pupil database*. London: Educational Endowment Fund.

Tan, A. G. P., Ware, J., & Norwich, B. (2017) Pedagogy for ethnic minority pupils with special educational needs in England: Common yet different? *Oxford Review of Education*, 43(4), 447-461. 10.1080/03054985.2017.1331845

Taylor, C. (2018) The Reliability of Free School Meal Eligibility as a Measure of Socio-Economic Disadvantage: Evidence from the Millennium Cohort Study in Wales, *British Journal of Educational Studies*, 66:1, 29-51, DOI: 10.1080/00071005.2017.1330464

Thompson, R. (2019). *Education, Inequality and Social Class: Expansion and Stratification in Educational Opportunity*. Abingdon: Routledge.

Tyler, W. (2012) *The Sociology of Educational Inequality*, London: Routledge.

UK Gov. (n.d.) *The national curriculum*. [Online] Available:

<https://www.gov.uk/national-curriculum> [Accessed: 15 Feb 2020].

Van de Werfhorst, H. (2018) Early Tracking and Social Inequality in Academic Achievement: Studying Reforms in Nine Countries. *Research in Social Stratification and Mobility*, 58: 22-32.

Van de Werfhorst, H. (2019) Early Tracking and Social Inequality in Educational Attainment: Educational Reforms in 21 European Countries. *American Journal of Education*, Vol:126(1), 65-99.

Whiteside, K. E., & Norbury, C. F. (2017) The persistence and functional impact of English language difficulties experienced by children learning English as an additional language and monolingual peers. *Journal of Speech, Language, and Hearing Research*, 60(7), 2014-2030. 10.1044/2017_JSLHR-L-16-0318

Wilkinson, D., Bryson, A., Stokes, L. (2018) Assessing the variance in pupil attainment: how important is the school attended? *National Institute Economic Review*, Issue 243

Appendix A

Table 3: Measures of English Language Proficiency

Code	Description
01 (New to English- NE)	May use first language for learning and other purposes. May remain completely silent in the classroom. May be copying/repeating some words or phrases. May understand some everyday expressions in English but may have minimal or no literacy in English. Needs considerable support to operate in English.
02 (Early Acquisition- EA)	May follow day to day social communication in English and participate in learning activities with support. Beginning to use spoken English for social purposes. May understand simple instructions and can follow narrative/accounts with visual support. May have developed some skills in reading and writing. May have become familiar with some subject specific vocabulary. Still needs a significant amount of support.
03 (Developing competence- DC)	May participate in learning activities with increasing independence. Able to express self orally in English, but structural inaccuracies are still apparent. Literacy will require ongoing support, particularly for understanding text and writing. May be able to follow abstract concepts and more complex written English. Requires support to access the curriculum fully.
04 (Competent- C)	Oral English will be developing well, enabling successful engagement in activities across the curriculum. Can read and understand a wide variety of texts. Written English may lack complexity and contain occasional evidence of errors in structure. Needs some support to access subtle nuances of meaning, to refine English usage, and to develop abstract vocabulary.
05 (Fluent- F)	Has become fluent in English as an Additional Language, and can operate across the curriculum to a level of competence equivalent to that of a pupil in category EN.
06 (English as a first– language)	All pupils who have not required, do not require and will not require English as an Additional Language support. This includes pupils of varying ability in English, but their level of English is not related to it being in any way a foreign/additional language.

Note. Not assessed (NA) and Limited communication (LC) were excluded.³⁸ Source: ScotXed (2016).

³⁸ Students may have “complex learning difficulties affecting communication make assessment for level of English as an Additional Language inappropriate. This is likely to be used in a very small number of cases in the special sector ... [or have not] been in school long enough for an assessment to be made. At the time of the census we would expect this to be restricted to pupils in P1 or those who have recently moved into the local authority’s schools.” (ScotXed, 2016, p.66).

Appendix B

Table 4: Ethnicity Variable

Category	Code	Groups included in category
African or Caribbean	1	Black–African, African–Other, African–Scottish/British, Black–Caribbean, Caribbean or Black–Other, Caribbean or Black–British/Scottish
Asian	2	Asian–Indian/British/Scottish, Asian–Pakistani/British/Scottish, Asian–Bangladeshi/British/Scottish, Asian–Other
Chinese	3	Asian–Chinese/British/Scottish
White–Other	4	White–Irish, White–Polish, White–Gypsy/Traveller
Other–Ethnicity	5	Black–Other, Other–Arab, Not Known, Other–Other, Not Disclosed, Mixed or multiple ethnic groups, Mixed, Occupational Traveller, Gypsy Traveller, Traveller, Other Traveller
White–UK	6	White–Scottish, White–Other British

Note. Chinese ethnicity was included separately as the literature indicates strong academic performance.

Appendix C

Supplemental material: Availability and validity of English language proficiency data

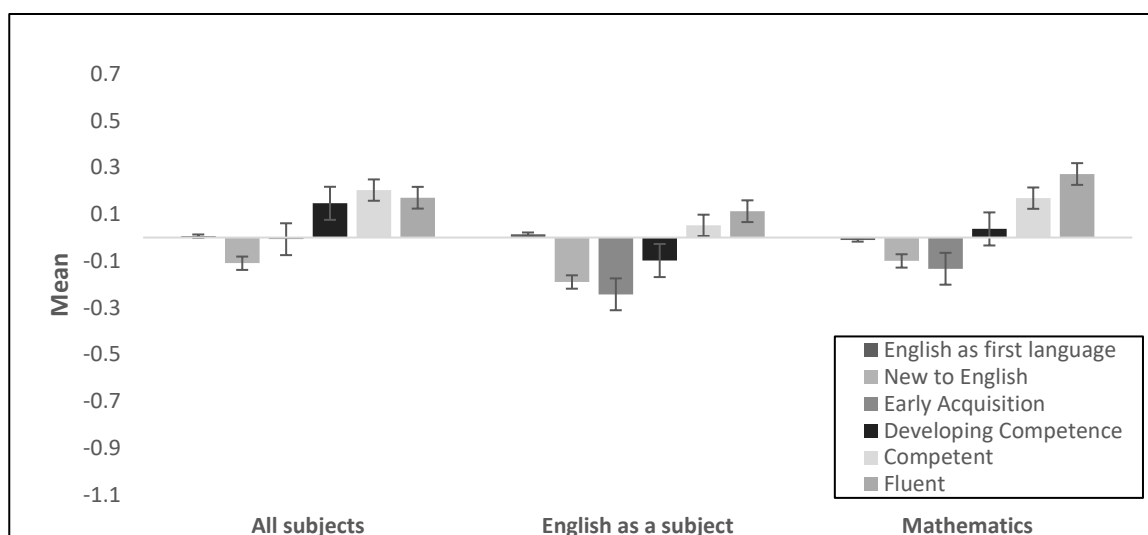
Despite English being the language of instruction in UK schools, there is a lack of disaggregated EAL data in England. Although English language proficiency data was collected briefly by the Department for Education (DfE) during 2016/17 to 2017/18 as a trial, it provided no opportunity to assess change or consistency of student outcomes over time (ONS, 2019). It demonstrates a failure to keep pace with the dynamic changes in classrooms and growth of the EAL population. Teachers were asked to assess students EAL level without firm guidelines or systems in place. Hutchinson (2018) thus raises questions over the reliability of that data to predict educational outcomes. Inaccuracy in recording levels would obscure the mechanism of language proficiency and its association with educational attainment.

Concern over the validity of language proficiency measures have been expressed by Strand and Lindorff (2020). The authors found discrepancy in the association between higher levels of EAL proficiency with what would be expected in their study using data from Wales, indicating a lack of reliability of the language measure. The authors observed the stepped hierarchy of outcomes of primary school students were out of sync with the patterns in outcomes observed by language proficiency at KS4. For example, 'competent' were found to achieve higher than 'fluent' students in primary school but not at the end of compulsory schooling.

As the accuracy of the language proficiency data recorded by schools was central to the analysis here, endogeneity of the independent and dependent

variables was considered. The longitudinal structure of the dataset was exploited with language proficiency sourced at the point of entry into secondary school (S1). It was hypothesised the hierarchical pattern seen in the association between language proficiency and outcomes at S4 would also be evident for S1 cohorts, differentiated by level of English language proficiency in S4 outcomes.³⁹ Outcomes were compared in all subjects combined, English as a subject and mathematics.⁴⁰ In the results presented in Figure 5, the distinct stepped, hierarchical patterns remained. The similar patterns for students differentiated by level of English language proficiency at S1 and outcomes at S4 gave confidence in the construct validity of the language measure confirming the exploratory hypothesis.⁴¹ In Scotland, EAL proficiency data has been collected in schools census over time, and as a result potentially more reliable.

Figure 5: Outcomes at S4 by level of English language proficiency at S1



Note. S1 cohorts: All subjects combined N = 25,830; English as a subject N = 24,476; Mathematics N = 23,186.

³⁹ For example, assessed language level at S1 could not be influenced by in-class assessment portfolios.

⁴⁰ All subjects combined N = 25,830; English as a subject N = 24,476; Mathematics N = 23,186.

⁴¹ Although beyond the scope of this paper, the results warrant further exploratory analysis on whether there is in effect an entry threshold of proficiency that determines outcomes.

Paper 2: English Language Proficiency and Attainment in Secondary Schools: A Multilevel Regression Model

Abstract

This paper examines variation in educational attainment between secondary schools for students with English as an additional language (EAL). This under-researched topic is studied with a unique dataset acquired from the Scottish Government allowing a case study of the city of Glasgow. With English as first language students as a performance benchmark, educational attainment is measured in 'all subjects' combined, English as a subject and mathematics in public examinations for 15-16-year-old students ($N = 39,919$) nested in 26 state funded schools. Multilevel mixed effects models are fitted to study the impact of individual and school characteristics. Student-level predictors including level of English language proficiency and school-level contextual variables are employed. The results indicate that the largest proportion of variation is explained at the student-level. Although most schools facilitate similar outcomes for intermediate to advanced EAL proficiency students, the main differences between schools are in their effectiveness for English language beginners. Interaction effects between English language proficiency and school composition of English language learners are found. New to English student scores are negatively affected by increased school EAL composition in all subjects combined ($-0.35, p < .001$), and in English ($-0.18, p = .096$) but not in mathematics ($-0.11, p = .233$). The results provide new evidence on the way schools affect educational outcomes for EAL students.

Key words: EAL, educational attainment, school performance, school effectiveness, school effects, peer effects, school diversity

1. Introduction

School performance is a global education issue, central to accountability of education systems (Raudenbush and Willms, 1995; Townsend, 2007). In developing countries, research indicates variation in student outcomes between schools is greater than in developed nations (Scheerens, 2001). In the United Kingdom (UK), research shows schools do not account for the majority of variance in outcomes: the largest component is explained at the student-level (Wilkinson et al., 2018). Nevertheless, the literature suggests that after controlling for student characteristics, and school composition factors, differential outcomes between schools persist (Opdenakker & Van Damme, 2006). Therefore, educational effectiveness research (EER) is important for educational systems accountability. The effectiveness of schools carries implications for inequality and social inclusion. Studies of variation in educational outcomes across schools and at the student level have highlighted inequality in educational outcomes and influenced national education policy (see The Equalities Review, 2007; Sammons et al, 2014).

Though educational effectiveness research has developed as a distinct discipline and broadened its scope, its origins lie in the study of disadvantaged students (Reynolds et al, 2014).¹ Although education is a right afforded to all students, and those without proficiency in the language of instruction are provided access through legislation, substantial differences in outcomes between schools would be more indicative of educational inequality than equality of opportunity. Study of inequitable educational outcomes has a long history in the UK,

¹ Reynolds et al opt for 'educational effectiveness' in preference to 'school effectiveness' to describe the research discipline (Reynolds et al, 2014, p.198).

accounting for ethnic background and poverty, but marked by less focus on the effectiveness of schools for such groups (Strand, 2016a). Therefore, identifying differences in student attainment between schools is essential to mitigate the risk of inequitable outcomes. As Reynolds et al. note, during times of fiscal restraint and increased challenges faced by schools from international migration, it may well be the disadvantaged who are overlooked (Reynolds et al, 2014).

One potential source of educational inequality is not having full proficiency in the language of instruction, impeding full access to the curriculum.² International evidence drawn from analysis of the Programme for International Student Assessment study (PISA) found students without fluency in the language of instruction under-performed at school compared to native language speakers (Christensen and Stanat, 2007; OECD, 2015). In the UK, the number of students with English as an additional language (EAL) have increased steadily over time. As of 2018, EAL students comprised 17% of the state-funded secondary school population in England, compared to 12% in 2010 (ONS, 2019). Those figures represent the proportion of students recorded with EAL, not necessarily students requiring language support to access the curriculum. For instance, in England during 2018, EAL students comprised 20% of the primary and secondary school population, but only 3.3% of students required substantial language support (ONS, 2019). This underscores EAL students are not a homogenous group, some are UK born, others newly arrived migrants with a range of proficiency in the English language from complete beginners to fluent.

² While there are educational attainment gaps for some in the early years, they narrow by age 16 in England (ONS, 2019; Strand et al, 2015).

In the secondary school setting, newly arrived students without full command of the English language have limited time to simultaneously learn English and learn in English to engage with the curriculum in preparation for public examinations at age 16.³ However, a comprehensive discussion on the role of school effects for EAL students is entirely missing from the literature. This paper bridges that gap, connecting the educational effectiveness research, and educational inequalities literatures with the existing literature on EAL education. The central aim of the present paper is to establish (a) how the educational outcomes of 15-16 year old students with English as an additional language varies across state funded secondary schools in the city of Glasgow;⁴ (b) what explains that variation; and (c) how much English language proficiency matters for differences between schools. As the literature indicates the association between linguistic proficiency and attainment varies between attainment measures (Dillon, 2020; Strand & Hessel, 2018) and the measure of attainment affects the variance between schools (Wilkinson et al., 2018), the paper considers attainment measured in all subjects combined, in English as a subject, and in mathematics.⁵

This is the first paper to conduct quantitative empirical analysis of educational attainment comparing the effectiveness of secondary schools for student outcomes differentiated by students' level of English language proficiency in a UK educational context. It uses unpublished data acquired from the Scottish

³ Progression EAL students make through S5 and S6 is beyond the scope of this paper.

⁴ The UK does not have a unified education system. The system in England is characterised by a range of provision and school types (Gorard and Siddiqui, 2018; Hilton, 2019; Leckie and Goldstein, 2019; Long and Bolton, 2018),. The Scottish system is characterised by uniformity of provision (Opdenakker & Van Damme, 2006; Sawkins, 2002; Willms and Cuttance, 1985).

⁵ In a related study, Dillon (2020) established an underlying proficiency threshold associated with outcomes comparable to those of English as first language students in Glasgow secondary schools. It is important to establish if that threshold holds across schools.

Government analysed in a multilevel statistical model, allowing simultaneous analysis of student-level and school-level explanatory variables.⁶ It studies how student characteristics, level of English language proficiency, and school social composition explain between school variation in educational attainment.

Next, section 2 reviews the literature focusing on what is known about: (a) how much variance in educational outcomes is accounted for by schools; (b) measuring school effectiveness; (c) sources of disadvantage in educational outcomes; (d) English language proficiency and educational outcomes; (e) the school and learning environment; and (f) the effects of school composition.

Sections 3 and 4 then sets out the data, methods, and variables for the empirical analysis. Section 5 presents the empirical results and Section 6 discusses them, establishing (1) the extent to which variance in outcomes arise at the school level (2) how much student characteristics and school composition explain differences in outcomes between schools (3) the universal threshold of EAL proficiency allowing students to match English as a first language student outcomes across schools. The paper concludes by presenting in Section 7 the implications for policy which stem from the study's findings.

2. Review of literature

How much variance in outcomes do schools explain?

School effects are “the extent to which attending a particular school modifies a student’s outcome” (Raudenbush and Willms, 1995, p.308). The

⁶ Multilevel statistical models provide the sophisticated techniques required to measure school effects (Goldstein, 1987; Gray et al, 1990; Leckie and Goldstein, 2019; Nuttall et al, 1989; Raudenbush and Willms, 1995; Reynolds et al., 2014). They facilitate simultaneous analysis of the relationship between outcomes and level-1, and level-2 explanatory variables, to establish whether the school context matters grounded on the estimated variance (Bell et al., 2019).

variance in student attainment between schools is consistent across the countries of the UK. In Northern Ireland secondary schools account for 10% of the variance in student attainment (Daly, 1991), in Scottish secondary schools also 10% (Willms, 1987), in England 9% (Wilkinson et al., 2018). After controlling for student characteristics within schools, differences in educational outcomes remain, indicating an underlying effect due to attending different schools. There are indications that the quality of the school attended may account for differentiated outcomes and gaps in attainment for disadvantaged groups, to the extent that the UK Government has labelled some schools as failing (Strand, 2016a). In contrast, Strand (2016a) suggests inequitable gaps are more likely due to systemic issues than individual poorly performing schools. Strand (2010; 2016a) found no evidence of schools deemed effective at helping students with a white UK background not being equally so for ethnic minority groups. However, this brings into question the measures used to deem schools successful.

Measuring school effectiveness

The variance explained by schools is 'sensitive' to different attainment measures (Wilkinson et al 2018, R4). In other words, school performance differs depending on the outcome variable. Thus, published school league tables require cautious interpretation, as different measures produce different results and rankings (see Leckie and Goldstein, 2017). Moreover, assessing a school's effectiveness by way of comparing final examination scores risks disregarding contributions made by previous schools' students may have attended (Leckie and Goldstein, 2019). The following sections discuss mechanisms that help explain disadvantage in education, focusing on individual characteristics of students and the learning environment.

Sources of disadvantage in educational outcomes

School outcomes are determined by the characteristics of individual students. At the student level, the range of potential predictors are considerable. Associations between educational outcomes and gender, generally in favour of girls (Gayle et al., 2016; Sammons et al., 2014), socio-economic status derived from parental position (Christensen and Stanat, 2007; McKinney et al. 2012; Strand, 2016a; Strand et. al, 2015), deprivation and ethnicity (Burgess, 2014; Strand et al., 2015), and more broadly genetics, are established (Shakeshaft et al., 2013). Nonetheless, one aspect given somewhat less attention in the literature is a lack of proficiency in the language the curriculum is being delivered in which subsequent examinations are taken.

English language proficiency and EAL educational outcomes

A lack of English language proficiency is a challenging barrier to academic success for the UK's EAL student population (Demie, 2013; Dillon, 2020).⁷ Still, overall EAL students collectively outperform English as first language students in Glasgow secondary schools at S4, measured by performance in all subjects combined and in mathematics (Dillon, 2020). However, when EAL students are separated by language proficiency, a gap is found with lower outcomes for students with low English language proficiency compared to non-EAL students in areas of London and Glasgow (Demie, 2013; Demie, 2018; Dillon, 2020). Those differences decrease as levels of proficiency increase (Demie, 2018; Dillon, 2020). That EAL student attainment increases as language proficiency increases

⁷ Language has an association with outcomes for immigrant or ethnic minority students even when not separated by level of proficiency (Christensen and Stanat, 2007; Dustmann et al., 2010; Ohinata and van Ours, 2013).

confirms the strong association between English language proficiency and educational attainment (Demie and Strand, 2006; Dillon, 2020). There is therefore a point where EAL shifts from being a disadvantage to an advantage, with level of proficiency the underlying mechanism (Dillon, 2020). An understanding of that mechanism and how the association holds across schools differentiated by levels of English language proficiency is entirely missing from the literature.⁸

The school and learning environment

Longitudinal studies in the UK report student progress towards educational outcomes at age 16 are not only shaped by individual characteristics and socioeconomic factors, but also educational environments (Sammons et al, 2014). With effects on educational outcomes associated with neighbourhoods (Nicoletti and Rabe, 2013), a greater concentration of those factors such as low socio-economic status, poverty, and deprivation within a geographical or catchment area may have a cumulative detrimental effect on the learning environment (Wodtke and Parbst, 2017). Thus, different classroom or school settings may promote or slow down the rate of learning (Willms, 2010). The influence of the school roll (aggregated student characteristics) on the educational achievement of students, are deemed school composition effects (Harker and Tymms, 2004; Lauder et al, 2010; Timmermans and Thomas, 2015).

The effects of school composition

School composition variables contribute to explaining differences in student outcomes across different educational contexts (Opdenakker & Van

⁸ When levels of proficiency are considered, the literature is consistent that fluent EAL students outperform monolingual students (Demie and Lewis, 2018; Demie and Strand, 2006).

Damme, 2006; Rangvid, 2007; Timmermans and Thomas, 2015; Van Ewijk and Sleegers, 2010). Characteristics of students within individual schools may effect a change in the learning environment, which may help explain why outcomes for students of similar ability (or English language proficiency) vary between schools. Such peer effects might include, but not be limited to, composition by gender, ethnicity, percentage of students entitled to free school meals, special education needs (SEN), or EAL. Therefore school-level variables are often combined with student-level predictors in the same analyses in multilevel statistical models (Goldstein, 1987; Gray et al, 1990; Leckie and Goldstein, 2019; Nuttall et al, 1989; Raudenbush and Willms, 1995; Reynolds et al., 2014; Sammons et al., 2014; Strand et al., 2015). In England, Wilkinson and colleagues (2018), after taking account of school characteristics such as size, resources, student–teacher ratio, percentage of girls, ethnic groups, eligibility for free school meals, and students with special educational needs in each school, found approximately 9% variance explained by schools. English language proficiency or the size of schools EAL population was not controlled for.

Non-native language students and immigration background

There are established negative associations for low level English language proficiency students and students with an immigrant background with educational attainment (Christensen and Stanat, 2007; Demie, 2013; Demie, 2018; Demie and Strand, 2006; Dustmann et al., 2010; Lenkeit et al., 2015). Therefore, whether schools with larger populations of non-native language speaking students have an impact on other students has been considered (Frattini & Meschi, 2017; Hunt, 2012; Ohinata & van Ours, 2013; Seah, 2016). In the UK, no empirical evidence has been presented of a detrimental impact on English as first language students

(Strand, 2016), although no comprehensive empirical study has been presented studying the secondary school context.⁹ Although not all students with an immigrant background are non-native language speakers, Jensen and Rasmussen (2011) found a negative effect on reading and mathematics scores in schools with higher concentration of immigrant students. In Denmark, Ohinata & van Ours (2013) found a negligible impact in the Netherlands, with mixed results too in international comparisons conducted by Seah (2016). However, one limiting factor in such studies of students with an immigrant background is a lack of analysis by levels of linguistic proficiency.

The increase in EAL students is closely tied to immigration, associated with increased ethnic and linguistic diversity in the UK. Historical migration patterns, movement within the European Union, and particularly in the case of Glasgow, an increase in ethnic diversity and languages emanating from the Home Office Asylum Dispersal programme (CSMP, 2019; Geay et al., 2013; GCC, 2011; Jensen and Gidley, 2014; Migration Scotland, n.d.). Within the population analysed in this paper, a total of 34,833 students were recorded with English as their first language, of which only 5% reported a non-white-UK ethnicity. Therefore, EAL students comprise a mix of UK born and recent arrivals, mostly distinguished by an immigrant background, whether first or second generation, using a language other than English at home.

In summary, theoretically, where students with similar characteristics are educated in different schools, differences in average outcomes are evidence of school effects (Raudenbush and Willms, 1995). Although student characteristics

⁹ See Geay et al., (2013) for a study that looked at the effects of non-native English language students on primary school performance.

are deemed more important for outcomes, the literature confirms schools do matter (Daly, 1991; Willms, 1987; Wilkinson et al., 2018). Scholars have explored whether between school differences have a greater impact on ethnic minority groups. Schools deemed effective for the majority white-UK students' academic progress, are considered effective for ethnic minority groups (Strand, 2010). What remains unconfirmed is whether that effectiveness also applies to EAL students, or if inequality exists between schools.

3. The Research Question

Considering the gaps in knowledge highlighted in the literature review, the present paper sets out to explain between school variation in student outcomes guided by the following research questions:

1. How much variation in student outcomes between schools is explained by English language proficiency after controlling for student characteristics?
2. How much does school EAL composition explain variation in student outcomes between schools, controlling for other school contextual variables?
3. To what extent is there a universal threshold of English language proficiency that allows students with English as an additional language match English as a first language student outcomes that holds across all schools?

As the literature indicates 10% variation between schools in the general student population, the primary hypothesis predicts variation in student outcomes by level of English language proficiency between schools: in other words, some

schools may be more effective for students at different proficiency levels than others. Based on the findings of Dillon (2020) of a strong performance for students with the EAL level of 'developing competence', it is hypothesised that this intermediate level of proficiency allows students to match the outcomes of English as first language students in all schools. Finally, based on the lack of empirical evidence of a negative impact of increased non-native language speakers on English as first language student outcomes (Strand, 2016b), an exploratory hypothesis predicts that school percentage EAL composition (after controlling for School ASN and FSMs), will not explain differences between schools.

4. Data and Methods

4.1 Data

Datasets were acquired in the first instance from the Scottish government then merged to form a unique database. The database comprised students' level of English language proficiency and characteristics derived from annual school census returns, linked to public examination results at S4 for students (N = 39,919) nested in 26 state funded secondary schools in the city of Glasgow 2007-2016.¹⁰ The nine consecutive school years of data were aggregated and controlled for as fixed effects in all analyses.¹¹ There was no missing data other than students without an English as a subject score at S4 (7%) or mathematics (10%). The distribution of students and variables are provided in Table 1.

¹⁰ S4 in the Scottish education system is largely comparable to students' academic attainment at the end of Year 11 in the General Certificate of Secondary Education (GCSE) examinations in England at age 16.

¹¹ The paper did not address change over time, the longitudinal aspect will be explored in a follow-on paper.

Dependent Variables

Examination scores as a continuous measure were constructed for points acquired at S4: (a) in all subjects combined (N = 39,919), (b) English as a subject (N = 37,148), (c) in mathematics (N = 35,892).¹² Scores were transformed for each year to a normal score with a mean of zero and SD of 1 to control for differences in scale across years.

Focal Explanatory variable: English language proficiency

Levels of English language proficiency in the year of examination was sourced from school census records. Proficiency was recorded on a six-point scale, coded: (1) new to English, (2) early acquisition, (3) developing competence, (4) competent, (5) fluent and (6) students with English as a first language (as the reference category in statistical analyses).¹³ The distribution of EAL students was uneven across schools (3% to 47%).

Control variables

In the analyses, boys were coded 1, girls coded 0. The Additional Support Need (ASN) variable was reconstructed to indicate whether ASN was recorded at any point during secondary school with 1 indicating ASN and 0 indicating no ASN.¹⁴ Entitlement to free school meals (FSM) is an indicator of family poverty (Gorard and Siddiqui, 2018; Ilie et al., 2017; Strand, 2016a), therefore a variable was constructed to indicate whether a student had FSM entitlement at any point

¹² English for Speakers of Other Languages (ESOL) was filtered out of the English as a subject measure. No data was available for students' attainment prior to entering secondary school, which is also symptomatic of sections of the EAL population.

¹³ Assessment of proficiency in Glasgow secondary schools is the responsibility of teachers or EAL support staff.

¹⁴ ASN covers a wide range of support needs such as emotional, social, physical, learning disability or impairment.

during secondary school. The distribution of FSM entitlement was uneven between schools, ranging from 18% to 64%. Ethnicity was not coded consistently over time in the original datasets and low counts were evident for some minority groups. Thus, through necessity categories were merged which resulted in a reduced 6-category ethnicity variable (see Table 4 in Appendix A for sub-groups included in each category).¹⁵

School composition variables

Level-2 variables were constructed by aggregating student-level predictors for each school. Variables included the percentage of EAL students, students with ASN, and students entitled to FSM, scaled to have a mean of zero and standard deviation of 1. These variables allowed further exploration of the role of English language proficiency's influence between schools. The paper's final multilevel model set out School level EAL composition as theoretically a macro level factor anticipated to matter for outcomes. Although the focus was on the role played by that factor, other potentially confounding contextual factors such as the socio-economic composition of the school by way of the FSM variable and School ASN composition (found to have an association with educational outcomes at the individual level), were controlled for.

Schools

The final sample consisted of 26 schools after 4 were excluded. Glasgow's Gaelic school and all-girls schools were omitted as atypical, and two schools with a low number of EAL students recorded in the school census.¹⁶

¹⁵ Glasgow is the most ethnically diverse city in Scotland.

¹⁶ Secondary schools were not differentiated by type (denominational or non-denominational). See Shields and Gunson (2017), and McKinney et al. (2017) for discussion of arguably the most distinguishing feature of secondary schools in the city of Glasgow context.

Table 1: Descriptive Statistics

	N	%	Mean	SD
Students level of English language proficiency				
New to English	203	0.5%	-	-
Early Acquisition	520	1.3%	-	-
Developing Competence	2,052	5.1%	-	-
Competent	1,796	4.5%	-	-
Fluent	515	1.3%	-	-
English as a first-language	34,833	87.3%	-	-
Gender of student				
Female	19,564	49.0%	-	-
Male	20,355	51.0%	-	-
ASN at any point during secondary school				
No Additional Support Needs	30,450	76.3%	-	-
Additional Support Needs	9,469	23.7%	-	-
FSM at any point during secondary school				
No FSM entitlement	23,993	60.1%	-	-
FSM entitlement	15,926	39.9%	-	-
Ethnic group				
White-UK	33,337	83.5%	-	-
African or Caribbean	786	2.0%	-	-
Asian	2,523	6.3%	-	-
Chinese ^a	199	0.5%	-	-
White-Other	1,127	2.8%	-	-
Other Ethnicity	1,947	4.9%	-	-
Educational attainment				
All subjects combined	39,919	100.0%	-0.016	0.990
English as a subject	37,148	93.1%	-0.004	0.982
Mathematics	35,892	89.9%	-0.003	0.967

Note. Aggregated data derived from 2007-2016 Schools census and examinations.

a. Although a low count, included as literature suggests strong academic performance.

4.2 Methods

Multilevel statistical modelling allowed partitioning of the variance measured between the student level (level-1) and school-level (level-2). It brought the added benefit of reducing the problem of underestimating standard errors common in single-level analyses of clustered sample data, to examine the explanatory power

of the variables controlled for at level-1 and level-2. It is noted that the number of level-2 observations are an important consideration in multilevel modelling (Bryan and Jenkins, 2016; Mills and Präg, 2016). Fewer level-2 observations can reduce the precision of estimated effects of level-2 contextual variables (Leyland and Groenewegen, 2020). A limited number of schools impinge on the degrees of freedom at level-2, potentially impacting on robust estimates of school effects (as in the effects of school-level variables or characteristics related to outcomes at the student level). This study incorporated 26 schools, one more than the 25 level-2 observations suggested as best practice to correctly estimate a multilevel linear random effects model by Bryan and Jenkins (2016). Interpretation of the findings should consider the relatively small number of level-2 observations.

Three successive models were built for the ‘all subjects’ combined outcome variable. The first model included student-level predictors, the second introduced school-level predictors, while the final model included cross level interactions. The final model was also fitted to English as a subject and mathematics outcomes to see if the model explained outcomes in those key subjects, in addition to null models for baseline comparison. The effects of adding predictors and overall fit of successive models were measured by comparing the deviance (-2 Log Likelihood). Although there is no consensus on how to measure effect sizes from multilevel models (Garson, 2013), the common approach is to assess the Intraclass Correlation (ICC)¹⁷ and share of variance (Tymms, 2004).

¹⁷ The amount of variance accounted for by level-2 is indicated by the ICC, also referred to as the variance partition coefficient (VPC) Garson (2013). It reports the amount of variation unexplained between schools after accounting for differences between students. An ICC value below 0.05 is generally considered low, while above 0.20 deemed as indicating high clustering of units and therefore more homogenous (Heck et al., 2014). See Leckie et al., (2020) for discussion of variance partitioning in multilevel models.

Model Specification

1. Mixed Effect Model with language proficiency as random effect (with student-level predictors)¹⁸
2. Mixed Effect Model with language proficiency as random effect (with student-level and school-level predictors added)
3. Mixed Effects Model Interactions Added¹⁹

First, null models confirmed multilevel modelling was appropriate. These baseline models statistically determine the extent of variance between schools without explanatory variables (Garson, 2019; Heck et al., 2014; Leckie et al 2020).²⁰ Students were entered at level-1 nested within level-2 (schools), years as fixed effects using dummy variables, and student scores as the dependent variable.²¹ This tested if there was variation in the intercepts across units. The null model:

$$Total\ Score_{ij} = \beta_0 + u_{0j} + \varepsilon_{ij}$$

where $Total\ Score_{ij}$ is the attainment of student i in school j , β_0 is the overall mean score across schools, u_{0j} is the effect of school j on attainment, and ε_{ij} is a residual. The Final model (Mixed Effects Model Interactions Added) was estimated:²²

¹⁸ Allowing English language proficiency to vary across schools detects if any effect is different between schools.

¹⁹ The literature has not fully explored peer effects in UK schools differentiated by level of English language proficiency. An interaction term was introduced to assess the interplay between students' level of linguistic proficiency and proportion of EAL students in schools, important for policy makers and educationalists to understand any disproportionate effect on lower proficiency students of increased non-native English language speakers in schools.

²⁰ This explores the extent of clustering at level-2 (Garson, 2019; Leckie, et al., 2019).

²¹ Although technically not a null model due to 'years' as fixed effects, it serves as a null for baseline comparison.

²² Language (Lang), gender (Gen), school ASN (Sch ASN), school FSM (Sch FSM), school EAL composition (Sch EAL), years (Yrs). Model 2 omits the $Lang_{ij} * Sch\ ASN_j$ interaction.

$$Total\ Score_{ij} = \beta_0 + \beta_{1j} * Lang_{ij} + \beta_2 * Gen_{ij} + \beta_3 * ASN_{ij} + \beta_4 * FSM_{ij} + \beta_5 * Eth_{ij} + \beta_6 * Sch\ ASN_j + \beta_7 * Sch\ FSM_j + \beta_8 * Sch\ EAL_j + \beta_9 * Lang_{ij} * Sch\ ASN_j + \beta_{10} * Yrs_{ij} + u_{0j} + \varepsilon_{ij}$$

where $Total\ Score_{ij}$ is total points in all subjects combined or in English or mathematics outcomes for student i within school j ; β_0 is the intercept (the expected mean score when all predictors = 0);²³ u_{0j} is level-2 with estimated variance τ^2 (the variance between different schools); ε_{ij} is random error with estimated variance σ^2 (within school variance); all other β are slope coefficients.

In each model, the Estimates of Covariance Parameters provided the basis to calculate the ICC to determine if there were significant clustering of observations within schools. Where ρ is the ICC (proportion of the total variation in the outcome variables explained by the grouping structure), $\sigma^2(e)$ is the pooled variance within subjects, and $\sigma^2(u)$ is the variance of the characteristic between subjects (Tymms, 2004):²⁴

$$\rho = \frac{\sigma^2(u)}{\sigma^2(u) + \sigma^2(e)}$$

5. Results

5.1. How much variance in student outcomes is explained by schools?

The paper first sought to ascertain how much variance in student outcomes was explained by differences between schools. This was established from the intraclass correlation (ICC) from null (no predictors) models. As presented in Table 2, for all subjects combined outcomes (39,919 students nested in 26 schools), the

²³ The intercept is how different or similar schools are to the mean, slopes indicate the strength or weakness of the relationship within schools between language and outcomes.

²⁴ Variance can be partitioned by dividing each part by the sum of the estimated variance (see Garson, 2013).

ICC (0.09) suggested the level-2 grouping (schools) had a meaningful effect on estimates and variance in student outcomes between schools of 9%. The results suggested significant variance still to be explained within groups (Wald Z = 141.23, $p < .001$), indication of the existence of differences in outcomes between schools, and indication of variation in intercepts across schools (Wald Z = 3.57, $p < .001$).²⁵ Scores in English as a subject (N = 37,148) also indicated a between school variance of 9%. For mathematics outcomes (N = 35,892), a lower level of variance of 3% in scores between schools (ICC = 0.03).

Table 2: Null Models Estimates of Covariance Parameters for Outcomes at S4

Parameter	Est.	SE	Wald Z	Deviance	ICC
All subjects combined					
S4 Residual	0.92	0.01	141.23***	109886	
Intercept [Schools] Variance	0.09	0.02	3.57***		0.09
English as a subject					
S4 Residual	0.89	0.01	136.24***	101216	
Intercept [Schools] Variance	0.09	0.02	3.57***		0.09
Mathematics					
S4 Residual	0.91	0.01	133.91***	98381	
Intercept [Schools] Variance	0.03	0.01	3.52***		0.03

* $p < .05$. ** $p < .01$. *** $p < .001$. Note. Deviance (-2 Log Likelihood). Note. Schools = 26.

What are the effects of English language proficiency and other student-level predictors on outcomes across schools? (Model 1: All Subjects)

In Model 1 (Table 3), language proficiency was entered as a fixed and random effect, with student characteristics fitted to all subjects combined

²⁵ If Subject-Schools intercept variance Wald Z is significant, it indicates further school-level variables could be added to explain variance across schools. If the Language parameter estimate (slope variance) is significant in Wald Z, it suggests slopes vary across schools (see Heck et al, 2014).

outcomes. The results indicated a decreased ICC (0.08) from the null model (0.09). The reduced deviance statistic from 109,886 to 108,469 suggested the model provided a better fit. The results in Table 3, also show an association between English language proficiency and scores at S4 in all subjects combined, with statistically significant differences between levels of proficiency compared to the benchmark English as first language. After accounting for student characteristics, 8% variation in student outcomes between schools was left to be explained in all subjects combined, suggesting additional explanatory variables may help explain the variability in intercepts.

Table 3: Multilevel Models for outcomes at S4 in 26 Schools (SE in brackets)

	All subjects			English	Maths
	Model 1	Model 2	Model 3	Model 3	Model 3
Intercept	-0.39*** (0.07)	-0.41*** (0.06)	-0.40*** (0.06)	-0.18** (0.06)	-0.22*** (0.05)
Level 1: Language proficiency^a					
New to English	-0.71*** (0.09)	-0.71*** (0.09)	-0.65*** (0.09)	-0.20 [†] (0.11)	-0.05 (0.10)
Early Acquisition	-0.05 (0.08)	-0.05 (0.08)	0.01 (0.07)	-0.22** (0.08)	-0.01 (0.08)
Developing Competence	0.19** (0.07)	0.20** (0.07)	0.19** (0.06)	0.01 (0.06)	0.10 (0.06)
Competent	0.27*** (0.07)	0.28*** (0.07)	0.26*** (0.06)	0.13 [†] (0.07)	0.22** (0.06)
Fluent	0.33*** (0.08)	0.34*** (0.08)	0.31*** (0.07)	0.19* (0.08)	0.38*** (0.07)
Level 1: Control variables^b					
Girls	0.10*** (0.01)	0.10*** (0.01)	0.10*** (0.01)	0.07*** (0.01)	-0.01 (0.01)
No ASN	0.19*** (0.01)	0.19*** (0.01)	0.19*** (0.01)	0.12*** (0.01)	0.13*** (0.01)
No FSM	0.22*** (0.01)	0.22*** (0.01)	0.22*** (0.01)	0.12*** (0.01)	0.16*** (0.01)
African or Caribbean	0.17*** (0.04)	0.17*** (0.04)	0.17*** (0.04)	0.05 (0.04)	0.05 (0.04)
Asian	0.06 [†] (0.03)	0.06 [†] (0.03)	0.06 [†] (0.03)	-0.02 (0.04)	-0.05 (0.04)
Chinese	0.22** (0.07)	0.22** (0.07)	0.22** (0.07)	0.01 (0.08)	0.19** (0.08)
White-Other	-0.08* (0.03)	-0.08* (0.03)	-0.08* (0.03)	0.00 (0.04)	-0.05 (0.04)
Other-Ethnicity	-0.04 (0.03)	-0.04 (0.03)	-0.04 (0.03)	-0.03 (0.03)	-0.02 (0.03)
Level 2: School-level variables					
School ASN		0.17** (0.05)	0.18** (0.05)	0.04 (0.05)	-0.02 (0.04)
School FSM		-0.03 (0.05)	-0.04 (0.05)	-0.01 (0.05)	-0.02 (0.03)
School EAL		-0.15** (0.05)	-0.11 [†] (0.06)	-0.11 [†] (0.06)	0.04 (0.04)
Cross-level interactions^c					
New to English*School EAL			-0.35*** (0.08)	-0.18 [†] (0.11)	-0.11 (0.09)
Early Acquisition*School EAL			-0.20** (0.06)	0.00 (0.07)	-0.09 (0.06)
Developing Competence*School EAL			-0.03 (0.05)	0.01 (0.06)	-0.06 (0.05)
Competent*School EAL			0.02 (0.05)	0.02 (0.06)	0.01 (0.05)
Fluent*School EAL			0.02 (0.06)	-0.04 (0.06)	-0.03 (0.06)
ICC	0.08	0.05	0.05	0.05	0.02
% of variance					
Level 1 (Students)	88%	91%	93%	92%	95%
Level 2 (Schools)	8%	5%	5%	5%	2%
Language proficiency	4%	4%	2%	3%	3%
Goodness of fit	108469	108457	108430	100796	97830

[†]p < .10. *p < .05. **p < .01. ***p < .001. a. English as first language (Reference); b. White-UK (Reference); c. English as first language*School EAL (Reference); Years fixed; Goodness of fit = -2 Log Likelihood; ICC = Intraclass correlation.

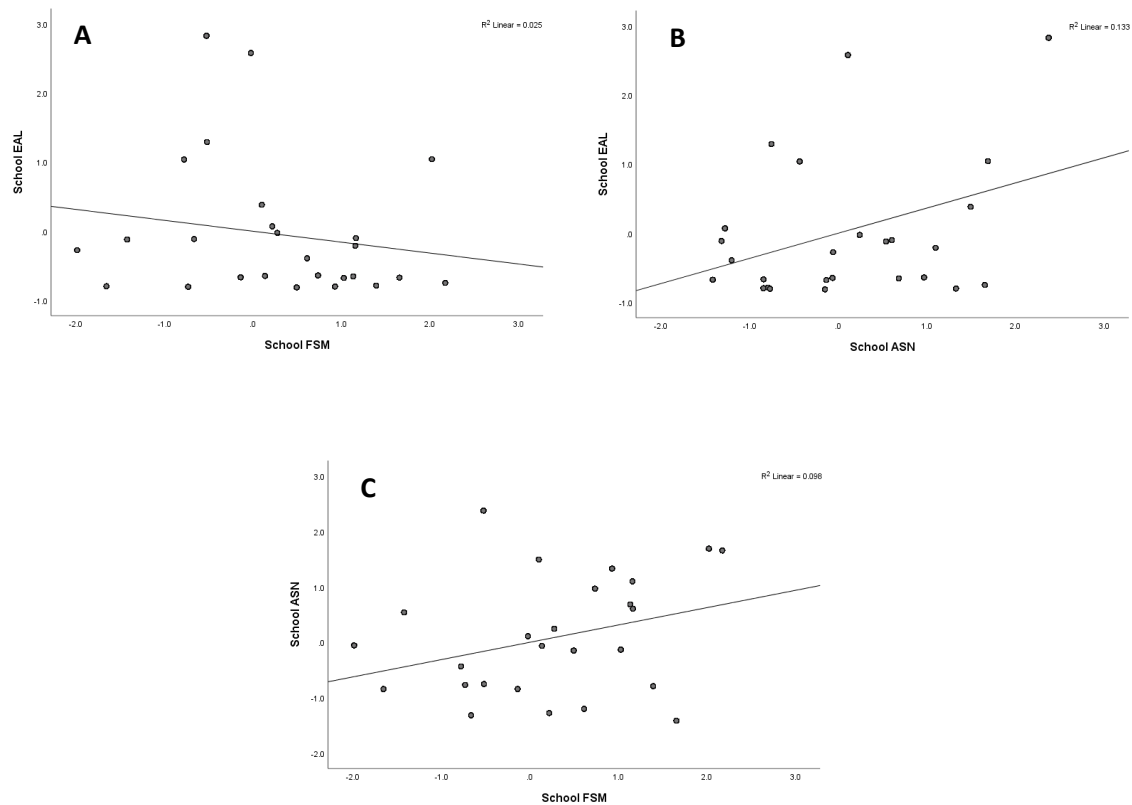
What are the effects of school composition on student outcomes across schools?

(Model 2: all subjects)

In Model 2, language proficiency remained fixed and random with level-2 variables introduced to explain the variability in intercepts across schools. Variables aggregated to the school-level included additional support needs, free school meal entitlement and percentage of EAL students.²⁶ Leyland and Groenewegen (2020) caution that level-2 variables may impinge on estimation of effects due to multicollinearity. A Pearson product-moment correlation coefficient assessed the relationship between composition variables. Overall, no strong correlations were found (Scatterplots summarise those results in Figure 1).²⁷ Tolerance values of between .72 and .82, variance inflation factor (VIF) values of 1.22 to 1.38, and Condition Index of 1.00 to 1.80 confirmed there were no issues of multicollinearity in the data. The results, presented in Table 3, confirmed in all subjects combined Model 2, the ICC decreased to 0.05 from 0.08 in the previous model, reducing the remaining unexplained between school variation in student outcomes to 5%.

²⁶ A variable based on percentage of non-white UK students was trialled but correlated with School EAL ($R^2 = 0.974$).

²⁷ School EAL and School ASN were found to be moderately positively correlated, $r(39,917) = .36$, $p < .001$; School EAL and School FSM weakly negatively correlated, $r(39,917) = -.16$, $p < .001$; School FSM and School ASN moderately positively correlated, $r(39,917) = .31$, $p < .001$.

Figure 1: Composition variables: Correlations

What are the effects of interaction between language proficiency and school EAL composition on student outcomes across schools? (Model 3: All Subjects, English, and mathematics)

Model 3 considered if level-2 school composition interacted with the size of the within-school slopes. All level-1 and level-2 predictors were entered with language proficiency as fixed and random. Interaction effects between English language proficiency and school EAL composition were added.²⁸ Table 3 shows the series of models provided an improved fit based on the deviance statistic and

²⁸ Although other interactions were trialled, only language*School EAL interaction fitted the final model well.

lower ICC, in turn explaining more of the variation in scores between schools. The all subjects combined null model signposted 9% variation between schools, reduced to 5% in the final model. The majority of variance in student outcomes was explained by differences between students, the remainder partitioned between schools (5%) and the random effect of language (2%). Variation in English as a subject score between schools was seen in the decrease in ICC from 0.09 in the null to 0.05 in the final model. The null model for mathematics indicated a low level of variance between schools at S4, reflected in Model 3 with only 2% variance between schools. The analysis presented in Figure 2B and 2C, confirmed the association between English language proficiency was different between the two core subjects of English and mathematics across schools.

Cross-level interactions

In mathematics, no cross-level interaction effect between English language proficiency and school EAL composition emerged. There was an interaction effect in all subjects combined for New to English*School EAL (-0.35, $p < .001$), and Early Acquisition*School EAL (-0.20, $p = .001$); in English as a subject, New to English*School EAL (-0.18, $p = .096$). Figure 2 illustrates how the negative interaction effect was not experienced by all EAL students. The statistically significant result, different slopes, and interaction shows students who were English language beginners at S4 (new to English and early acquisition) did less well in S4 examinations in schools with higher EAL composition.

Level-1: Student-level effects

Although the focus of this paper was on between school differences, the final models indicated which explanatory variables influenced scores when fitted

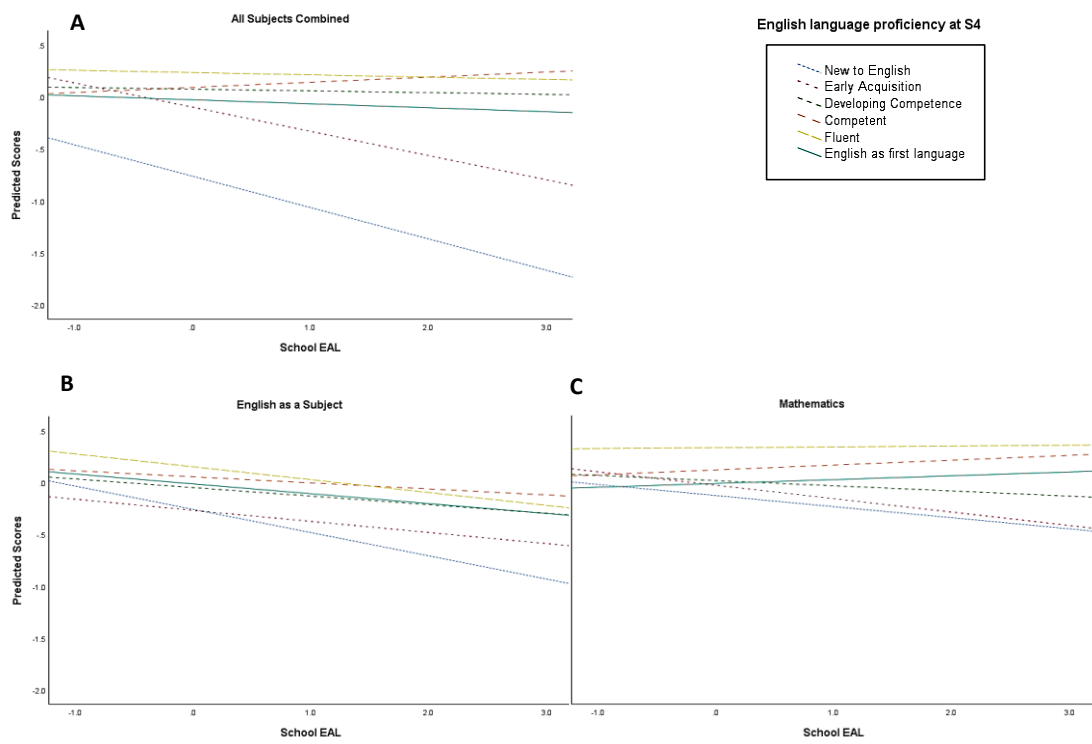
jointly. Each Model 3 (presented in Table 3) shows as level of English language proficiency increased, EAL student scores increased. There was a small statistically significant positive effect for girls (0.10, $p < .001$) in all subjects combined and in English as a subject (0.07, $p < .001$), while the difference by gender was statistically non-significant in mathematics ($p = .432$). Having ASN had a negative effect on students predicted scores in all three outcome measures, as did entitlement to free school meals. Compared to white UK ethnicity as the reference group, white-other and other-ethnicity students had slightly lower scores. Chinese students had the highest scores in all subjects combined, a positive effect for African or Caribbean, and a small but positive effect for Asian students. There were no effects on English as a subject or mathematics outcomes by ethnicity, apart from a statistically significant positive effect for Chinese students in mathematics.

Level-2: School-level effects

The results from Model 3 in Table 3, also confirmed School EAL had a statistically significant negative association with scores (-0.11, $p = .062$) in all subjects combined, and in English as a subject (-0.11, $p = .063$). Of the additional controls, School FSM composition, was statistically nonsignificant in all three outcome measures, School ASN had a statistically significant positive association with student scores after controlling for student-level ASN (0.18, $p = .002$) in all subjects combined.²⁹

²⁹ Timmermans and Thomas note "... direction of statistically significant school compositional effects on student achievement is not always consistent. Many studies have reported positive or otherwise positive but nonsignificant effects" (Timmermans and Thomas, 2015, p.495).

Figure 2: Predicted scores by language proficiency at S4 by School EAL composition



How much does English language proficiency explain variation in outcomes across schools?

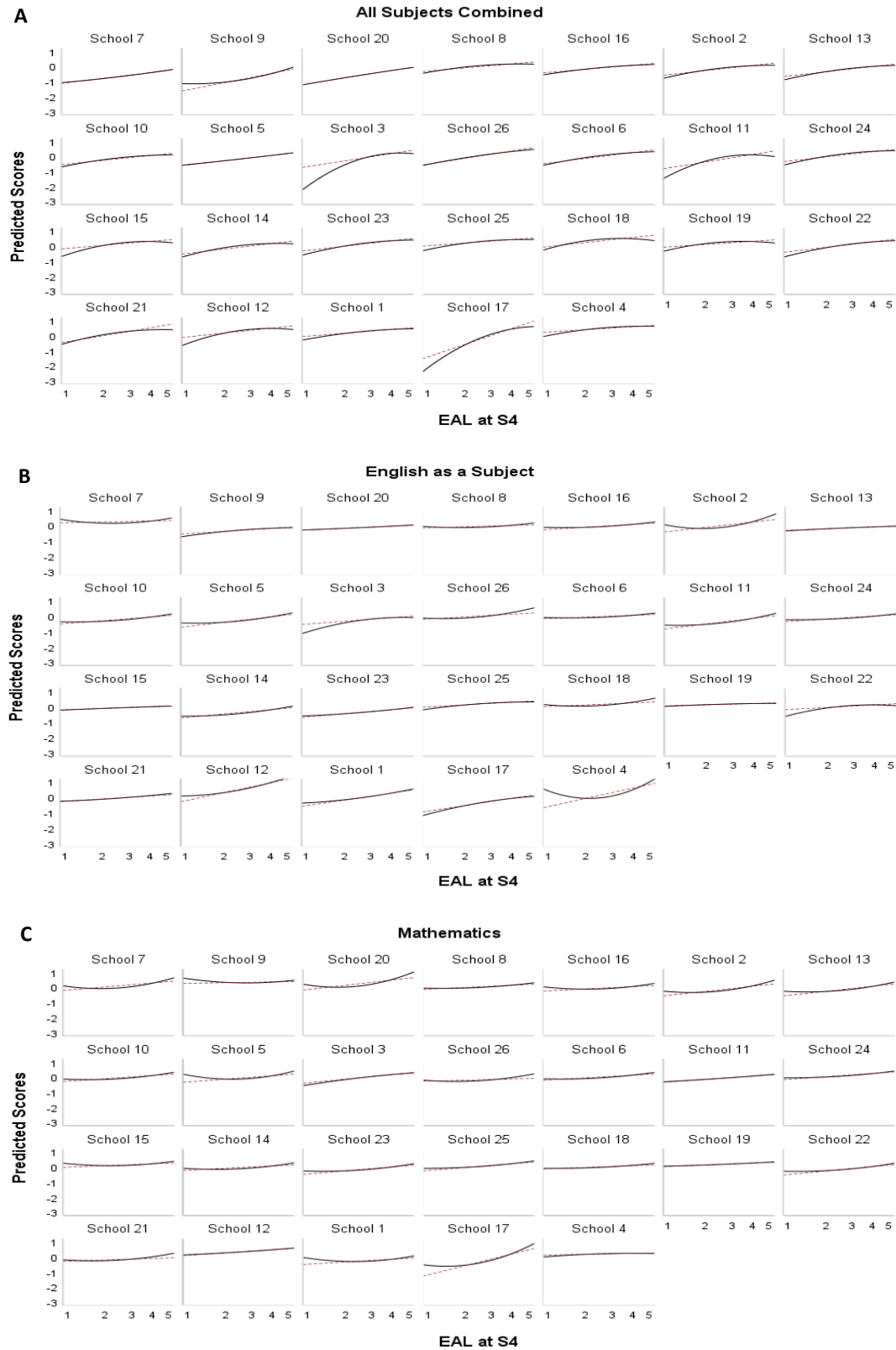
Next, the non-linearity of slopes was explored to understand how well students with the same level of English language proficiency were supported across schools. The predicted values from the final statistical models (Model 3) were plotted against EAL levels 1-5 (new to English to fluent). Differences in slopes indicated the different association between language and outcomes in each school. Intercepts indicated the level of student outcomes adjusted for level of English language proficiency. The results in Figure 3, signposted significant variation in the intercepts between schools and variation in the slopes between

schools. This confirmed the association between language and outcomes was stronger in some schools and weaker in others.

Although the linear fit suggested a positive association between EAL level and predicted scores in all subjects combined across all schools (Figure 3A), the non-linear quadratic slope illustrated differences between schools in how EAL level 1 and 2 students fared (new to English and early acquisition), with more narrow outcomes at EAL levels 3-5 (developing competence to fluent). There was less difference between schools in English as a subject (Figure 3B) compared to all subjects, and mathematics (Figure 3C). Analysis of the nonlinearity of slopes indicated most schools facilitated similar outcomes for intermediate to advanced EAL proficiency students. However, there were considerably lower predicted scores for beginner level students in a small number of schools.³⁰ The results suggested differences existed between schools on how well they provided for beginners.

³⁰ The results of the English language proficiency and school EAL interaction in all subjects combined, confirmed a negative effect experienced by 'new to English' and 'early acquisition' students in S4 examinations.

Figure 3: Comparison of Predicted Scores by Schools and EAL level 1-5



Note. EAL 1 = new to English, 2 = early acquisition, 3 = developing competence, 4= competent, 5 = fluent.
Dashed line represents linear fit, solid line represents quadratic fit with logarithmic scale.

To what extent was a universal threshold of English language proficiency evident across schools that allowed EAL students to match English as first language student outcomes?

A secondary hypothesis predicted intermediate EAL level (developing competence) was a common threshold of proficiency allowing students to match the outcomes of native English language students consistently across schools. Using the predicted values from the fitted models, outcomes by levels of English language proficiency were compared between schools.³¹ For clearer comparison between the hypothesised level of proficiency and English as first language students, new to English and early acquisition were combined to represent beginners, developing competence as intermediate, and competent and fluent levels represented an advanced category.³² The results in Figure 4A confirmed the developing competence threshold hypothesis across schools in all subjects combined. Although the hypothesis did not hold in English as a subject (Figure 4B) or in mathematics (Figure 4C), the intermediate level of developing competence allowed students to match English as first language student outcomes in most schools. Overall, the results generally indicated intermediate EAL predicted scores to be close to English as first language outcomes, notwithstanding some differences in performance between schools for intermediate versus English as first language students.³³

³¹ Predicted values from fitted models can be saved in SPSS: https://www.ibm.com/support/knowledgecenter/en/SSLVMB_25.0.0/statistics_mainhelp_ddita/spss/advanced/idh_mixl_save.html

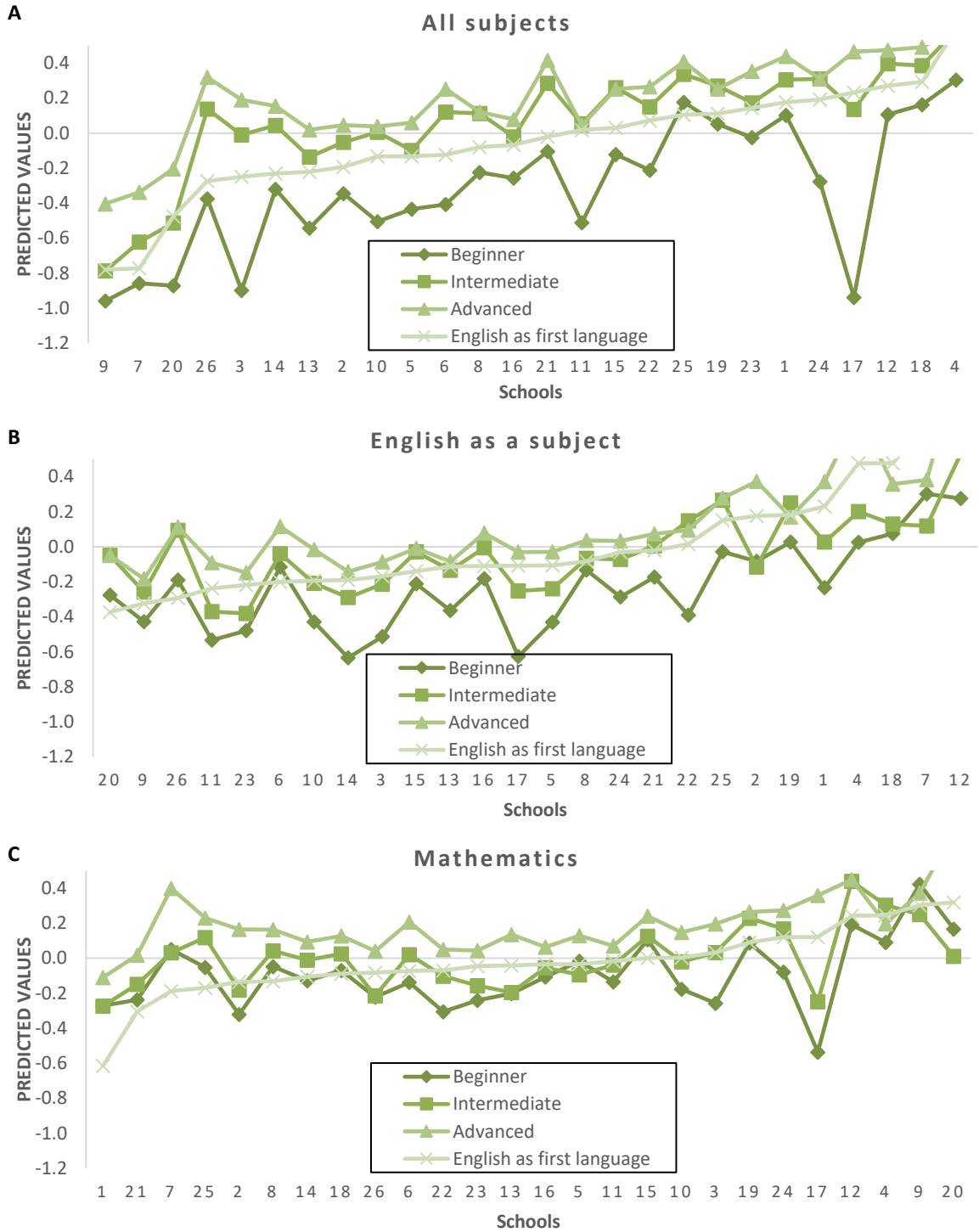
³² Patterns and relationship with outcomes at S4 are consistent with those found by Dillon (2020).

³³ The low score for School 17 for beginners in 'all subjects' is explained by an association with increased EAL composition, uncovered by the interaction effect.

The results in Figure 4 visually reflect the baseline ICC results which indicated less variation between schools in mathematics (0.03) compared to English as a subject (0.09). There was indication that some schools were more effective for EAL students as they progressed towards proficiency in the English language. For instance, a top performing early acquisition or entirely new to English female Chinese student, had a comparable outcome with a similar student in most schools. However, if located in School 3, 11 or 17, their expected score in all subjects combined would have been approximately 1 standardised point lower due to increased school EAL composition.³⁴

³⁴ Such differences would be obscured without language proficiency data.

Figure 4: Predicted scores from Model 3 by schools and level of English language proficiency



Note. Beginners = new to English & early acquisition. Intermediate = developing competence. Advanced = competent and fluent.

6. Discussion

6.1 Explaining variance in outcomes

The central goals of the present study were to determine how the educational outcomes of 15-16 year old students with English as an additional language varied across state funded secondary schools in the city of Glasgow and explain that variation. The weight of variance in outcomes explained at the student level is in keeping with the UK literature (Daly, 1991; Wilkinson et al., 2018; Willms, 1987). The pattern of English language proficiency increasing, associated with increased scores, aligns with existing scholarship (Demie, 2013; Demie, 2018; Demie and Strand, 2006; Strand and Hessel, 2018). The statistically significant positive effect for girls in all subjects combined is consistent with previous studies (Gayle et al., 2016; Sammons et al., 2014). Additional support needs predicting lower scores in all three attainment measures, likewise consistent with the current literature, as is the case for eligibility for FSMs (Sammons et al, 2014) echoes in the results here. Variation in outcomes for ethnic groups chimes with Sammons et al (2014),³⁵ and positive effects for Chinese students in agreement with Leckie and Goldstein (2019).

Differences between schools (School-level effects): School composition and effect of EAL peers

The findings partially supported the exploratory hypothesis that EAL composition would not explain differences in performance between schools. The lack of evidence of any negative effect on English as first language students is consistent with studies on the impact of non-native language speakers in schools

³⁵ There may be further differences between African or Caribbean students, between Indian, Bangladeshi or Pakistani heritage students encompassed within the Asian category.

(Fratini & Meschi, 2017; Hunt, 2012; Ohinata & van Ours, 2013).³⁶ Overall, the results concur with Wilkinson et al (2018) that school composition only partially explains school-level variance.³⁷ However, multilevel modelling revealed the interaction between English language proficiency and School EAL. English language beginners' scores were negatively affected by increased school EAL composition (though not in mathematics). Therefore, the important new insight gained from the analysis in this paper is the confirmation of variation in outcomes between schools among lower level English language proficiency students. Beginners (new to English and early acquisition students) may be more sensitive to school composition as indicated by the statistically significant interaction effect between language and school EAL. In this respect, the findings in the Scottish context are analogous to Ohinata and van Ours (2013) study of immigrant children in Dutch classrooms. That study found a greater proportion of students with an immigrant background did not affect native Dutch students' scores, but there was a negative 'spill-over' effect for immigrant children in the Dutch language, and like the Scottish case, the effect was not seen in mathematics.

Language explains inequitable gaps: Some schools provide better outcomes for EAL students than others

Overall, schools that are effective for English as first language students are effective for EAL students, just as in those where English as first language students do less well, EAL students likewise perform less well. Although there is no comparable UK literature on school effects for EAL students in the secondary

³⁶ Although Seah (2016) has determined some differences between different international contexts.

³⁷ That school-level FSM entitlement was statistically non-significant, contrasts with Sammons et al (2014). This may be due to the city of Glasgow context: "... the demographic in Glasgow results in a significant number of schools having most or almost all of their children and young people coming from the 20% most deprived communities in Scotland" (Education Scotland, 2019, p.2).

school context, the present results echo work conducted on between school differences for ethnic groups and white British students. Strand (2010; 2016a) found no evidence of schools deemed effective at helping students with a white UK background not being equally so for ethnic minority groups.

Although most schools facilitated similar outcomes for intermediate to advanced EAL proficiency students, lower predicted scores for beginners in some schools confirmed the primary hypothesis of variation in outcomes by level of English language proficiency between schools. This suggests there are inequitable outcomes across schools by level of language proficiency. In the case of determining a consistent threshold of proficiency, the findings partially supported the secondary hypothesis that intermediate level ‘developing competence’ allowed students to match the outcomes of English as first language students across schools. Although generally intermediate EAL aggregate predicted scores were close to English as first language students, there was indication of differences in performance between schools for ‘developing competence’ and native English language students. The strong performance for intermediate EAL echoes the findings of Dillon (2020). Moreover, less differences between schools for students average scores differentiated by level of English language proficiency in mathematics compared to English as a subject, indicates the phenomenon of discriminant validity found in English and mathematics scores in the literature (Dillon, 2020; Strand and Hessel, 2018) is common across schools.

6.2. Limitations of the investigation

Although these findings bring new insight to the topic, particularly empirical analysis of school effects for EAL students for the first time in the secondary

school context, there are limitations. There was a small sample of level-2 observations, albeit within the parameters advocated by Bryan and Jenkins (2016). Level of proficiency and literacy in first languages and data on prior attainment were not available. The home learning environment, parental education, neighbourhood characteristics, and school attendance records are also unknown entities. The paper does not account for student-teacher ratios, the central role of leadership, the diversity or linguistic skills of teachers, or fiscal constraints which may account for between school differences. It was also not possible to include between school movement, cited by Leckie and Goldstein as a result “... naïvely holding the final school attended accountable for the entirety of these pupils’ education.” (Leckie and Goldstein, 2019, p.533).³⁸ The choice of outcome measure could also have some bearing on the results. All subjects combined was a crude measure with potential for community language subjects boosting scores or selection of subjects with less demanding English language requirements (See Demie and Strand, 2006). However, the measures for English and mathematics attenuated this to some extent with ESOL filtered out of the English as a subject measure.³⁹

6.3 Further research

Examinations are only one measure of school effectiveness, ultimately student destinations beyond compulsory schooling are a key indicator of an educational system’s success and entirely missing from the EAL literature. Further

³⁸ The analysis also did not establish if School EAL composition effects are driven by an increase in for example new to English students. Further analysis could explore whether the effect is associated with a specific level of language proficiency in schools with higher EAL composition or EAL in general, and if further interactions exist by ethnicity.

³⁹ English for Speakers of Other Languages (ESOL) is accommodated in the secondary school curriculum in Scotland, but not in England (SQA, n.d.).

study exploiting the longitudinal aspects of this unique database could explore how well the educational system has helped EAL students reach their potential comparing outcomes by years. Quantitative analysis highlights some schools stand out: qualitative analysis could explore school characteristics that may help to explain the remaining between-school variance. However, the current EAL policy approach is the inclusive policy of mainstreaming. It is therefore imperative to understand whether the findings in this paper have been consistent over time or a comparatively recent consequence of policy choices: this will be addressed in a companion paper.

7. Conclusions and implications

The purpose of this paper was to answer three central questions: (1) How much variation in student outcomes between schools is explained by English language proficiency? (2) How much does school EAL composition explain variation in student outcomes between schools? (3) To what extent is there a universal threshold of English language proficiency that allows EAL students to match English as a first language student outcomes? Student and school level explanatory variables were controlled for in multilevel statistical models. In terms of the first question, although most variation in outcomes were explained by differences between students, after allowing English language proficiency to vary randomly across schools, approximately 3% of variation in student scores between schools can be apportioned to English language proficiency. However, though a modest amount of variance, differences are more pronounced for beginners, explained by the result of question two: an effect of school EAL composition on 'beginners' indicated a negative direction in schools with higher percentage of EAL students in all subjects combined, and in English as a subject.

Concerning the third question, although not universal, the intermediate level 'developing competence' allows students to match the outcomes of English as first language students across most schools. Higher levels of English language proficiency allow EAL students to mitigate the negative effects of school composition experienced by students with lower levels of proficiency. Such school effects are in line with Raudenbush and Willms (1995) definition of attending certain schools modify student outcomes.

In summary, the present findings improve understanding of the way lower levels of English language proficiency shape EAL students' educational outcomes and the consequences of not being fully conversant in the language of instruction and assessment in Glasgow secondary schools. The findings indicate differences in school effectiveness for beginners and greater risk of educational inequality. Although the city of Glasgow sits within "a distinct institutional, political and social context" distinct from elsewhere in the UK (Sawkins, 2002, p.2031-2032), the fundamental underlying issue shared by EAL students across the UK is accessing the curriculum in the English language. Therefore, the present findings are relevant for EAL education across the UK.

From a policy perspective, the fact that the interaction between level of English language proficiency and school EAL composition was statistically significant is particularly relevant. This may have implications for placing beginners into mainstream classes upon arrival, albeit the results imply performance in subjects which are less demanding in terms of English language proficiency is not impacted on by such peer effects. The results also reinforce the need for caution when choosing a measure to compare school effectiveness. Although schools could be ordered from highest to lowest by for example mathematics scores, as

shown by the result of the null model presented here that would be statistically unsound. This carries significant implications for the publication of league tables comparing school performance which can be potentially misleading (See Perry, 2018).⁴⁰

References

- Bell, A. Fairbrother, M. & Jones, K. (2019) "Fixed and random effects models: making an informed choice," *Quality & Quantity: International Journal of Methodology*, Springer, vol. 53(2), pages 1051-1074.
- Bryan, M. L., and Jenkins, S. P. (2016) Multilevel Modelling of Country Effects: A Cautionary Tale. *European Sociological Review*, 32(1), 3-22.
- Christensen, G., & Stanat, P. (2007) Language policies and practices for helping immigrants and second-generation students succeed. *The Transatlantic Taskforce on Immigration and Integration, Migration Policy Institute (MPI) and Bertelsmann Stiftung*, 1-15.
- CSMP. (2019) *Asylum Dispersal*. COSLA Strategic Migration Partnership (CSMP). Online Available: <http://www.migrationscotland.org.uk/our-priorities/current-work/asylum-dispersal> [Accessed: 13 May 2020]
- Daly, P. (1991) How Large are Secondary School Effects in Northern Ireland?, *School Effectiveness and School Improvement*, 2:4, 305-323, DOI: 10.1080/0924345910020404

⁴⁰ Wilkinson et al. (2018) similarly found the measure of attainment to affect the amount of variance accounted for by schools.

- Demie, F. (2013) English as an additional language pupils: how long does it take to acquire English fluency? *Language and Education*, 27:1, 59-69.
10.1080/09500782.2012.682580
- Demie, F. (2018) English language proficiency and attainment of EAL (English as second language) pupils in England. *Journal of Multilingual and Multicultural Development*, 1-13. 10.1080/01434632.2017.1420658
- Demie, F. (2019) *Educational Inequality: Closing the Gap*. London: UCL Institute of Education Press.
- Demie, F., & Strand, S. (2006) English language acquisition and educational attainment at the end of secondary school. *Educational Studies*, 32(2), 215-231. 10.1080/03055690600631119
- Dillon, S. (2020) The Positive Association Between English Language Proficiency and Educational Attainment: A Fixed Effects Multiple Regression Model. [Unpublished Paper 1 of DPhil Thesis].
- Education Scotland. (2019) *Inspection of local authorities How well is Glasgow City Council improving learning, raising attainment and closing the poverty-related attainment gap?* Education Scotland. Online Available: <https://www.glasgow.gov.uk/CHttpHandler.ashx?id=44550&p=0> [Accessed: 18 May 2020]
- Frattoni, T. and Meschi, E. (2017) The Effect of Immigrant Peers in Vocational Schools. *SSRN Electronic Journal*. 10.2139/ssrn.3046137.

- Garson, G. (2013) Preparing to analyze multilevel data. In Garson, G.
D. Hierarchical linear modeling: Guide and applications (pp. 27-54).
Thousand Oaks, CA: SAGE Publications, Inc. doi: 10.4135/9781483384450
- Garson, G. (2019) *Multilevel Modeling: Applications in STATA®, IBM® SPSS®, SAS®, R, & HLM™*. Thousand Oaks: SAGE Publications.
- Gayle, V. Murray, S. and Connelly, R. (2016) Young people and school General Certificate of Secondary Education attainment: looking for the 'missing middle', *British Journal of Sociology of Education*, 37:3, 350-370, DOI: 10.1080/01425692.2014.935292
- Geay, C., McNally, S. and Telhaj, S. (2013) Non-native Speakers of English in the Classroom: What Are the Effects on Pupil Performance? *Econ J*, 123: F281-F307. doi:10.1111/econj.12054
- GCC. (2011) *Children and Families Policy Development Committee*. Report by Executive Director of Education. Glasgow City Council. Online Available: <http://www.glasgow.gov.uk/Councillorsandcommittees/viewSelectedDocument.asp?c=P62AFQZ3T12UUTNT> [Accessed: 12 May 2020]
- Goldstein, H. (1987) *Multilevel Models in Educational and Social Research*. London: Oxford University Press.
- Gorard, S., and Siddiqui, N. (2018) Grammar schools in England: a new analysis of social segregation and academic outcomes, *British Journal of Sociology of Education*, 39:7, 909-924, DOI: 10.1080/01425692.2018.1443432

- Gray, J., Jesson, D. and Sime, N. (1990) Estimating differences in the examination performances of secondary schools in six LEA'S: a multilevel approach to school effectiveness, *Oxford Review of Education*, 16, 2, pp. 137-158.
- Harker, R., & Tymms, P. (2004). The effects of student composition on school outcomes. *School Effectiveness and School Improvement*, 15, 177–199
- Heck, R.H. & Thomas, S.L. & Tabata, L.N. (2011) *Multilevel and longitudinal modeling with IBM SPSS*. New York: Routledge.
- Hilton, A. (2019) *Academies and Free Schools in England*. London: Routledge.
- Hunt, J. (2012) The Impact of Immigration on the Educational Attainment of Natives. *IZA Discussion Paper No. 6904*, Online Available: <http://ftp.iza.org/dp6904.pdf> [Accessed 5 Sep 2020]
- Ilie, S., Sutherland, A. & Vignoles, A. (2017) Revisiting free school meal eligibility as a proxy for pupil socio-economic deprivation, *British Educational Research Journal*, 43, 253–274.
- Jensen, O. and Gidley, B. (2014) *The Politics of Mainstreaming Immigrant Integration Policies: Case study of the United Kingdom*. Center on Migration, Policy and Society (COMPAS): University of Oxford.
- Jensen, P. and Rasmussen, A. W. (2015) The Effect of Immigrant Concentration in Schools on Native and Immigrant Children's Reading and Math Skills. *Economics of Education Review*, Vol. 30, No. 6, 2011.
- Lauder, H., Kounali, D., Robinson, T., & Goldstein, H. (2010) Pupil composition and accountability: An analysis of English primary schools. *International Journal of Educational Research*, 49, 49 –68.

Leckie, G. (2018) Avoiding bias when estimating the consistency and stability of value-added school effects using multilevel models, *Journal of Educational and Behavioral Statistics*, 43, 440–468.

Leckie, G., Browne, W., Goldstein, H., Merlo, J., & Austin, P. (2019) Variance partitioning in multilevel models for count data. School of Education Centre for Multilevel Modelling, University of Bristol. Online available: <https://arxiv.org/ftp/arxiv/papers/1911/1911.06888.pdf> [Accessed: 12 Nov 2020]

Leckie, G. & Goldstein, H. (2017) The evolution of school league tables in England 1992–2016: ‘Contextual value-added’, ‘expected progress’ and ‘progress 8’, *British Educational Research Journal*, 43, 193–212.

Leckie, G. and Goldstein, H. (2019) The importance of adjusting for pupil background in school value-added models: A study of Progress 8 and school accountability in England. *British Educational Research Journal*, 45: 518-537. doi:10.1002/berj.3511

Lenkeit, J., Caro, D. H. & Strand, S. (2015) Tackling the remaining attainment gap between students with and without immigrant background: an investigation into the equivalence of SES constructs, *Educational Research and Evaluation*, 21:1, 60-83, DOI: 10.1080/13803611.2015.1009915

Lenkeit, J., Schwippert K. and Knigge, M. (2018) Configurations of multiple disparities in reading performance: longitudinal observations across France, Germany, Sweden and the United Kingdom, *Assessment in Education: Principles, Policy & Practice*, 25:1, 52-86, DOI: 10.1080/0969594X.2017.1309352

Leyland A.H., Groenewegen P.P. (2020) Context, Composition and How Their Influences Vary. In: *Multilevel Modelling for Public Health and Health Services Research*. Springer, Cham.

Long, R. & Bolton, P. (2018) *Faith schools in England: FAQs*, London: House of Commons Library.
<https://researchbriefings.files.parliament.uk/documents/SN06972/SN06972.pdf>

McKinney, S., Hall, S., Lowden, K., McClung, M., & Cameron, L. (2012) The relationship between poverty and deprivation, educational attainment and positive school leaver destinations in Glasgow secondary schools, *Scottish Educational Review*, 44 (1), 33-45

McKinney, S. J., Hall, S. T. and Lowden, K. (2017) Catholic Schools and attainment in Scotland. *Open House*, 269, pp. 14-15.

Migration Scotland. (n.d.) Migration to Scotland. COSLA Migration, Population and Diversity. Online available: <http://www.migrationscotland.org.uk/migration-information/migration-statistics> [Accessed: 2 Oct 2020]

Mills, M. C., and Präg, P. (2016) Methodological Advances in Cross-National Research: Multilevel Challenges and Solutions. *European Sociological Review*, 32(1), 1-2

Nuttall, D. N., Goldstein, H., Prosser, R. and Rasbash, J. (1989) Differential school effectiveness, *Journal of Educational Research*, 13, pp. 769-776.

OECD. (2015) *Helping immigrant students to succeed at school – and beyond*. The Organisation for Economic Co-operation and Development (OECD),

Online Available: <http://www.oecd.org/education/Helping-immigrant-students-to-succeed-at-school-and-beyond.pdf> [Accessed 15 July 2020]

Ohinata, A., & van Ours, J. C. (2013). How immigrant children affect the academic achievement of native Dutch children. *Economic Journal*, 123(570), F308-F331. <https://doi.org/10.1111/ecoj.12052>

ONS. (2019) *International migration and the education sector – what does the current evidence show?* Office for National Statistics.

Opdenakker, M., & Van Damme, J. (2006). Differences between secondary schools: A study about school context, group composition, school practice, and school effects with special attention to public and Catholic schools and types of schools. *School Effectiveness and School Improvement*, 17(1), 87-117.

Perry, T. (2018) 'Phantom' compositional effects in English school value-added measures: The consequences of random baseline measurement error, *Research Papers in Education*, 34, 239–262.

Rangvid, B.S. (2007) School composition effects in Denmark: quantile regression evidence from PISA 2000, *Empirical Economics*, 33(2), 359-388.

Raudenbush, S. W. & Willms, J. (1995) The estimation of school effects, *Journal of Educational and Behavioral Statistics*, 20, 307–335.

Reynolds, D. Sammons, P. Fraine, B. D. Van Damme, J. Townsend, T. Teddlie C. and Stringfield, S. (2014) Educational effectiveness research (EER): a

state-of-the-art review, *School Effectiveness and School Improvement*, 25:2, 197-230, DOI: 10.1080/09243453.2014.885450

Sammons, P., Sylva, K., Melhuish, E., Siraj, I., Taggart, B., Toth, K. & Smees, R. (2014) *Influences on students' GCSE attainment and progress at age 16: Effective Pre-School, Primary & Secondary Education Project (EPPSE)*. Online Available: https://dera.ioe.ac.uk/20875/1/RR352_-_Influences_on_Students_GCSE_Attainment_and_Progress_at_Age_16.pdf [Accessed: 23 July 2020]

Sawkins, J. W. (2002) Examination performance in Scottish secondary schools: an ordered logit approach, *Applied Economics*, 34:16, 2031-2041, DOI: 10.1080/00036840210124559

Seah, K. KC. (2016) The Impact of Immigrant Peers on Native Students' Academic Achievement in Countries Where Parents of Immigrants Are Relatively Skilled. *IZA Discussion Paper* No. 1006, 5 <http://ftp.iza.org/dp10065.pdf>

Scheerens, J. (2001) Monitoring School Effectiveness in Developing Countries, *School Effectiveness and School Improvement*, 12:4, 359-384, DOI: 10.1076/sesi.12.4.359.3447

Shields, J. & Gunson, R. (2017) *Autonomy in the right place: School governance reform in Scotland*, IPPR Scotland. <http://www.ippr.org/publications/autonomy-in-the-right-place-school-governancereform-in-scotland>

Smithers, A. & Robinson, P. (2010) *Worlds Apart: Social Variation Among Schools*. London: The Sutton Trust.

SQA. (n.d.) ESOL. The Scottish Qualifications Authority.
<https://www.sqa.org.uk/sqa/45678.html>

Strand, S. (2010) Do some schools narrow the gap? Differential school effectiveness by ethnicity, gender, poverty and prior attainment, *School Effectiveness and School Improvement*, 21(3), 289– 314.

Strand, S. (2014a) School effects and ethnic, gender and socio-economic gaps in educational achievement at age 11, *Oxford Review of Education*, 40:2, 223-245, DOI: 10.1080/03054985.2014.891980

Strand, S. (2014b) Ethnicity, gender, social class and achievement gaps at age 16: intersectionality and ‘getting it’ for the white working class, *Research Papers in Education*, 29:2, 131-171, DOI: 10.1080/02671522.2013.767370

Strand, S. (2016a) Do some schools narrow the gap? Differential school effectiveness revisited, *Review of Education* Vol. 4, No. 2, pp. 107–144.

Strand, S. (2016b) *Educational Outcomes Among Children with English as an Additional Language (EAL)*. Migration Observatory Briefing, COMPAS, University of Oxford [Online] Available:
http://www.migrationobservatory.ox.ac.uk/wp-content/uploads/2016/06/Briefing-Educational_Outcomes_EAL-1.pdf
[Accessed: 12 Sep 2016].

- Strand, S., Malmberg, L., & Hall, J. (2015) *English as an additional language and educational achievement in England: An analysis of the National Pupil Database*. London: Educational Endowment Fund.
- Strand, S. & Hessel, A. (2018). *English as an additional language, proficiency in English and pupils' educational achievement: An analysis of Local Authority data*. London: Bell Foundation.
- The Equalities Review. (2007) Fairness and Freedom: The Final Report of the Equalities Review. https://dera.ioe.ac.uk/26640/1/equality_review.pdf
- Timmermans, A. C., & Thomas, S. M. (2015) The impact of student composition on schools' value-added performance: a comparison of seven empirical studies. *School Effectiveness and School Improvement*, 26(3), 487-498.
- Tymms, P. (2004) Effect sizes in multilevel models, in: I. Schagen, K. Elliott (Eds) *But what does it mean? The use of effect sizes in educational research* (Slough, National Foundation for Educational Research), 55–66.
- Townsend T. (2007) 20 Years of ICSEI: The Impact of School Effectiveness and School Improvement on School Reform. In: Townsend T. (eds) *International Handbook of School Effectiveness and Improvement*. Springer International Handbooks of Education, vol 17. Springer, Dordrecht.
- Van Ewijk, R., & Sleegers, P. (2010) Peer ethnicity and achievement: A meta-analysis into the compositional effect. *School Effectiveness and School Improvement*, 21, 237–265. doi:10.1080/ 09243451003612671

Wilkinson, D., Bryson, A., Stokes, L. (2018) Assessing the variance in pupil attainment: how important is the school attended? *National Institute Economic Review*, Issue 243

Willms, D. J. (1987) Differences between Scottish Education Authorities in their Examination Attainment, *Oxford Review of Education*, 13:2, 211-232, DOI: 10.1080/0305498870130208

Willms, J. (2010) School Composition and Contextual Effects on Student Outcomes. *Teachers College Record*. 112. 1008-1037.

Wodtke, G., & Parbst, M. (2017) Neighborhoods, Schools, and Academic Achievement: A Formal Mediation Analysis of Contextual Effects on Reading and Mathematics Abilities. *Demography*. 54. 10.1007/s13524-017-0603-1.

Appendix A

Table 4: Ethnicity Variable

Category	Code	Groups included in category
African or Caribbean	1	Black–African, African–Other, African–Scottish/British, Black–Caribbean, Caribbean or Black–Other, Caribbean or Black–British/Scottish
Asian	2	Asian–Indian/British/Scottish, Asian–Pakistani/British/Scottish, Asian–Bangladeshi/British/Scottish, Asian–Other
Chinese	3	Asian–Chinese/British/Scottish
White-Other	4	White–Irish, White–Polish, White–Gypsy/Traveller
Other-Ethnicity	5	Black–Other, Other–Arab, Not Known, Other–Other, Not Disclosed, Mixed or multiple ethnic groups, Mixed, Occupational Traveller, Gypsy Traveller, Traveller, Other Traveller
White-UK	6	White–Scottish, White–Other British

Note. Chinese ethnicity was included separately as the literature indicates strong academic performance.

Paper 3: The Effect of Mainstreaming Policy on English as an Additional Language Student Outcomes and Key Thresholds of Proficiency: A Multilevel Difference-in-Differences Regression Model

Abstract

'Mainstreaming' is an important theme in UK social policy across various domains. In education, it refers to inclusion of students with educational support needs into mainstream classrooms, rather than being educated separately. This paper is the first to empirically assess (a) the impact of mainstreaming on the educational outcomes of students with English as an additional language (EAL) versus the efficacy of a separate language instruction unit, (b) the level of English language proficiency required entering secondary school to match native English language speakers' outcomes by the end of compulsory schooling. Data comprised yearly school census returns for state funded secondary schools in the city of Glasgow, linked to annual public examinations for 15-16 year olds (2007-2016). Descriptive analysis is followed by estimation of difference-in-differences models comparing 2009-2011 and 2014-2016 outcomes within a multilevel framework (N = 262,220 students nested in 29 schools). English as first language students were the performance benchmark, while EAL students were differentiated by level of English language proficiency. Performance in all subjects combined, English as a subject and mathematics were considered. After taking account of school and student characteristics, attainment for students with 'new to English' level of proficiency decreased over time in English as a subject with a statistically significant negative effect on scores (-0.54 , $p = 0.009$) compared to native English language students. The findings suggest (1) mainstreaming may have had a negative impact on new to English students in English as a subject, (2) students

new to the English language in their first year of secondary school are unlikely to match native English language student outcomes by the end of compulsory schooling. The results have important policy implications for instructing new to English students in mainstream settings and policies which limit language support by time rather than by need.

Keywords English as an additional language (EAL); EAL policy; educational attainment; English language proficiency; mainstreaming; migrant integration; educational inequality; difference-in-differences; multilevel regression

1. Introduction

Immigration has increased the diversity and number of students who do not have English as their first language in the United Kingdom (UK) (Flynn & Curdt-Christiansen, 2018).¹ As of 2018, 17% of students in state-funded secondary schools in England were recorded as having English as an additional language (EAL), totalling 1.3 million students (Demie, 2018; ONS, 2019). Similar trends are found in other parts of the UK such as Scotland, with an increase in students requiring language support (OECD, 2015). This has brought challenges for teachers, schools, and the UK's education systems (Anderson et al., 2016). As the English language is the medium of instruction, students need to be proficient to fully access the curriculum and take summative assessments in national examinations at the end of compulsory schooling (Demie, 2013; Demie, 2018).

Across the UK, national examinations are assessed irrespective of students' level of English language proficiency (Anderson et al., 2016; Leung, 2016; Safford and Drury, 2013; SQA, 2020).² This is incongruent with the notion of equal access to education if the curriculum is partially inaccessible due to lack of linguistic competence.³ If the right to education also means equal provision for all students to achieve their best possible outcomes, then it ought to be the case that students not fully proficient in the language of instruction are supported to the point where they can match the educational outcomes of native language speakers. This leads to the policy questions of whether (a) language support

¹ Accompanied by social discord and politicisation of integration (Christopher, 2015; Jensen and Gidley, 2014).

² While there may be in-school differences in formative assessments (Leung, 2018), bilingual dictionaries are not permitted in summative external examinations for "English, ESOL or the candidate's first language." (SQA, 2020, p.1).

³ Acquisition rate may vary due to student background factors (See Strand & Lindorff, 2020).

should be removed after a specified period or once a threshold of proficiency has been reached, (b) whether separate instruction for beginners leads to better educational outcomes than direct enrolment in mainstream classrooms.

The policy response of mainstreaming, UK policy since the 1980s, is the universal inclusion of groups rather than targeted intervention.⁴ The mainstreaming approach has been employed in policy areas in relation to gender and disability, now an “... increasingly used policy technique in the UK.”, playing a key role in education (GCC, 2015; Maan et al., 2015, p.15).⁵ The distinct shift in education policy from the mid-1980s onwards away from educating students deemed different in one way or another separately resulted in the demise of separate language instruction units. The last remaining separate language educational establishment in Scotland closed in 2012:⁶

When I first came here the Bilingual Unit was in operation, I didn't deal with those pupils new to English at all, because I just did the initial assessment and they went away for half a year or a year to the bilingual unit and they came back with early acquisition level. (EAL Teacher, personal interview, 31 May 2016)

The above excerpt from an interview with an EAL secondary school teacher in the city of Glasgow illustrates how the city's central language support unit was originally set up to quickly facilitate enough acquisition of English to enable students to begin to access the curriculum, then enter mainstream lessons at their

⁴ In Special Education Needs (SEN) a decade earlier (Farell et al., 2007; Humphrey and Lewis, 2008; Pirrie et al., 2005; Woodcock and Hitches, 2017). The Standards in Scotland's Schools etc Act 2000, and Special Educational Needs and Disability Act 2001 (SENDA) cemented mainstreaming as the principal policy approach in Scottish schools (Pirrie et al., 2005).

⁵ Comparatively new policy approach in the context of migrant integration (Scholten et al., 2016).

⁶ No clear timeline is outlined in the literature on closure of separate language units following 1980s legislative directives. The focus of this paper is on the city of Glasgow's which closed 2012.

local school (Leung, 2005; Leung, 2016). It shows how closure of the specialised language unit in 2012 (referred to by the interviewee as the Bilingual Unit) impacted on the experiences of the interviewee – initial assessment only (pre-2012) to teaching new to English students *in situ* (post 2012).

The acquisition of the English language is particularly important for the integration of refugees and asylum seekers into local communities (Hammond, 2018). Not all EAL students are migrants, however the demographic profile of EAL students is diverse. They include a range of linguistic proficiency, ethnic diversity, past educational and migration experiences, including in some instances second or third generation children (Anderson et al., 2016; Keller-Russell, 2012; Kenner et al., 2008), which indicates a firm association between EAL and having an immigrant background.⁷ Linguistic advantage equates to “economic and political advantage since members of the dominant cultural community have a leg up in schools, the workplace, and politics.” (Song, 2017, 2.2). Although it may be for individuals to choose their own level of participation (integration)⁸, it is nonetheless the task of the state in a multicultural polity⁹ such as the UK and within its devolved system of governance to provide the means.

There is a growing body of literature on the topic of EAL education, yet major knowledge gaps remain. Although a threshold of English language proficiency allows EAL students to match educational outcomes of native English language speakers (Dillon, 2020a), and this is largely consistent across schools (Dillon, 2020b), it is not known whether that threshold has operated consistently

⁷ For instance, only 1.8% of EAL students in the population studied in this paper did not have an ethnic minority background.

⁸ Group differentiated rights “... empower members of minority groups to continue their distinctive cultural practices so long as they wish to.” (Song, 2017, 3.1).

⁹ Berry (2011) uses the alternative *culturally plural societies*.

over time. What also remains to be explored in the literature is how the shift from instructing newly arrived secondary school age students initially in separate educational units to direct enrolment in local schools impacted on educational outcomes. No empirical evidence has been presented attesting to academic success or otherwise of mainstreaming EAL policy in the UK, coupled with a lack of tracking students' linguistic progress in the secondary school context. This study fills that void in a case study of the city of Glasgow.¹⁰

The current paper studies (a) the effect on educational attainment of direct enrolment of new to English students into mainstream schools versus a separate educational language instruction unit;¹¹ (b) the consistency of the association between English language proficiency and educational attainment over 2008-2016; (c) the level of English language proficiency required at the beginning of secondary school to match native English language speakers' outcomes by the end of compulsory schooling over that period. Outcomes are measured in terms of performance in 'all subjects' combined to gain a broad overview of student achievement, then in English as a subject and in mathematics to assess whether the association with language proficiency in those two key subjects is different.

The paper introduces for the first time in the Scottish context empirical analysis of cross-sectional time series data, including levels of English language proficiency, and secondary school educational outcomes. Although it cannot incorporate all the factors associated with outcomes or which moderate the rate of

¹⁰ No published attainment summaries by level of English language proficiency in Scotland.

¹¹ Although other levels of linguistic proficiency could have been employed as a control group, native English language speakers provided a benchmark and a constant for difference-in-differences regression analysis.

acquisition of the English language,¹² the quantitative analysis is strengthened by an analytical framework resting on a multilevel difference-in-differences regression model, enhancing the validity of the study (Punch and Oancea, 2014). In doing so, the paper makes an important contribution to the literatures on EAL education, migrant integration, and educational inequality.¹³

Next, Section 2 provides background to the policy context and literature by (a) highlighting the policy shift towards mainstreaming; (b) outlining changes and pressures on EAL funding; (c) discussing what the literature suggests about whether mainstreaming or separate educational units provide better outcomes for EAL students; and (d) setting out the background to the case study. Sections 3 and 4 then set out the data, the methods, and variables for the empirical analysis. Section 5 presents the empirical results and Section 6 discusses them, establishing (1) the evidence on whether mainstreaming improved new to English student outcomes; (2) the consistent level of EAL proficiency required to match English as a first language student educational outcomes over time; (3) the entry level of proficiency at S1 that allows students to match native English language student outcomes by end of compulsory schooling. The paper concludes by presenting in Section 7 the implications for policy of the study's findings.

¹² Strand and Lindorff (2020) found gender and ethnicity had a weak relationship with linguistic progression.

¹³ Linguistic advantage equates to “economic and political advantage since members of the dominant cultural community have a leg up in schools, the workplace, and politics.” (Song, 2017, 2.2).

2. The Policy Context and Literature

The shift towards mainstreaming

The UK's approach to integration has travelled full circle. Up until the late 1960s assimilation was to the fore. There was then a shift towards multiculturalism distinguished by an equal rights and non-discrimination approach, followed by concern over social cohesion, underpinning the now current mainstreaming approach and return to assimilationist practices (Jensen and Gidley, 2014; Maan et al., 2015).¹⁴ However, the changing nature of EAL policy is intertwined with the pluralistic characteristics of UK governance. Immigration and integration are the responsibility of different UK Government departments (Jensen and Gidley, 2014; Maan et al., 2015), while education and integration are devolved matters in Scotland (Jensen and Gidley, 2014).¹⁵ Historically, provision of language support for students new to the English language was often provided in separate educational establishments. These units were intended to provide students with enough English language proficiency, taught through curriculum subjects by specialised EAL teachers, to enable students to later join mainstream classes (Costley, 2014; Keller-Russell, 2012; Leung, 2005; Leung, 2016). On average, students spent one academic year outside mainstream (Leung, 2016). Such units provided new arrivals with social skills in addition to linguistic instruction for a diverse demographic of young people, some children of economic migrants, while others unaccompanied minors, refugees, or asylum seekers, with differing literacy and education backgrounds (Keller-Russell, 2012).

¹⁴ Arguably “oscillated between differentialist, assimilationist and interculturalist modalities at different times and places.” (Simon and Beaujeu, 2018: 29).

¹⁵ Overseen by the Scottish Government and delivered by local authorities.

Nevertheless, two influential reports during the 1980s provided the impetus for a policy shift. The Swann Report (1985) advocated inclusion of EAL students in mainstream classrooms. Similarly, the Calderdale Education Authority review of EAL provision (1986) found the practice of separating students discriminatory (CRE, 1986). Although arguably the lack of immediate policy action was due to the political paradigm which dominated 1980s Britain, the reports paved the way for the move to direct enrollment of new to English students in local schools, rather than in separate language instruction units (Jensen and Gidley, 2014).

In Scotland, as elsewhere in the UK, mainstreaming stands on legislative directives which promote an inclusive approach (Arnot et al., 2014). Under article 15(1) of the Standards in Scotland's Schools etc. Act 2000, education should be provided in mainstream settings. Glasgow City Council for example acknowledge they "must have an EAL Service set in the context of the Education (Additional Support for Learning) (Scotland) Act 2004 that supports children and young people with English as an additional language wherever they may be" (GCC, 2008, p.3).¹⁶ Thus, there are legislative requirements which UK local authorities must adhere to underpinning mainstreaming.

Financial pressures on EAL funding

Across the UK, the funding source for EAL provision has changed over time. Section 11 of the Local Government Act 1966 distributed financial support to local authorities for the educational provision of Commonwealth immigrants with language support needs. It was replaced in 1999 by the Ethnic Minority Achievement Grant (EMAG) (Jensen and Gidley, 2014), principally intended to

¹⁶ See Hancock (2014) for an account of language education policy (LEP) in Scotland, the languages of migrants, and modern foreign languages.

address underachievement of minority groups (Tikly et al., 2005). This reduced the efficacy of resources for EAL students, spread across at times overlapping but often separate policy areas and factors in ethnic minority underachievement. As a result, an ensuing reduction in centralised support for EAL was forecast (Tikly et al., 2005).

In 2011, EMAG provision was absorbed into the Dedicated Schools Grant, becoming the central funding source for EAL in England with greater decision making on its use passed on to schools (Jensen and Gidley, 2014; Maan et al., 2015; NALDIC, 2015). With the demise of EMAG, ring fenced financial support for EAL was effectively removed (Jensen and Gidley, 2014). Although Bristol for a time retained a language support unit (Maan et al., 2015), the London Borough of Southwark and the city of Glasgow had finally closed their language units by 2012 (COSLA, 2011; Jensen and Gidley, 2014). While Scotland has a different educational, legislative, and funding context from that of England, it has been suggested changes to funding resulted in reduction of EAL staff in the city of Glasgow (GCC, 2011a; Scottish Parliament, 2014). Similar suggestions are made by Evans and Liu in England, a consequence of the milieu amidst decentralisation of educational provision (Evans and Liu, 2018),¹⁷ foreseen by Tikly et al. (2005).

Time bound support

The Department for Education (DfE) in England maintain support for “3 years – from the point at which the pupil enters compulsory education in England – should be sufficient.” (DfE, 2012, p.8). This approach excludes students enrolled for more than three years, to as little as one year at the discretion of local

¹⁷ Evans et al. (2016) discuss the impact of EAL funding on schools in England. However, different funding structures are in place in Scotland.

authorities (Arnot et al., 2014). The time-bound rather than needs based approach advocated by the DfE is questionable. Full acquisition of English is estimated by Demie (2013) to take 5-7 years, while a 5-10 years model is outlined by the Scottish Government (ScotXed, 2016). It therefore seems unlikely that a beginner level EAL student would not still require support after one year. Yet only two studies in the UK literature have explored how long it takes students to acquire academic proficiency: Demie (2013) in an inner London secondary school context, and Strand and Lindorff (2020) in the primary school context in Wales. No comparable study has been conducted in Scotland. Strand and Lindorff (2020) found most students who arrived in primary school with a new to English level of proficiency had not reached the level of 'competent' after 6 years. They conclude that 3 years of support as advocated by DfE in England is inadequate.

Which approach provides the best student outcomes: separate educational units (full withdrawal) or mainstreaming?

A recurrent policy concern is how to effectively instruct EAL students (Demie, 2013).¹⁸ English as an additional language (EAL) policy is characterised by “emphasis on English acquisition with limited importance placed on the teaching of the languages of migrants” (McDermott, 2008, p.487). A review of the literature and legislative directives indicate the weight of the discussion leans towards in-reach rather than outreach (full withdrawal).¹⁹ Mainstreaming is an equality based policy which dominates any pedagogical argument. Research conducted in 2013 by Arnot et al. (2014) found conflicting views among teachers on when students should enter mainstream secondary school classrooms: some

¹⁸ See Foley et al (2013) for discussion of EAL teacher training in the Scottish context.

¹⁹ Costley (2014) discusses school approaches and evolution of EAL policy.

advocated once a degree of English language proficiency had been acquired, while some schools were found to place “all new EAL arrivals (irrespective of their English language skills) in mainstream classes as well as providing extra English tuition in withdrawal groups” (Arnot et al., 2014, p.27).

The OECD assert that educational outcomes are improved when non-native language speaking students are integrated immediately into mainstream schools (OECD, 2015). This resonates with Christopher (2015): “If New Arrival children are integrated with mainstream schooling in the country of their adoption, they will achieve the high level of language competence – including appropriate vocabularies and grammar – that they will need as working adults.” (Christopher, 2015, p.115). For students learning a second language, interaction with native speakers is a significant positive factor (Verhoeven, 1987). Kotler et al. (2002) concur from an instructional viewpoint “When there is little or no contact with native speakers, the teacher’s task is greater, having to incorporate social functional language as well as more academic language” (Kotler et al., 2002, non-paginated). Moreover, Ohinata and van Ours (2013) note that migrant children may be adversely affected in acquiring language skills if taught within a large cohort of other non-native language speaking migrants (Ohinata and van Ours, 2013).

Although educational attainment is the measure employed in this paper, mainstreaming could be assessed by other measures. Research-based arguments suggest students working together in small groups in mainstream settings is beneficial for social interaction and promotes language development (Leung, 2010; Leung, 2019; Norlund, 2020). In terms of student wellbeing, immersion directly into a mainstream classroom may be beneficial for social

integration (Leung, 2007). It perhaps increases self-esteem and removes any perceived sense of difference. In contrast, it might leave some students feeling negative due to lack of linguistic proficiency (Economou, 2015).

Demie and Lewis (2018) found student achievement in London was underpinned by prioritising language support to enable students to acquire English as quickly as possible. It is therefore the level of intensity that is the key difference between an in-reach and an outreach service. Whether individual schools can compensate for the support provided by a specialised language support unit is open to question. Demie and Lewis (2018) have shown that in London within-school approaches to EAL and intensity of support do vary. Nonetheless, there is a lack of knowledge on which approach maximises EAL educational attainment (Demie and Lewis, 2018). Hence, there is a need to compare different approaches to establish their effect on EAL student attainment (Arnot et al., 2014).

Background to the case study: EAL policy for secondary schools in Glasgow

In Scotland, as noted, education is a devolved matter overseen by the Scottish Government. At the local authority level, Glasgow City Council are responsible for educational provision for the city's 30 state-funded secondary schools.²⁰ There are over 14,000 children from ethnic minority groups, and 12,500 with EAL in all educational establishments (Education Scotland, 2019). Prior to 2012, students without access to EAL support in their local school were instructed within the EAL Secondary Support Service, an educational unit that provided intensive language support to help students gain a level of capability in English before entering mainstream classes (GCC, 2011a). Between 2008-2011, 300

²⁰ The Education (Scotland) Act 1980 outlines local authorities' responsibility for educational provision (UK Government, 2020).

students were referred to the unit from secondary schools, of which 12% were short term referrals (for only one school term) (GCC, 2011b). Although the number of referrals varied between schools, 87% of secondary schools referred students during 2008-2011 (GCC, 2011b).

The central language support unit was not the sole means of EAL provision prior to 2012, full time EAL teachers were also allocated to schools by a formula based on need (GCC, 2011a). Therefore, during the period up until closure of this in-reach service some students were assisted in their local school, while others were transported across the city to the language support unit (GCC, 2011b).²¹ Although the local authority had advocated in 2008 “Support should be provided as close as possible to the community where children and young people learn and live” (GCC, 2008), by 2011, the city of Glasgow was the only local authority in Scotland with a language support in-reach service (GCC, 2011b).²² The closure of the unit was posited as principally a means of increasing EAL provision in schools (GCC, 2008; COSLA, 2011). It was also suggested increased attainment would follow (COSLA, 2011).

Since 2012, the current EAL strategy in the city of Glasgow advocates assisting students in mainstream schools at the earliest opportunity. It includes short withdrawal periods for language instruction, reducing over time depending on need and progress. The English as an Additional Language Service (EAL) has two peripatetic teams, one providing EAL support in schools without EAL teaching

²¹ A service review brought opposition to closure (GCC, 2011b). See also http://www.heraldscotland.com/news/13031433.Sturgeon_attacks_moves_to_shut_language_support_unit/

²² Also uncommon in England at that time (GCC, 2011b).

staff or increased need,²³ the other provides support for EAL students with additional support needs (Walker, n.d.). The service supports recently arrived and locally born students who use a language other than English in their home environment, whether new to English or to further develop their language skills (GCC, n.d.; GCC, 2015).

The service is presented as designed to facilitate access to the curriculum and allow more advanced students the opportunity to maximise their educational potential. It is now wholly an outreach service whereby EAL support is provided in schools, no longer in a separate educational language unit. This is the key change in policy during the period explored in this paper, which may have impacted on student outcomes.²⁴ The units operation ended during the 2010/11 academic year. Allowing an academic year for the transition, any impact on performance would be expected in the 2012/13 school year onwards.²⁵

3. The Research Question

The existing literature sheds an important light on the topic of EAL education in UK secondary schools. Nevertheless, shortcomings are evident in key studies without separate levels of English language proficiency data or temporal analysis (Strand et al., 2015); with separate levels of English language proficiency but no temporal analysis (Demie, 2013; Demie, 2018; Demie and Strand, 2006; Strand and Hessel, 2018), tracking students over time but only an

²³ "Annually, we use English Language Acquisition Level to calculate the level of English as an Additional Language (EAL) resourcing for each school that has significant numbers of children with English as an Additional Language." (GCC, 2013, p.11).

²⁴ Glasgow City Council documents are accessible online:
<https://www.glasgow.gov.uk/councillorsandcommittees/default.asp>

²⁵ The 'new to English' group were the focus as most likely to have been referred to the Secondary Bilingual Support Unit.

EAL, non-EAL language variable (Gorard and Siddiqui, 2019), longitudinal tracking acquisition of English language proficiency, but in the primary school context (Strand and Lindorff, 2020). A shift towards local stakeholder provision has placed the onus on schools and ultimately teachers (Anderson, et al., 2016; Jensen and Gidley, 2014), with the weight of legislative and policy edicts favouring a mainstreaming approach. However, whether mainstreaming is appropriate for all migrant groups is open to question (Maan et al., 2015). There is a need, identified by Arnot et al (2014) to improve understanding in a UK context how different approaches to EAL best support learning and student outcomes.

The questions explored in this paper are set against the backdrop of the challenges posed to UK education systems from increased numbers of students in secondary schools without English as their first language. They explore (a) the efficacy of mainstreaming for English language beginners in secondary school, (b) whether the positive effects of an intermediate threshold of English language proficiency seen in fixed effects analysis (see Dillon, 2020a; Dillon, 2020b) has been present over time, (c) considers the different approaches across the UK in terms of language support limited by time, and by need, through assessing the English language acquisition progress of EAL students. Specifically, across the academic years 2007/8-2015/6:

1. What has been the impact of mainstreaming on student outcomes, particularly on new to English students?
2. How consistent was student attainment in Glasgow secondary schools for all levels of English language proficiency: in particular, was 'developing

competence' a consistent threshold matching outcomes for native English language speakers at the end of compulsory schooling?

3. What is the level of English language proficiency required at the beginning of secondary school to match English as first language student outcomes at the end of compulsory schooling?

4. Data and Methods

4.1. Data and Variables

The required data was obtained from the Scottish Government. Datasets included yearly school census returns covering all stages of secondary school spanning 2007-2016 for all state funded secondary schools within Glasgow City Council boundaries. The census datasets were then linked to annual public examinations outcomes.²⁶ The examinations data is provided by Scottish Qualifications Authority (SQA)²⁷ to the Scottish Government, all other data are first collected by schools. Datasets for additional support needs (ASN) recorded by schools were also merged. The dataset comprises cross-sectional time series data. The distribution of students (N = 262,220) by years and level of English language proficiency are provided in Figure 4, in Appendix B. In Scotland, the final year of compulsory education is the fourth year of secondary school (S4). This senior phase includes an optional further two years (S5-S6) if a student chooses to remain. By S5 in each year, a proportion of students left secondary school and more so by S6, as such, S5 and S6 are subsets of the main population. Students at stages S5-S6 were included for the purpose of tracking linguistic progress only,

²⁶ No schools or students are named in the presentation of results.

²⁷ The national framework of examinations for Scottish schools is overseen by SQA (See <https://scqf.org.uk/the-framework/about-the-framework/>).

not for analysis of examination outcomes which was beyond the scope of this paper. The focus of this paper is on student outcomes at S4 (aged 15-16).

Dependent variables

Educational attainment was measured by total scores awarded in national examinations. Unstandardised scores ranged from 0 to 696 but are not directly comparable over time due to changes in points awards following the introduction of Curriculum for Excellence (CfE) across Scotland from 2013 (Shapira and Priestley, 2019). Hence, scores were standardised with a mean of zero and standard deviation of 1. Scores in all subjects combined, in English as a subject and in mathematics were measured. The all subjects combined measure included a range of subjects such as Accounting, Art and Design, English, Mathematics, Music, Modern Languages, science subjects and so forth (See SQA, n.d. for a comprehensive list). It also included English for Speakers of Other Languages (ESOL), although filtered out of the English as a subject measure.²⁸

The outcome variable 'time spent at each EAL level' used the sub-fluent EAL levels 1-4 (new to English to competent) to estimate how long students spent at each level of proficiency. This was based on levels of English language proficiency recorded annually, therefore average time spent at a level can be estimated in years and months.

Focal Explanatory variable: English language proficiency

The focal independent variable is students' level of English language proficiency. This was recorded as either new to English (NE), early acquisition

²⁸ English is the language of assessment (SQA, 2020). ESOL is part of the Scottish curriculum and examinations framework, but not in England (Anderson et al., 2016; GCC, 2015).

(EA), competent (C), developing competence (DC), or fluent (F), and coded 1-5 respectively. Students with English as a first-language (EN) were included as a control group coded as 6. Proficiency levels were obtained from annual school census returns submitted to the Scottish Government. For a more complete discussion of those categories see Dillon (2020a). Proficiency was sourced at S1 (first year of secondary schooling) and at the beginning of S4 (the final year of compulsory schooling) for different analyses. The demographic changes in the city of Glasgow's student population by English language proficiency 2007-2016, in publicly funded secondary schools are illustrated in Figure 1, in Appendix B.²⁹

Exogeneity of the key explanatory variable?

The original quantitative datasets did not indicate the process of recording proficiency, how often it was updated or the extent to which formative assessments played in determining a student's EAL level.³⁰ Therefore questions could be raised on how independent the key explanatory variable is from the outcome variable. If English language proficiency levels were recorded or updated after teachers assessed students in-class work, a correlation could imply in-class performance explains the recorded level of linguistic proficiency, rather than level of English language proficiency explaining examination outcomes. However, 2008 local authority policy documents discussed the importance of accurately assessing students' English language level and standardised procedures in Glasgow schools

²⁹ Glasgow participated in the Home Office Asylum Dispersal programme (CSMP, 2019; GCC, 2011b). As a result of immigration, Glasgow City Council assert "there are more young people arriving into secondary school who are in the early stages of learning English" (GCC, 2010, p.3). International migration has also added to the proportion of non-UK born school staff, with the highest percentage in London (ONS, 2019).

³⁰ There is no mandatory moderation process in place. The level of proficiency is a professional judgement made by school staff (ScotXed, 2016). The city of Edinburgh introduced a Profile of Competence guideline for schools, and the Bell Foundation has developed a framework to aid initial assessment and tracking of proficiency (The Bell Foundation, 2019).

(GCC, 2008). To some extent, this may provide a basis for more reliable data than found in England where historically only binary EAL status was recorded. Although proficiency levels were collected briefly in England by the Department for Education during 2016/17 to 2017/18 as a trial, it was insufficient to evaluate change over time (ONS, 2019). Teachers were asked to assess students EAL level without firm guidelines or prior systems in place. Hutchinson (2018) thus raises questions over the reliability of that data to predict educational outcomes. Therefore, as EAL proficiency data has been collected by schools over time in Glasgow, the data used in this study may be more reliable. Cohort analysis further indicated the language proficiency measure was exogenous vis-a-vis the outcome variables (See supplementary material, in Appendix C).

Control variables

Additional Support Needs (ASN) ranged from student's health or disability, family issues, social or emotional, or learning environment (See Scottish Government, 2017). In this paper, the variable indicates ASN recorded at any point during secondary school. The FSM variable similarly measured whether a student was entitled to FSMs at any point during S1-S6. Inconsistency in how ethnic groups were categorised in the original datasets, and a low count in some categories, led to construction of a six-category ethnicity variable with white-UK coded as the reference group. Student gender was included with boys coded 1 and girls coded 0.

Schools

A total of 29 schools were included in statistical analysis. Glasgow's Gaelic school was omitted as atypical. The city's sole all-girls school was included as it

contributed to the EAL sample. This was desirable as the EAL population was lower in the earlier period covered by the data. This point should be considered when interpreting the results of the gender coefficients in regression outputs. The nesting of students in schools was accounted for in a multilevel regression framework.³¹ Schools are numbered 1-29 in the presentation of results to retain anonymity. The type of school attended was differentiated by way of a dummy variable with non-denominational schools coded as 1 and denominational as 0.

School composition variables, scaled to have a mean of zero and standard deviation of 1, represented (a) the percentage of students in schools with additional support needs recorded at any point during secondary school, (b) the proportion of students entitled to FSM at any point during secondary school, and (c) the proportion of EAL students in each school. Outcomes may be influenced by not only the characteristics of individuals themselves, but also the contextual background or environment in which the individual is located (Leyland and Groenewegen, 2020). As students are nested in schools, the key advantage of multilevel modelling adopted in this paper over other statistical methods is that it provides the means to control for the effects of either contextual (school environment) or compositional (student group characteristics combined) on student outcomes.

4.2 Methods

Difference-in-differences regression model

The difference-in-differences (DiD) technique was used to estimate the effect of the shift to mainstreaming. Aggregated examination scores for two

³¹ Dillon (2020b) established approximately 9% baseline variance in student outcomes between secondary schools in Glasgow.

periods, 2009-2011 and 2014-2016, measured in (a) all subjects combined, (b) English as a subject and (c) in mathematics, were compared for new to English students versus students with English as a first language (the control group). The control group provides a benchmark to estimate the effect of policy. This approach aims to isolate the effect of mainstreaming on new to English students, represented by closure of the EAL Secondary Support Service, a move from an in-reach to an outreach service.³² Statistical models were first fitted without explanatory variables (null model) to assess the fit of the final model, in which student background characteristics were controlled for.

Model Specification

1. Difference-in-differences Null Model (No predictors)
2. Difference-in-differences Full Model (Student and school-level predictors added)

The DiD estimator here is defined as the difference in average outcome in the new to English group before and after closure of the EAL Secondary Support Service minus the difference in average outcome in the English as first language group before and after. In this respect, it represents a typical DiD model as outlined by Albouy (2004), estimated as:

$$DiD = E(Y_{2014-2016}^{NE} - Y_{2009-2011}^{NE}) - E(Y_{2014-2016}^{EN} - Y_{2009-2011}^{EN})$$

where Y_t^{NE} denote students in the new to English group and Y_t^{EN} the English as first language student group serving as a control group, and the time periods t as a dummy variable that can take two values: 2009-2011 and 2014-

³² This was the key change during the time frame. Within school provision existed prior to and after closure.

2016, E is the group average outcome. The difference-in-differences equation for the null model is written as:³³

$$Y_{ij} = \beta_{0ij} + \beta_1(groups)_{ij} + \beta_2(time)_{ij} + \beta_3(groups \times time)_{ij} + u_{0j} + \varepsilon_{ijt}$$

where Y_{ij} is the total score for student i in school j (measured separately in all subjects combined, English as a subject and mathematics); groups a dummy variable indicating group membership, time is the time dummy variable, and groups $\times$ time an interaction (the β_3 coefficient which represents the DiD and estimated effect).

$$Groups = \begin{cases} 1 & \text{if belongs to new to English students group} \\ 0 & \text{if belongs to English as first language students group} \end{cases}$$

$$Time = \begin{cases} 1 & \text{if year} = 2014 - 2016 \\ 0 & \text{if year} = 2009 - 2011 \end{cases}$$

The difference-in-differences regression equation for the full model with student-level and school-level predictors added was estimated as:³⁴

$$Y_{ij} = \beta_{0ij} + \beta_1(groups)_{ij} + \beta_2(time)_{ij} + \beta_3(groups \times time)_{ij} + \beta_4*gen_{ij} + \beta_5*ASN_{ij} + \beta_6*FSM_{ij} + \beta_7*eth_{ij} + \beta_8*sch\ type + \beta_9*sch\ ASN_j + \beta_{10}*sch\ FSM_j + \beta_{11}*sch\ EAL_j + u_{0j} + \varepsilon_{ij}$$

where Y_{ij} is the total score for student i in school j (measured separately in all subjects combined, English as a subject and mathematics), groups a dummy variable indicating group membership, time is a binary indicator that the outcome

³³ The baseline equation is in line with Sneyers and De Witte (2017).

³⁴ *Groups* (English as first language or new to English), *time* (2009-2011 or 2014-2016), *gen* (gender), *ASN* (Additional Support Needs), *FSM* (Free School Meals), *eth* (ethnicity), *sch type* (non-denominational or denominational), *sch ASN* (School composition: Additional Support Needs), *sch FSM* (School composition: Free School Meals), *sch EAL* (School composition: EAL).

measurement was made in the period either before or after, the random variable u_{0j} represents the effect of school j on attainment, and ε_{ij} is the error term for the outcome measure of student i in school j . Errors are assumed to be normally distributed with a mean of zero. The coefficient β_3 on the interaction term groups $\times$ time provides the difference-in-differences estimate and basis for inference of whether the policy intervention had a significant impact on the dependent variable, and how much impact. All other β are coefficients for predictors.

5. Results

5.1. Is there evidence of mainstreaming impacting on student outcomes?

The paper first investigates whether exam performance of the potentially most vulnerable EAL students changed in relative terms over the period, in a manner which could be attributed to the policy reform being studied, namely closure of the Secondary Bilingual Support Unit. The difference-in-differences method was employed to determine if 'new to English' student outcomes at S4 had changed over time compared to students with 'English as a first language' as a control group. Aggregated group scores for 2009-2011 and 2014-2016 represented the 'before' and 'after' measurement points respectively. This facilitated comparison of outcomes in the period when the EAL Secondary Support Service was in operation and after it was closed, with a 2 year gap to ensure a clear delineation between policy approaches. The policy effect is defined as the average effect of policy reform on 'new to English' students' total scores in all subjects combined, in English as a subject and in mathematics at S4, measured by the β_3 coefficient for the Groups*Time interaction term from the regression output (See Table 1). A 'no predictors' model provided a baseline

comparison to consider the effect of control variables on outcomes (See Table 2, in Appendix A).³⁵

Central to the difference-in-differences method is the parallel trend assumption (Abadie, 2005; Ahlfeldt, 2018). The crucial point here, is to confirm similar trends for the control and treatment groups existed prior to the reform of policy. If trends were divergent before the intervention then the underlying reasons for that divergence may well be the cause of differences found post-reform, rather than a result of policy reform. Therefore, the assumption maintains the trends of average outcomes for both groups would have been similar before and similarly continued in the absence of any intervention (Rambachan and Roth, 2019). Here, English as first language student outcomes provided a counterfactual trend assuming the EAL Secondary Support Service had not closed, detected by assessing how parallel outcomes were in the pre-test period. Visual inspection of trendlines suggested the assumption was met in English as a subject (Figure 2B) and in mathematics (Figure 2C) but potentially violated in all subjects combined (Figure 2A). This may have been due to outliers, the examination choices made by students in non-compulsory subjects each year, or comparatively low sample size for new to English students. The potential violation therefore requires caution when interpreting results for all subjects combined measure. Although not implemented in this paper, Rambachan and Roth (2019) suggest alternative robust inference methods. The authors suggest the assumption can be relaxed if it does not hold in applied settings when findings are still of interest. Bilinski and Hatfield (2019) present an alternative to specifically address complex differences between group trends, while Kahn-Lang and Lang (2018) suggest logical

³⁵ See Pedraja-Chaparro et al (2016) for an educational study in the context of integration.

reasoning should consider differences in group characteristics which may have also influenced earlier trends. Such group characteristics may be in this case a lack of choice of subjects available to new to English students due to their lack of English language proficiency, thereby limiting their opportunity to pick up points in the 'all subjects' combined measure.

Difference-in-differences estimates

The β_3 coefficient for the Groups*Time interaction term was statistically nonsignificant in mathematics null model (0.02, $p = 0.92$) and full model (-0.03, $p = 0.863$); also, in all subjects combined null model (-0.02, $p = 0.881$) and full model (0.00, $p = 0.982$). In English as a subject, a statistically significant negative coefficient in both the null model (-0.49, $p = 0.02$) and full model (-0.54, $p = 0.009$) for the interaction indicated 'new to English' scores had decreased compared to 'English as a first language' student scores when measured between the two time points. The change in the β_3 coefficient from null to fitted model indicates that the introduction of control variables increased the strength of the negative effect, adding to the size of the β_3 coefficient and increasing the statistical significance of the interaction term.

The significance of the interaction term in English (illustrated in Figure 1B) but not mathematics (Figure 1C) or all subjects combined (Figure 1A), may be indicating that competence in English as a subject requires more than rudimentary proficiency in the English language. Linguistic skills are less fundamental to competency in mathematics. Discriminant validity in the association between language proficiency and outcome measures was also reflected in the ICC and between school variance. The results in Table 1 suggested differences between

schools decreased across the outcome measures from all subjects (7%) to English as a subject (6%), to mathematics (3%). English as a subject emerged as a more sensitive measure to change in new to English student performance than any other academic subject.

The effects of control variables

There was a small advantage in predicted scores for girls in English as a subject. Not having additional support needs (ASN) or free school meal (FSM) entitlement had a positive effect on scores across all three outcome measures. Level-2 school composition variables had a statistically significant effect on the all subjects measure: School ASN (0.19, $p = 0.002$), School FSM (-0.13, $p = 0.018$) and School EAL (-0.16, $p = 0.011$), but with no bearing on English as a subject or mathematics. The effects of ethnicity were mixed. Although differences were evident in all subjects combined compared to the benchmark (white-UK students), in the key subjects of English and mathematics only African or Caribbean ethnicity had a statistically significant positive effect in English as a subject (0.21, $p = 0.031$). In contrast, only Chinese students had a statistically significant positive effect in mathematics scores (0.54, $p = 0.004$). There were no statistically significant differences by school type in any outcome measure.

Table 1: DiD Parameter Estimates for New to English and English as First Language Student Groups for 2009-2011 and 2014-2016 at S4

Parameter	<u>All subjects</u>		<u>English</u>		<u>Mathematics</u>	
	Est.	SE	Est.	SE	Est.	SE
Intercept	-1.26***	0.12	-0.82***	0.15	-0.41**	0.13
Groups: EN students ^a	0.73***	0.10	0.51***	0.13	0.13	0.12
Time: 2009-2011	-0.04	0.16	0.50*	0.21	-0.00	0.18
Groups*Time [DiD]	0.00	0.16	-0.54**	0.21	-0.03	0.18
Student-level						
Girls	0.09***	0.01	0.12***	0.01	0.00	0.01
No ASN	0.28***	0.02	0.18***	0.02	0.21***	0.02
No FSM	0.29***	0.01	0.17***	0.01	0.20***	0.01
African or Caribbean	0.27**	0.09	0.21*	0.10	0.08	0.10
Asian	0.10	0.08	-0.10	0.08	-0.03	0.09
Chinese	0.47**	0.18	-0.09	0.20	0.54**	0.19
White-Other	-0.13*	0.05	0.05	0.06	-0.08	0.06
Other-Ethnicity	-0.05	0.04	-0.04	0.04	0.00	0.04
Denominational School	0.15	0.11	0.08	0.10	0.03	0.07
School-level						
School ASN	0.19**	0.06	0.03	0.05	-0.00	0.04
School FSM	-0.13*	0.05	-0.03	0.05	-0.03	0.04
School EAL	-0.16*	0.06	-0.11	0.06	0.03	0.04
Goodness of fit						
-2 Log Likelihood	61583		58732		54664	
Variance						
ICC	0.93		0.94		0.97	
Between Schools Variance	7%		6%		3%	

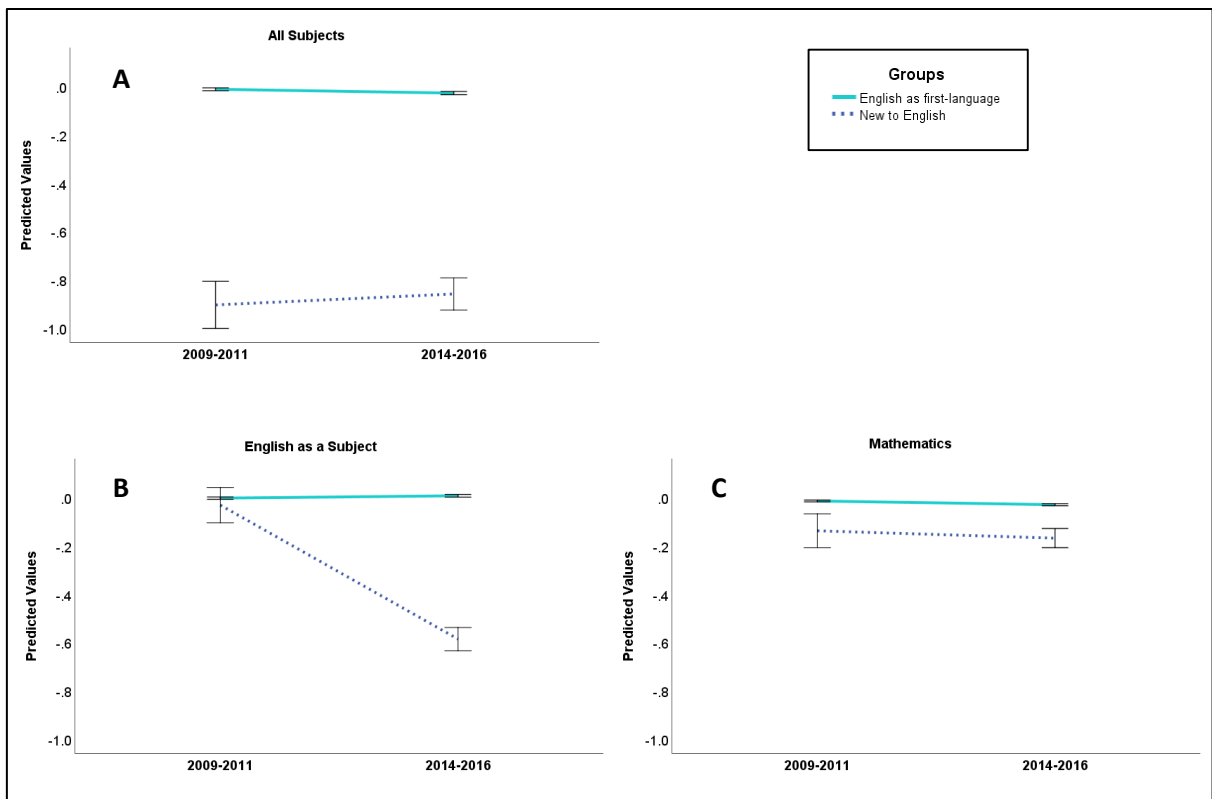
*p < .05. **p < .01. ***p < .001.

a. EN represents the control group as English as first language students.

Note. Ethnicity reference white-UK.

Note. All subjects, N = 37,448; English as a subject, N = 34,841; Mathematics, N = 33,598.

Figure 1: Predicted Values from Difference-in-Differences Model (explanatory variables added)



Note. Error bars: 95% CI

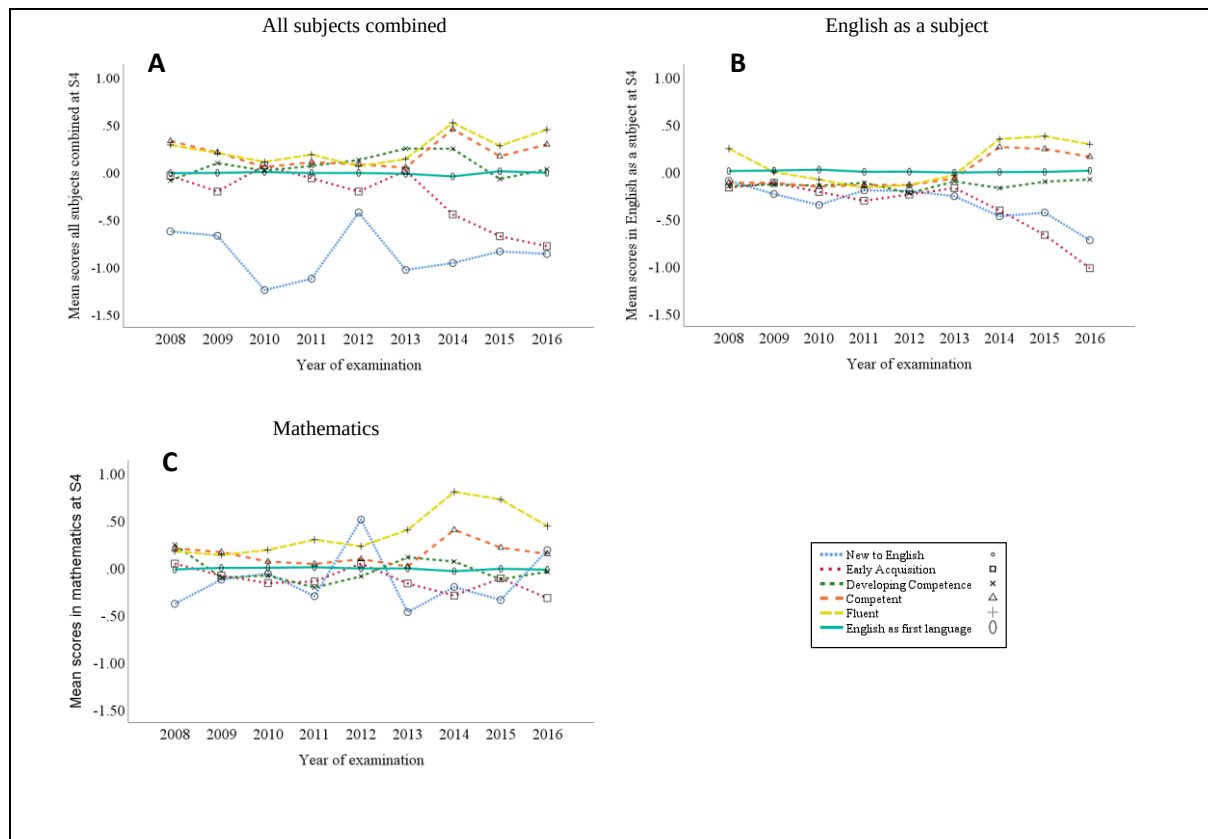
5.2. How consistent was attainment by level of English language proficiency in Glasgow secondary schools?

Examination results 2008-2016 were compared differentiated by students' level of English language proficiency. The analysis was based on mean scores net of the effects of control variables. As indicated in Figure 2, mean scores for the benchmark group (English as first language students) were consistent over time. Three distinct patterns emerged: students at the level of 'competent' and 'fluent' had similar outcomes to each other, as did 'developing competence' and 'English as a first language' students, and so did 'new to English' and 'early acquisition' which held across all three outcome measures. New to English students displayed

the largest fluctuation in scores, and together with early acquisition were consistently the lowest across all measures.

Was Developing Competence a consistent level of proficiency matching English as first language student outcomes over time?

The results in Figure 2 confirmed developing competence in the English language was a key threshold. Scores for students at that threshold remained close to English as first language student mean scores across all three attainment measures. Although, discriminant validity emerged, in that developing competence outcomes were slightly below English as a first language students in English as a subject (Figure 2B), matched in mathematics (Figure 2C) and above in all subjects combined (Figure 2A). The EAL levels of competent and fluent were consistently above English as first language students in all subjects combined and mathematics. A gap opened between fluent and English as first language students during 2014-2016.

Figure 2: Mean scores at S4 (2008-2016) by English language proficiency at S4

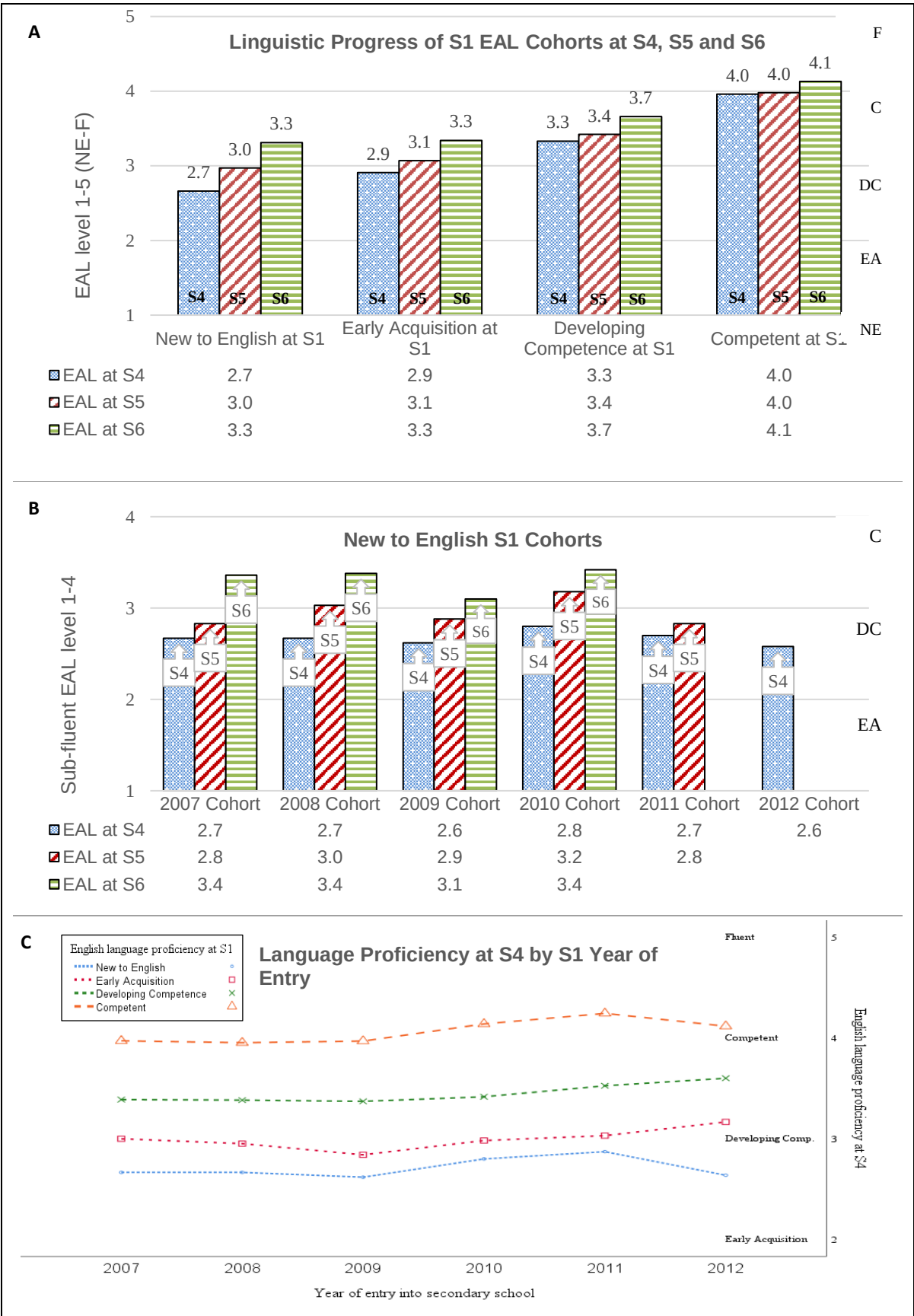
5.3. What entry level of English language proficiency at S1 is required to match English as first language student outcomes at S4?

Now the paper explores if students who entered secondary school at S1 new to English could reach the level of developing competence by S4. Cohorts by year of entry into S1 were aggregated by EAL level, then compared with average EAL level at S4, S5 and where applicable at S6. The availability of 10 years census data allowed six cohorts to be tracked from S1 to S4, five to S5 and four to S6. The results confirmed students spent increasingly longer at each stage as they moved towards full proficiency. For example, the transition from new to English to early acquisition was shorter than the transition from competent to fluent (net of explanatory variables) as indicated in Figure 3A.

Can students new to English at S1 catch English as first language students by S4?

Figure 3A shows students progressed from level 1 (new to English) to just over halfway to level 3 (developing competence) by S4, on average reaching level 3 by S5. The addition of a further year at S6 did not greatly increase proficiency. These results suggest that most new to English students arriving at S1 need to remain until S5 to reach developing competence, thus requiring up to 5 years. Early acquisition students struggled to reach developing competence by S4, although they were closer to the developing competence threshold than new to English S1 cohorts. Figure 3B and 3C confirm the results were mostly consistent during 2007-2012. The results suggest that the entry threshold of English language proficiency required at the beginning of secondary school to match English as first language student outcomes by the end of compulsory schooling at S4 for most students needs to be above beginner level.

Figure 3: S1 Cohorts English as an additional language progress



6. Discussion

International migration to the UK has been accompanied by social discord and the politicisation of integration (Christopher, 2015; Jensen and Gidley, 2014). Immigration has increased the number of students who do not have English as their first language (Flynn & Curdt-Christiansen, 2018), brought policy challenges for and put pressure on the UK's education systems (Anderson et al., 2016). This paper has sought to understand (a) the effect of direct enrolment of EAL students into mainstream versus separate educational language instruction units on educational attainment, (b) the consistency of outcomes over time, and (c) the level of English language proficiency required at the beginning of secondary school to match native English language speakers' outcomes by the end of compulsory schooling.

The Impact of mainstreaming: a negative impact of outreach only on 'new to English' students in English as a subject?

Aside from the matter of equality, the policy of mainstreaming has merits. Migrant children's acquisition of language skills may be impeded if instructed within a cohort of non-native language speaking migrants (Ohinata and van Ours, 2013). Interaction with native speakers is a significant positive factor for students learning a second language (Verhoeven, 1987), which reduces the burden on teachers having to incorporate social as well as academic language, grammar, and vocabulary (Christopher, 2015; Kotler et al., 2002).

The OECD assert that educational outcomes are improved when non-native language speaking students are integrated immediately into mainstream education rather than first taught separately (OECD, 2015). However, this paper

found no evidence to support the OECD assertion. That only 'new to English' but no other English language proficiency levels showed a decline in scores over time following closure of the EAL Secondary Support Service is highly suggestive of a negative impact of policy reform on English language beginners. The key policy difference during the period assessed was the move from in-reach service (with support in some schools), to exclusively an outreach (in-school) only service. As in-reach was based on intensive language support, the results lend credence to Demie and Lewis (2018) that achievement is underpinned by prioritising language support to enable students to acquire English as quickly as possible.³⁶

Maan et al (2015) have inferred mainstreaming may not be the most appropriate course for all migrant groups. Leung (2016) too has noted, mainstreaming is a popular and established policy in education, yet contradictions within the education system due to demographic changes mean that EAL policy should be open to alternatives. The results here suggest that for English as a subject a re-evaluation is warranted on the merits of initial mainstreaming of new to English students, admittedly at the cost of exposure to native English speaking role models. If provision varies across schools in the level and intensity of support, then a uniformity of provision would be more equitable for those at risk of low academic outcomes. For late arrivals to secondary school who are beginners in the English language, a separate unit with uniform provision may be more appropriate.

Performance of English as first language students

³⁶ Intensive support for low proficiency late arrivals concurs with Hutchinson (2018).

Another notable finding was that 'English as a first language' students had underperformed compared to 'competent' and 'fluent' EAL students, despite the inclusion of individual and school-level controls. However, this is consistent with the findings of Dillon (2020a) in Glasgow secondary schools, and Strand and Hessel (2018) in England. There might be an underlying motivational factor that explains such differences derived from ethnicity or an immigration background. Immigrant students could have a higher motivation to succeed than non-immigrant students, suggested by Gates and Guo (2014) study of Chinese students, and Burgess (2014) who looked at the performance of ethnic minority groups who attained higher than white British students. Bilingualism too may have a part to play. Fluent and students approaching fluency are found to outperform English as first language students in the literature (Demie and Lewis, 2018; Demie and Strand, 2006). Native English language students are not a homogenous group and exposed to the established associations which negatively impact on educational outcomes, they will likely also exhibit a range of prowess in English.

Resilience of the system

The attainment trends for students with English as a first language were consistent over time. Therefore, no evidence arose of any negative impact on the educational performance of native English language speakers of increasing numbers of non-native English language speakers in mainstream classrooms. Similarly, that the performance of new to English students in the latter period (2014-2016) had not deteriorated in all subjects combined or in mathematics is also a positive result in the context of increased numbers of students requiring language support. Likewise, intermediate to advanced student outcomes were

consistent over time. It is however lower level language proficiency students who appeared to be negatively impacted in English as a subject.

Threshold of proficiency: The importance of 'developing competence'

The advantage versus disadvantage for EAL students compared to their English as a first language peers has consistently over time depended on whether they were above or below the 'developing competence' threshold. The results are consistent with fixed effects regression conducted by Dillon (2020a) and multilevel analysis of Glasgow secondary schools (Dillon, 2020b). Consequently, how long it takes to reach that level of proficiency and support to enable students to do so is a central policy concern.

Language support must not be time bound

The findings are in line with Strand and Lindorff (2020), who conclude that 3 years support is inadequate in analyses of primary school EAL students, using national data from Wales. Although there may be differences in the rate of acquisition across educational contexts, in London Demie (2013) estimates 1.5 and 2.1 years are the average times spent at the first two EAL levels, concurs with Strand & Lindorff (2020) using Welsh primary school data of 3.7 years combined. Thus, EAL support must be by level of proficiency need, not time bound.

A higher entry threshold than 'new to English' at S1 is required to catch native English language students by age 15-16

Entering secondary school 'new to the English language' is a major impediment to academic success. The window of opportunity to reduce the potential for educational disadvantage for 'new to English' students narrow for

those entering secondary school at a later stage than S1.³⁷ The findings suggest this is not unsurmountable for some students arriving at S1, it is however for most a challenge to reach the threshold by S4 and subsequently match native English speakers' outcomes. Students 'new to English' at S4 face the greatest risk of educational inequality.

Suggestions for further research

This study raises questions about the life chances of students without full command of the English language. Where EAL students exit to following compulsory education, and how those outcomes may be determined by level of English language proficiency is absent from the literature. Thus, there is a need to explore the association between level of English language proficiency and destinations of school leavers,³⁸ explored in a subsequent paper (See Dillon, 2020c).

7. Conclusion and implications

In sum, this study provides a picture of EAL student outcomes over time, thus improving knowledge of EAL education and the integration of new to English students, presented against the policy backdrop of mainstreaming. The present findings highlight (a) a separate language support unit may have a positive effect on the educational outcomes of new to English students; (b) the importance of the EAL level of 'developing competence' as a consistent threshold for student outcomes over time; (c) more than three years support is required to reach the key

³⁷ Influences on rate of language acquisition were beyond the scope of this paper. Other studies suggest support at home and differences by gender (Araujo and Dinis Da Acosta, 2013; Butler, 2014), and school composition (Strand & Lindorff, 2020).

³⁸ See Scottish Government (2018).

threshold, with a higher level of English language proficiency than new to English at S1 needed to match native English language speakers' outcomes at the end of compulsory schooling. The findings are consistent with Dillon (2020a) in terms of the significance of the threshold, and with Strand and Lindorff (2020) that three years language support is inadequate. However, they contradict the OECD (2015) assertion educational outcomes are improved when non-native language speaking students are integrated immediately into mainstream education, rather than initially instructed separately (OECD, 2015), and the Department for Education's assertion 3 years language support is adequate (DfE, 2012). No evidence was found of an impact of increased EAL student population on English as first language student educational outcomes, consistent with the current UK literature (Strand, 2016). No evidence was detected of mainstreaming benefiting academic achievement, on the contrary the analysis suggests mainstreaming may not benefit 'new to English' students in English as a subject. Consequently, in the case of Glasgow secondary schools, mainstreaming could be presented explicitly as a normative policy approach rather than presented as promoting better educational outcomes for all.³⁹

Although this was a case study of Scotland's largest city, which may be distinct from other cities and has a different educational context than in England, mainstreaming is an established UK wide policy approach. Therefore, these findings are relevant for EAL education across the UK. The implications for policy are beginners need more help in English as a subject than in mathematics. Cohort analysis showed 'new to English' students on average are at best developing competence level by S4 (approximate to Key Stage 4 in England). Policy

³⁹ For support for new arrivals into Scottish secondary schools, see McKinney et al. (2015).

supportive to this threshold would optimise EAL student outcomes. The Department for Education (DfE) however asserts that 3 years of EAL support is adequate for secondary school students in England (DfE, 2012). The key difference in policy over time was the move from in-reach to exclusively an outreach (in-school) service. The implication of a large negative effect in English as a subject for 'new to English' students compared to English as first language students, for some late arrival students with low proficiency in the English language, is that (leaving cost implications aside) separate educational units may be more effective.⁴⁰

References

- Albouy, D. (2004) Program evaluation and the difference in difference estimator. *Economics*, 131, 1-4.
- Anderson, C., Foley, Y., Sangster, P., Edwards, V. and Rassool, N. (2016) *Policy, Pedagogy and Pupil Perceptions: EAL in Scotland and England*. Cambridge, UK: University of Edinburgh and The Bell Foundation.
- Annot, M., Schneider, C., Evans, M., Lieu, Y., Welply, O., & Davies-Tutt, D. (2014). *School approaches to the education of EAL students: Language development, social integration and achievement*. Cambridge: The Bell Educational Trust Ltd.
- Araujo, L. and Dinis Da Acosta, P. (2013) *The European Survey on Language Competences: School-internal and External Factors in Language Learning*.

⁴⁰ Costs may be higher for new arrival EAL secondary school students compared to primary school (DfE, 2012).

European Commission Joint Research Centre. Institute for the Protection and Security of the Citizen. Luxembourg: Publications Office of the European Union.

Berry, J. W. (2011) Integration and Multiculturalism: Ways towards Social Solidarity. *Papers on Social Representations*, Volume 20, pages 2.1-2.21

Bilinski, A. and Hatfield, L. A. (2019) *Nothing to see here? Non-inferiority approaches to parallel trends and other model assumptions*. Online Available: <https://arxiv.org/pdf/1805.03273.pdf> [Accessed: 11 July 2020]

Butler, Y. (2014) Parental factors and early English education as a foreign language: A case study in Mainland China. *Research Papers in Education*, 29(4), 410-437.

Christopher, E. (2015) (ed.) *International Management and Intercultural Communication: A Collection of Case Studies*. Basingstoke: Palgrave Macmillan.

COSLA. (2011) *Glasgow City Council: EAL Service – supporting children and young people*. The COSLA Excellence Awards [Online] Available: <http://awards.cosla.gov.uk/2011/03/bronze-awards-category-5-%E2%80%93-excellence-in-adversity/> [Accessed: 4th Mar 2015].

Costley, T. (2014) English as an additional language, policy and the teaching and learning of English in England, *Language and Education*, 28:3, 276-292, DOI: 10.1080/09500782.2013.836215

- CRE. (1986) *Teaching English as a Second Language: Report of a Formal Investigation in Calderdale Local Education Authority*. London: Commission for Racial Equality.
- CSMP. (2019) *Asylum Dispersal*. COSLA Strategic Migration Partnership (CSMP). Online Available: <http://www.migrationscotland.org.uk/our-priorities/current-work/asylum-dispersal> [Accessed: 13 May 2020]
- Demie, F. (2013). English as an additional language pupils: how long does it take to acquire English fluency? *Language and Education*, 27:1, 59-69. 10.1080/09500782.2012.682580
- Demie, F. (2018) English language proficiency and attainment of EAL (English as second language) pupils in England. *Journal of Multilingual and Multicultural Development*, 1-13. 10.1080/01434632.2017.1420658
- Demie, F., & Lewis, K. (2018) Raising achievement of English as additional language pupils in schools: Implications for policy and practice. *Educational Review*, 70(4), 427-446. 10.1080/00131911.2017.1344190
- Demie, F., & Strand, S. (2006) English language acquisition and educational attainment at the end of secondary school. *Educational Studies*, 32(2), 215-231. 10.1080/03055690600631119
- DfE. (2012) *School funding reform: Arrangements for 2013-14*. Department for Education
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/244364/school_funding_reform_-_final_2013-14_arrangements.pdf

Dillon, S. (2020a) The Positive Association Between English Language Proficiency and Educational Attainment: A Fixed Effects Multiple Regression Model. [Unpublished Paper 1 of DPhil Thesis].

Dillon, S. (2020b) English Language Proficiency & Secondary School Attainment: A Multilevel Regression Model. [Unpublished Paper 2 of DPhil Thesis].

Dillon, S. (2020c) The association between English language proficiency and school leaver destinations: A multinomial logistic regression model. [Unpublished Paper 3 of DPhil Thesis].

Education Scotland. (2019) *Inspection of local authorities How well is Glasgow City Council improving learning, raising attainment and closing the poverty-related attainment gap?* Education Scotland. Online Available: <https://www.glasgow.gov.uk/CHttpHandler.ashx?id=44550&p=0> [Accessed: 18 May 2020]

Evans, M. & Liu, Y. (2018). The Unfamiliar and the Indeterminate: Language, Identity and Social Integration in the School Experience of Newly-Arrived Migrant Children in England, *Journal of Language, Identity & Education*, 17:3, 152-167, DOI: 10.1080/15348458.2018.1433043

Evans, M., Schneider, C., Arnot, M., Fisher, L., Forbes, K., Hu, Mei. and Liu, Y. (2016) *Language development and school achievement Opportunities and challenges in the education of EAL students*. Executive Summary. Cambridge: The Bell Educational Trust.

Farrell, P., Dyson, A., Polat, F., Hutcheson, G., & Gallannaugh, F. (2007) SEN inclusion and pupil achievement in English schools. *Journal of Research in Special Educational Needs*, 7(3), 172-178.

- Flynn, N. & Curdt-Christiansen, X, L. (2018) Intentions versus enactment: making sense of policy and practice for teaching English as an additional language, *Language and Education*, 32:5, 410-427, DOI: 10.1080/09500782.2018.1475484
- Foley, Y., Sangster, P., & Anderson, C. (2013). Examining EAL policy and practice in mainstream schools. *Language and Education*, 27(3), 191-206. 10.1080/09500782.2012.687747
- Gates, P. and Guo, X. (2014) How British-Chinese parents support their children: a view from the regions, *Educational Review*, 66:2, 168-191, DOI: 10.1080/00131911.2013.768958
- GCC. (n.d.) English as an Additional Language Service (EAL). Glasgow City Council. Online Available: <https://www.glasgow.gov.uk/index.aspx?articleid=17860> [Accessed: 18 May 2020].
- GCC. (2008) Supporting Learners with English as an Additional Language in Glasgow. Glasgow City Council: Education Services
- GCC. (2010) English for Speakers of other Languages: Policy for Glasgow schools. Glasgow: Glasgow City Council. <http://www.glasgow.gov.uk/CHttpHandler.ashx?id=12204>
- GCC. (2011a) Consultation on the Proposed Reconfiguration of English as an Additional Language Service. Glasgow City Council. Online Available: <https://www.glasgow.gov.uk/councillorsandcommittees/viewSelectedDocument.asp?c=P62AFQZLNT2UDN2U> [Accessed: 21 May 2020]

- GCC. (2011b) *Children and Families Policy Development Committee*. Report by Executive Director of Education. Glasgow City Council. Online Available: <http://www.glasgow.gov.uk/Councillorsandcommittees/viewSelectedDocument.asp?c=P62AFQZ3T12UUTNT> [Accessed: 12 May 2020]
- GCC. (2013) Equality Mainstreaming Report. Glasgow City Council. Online Available: <https://www.glasgow.gov.uk/councillorsandcommittees/viewDoc.asp?c=P62AFQ818181ZLZ3> [Accessed: 21 May 2020]
- GCC. (2015) Equality Progress Report 2015: Mainstreaming Equality in Service Delivery and Progress towards the Equality Outcomes. Glasgow City Council. Online Available: <https://www.glasgow.gov.uk/councillorsandcommittees/viewSelectedDocument.asp?c=P62AFQUTNTDX2UUT> [Accessed: 21 May 2020]
- Geay, C., McNally, S. and Telhaj, S. (2013) Non-native Speakers of English in the Classroom: What Are the Effects on Pupil Performance? *Econ J*, 123: F281-F307. doi:10.1111/ecoj.12054
- Gorard, S. and Siddiqui, N. (2019) 'How trajectories of disadvantage help explain school attainment.', *SAGE open.*, 9 (1). pp. 1-14.
- Hammond, C. (2018) *New Scots 2 – Engagement analysis of the New Scots Refugee Integration Strategy 2018 to 2022*. The Scottish Government: Edinburgh.
- Hancock, A. (2014) Language education policy in multilingual Scotland: Opportunities, imbalances and debates. *Language Problems and Language Planning*, Volume 38, Issue 2, p. 167 – 191.

Humphrey, N. and Lewis, S. (2008) What does 'inclusion' mean for pupils on the autistic spectrum in mainstream secondary schools? *Journal of Research in Special Educational Needs*, Vol 8(3), 132–140.

Hutchinson, J. (2018) *Educational Outcomes of Children with English as an Additional Language*. The Bell Foundation and Education Policy Institute. [Online] Available: https://epi.org.uk/wp-content/uploads/2018/02/EAL_Educational-Outcomes_EPI-1.pdf [Accessed: 1 Dec 2019].

Jensen, O. and Gidley, B. (2014) *The Politics of Mainstreaming Immigrant Integration Policies: Case study of the United Kingdom*. Center on Migration, Policy and Society (COMPAS): University of Oxford.

Kahn-Lang, A. and Lang, K. (2018) The Promise and Pitfalls of Differences-in-Differences: Reflections on 16 and Pregnant and Other Applications, *Journal of Business & Economic Statistics*, 38:3, 613-620, DOI: 10.1080/07350015.2018.1546591

Keller-Russell, I. (2012) Reflections on a European School Partnership and on a Model for Intercultural Schools: A Practice Report on “Young European Citizens: An Intercultural Dialogue between European Pupils” and Analysis of Results with Respect to Integrative Education. In: Palaiologou, N., & Dietz, G. *Mapping the Broad Field of Multicultural and Intercultural Education Worldwide: Towards the Development of a New Citizen*. Newcastle upon Tyne: Cambridge Scholars.

- Kenner, C., Gregory, E., Ruby, M. & Al-Azami, S. (2008) Bilingual Learning for Second and Third Generation Children, *Language, Culture and Curriculum*, 21:2, 120-137, DOI: 10.1080/07908310802287483
- Kotler, A., Authority, B. L. E., Wegerif, R., & LeVoi, M. (2002). Oracy and the educational achievement of bi-lingual pupils: The impact of bringing 'Talking Partners' into Bradford Schools. *Journal of Bilingual Education and Bilingualism*. Vol, 4, 1367-0050.
- Leung, C. (2005) English as an additional language policy: Issues of inclusive access and language learning in the mainstream. *Prospect*, Vol.20, No.1, p.95-113.
- Leung C. (2007) Integrating School-Aged ESL Learners into the Mainstream Curriculum. In: Cummins J., Davison C. (eds) *International Handbook of English Language Teaching*. Springer International Handbooks of Education, vol 15. Springer, Boston, MA.
- Leung, C. (2010) Communicative language teaching: principles and interpretations. In: Leung C, and Creese, A. (eds) *English as an additional language: approaches to teaching linguistic minority students*. London: Sage.
- Leung, C. (2016) English as an additional language – a genealogy of language-in-education policies and reflections on research trajectories. *Language and Education*, 30(2), 158-174. 10.1080/09500782.2015.1103260
- Leung, C. (2019) English as an Additional Language: Integrating School-Aged Learners into Mainstream Curriculum. In: Gao X. (eds) *Second Handbook*

of English Language Teaching. Springer International Handbooks of Education. Springer, Cham.

Leyland A.H., Groenewegen P.P. (2020) Context, Composition and How Their Influences Vary. In: *Multilevel Modelling for Public Health and Health Services Research*. Springer, Cham.

McDermott (2008) Acquisition, Loss or Multiculturalism? Educational Planning for Speakers of Migrant Community Languages in Northern Ireland. *Current Issues in Language Planning*, 9:4, 483-500

McKinney, S., McAdam, J., Britton, A., Crichton, H. and Arizpe, E. Christopher, E. (2015) Managing the Learning of New Arrival Children. In: E. Christopher (ed.), *International Management and Intercultural Communication: A Collection of Case Studies*. Basingstoke: Palgrave Macmillan.

Maan, X., van Breugel, I. and Scholten, P. (2015) *The Politics of Mainstreaming: A comparative analysis of migrant integration governance in Europe*. UPSTREAM Report. Rotterdam: Erasmus University.

NALDIC. (2015) *EAL service directory: Local EAL services which can provide EAL information and support*. National Association for Language Development in the Curriculum. Online Available: <http://www.naldic.org.uk/research-and-information/ealservicesites/> [Accessed: 18 May 2020]

Norlund, A. (2020) Fiction reading in a practice where L1 and L2 learners are taught together, *Pedagogy, Culture & Society*, 28:2, 261-279, DOI: 10.1080/14681366.2019.1631208

OECD. (2015) *Helping immigrant students to succeed at school – and beyond*.

OECD: [Online] <http://www.oecd.org/education/Helping-immigrant-students-to-succeed-at-school-and-beyond.pdf>

Ohinata, A., & Van Ours, J. C. (2013). How immigrant children affect the academic achievement of native Dutch children. *The Economic Journal*, 123(570), F308-F331.

ONS. (2019) *International migration and the education sector – what does the current evidence show?* Office For National Statistics [Online] Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/articles/internationalmigrationandtheeducationsectorwhatdoesthecurrentevidenceshow/2019-05-03> [Accessed: 1 Dec 2019].

Pedraja-Chaparro, F., Santín, D. and Simancas, R. (2016) The impact of immigrant concentration in schools on grade retention in Spain: a difference-in-differences approach, *Applied Economics*, 48:21, 1978-1990, DOI: 10.1080/00036846.2015.1111989

Pirrie, A. Head, G. and Brna, P. (2005) Mainstreaming Pupils with Special Educational Needs: an evaluation. Scottish Executive.
<https://dera.ioe.ac.uk/5907/1/0021334.pdf>

Punch, K. F., & Oancea, A. (2014). *Introduction to research methods in education*. Thousand Oaks: Sage.

Rambachan, A. and Roth, J. (2019) *An Honest Approach to Parallel Trends*. Job Market Paper. Harvard University, Department of Economics. Online Available:

https://scholar.harvard.edu/files/jroth/files/roth_jmp_honestparallelrends_main.pdf [Accessed: 11 July 2020]

Safford, K., and R. Drury. (2013) The 'problem' of bilingual children in educational settings: policy and research in England, *Language and Education*, 27:1, 70-81, DOI: 10.1080/09500782.2012.685177

Scottish Government. (2017) Supporting Children's Learning: Statutory Guidance on the Education (Additional Support for Learning) Scotland Act 2004 (as amended), Code of Practice (Third Edition). Edinburgh: Scottish Government.

Scottish Government. (2018) *Initial Destinations of Senior Phase School Leavers*. No. 2: 2018 Edition. Edinburgh: Scottish Government.

Scottish Parliament. (2014) *EDUCATION AND CULTURE COMMITTEE 25th Meeting 2014, Session 4*. Edinburgh: Scottish Parliament.

ScotXed. (2016) *Data Collection Documentation: School and Pupil Census*. Education Analytical Services Division. Edinburgh: Scottish Government.

Shapira, M. & Priestley, M. (2019) Do schools matter? An exploration of the determinants of lower secondary school subject choices under the Scottish Curriculum for Excellence. *Review of Education*.
<https://doi.org/10.1002/rev3.3180>

Simon P., Beaujeu M. (2018) Mainstreaming and Redefining the Immigrant Integration Debate in Old Migration Countries: A Case Study of France, the UK and the Netherlands. In: Scholten P., and van Breugel I. (eds) *Mainstreaming Integration Governance*. Palgrave Macmillan, Cham.

Sneyers, E. and De Witte, K. (2017) The effect of an academic dismissal policy on dropout, graduation rates and student satisfaction. Evidence from the Netherlands, *Studies in Higher Education*, 42:2, 354-389.

Song, S. (2017) Multiculturalism. In: *The Stanford Encyclopedia of Philosophy* (Spring 2017 Edition), Edward N. Zalta (ed.).
<https://plato.stanford.edu/archives/spr2017/entries/multiculturalism/>

SQA. (n.d.) *National Qualifications subjects*. The Scottish Qualifications Authority (SQA). Online Available: <https://www.sqa.org.uk/sqa/45625.3728.html>
[Accessed 11 July 2020]

SQA. (2020) *Use of a bilingual dictionary for candidates who have English as an additional language*. The Scottish Qualifications Authority (SQA). Online Available: https://www.sqa.org.uk/sqa/files_ccc/bilingual-dictionary-eal.pdf
[Accessed 12 May 2020]

Strand, S. and Hessel, A. (2018) *English as an additional language, proficiency in English and pupils' educational achievement: An analysis of Local Authority data*. London: Bell Foundation.

Strand, S. & Lindorff, A. (2020) *English as an Additional Language: Proficiency in English, educational achievement and rate of progression in English language learning*. Oxford: Department of Education.

Strand, S., Malmberg, L., & Hall, J. (2015). *English as an additional language and educational achievement in England: An analysis of the national pupil database*. London: Educational Endowment Fund.

The Bell Foundation. (2019) EAL Assessment Framework. [Online] Available:

<https://www.bell-foundation.org.uk/eal-programme/teaching-resources/eal-assessment-framework/> [Accessed: 1 Dec 2019].

The Swann Report. (1985) *Education for all, Report of the Committee of Enquiry into the Education of Children from Ethnic Minority Groups*. Crown copyright. [Online] Available:

<http://www.educationengland.org.uk/documents/swann/swann1985.html> [Accessed: 1 Dec 2019].

Tikly, L. Osler, A. and Hill, J. (2005) The ethnic minority achievement grant: a critical analysis, *Journal of Education Policy*, 20:3, 283-312, DOI: 10.1080/02680930500108619

UK Government. (2020) Education (Scotland) Act 1980. [Online] Available:

<http://www.legislation.gov.uk/ukpga/1980/44/contents> [Accessed: 11 Jan 2020].

Verhoeven, L. T. (1987). Literacy in a second language context: Teaching immigrant children to read. *Educational Review*, 39(3), 245-261.

10.1080/0013191870390306

Walker, M. (n.d.) EAL Service. Glasgow City Council. Online Available:

<https://www.scilt.org.uk/Portals/24/2.7%20Maria%20Walker.pdf> [Accessed: 18 May 2020].

Woodcock, S. and Hitches, E. (2017) Potential or problem? An investigation of secondary school teachers' attributions of the educational outcomes of students with specific learning difficulties. *Ann. of Dyslexia* 67, 299–317.

Appendix A

Table 2: Parameter Estimates for Model 1 (No Predictors) at S4

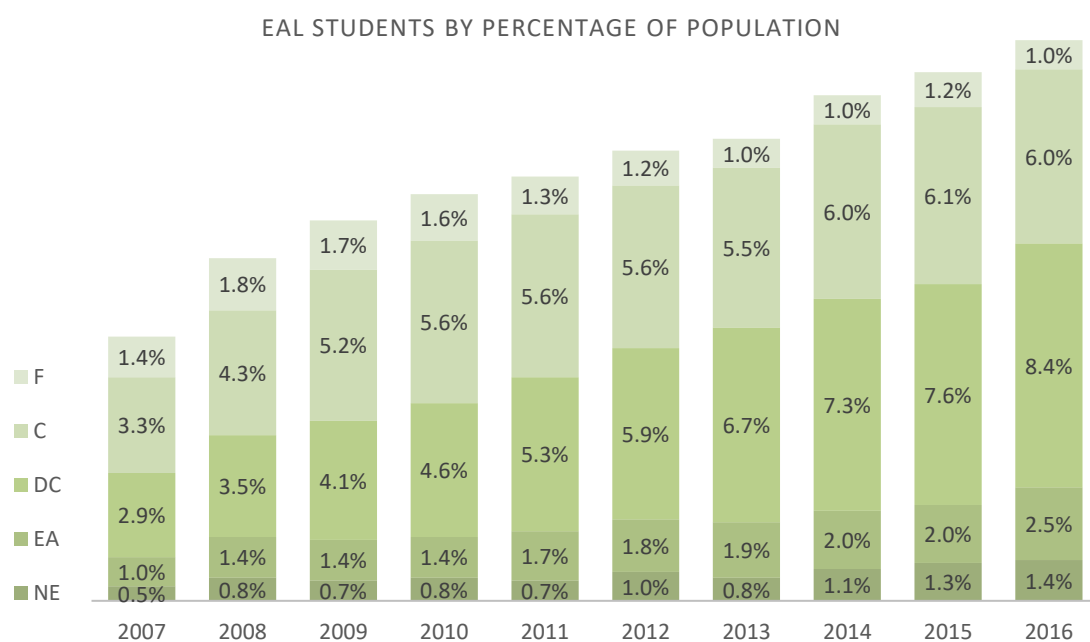
Parameter	All subjects		English		Mathematics	
	Est.	SE	Est.	SE	Est.	SE
Intercept	-0.859***	0.11	-0.499***	0.14	-0.144	0.12
Groups: EN students	0.798***	0.09	0.487***	0.13	0.119	0.12
Time: 2009-2011	0.044	0.16	0.510*	0.21	0.003	0.19
Groups*Time [DiD]	-0.024	0.16	-0.488*	0.21	0.02	0.19
Goodness of fit						
-2 Log Likelihood	67406		64324		60786	
Variance						
ICC	0.89		0.94		0.96	
Between Schools Variance	11%		6%		4%	

*p < .05. **p < .01. ***p < .001. Ethnicity Reference White-UK; EN = English as first language.

Appendix B

Demographic changes in the student population

Figure 4: Glasgow Secondary Schools Census Population 2007-2016 (N = 262,220 in 29 Schools)



Student population by year and level of English language proficiency

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
NE	150	233	178	201	194	249	212	284	320	345
EA	290	381	370	386	451	471	488	497	501	624
DC	804	962	1107	1222	1389	1536	1733	1846	1881	2102
C	911	1179	1397	1510	1466	1475	1421	1507	1500	1483
F	395	486	466	417	347	313	252	257	307	243
EN	25400	24175	23436	22962	22353	22010	21689	20809	20134	19862
LC	2	9	11	17	13	17	7	8	7	11
NA	19	19	24	25	40	52	37	24	60	249
Total	27971	27444	26989	26740	26253	26123	25839	25232	24710	24919

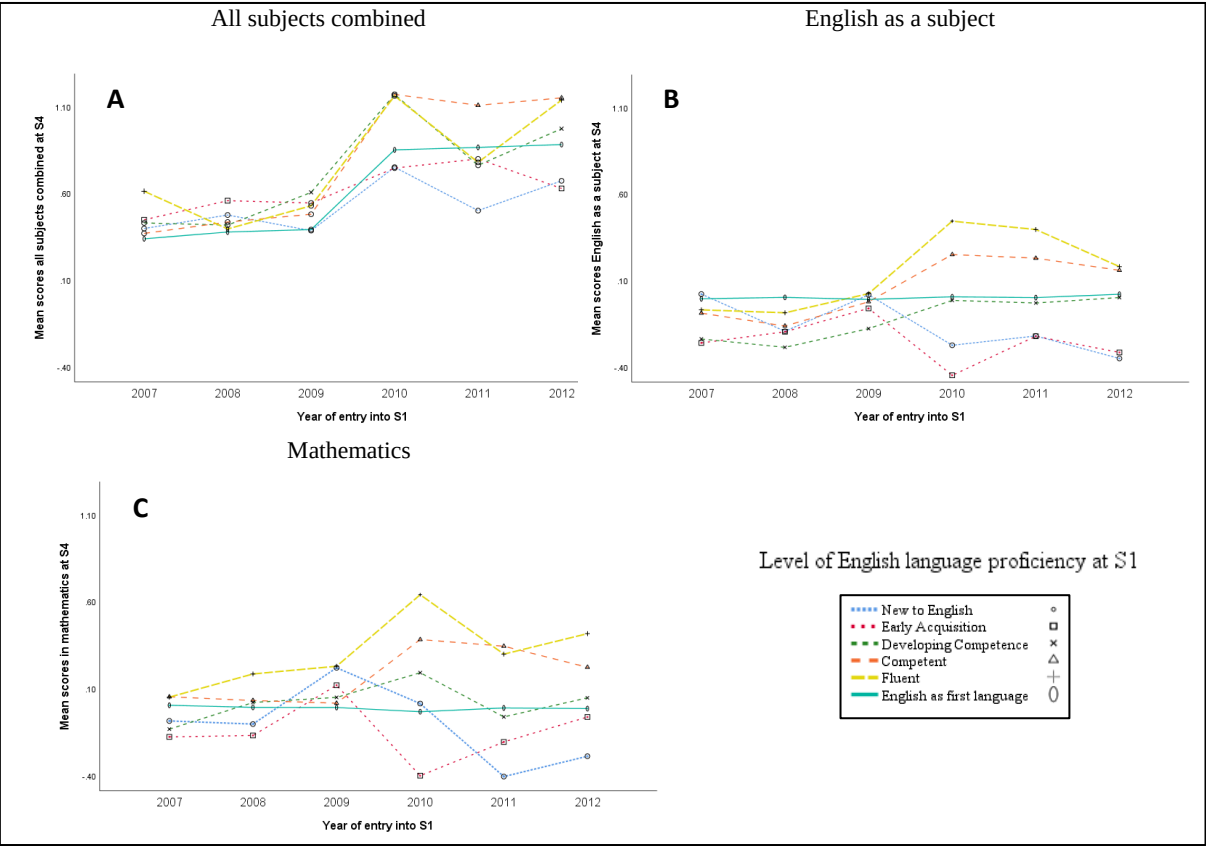
Note. English language proficiency was recorded as new to English (NE), early acquisition (EA), competent (C), developing competence (DC), fluent (F), English as first language (EN), limited communication (LC) or not assessed (NA). Individual students may appear in more than one census year.

Appendix C

Supplementary material: Separation of the main explanatory and outcome variables

The longitudinal structure of the dataset was exploited to explore the extent the language proficiency variable was exogenous from the outcome variables. A total of six cohorts who entered secondary school between 2007-2012 were tracked to S4 (examinations taken during 2011-2016). Examination scores at S4 were compared against level of English language proficiency at S1 (the point of entry into secondary school). Although the results in all subjects (Figure 5A), English as a subject (Figure 5B) and mathematics (Figure 5C) did not entirely mirror the language proficiency at S4 results in Figure 2, as students would have increased their language proficiency over time, nonetheless they reaffirmed the stepped, hierarchical patterns seen in those results. The analysis indicated students with a higher EAL level at S1 obtained higher scores at S4, the lowest for beginners (new to English and early acquisition) to the highest for fluent students, analogous to the patterns in the main analyses. There appeared to be no issue identified by Strand and Lindorff (2020) using Welsh data, whereby attainment was out of step with the expected hierarchical association with language proficiency, which had suggested a discrepancy in recorded language proficiency levels. The results here indicated the language proficiency measure was reliable, and likely to be exogenous from the outcome variables, as the assessed level of English language proficiency of S1 cohorts could not have been influenced by in-class portfolio or assessment.

Figure 5: Mean scores of S1 cohorts 2007-2012 at S4



Note. N = 25,830

Paper 4: The Association Between English Language Proficiency and Initial School Leaver Destinations: A Multinomial Logistic Regression Model

Abstract

There is a lack of empirical evidence in the United Kingdom on the association between English language proficiency and initial destinations of school leavers, although post-school transitions indicate how well education systems prepare students for the labour market and how well students who do not have fluency in the English language are integrating into UK society. This paper seeks to ascertain (1) the association between English language proficiency of 15-16 years old students and their post-secondary school destinations, (2) the probabilities of destination outcomes by level of English language proficiency, and (3) the threshold of English proficiency required for them to match native English language student destination outcomes. The paper hypothesises that increased English language proficiency increases the likelihood of being employed or entering higher education rather than other initial outcomes including further education or unemployment. The paper uses a unique dataset based on data acquired from the Scottish Government (2008-2016). A multinomial logistic regression model is fitted ($N = 30,080$), predicting the role played by English language proficiency in post-school outcomes, controlling for background characteristics. The paper finds (a) a distinct shift from further education to higher education as an outcome is associated with increased English language proficiency, (b) increased English language proficiency raises the probability of entering higher education and reduces the likelihood of unemployment, (c) the proficiency level of 'Developing Competence' is a pivotal threshold allowing students to match the destination outcomes of native English speakers.

Keywords English as an additional language (EAL); destinations of school leavers; language proficiency; migrant integration; social inequality; NEET; post-secondary school transitions

1. Introduction

The increase in students with an immigrant background across the globe, in particular non-native language speakers, has given rise to a research interest in their transition from compulsory education to higher education and the labour market (in Sweden: Kaya and Barmark, 2019; Norway: Hegna, 2014; Switzerland: Lagana, 2014; Ireland: Faas et al., 2019; and in England: Rodeiro and Williamson, 2018). The consensus is that destinations of school leavers are not determined by one single factor: educational attainment is important, but residing in an area of high deprivation, parental levels of education, low social capital, or lack of parental host language skills may cumulatively disadvantage students (Faas et al, 2019). Although integration takes place within overlapping economic, legal, political, and social spheres (Algan et al., 2012), two key predictors of success are education and language skills (Entzinger and Biezeveld, 2003; Harder et al., 2018).

A key function of educational systems is the preparation of students for entry into the labour market. For students with an immigrant background, particularly recent arrivals without competence in the language of instruction, that function extends to the social integration of students into their host society (Wiren, 2014). Consequently, gaps in educational attainment and language skills are likely to make the move from school to the labour market particularly challenging for students transitioning from one education system to another, engaging for the first time with a new language:

... whether the child begins schooling with command of the dominant tongue or has to learn it when already in mid-stream, whether the migrant child arrives at age ten, when it is still relatively easy to gain

language facility or aged 15, when language learning is already much harder - all these factors have a bearing on educational and labor market outcomes. (Froy and Pyne, 2011, p.12).

Therefore, the institution of education is a vital link between cultural integration (by way of second language acquisition) and socioeconomic integration in preparation for the labour market. Young people make a series of key transitions: from home to school, primary to secondary school, then into the senior phase of secondary school before final transition towards employment (Anderson et al., 2000; Faas et al., 2019). The transition from school to work is tied to social mobility (Lutz et al., 2014). For secondary school students the final year of compulsory education is an important point: outcomes from national public examinations influence future choices and life chances (Crawford and Greaves, 2015). Subsequently, establishing how well English as an additional language (EAL) students are integrating requires assessment of educational attainment and post-secondary school outcomes compared to native English language speakers.¹

In the UK context, there are unexplained gaps in school leaver outcomes for migrants with similar educational attainment to native students, and “persistent barriers present in the transition from education to work.” (Froy and Pyne, 2011, p.53). There is an absence of empirical analysis incorporating English language proficiency levels into the picture, and lack of linguistic proficiency may help to explain such gaps. For instance, qualifications in English as a subject, acquired at 15-16 years of age, are a minimum requirement for university admission (UCAS,

¹ The accepted approach is to compare “differences between immigrants and natives: what are the gaps in educational, social, and labor-market outcomes” (Saggar and Somerville, 2012, p.7). Destinations of school leavers thus offer an indicator of integration and the educational effectiveness of educational systems.

2020). Therefore, language proficiency may be of central importance amidst other known influential factors in understanding the causal mechanisms which determine post-secondary school transitions.

Although detecting causal effects of language proficiency for destinations outcomes is desirable, so too is establishing associated variables that in addition to language proficiency contribute to inequality of outcomes. This paper addresses this topic by studying the association between English language proficiency and initial post-school destinations of school leavers, by way of a case study of secondary school students in the city of Glasgow. The paper combines level of English language proficiency with other background characteristics and educational attainment measured in secondary school public examinations at age 15-16, analysed within a multinomial regression framework to better understand the life course implications for EAL students.² It is the first paper to consider the impact of the effects of levels of English language proficiency on destinations of school leavers in a UK context, achieved through analysis of a unique dataset. Participation in the labour market is important for social cohesion and the economy: it is essential for immigrant populations to establish themselves and access the social and economic benefits afforded to their native peers (Budr  a et al., 2019). Dustmann and Fabbri (2003) found a lack of English language proficiency in the UK resulted in lower earnings from employment. Thus, the paper offers a significant contribution to the integration, labour market, and educational inequality literatures.

² One practical application of the paper's findings could be to potentially help students make choices about their future.

Next, section 2 provides a review of the literature by highlighting what is known to impact on school leavers destinations, including: (a) the importance of host language proficiency; (b) the transition from school to employment; (c) the transition from school to further and higher education; and (d) the importance of educational attainment. Sections 3 and 4 then set out the data, the methods, and variables employed in the empirical analysis. Section 5 presents the empirical results and Section 6 discusses them specifically: (1) the association between level of English language proficiency and initial destinations of school leavers; (2) the contribution of control variables on destinations outcomes; (3) the probabilities of destination outcomes by level of English language proficiency. The paper concludes by discussing in Section 7 the implications for policy of the study's findings.

2. The Research Literature

Language proficiency

Students not fluent in the language of instruction at school face a linguistic barrier. Those with low levels of proficiency have less time to master English before entering the crucial assessment phase, which may in turn impact on labour market transition (Christensen and Stanat, 2007).³ Analysis of the UK labour market suggests variation in the probability of employment when ethnic background is considered, but also gains in earnings from English language proficiency for non-white immigrants (Dustmann and Fabbri, 2003). Dustmann and Fabbri (2003) estimated an advantage of up to 20% for those proficient in the English language.⁴ Consequently, the OECD suggest there is a performance

³ Lack of English language proficiency is a barrier to employment for asylum seekers and refugees (Hammond, 2018).

⁴ Proficiency was based on self-reported data, with English recorded as 'good' or 'very good'.

penalty for older or late-arrival students (OECD, 2015).⁵ A lack of linguistic competence can place some migrants outside the labour market (Budr  a et al., 2019). Study of European labour force data finds an ‘intermediate’ level of host-language proficiency is necessary for refugees to gain employment – those below this threshold are significantly less likely to be employed (Brell et al., 2020).

Despite the importance of language for economic assimilation (Dustmann and Fabbri, 2003) and social integration, language proficiency is insufficiently addressed in analysis of school leaver transitions, even in international contexts. In the US and France, two established immigrant receiving destinations, Lutz et al. explored “ethnic penalties” related to school-labour market transition (Lutz et al., 2014, p.277). They did not however ascertain whether there was an additional linguistic penalty for non-native language speakers. In the UK, Tackey et al. (2011) explored the link between educational outcomes, higher education, and the labour market. They surveyed the literature casting light on the differentiation between outcomes for ethnic groups yet failed to take account of English language proficiency. Similarly, in Glasgow McKinney et al. (2012) analysed the destinations of school leavers and educational outcomes. In Glasgow, the association between deprivation and destinations of school leavers was weaker than the association between deprivation and educational attainment (McKinney et al., 2012), but the potential effects of language proficiency are left unanswered.

Moreover, the Department for Education in England provides analyses of school leaver destinations by disadvantage, including gender, ethnic group, and special education needs (SEN), without discussion of English language

⁵ The OECD analysis is based on Programme for International Student Assessment (PISA) tests.

proficiency (DfE, 2019a; DfE, 2019b). Likewise, Scottish Government summaries of initial school leaver destinations consider gender, ethnicity, and deprivation, while English language proficiency is omitted (Scottish Government, 2018; SDS, n.d.). It adds to concern that EAL has dropped out of the policy discourse in the UK (Flynn & Curdt-Christiansen, 2018; Jensen and Gidley, 2014). Yet, considering the importance of language skills for labour market success identified by Entzinger and Biezeveld (2003), the school-work transition is likely to be particularly challenging for an EAL student without fluent language skills entering a competitive labour market.

The transition from school to employment

One central purpose of education is to prepare students for entry into the labour market (Foshay, 1991). While educational outcomes at school are important, examination scores are not the only predictor of destinations. In the UK, differences in the transition from education to employment exist for different ethnic groups (Jensen and Gidley, 2014; SDS, n.d.). In addition, Iannelli and Duta find parental social class and disadvantaged background, contribute significantly to whether a student enters employment or unemployment (Iannelli and Duta, 2018). Research indicates subject choice matters too (Iannelli and Duta, 2018; Iannelli and Smyth, 2017; Moulton et al., 2018; Rodeiro and Williamson, 2018; Shapira and Priestley, 2019). The UK's, and particularly Scotland's secondary school education system, is distinct in terms of the choice of subjects afforded to students during the senior (examination) phase (Iannelli and Smyth, 2017). This contrasts with systems offering a compulsory group of core subjects at the senior level.⁶ The

⁶ For example, mathematics and English are compulsory for upper secondary school students in Ireland, but not in Scotland (Iannelli and Smyth, 2017, p.732). The Scottish system diverges with other European contexts such as Germany, in which education pathways include direct routes

consequences may be that in Scotland, what was studied is perhaps more important to employers than overall examination grades (Iannelli and Smyth, 2017).⁷ Labour market statistics summaries including participation of 16-19 year olds are publicly available, they do not however consider English language proficiency (See Scottish Government, 2014; SDS, 2019).

The transition from school to further and higher education

Further Education (FE) in Scotland is provided by colleges. They provide school leavers and adults the opportunity to pursue vocational, skills for work, school-level qualifications, or study for entry to university (Education Scotland, 2020; Scotland, n.d.b). In Scotland, 37% of school leavers transition to FE colleges, particularly students from disadvantaged socio-economic backgrounds: approximately 42% of Scottish entrants to university do so via FE study (Colleges Scotland, 2020). Further education colleges therefore play a key role in supporting entry into the labour market and as a bridge to higher education (Colleges Scotland, 2020).

However, the literature highlights persisting inequalities inhibiting participation in UK higher education, particularly by gender, ethnicity, and social class (Richardson et al., 2020). There is a tendency for girls to make the transition from school to higher education more often than boys, with differences in aspiration to university study found by gender and by ethnicity (Archer et al., 2014; Berrington et al., 2016; Platt and Parsons, 2018; Richardson et al., 2020). White ethnicity students are proportionately less likely to transition to higher education

to employment, rather than solely academic, therefore not underpinned by solely education reasoning (Iannelli and Duta, 2018; Iannelli and Smyth, 2017).

⁷ Shapira and Priestley (2019) account for the impact of the curriculum on the senior phase of the Scottish secondary education system, but do not address the impact for EAL students.

than any other ethnic group (Crawford and Greaves, 2015; Richardson et al., 2020). Throughout the UK, social disadvantage plays a negative role in higher education participation (Blackburn et al., 2016; Harrison, 2017). For instance, school leavers from disadvantaged areas are less likely to transition directly to university (Blackburn et al., 2016).⁸

Although the literature suggests a migration background is associated with adverse outcomes, Crawford and Greaves (2015) found EAL gave a boost over and above ethnicity in terms of the likelihood of students participating in higher education, compared to white-UK students. However, as Crawford and Greaves (2015) analysis included only whether English as an additional language was reported or not, it would be misleading to interpret those results as suggesting all EAL students are more likely than white-UK students to enter higher education. In related study of attainment, variation in educational outcomes is found when English language proficiency levels are considered: lower level proficiency has an association with lower educational attainment (Dillon 2020a; 2020b). It would thus be reasonable to expect that beginners are unlikely to enter higher education directly from secondary school. Certainly, in Australia, Fenton-Smith and Humphreys found “issues of reading, speaking and listening were negligible” compared to academic writing, found to be an aspect of EAL postgraduate students’ coursework which needed to be addressed (Fenton-Smith and Humphreys, 2017, p.288). Likewise, McMillan (2008) found that in Scotland, prior experience of language learning impacted negatively on students’ ability to

⁸ Although special education needs (SEN) are flagged as important for EAL student outcomes (Strand et al 2015), Canduela et al (2010) found no significant difference in positive destination outcomes between students with or without Additional Support Needs (ASN) in early school leavers transitions to college in Scotland.

acquire university level academic literacies. Understandably, the challenges and rigour of postgraduate study are magnified for students not fully proficient in the language of instruction (Fenton-Smith and Humphreys, 2017).

Educational attainment

High educational attainment is an important factor for subsequent life chances (McCluskey, 2017). A higher level of education improves employment opportunities, but crucially may help maintain employment during times of stress on the labour market (Ionescu and Cuza, 2012). The inclusion of educational outcomes controlled for in analysis is therefore an important part of understanding secondary school transitions (Crawford and Greaves, 2015).⁹ There is for instance a positive association between the educational attainment of Key Stage 4 students in England (approximately 16 years of age) and entry to higher education (DfEb, 2019; Richardson et al., 2020).¹⁰ In contrast, low educational attainment has a detrimental impact on post-school destinations with increased prospect of unemployment (Howieson, 2003; Howieson and Iannelli, 2008). Unemployment for a school leaver leads to prolonged instability in the labour market (Howieson and Iannelli, 2008). As students' gender, social class and ethnicity have established associations with lower educational and labour market outcomes and related inequalities (see Hills et al., 2010), some students risk being classified as NEET (not in education, employment, or training) (Powell, 2018).¹¹ It is unknown how English language proficiency may be associated with NEET for EAL school leavers.

⁹ A total points score is a commonly used measure of educational attainment (Crawford and Greaves, 2015; Iannelli and Duta, 2018; Iannelli and Smyth, 2017; Rodeiro and Williamson, 2018).

¹⁰ Also related to whether a student leaves at that stage (DfE, 2019b).

¹¹ Proportions labelled NEET varies by region (Jensen and Gidley, 2014; Powell, 2018).

Methodological approaches to studying school to labour market transitions

Different approaches and categorisations of destinations are found in the literature. Binomial logistic regression has been used (Iannelli and Smyth, 2017), including on Scottish longitudinal data (Iannelli and Duta, 2018), and multilevel regression (Rodeiro and Williamson, 2018). Schools by type are incorporated by Rodeiro and Williamson (2018) in England, while schools by denomination are used by McKinney et al (2012) in their case study of Glasgow's secondary school leavers.¹² Rodeiro and Williamson (2018) use a binary outcome variable defined as either an education, employment or training destination as opposed to not in education, training, or employment. Similarly, Iannelli and Smyth (2017) used a two-category outcome variable (unemployed or inactive) in analysis of Scottish school leavers (Iannelli and Smyth, 2017). While Iannelli and Duta (2018) use five-categories, Dorsett and Lucchino use four: "employment, full-time education, unemployed NEET and inactive NEET." (Dorsett and Lucchino, 2015, p.4). However, the problematic aspect of aggregating education into a single category is it restricts differentiation between further education and higher education destinations. Further education colleges may be a vital bridge for some EAL students to access university.

Background to the case study's non-native English language populations

Immigration has increased the number of secondary school students in UK schools who are not proficient in the English language (GCC, 2010). Increased diversity stems from the UK's colonial past, recent economic migration from the European Union (EU), and arrival of asylum seekers from across the globe (Geay

¹² Non-denominational and denominational (Roman Catholic) are distinctive characteristics of state-funded secondary schools in Glasgow.

et al., 2013; GCC, 2011b; Jensen and Gidley, 2014). In 2014, a total of 37,820 economic migrants (seeking employment) arrived in Scotland mostly from EU or EU Accession States, but also Asia, the Middle East, Africa, and the Americas, 18% of whom registered in Glasgow (Migration Scotland, n.d.).¹³ The city of Glasgow participates in the Home Office Asylum Dispersal programme (CSMP, 2019; GCC, 2011b).¹⁴ The city housed 11% of the UK's dispersed asylum seeker population, of which 40% arrived with their family in 2014 (Migration Scotland, n.d.). Although approximately 70 different countries of origin, the majority in 2014 originated from "the Peoples Republic of China, followed by Pakistan, Iran, Nigeria and Eritrea." (Migration Scotland, n.d., non-paginated). Therefore, Glasgow's secondary school EAL student population includes children of economic migrants, asylum seekers (including unaccompanied minors), and students born in the UK as members of established communities who speak a language other than English at home, with variation in parental, social class, and education background.

There is an association between having an immigration background and EAL, evidenced by the high proportion of EAL students with an ethnic minority background.¹⁵ The close relationship between EAL and a non-white UK ethnic background is also confirmed in the literature (See Burgess, 2014; Strand et al., 2015). As an exceptionally diverse population, rates of English language acquisition are likely to vary. How long a student has been in the UK, whether English is spoken at home, socialising with native English language speakers outside of school, attendance at after school language support classes provided

¹³ The data cited by Migration Scotland (n.d.) is based on National Insurance Number (NINo) registration, and may not capture all migrants, or include dependents such as students.

¹⁴ Scotland has been participant to the UK Governments Syrian Resettlement Programme since 2015 (Scotland, n.d.a).

¹⁵ Within the population analysed in this study, 98% of EAL students had an ethnic minority background.

by local community groups and so forth, will have some bearing on acquisition. Schools will vary in linguistic and ethnic composition of teachers. Dustmann and Fabbri (2003) infer past schooling in native languages provide a structural foundation for English acquisition.¹⁶ The intensity of language support received in school may also be a factor. During the time frame of the data used in this study, the city of Glasgow moved to an outreach only EAL support service (See Dillon 2020c for discussion of the impact on educational outcomes). The implications for EAL school leavers are potentially found in analysis of UK labour market data. An effect of linguistic competence may play out in economic outcomes as in the disparity between “the assimilation patterns of ethnic minority immigrants and white immigrants” (Dustmann and Fabbri, 2003, p.714).¹⁷

3. The Research Question

Although the transitions discussed here are important for all students, a review of the literature leaves unanswered where EAL students go once they leave school. It is imperative to ascertain the association between English language proficiency and destinations, and its impact on outcomes: (a) from an integration perspective to compare how closely EAL student outcomes match native English language speaking students,¹⁸ and (b) to gauge how effective the education system is for all students, as a matter of social justice.¹⁹ There may be a higher risk of entering unemployment for those who have not acquired full

¹⁶ In the primary school context, EAL students from established ethnic community backgrounds enter education alongside students who use English as their first language at home, and recent arrivals also new to the English language. It is implausible a student born in the UK would be ‘new to English’ in secondary school.

¹⁷ For an overview of English language proficiency of migrants to the UK, see Reino (2019).

¹⁸ Integration of non-native English speakers into society, education, and labour market.

¹⁹ Social justice carries different meanings in educational research (see Francis et al., 2017).

proficiency, yet, without empirically studying the association between English language proficiency and post-school transitions that risk remains unconfirmed.²⁰

While the literature does confirm that white-UK students are least likely to transition to higher education compared to other ethnic groups (Crawford and Greaves, 2015; Richardson et al., 2020), and having EAL seems to give a further boost over and above ethnicity (Crawford and Greaves, 2015), this is incongruent with what would be expected given native English language students have the language of instruction and assessment as their first language. This incongruence was resolved in some studies of educational attainment, where similarly EAL students are found to collectively outperform non-EAL students – the introduction of levels of English language proficiency uncovered outcomes stratified by English language proficiency (Dillon, 2020a; Dillon, 2020b, Strand and Hessel, 2018). This may also help to resolve the contradiction here in the context of school leaver destinations.

Moreover, the EAL level of ‘developing competence’ has been established as an important threshold of English language proficiency, allowing students to match the educational outcomes of native English language speakers (Dillon, 2020a; 2020b; 2020c). This paper extends that work beyond education to consider if the threshold plays a similar key role in post-school destination outcomes. This is particularly important as the integration literature suggests an intermediate level of host-language proficiency is a threshold which makes participation in European labour markets more likely, particularly for refugees (Brell et al., 2020). While the destinations assessed in this study may not be final outcomes, nonetheless,

²⁰ Early unemployment is a predictor of later unemployment (Howieson and Iannelli, 2008).

understanding the initial transition and association with English language proficiency contributes to understanding the possible life course of EAL students.²¹

Full integration into the labour market is “critical for achieving growth, cohesion and equality in our economies and society.” (Froy and Pyne, 2011, p.4).

Discussion of that transition, and the potential key role of a linguistic threshold, is missing from the EAL and educational inequalities literature, and yet increasingly salient due to current migration trends.

The main research question and related sub-questions addressed in this paper are as follows:

- What is the association between English language proficiency and initial post-secondary school destinations controlling for student characteristics and public examination outcomes at age 15-16? What are the probabilities of destination outcomes by level of English language proficiency, and how important is the level of ‘developing competence’ of English language proficiency for destination outcomes?

A primary hypothesis is proposed which connects directly to the potential impact of English language proficiency on initial school leaver destinations: (1) on employment, and (2) entering higher education:

H₁ Increased English language proficiency increases the likelihood of being employed, and the likelihood of entering higher education.

²¹ Destinations are recorded approximately 3 months after leaving school.

4. Data and Methods

4.1. Data and Variables

This case study includes data for students educated in 29 state funded secondary schools (2008-2016) within Glasgow City Council boundaries. Separate datasets for destinations of school leavers, attainment, school census, and additional support needs were acquired from the Scottish Government, then merged to construct a single database.²² The data was matched using students' unique identifiers, re-coded by the data holder to retain anonymity. The data was aggregated by years, which reduced the potential effects of year on year variation and increased statistical power. This was also beneficial due to a low count in some destination categories, compounded by a small sample size of EAL students in some proficiency levels and uneven distribution across schools.²³ Students' self-reported data was collected through annual survey by Skills Development Scotland (SDS), then submitted to the Scottish Government (SDS, n.d.; Scottish Government, 2018).²⁴ While the response rate was consistent over time, less data was available for S4 students in 2015-2016 as not all students had left school. This was addressed by fixed effects aggregating the data by years. After removing duplicates and anomalies, the sample N = 34,627, net of explanatory and control variables was used for descriptive analysis.²⁵ There was missing data for 2,528 students without an English as a subject score at S4 (7%) or a mathematics score 3,020 (10%). These were removed by listwise deletion, which reduced the sample

²² Schools census records provided background characteristics such as English language proficiency, gender, ethnicity, free school meal entitlement, additional support needs, stage of secondary school (S1-S6), census year, and school attended.

²³ Differences in group sizes may bias statistical models.

²⁴ The Scottish Government attest to a high response rate of above 98%.

²⁵ The original data file had a total of 45,676 initial destination records with some inconsistency in how destinations were categorised.

to $N = 30,080$ (of which 12% were EAL students) retaining only robust matches between variables for statistical analysis, including only students with scores in both the subjects of English and mathematics.

Dependent variable: Initial destinations of school leavers

A five-category post-school destinations outcome variable was constructed,²⁶ distinguishing Employed, Further Education, Higher Education, Training-other, and Unemployed (reference category) coded 1 to 5, respectively. Definitions of destinations used in Scottish Government outputs are provided in Table 4 (Appendix B). Two school leaver destinations datasets were acquired from the Scottish Government (1) the initial destination (collected approximately three months after leaving school) and (2) a follow up (collected nine months after leaving). The former was used in this paper as it provided a larger sample.

An important point to note about the Employed category is its heterogeneity. It does not distinguish by the type of employment, wages or working hours (full or part-time), or the level of English language proficiency required to fulfil the role. Likewise, the Unemployed category being measured only 3 months after leaving does not capture whether unemployment is of short or long term duration. This highlights a general limitation of the data, that it cannot reflect the stability of destination outcomes. Moreover, as the analysis controlled for years as fixed effects, it did not explore change over time.²⁷

The Scottish Government publish summaries which include 'higher education, further education, training, voluntary work, employment or activity

²⁶ The original dataset consisted of 18 categories (See Table 3, Appendix A).

²⁷ This would extend to whether an underlying effect is present from economic downturns such as 2008.

agreements' all deemed positive outcomes (Scottish Government, 2018, p.4). The national figures indicate relatively stable positive destination outcomes between 2012-2017 at 92% on average; Employment 21%, Further Education 27%, and Higher Education 39% (Scottish Government, 2018). The initial school leaver destinations for Glasgow City are similar, although slightly lower in some categories: positive destinations at 90% (Scottish Government, 2018), 19% employed, 29% further education and 33% higher education (Scottish Government, 2019a), which correspond to the data used in this study (See Table 1).

Stage of leaving secondary school

The focus of this paper is on how destination outcomes are shaped by results at 15-16 years of age in the final year of compulsory education. Where the transition takes place after S4, students are likely to have gained additional qualifications.²⁸ It is well established that students transition directly from secondary school to higher education (some from S5), most doing so from S6 after acquiring higher level qualifications (Scottish Government, 2019b; Tinklin and Raffe, 1999). Likewise, some EAL students may have improved their English language proficiency if remaining in school beyond S4. However, English acquisition, although variable between students, is a long process. Dillon (2020c) shows how for example a student entering secondary school at S1 'new to English' had marginal improvement in proficiency at S5 compared to S4, in other words an additional year of schooling did not significantly improve English language proficiency. Moreover, although knowing the stage a student left

²⁸ Or for that matter resit, or delay taking S4 examinations until S5-S6.

secondary school is part of understanding transitions, the literature suggests that even after controlling for later educational performance in England, attainment at Key Stage 4 is strongly associated with participation in higher education (DfEb, 2019; Richardson et al., 2020). In Scotland, longitudinal analysis confirms poor results at S4 are reflected in poor labour market outcomes at age 22-23 (Howieson and Iannelli, 2008). The paper thus focuses on English language proficiency and attainment at S4 to assess the implications for post-secondary school transitions in the Scottish context.

Focal Explanatory variable: Level of English language proficiency

Students' level of English language proficiency was sourced at S4 (the final year of compulsory education). There were six levels coded (1) New to English (2) Early Acquisition (3) Competent (4) Developing Competence (5) Fluent (6) English as a first-language (the reference category).²⁹ The level of proficiency was recorded in annual census returns by schools and submitted to the Scottish Government.

Control variables

Gender was included with boys coded 1 and girls coded 0. A binary variable was constructed indicating Additional Support Need (ASN) at any point during secondary school.³⁰ A variable was also constructed to indicate whether a student was entitled to free school meals (FSM) at any point during secondary school. The recording of ethnicity was not consistent over time. As a result, categories were merged and restructured to improve consistency and address a

²⁹ Although potentially students with English as first language could be fluent in another language and thereby bilingual, it is unlikely to be the norm.

³⁰ ASN covers a broad spectrum of needs from health, disability, family issues, social or emotional, or students' learning environment (See Scottish Government, 2017).

low count for some groups. This resulted in a six-category variable coded as: (1) African or Caribbean (2) Asian (3) Chinese³¹ (4) White-Other (5) Other-ethnicity (6) White-UK (reference group). See Table 5 in Appendix C for sub-groups in each category.

Educational attainment measured students' average scores derived from performance in Scottish Qualifications Authority (SQA) examinations. The measure included scores accumulated at the end of compulsory schooling (S4) for English as a subject and mathematics. Scores were standardised in each year, given a mean of zero and deviation of 1, then aggregated. The literature confirms educational attainment increases as EAL students' linguistic proficiency increases (Demie and Strand, 2006; Dillon, 2020a). The association is stronger in English as a subject than in mathematics (Dillon, 2020a; Strand and Hessel, 2018).

Individual state funded secondary schools (N = 29) were entered into the model as fixed effects and individual school associated effects not reported. Although McKinney et al. (2012) excluded an all-girls school in their case study of Glasgow secondary schools as atypical, the school was included here. This was preferred as the research interest was level of English language proficiency: removal would have reduced an already small sample of EAL students and destinations records. This should be considered when interpreting the results of the gender coefficients. The religious association of denominational schools may influence the ethos within a school (Sawkins, 2002). To measure any potential effect, in addition, a dummy variable was constructed representing whether a

³¹ Chinese was included separately as the literature indicates strong academic performance.

student was in a denominational or non-denominational school.³² A total of 18 non-denominational schools were coded as 1 and 11 denominational schools coded 0. Such an approach was adopted by Sawkins (2002) study of examination performance in Scottish secondary schools. For discussion of differences in educational attainment outcomes by school denomination in the Scottish secondary school context, see Shields and Gunson (2017), and McKinney et al. (2017).

4.2 Methods

In addition to descriptive analysis, a multinomial logistic regression model is fitted. This method facilitated investigation of the association between level of English language proficiency and school leaver destinations controlling for available student characteristics. Although students are nested within schools, between school variance is low for educational outcomes of EAL students when considered in multilevel analysis of secondary schools in Glasgow (Dillon, 2020b).³³ As the key research interest here is the association between linguistic proficiency and the outcome variable as an assessment of the overall system rather than between school differences, a fixed effects approach was implemented.³⁴

Model specification

³² State funded denominational (Roman Catholic) and non-denominational schools are a distinguishing feature in Scottish education. Not a school level variable per se, rather an indicator of where a student was located, in one of the two types of publicly funded secondary schools.

³³ Crawford and Greaves (2015) found controlling for type of secondary school attended did not explain gaps in HE participation between ethnic groups. Similarly, "... there is no necessary connection between low income and an initial positive school leaver destination in both denominational and non-denominational schools." In Glasgow (McKinney et al., 2017).

³⁴ The fixed effects relate to individual schools (N = 29), and years (N = 9).

Let Y represent destination outcomes, which can take a value of 1-5; (1) employment, (2) further education, (3) higher education, (4) training-other destination outcome or (5) unemployed. The equation for the prediction of the probability of the occurrence of a destination outcome is as follows:

$$Y = \frac{e^{\beta_0 + \beta_1 * Eng + \beta_2 * Math + \beta_3 * Lang + \beta_4 * Gen + \beta_5 * ASN + \beta_6 * FSM + \beta_7 * Eth + \beta_8 * SchDenom + \beta_9 * Sch + \beta_{10} * Yrs}}{1 + e^{\beta_0 + \beta_1 * Eng + \beta_2 * Math + \beta_3 * Lang + \beta_4 * Gen + \beta_5 * ASN + \beta_6 * FSM + \beta_7 * Eth + \beta_8 * SchDenom + \beta_9 * Sch + \beta_{10} * Yrs}}$$

where β_0 is the intercept and all other β are slope coefficients; examination scores β_1 (English as a subject), β_2 (Mathematics), β_3 (English language proficiency level), β_4 (gender), β_5 (Additional Support Needs), β_6 (Free School Meal entitlement), β_7 (Ethnicity), β_8 (School Denomination), β_9 (Schools), β_{10} (Years).

5. Results

5.1. Descriptive analysis

The distribution of variables in Table 1 show ‘new to English’ students were the least represented (0.2%). Although they could have been combined with ‘early acquisition’ to form a ‘beginner’ category, this provided the nuance missing from the literature lacking study differentiating students by levels of English language proficiency. The majority of EAL students were ‘developing competence’ (4.4%) or ‘competent’ (4.9%). There was an even distribution by gender. Most students did not have additional support needs during secondary school (78.4%) or free school meal entitlement (60.3%). Asian students comprised the largest ethnic minority group (6.5%), with Chinese the lowest (0.5%), most recorded as white-UK ethnicity. There were slightly more students in non-denomination schools (58.7%) than denominational ones.

Table 1: Data Summary

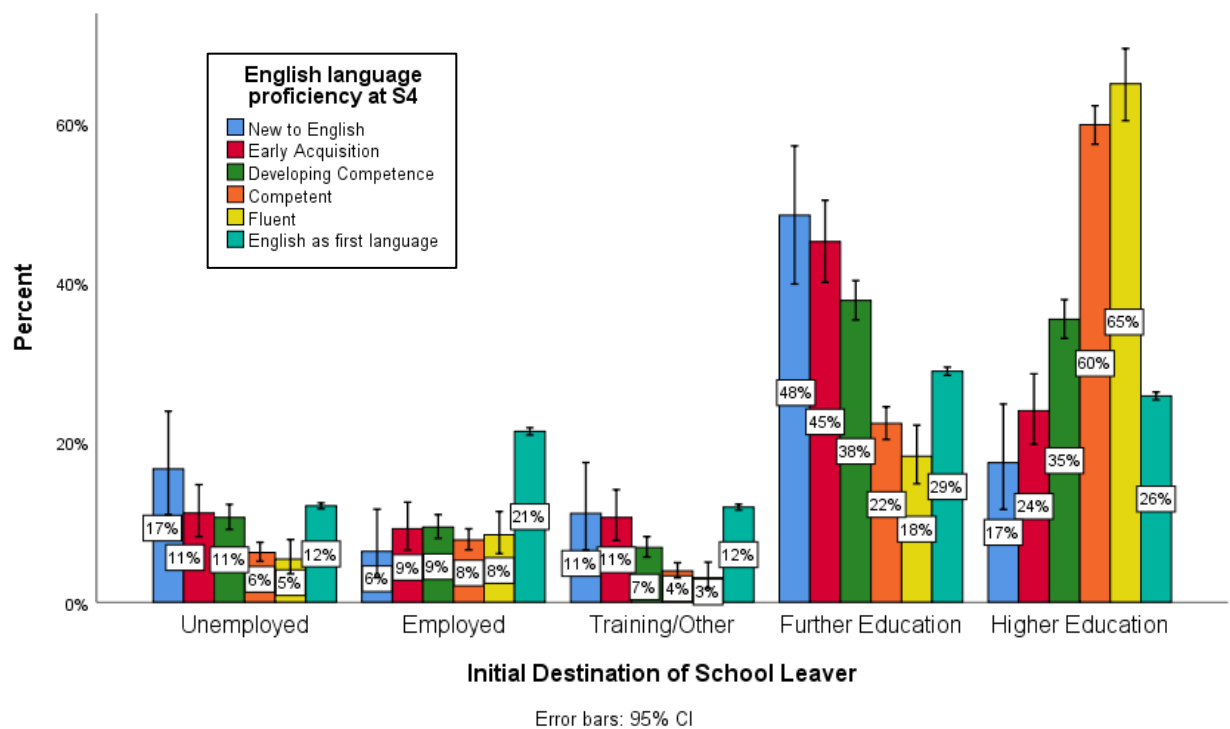
	N	Marginal %	Mean	SD
Initial Destinations				
Employed	6164	20.5		
Further Education	8855	29.4		
Higher Education	8802	29.3		
Training or other destination	3086	10.3		
Unemployed	3173	10.5		
Level of English language proficiency				
New to English	72	0.2		
Early Acquisition	278	0.9		
Developing Competence	1331	4.4		
Competent	1459	4.9		
Fluent	383	1.3		
English as first-language	26557	88.3		
Gender				
Female	15052	50.0		
Male	15028	50.0		
ASN during secondary school				
No Additional Support Needs	23573	78.4		
Additional Support Needs	6507	21.6		
FSM during secondary school				
No FSM entitlement recorded during period	18146	60.3		
FSM entitlement during period	11934	39.7		
Ethnicity				
African or Caribbean	448	1.5		
Asian	1963	6.5		
Chinese	138	0.5		
White-Other	670	2.2		
Other-Ethnicity	1270	4.2		
White-UK	25591	85.1		
School Type				
Denominational	11	41.3		
Non-denominational	18	58.7		
Educational attainment at S4				
English as a subject	30080		-0.008	1
Mathematics	30080		-0.001	1

Note. N = 30,080

5.2. What is the association between English language proficiency at S4 and initial school leaver destinations?

Initial destinations by level of English language proficiency net of control variables

Figure 1 presents descriptive analysis of destinations differentiated by level of English language proficiency at S4. The highest proportion recorded as unemployed were new to English (17%) but reduced as proficiency increased. All levels of EAL proportionally entered less employment destinations than English as a first language students (21%), with only small differences between proficiency levels. The results indicted a pattern: as EAL students' English language proficiency increased, representation in further education destinations decreased and entry to higher education increased. The transition from developing competence to competent appeared a pivotal stage at S4. The caveats are the difference in sample sizes between the English as a first language and EAL groups (See Table 1) and based on the simple association between language and destinations, net of control variables.

Figure 1: Initial Destination by Level of English Language Proficiency at S4

Note. N = 34,627

What are the effects of English language proficiency on destinations controlling for student characteristics?

To confirm the association persisted beyond the bivariate associations presented in Section 5.2, multinomial logistic regression analysis was conducted to study the effects of English language proficiency on destinations controlling for potential confounders.

Model diagnostics

The literature suggests EAL and ethnicity are closely related (Strand, 2015) and potentially collinear (Burgess, 2014). An association between level of English language proficiency at S4 and ethnicity was observed ($\chi^2(25) = 35469.34, p < .001$) and moderate effect determined by Cramer's V ($\phi_c = .407, p < .001$).

However, collinearity diagnostics revealed the variance inflation factor (VIF) was below 3 and tolerance > 0.4 for all variables included in the statistical models.³⁵

Ethnicity added a further nuance to understanding differences in outcomes among EAL students and was retained in the model as potentially part of the causal chain.

Evaluation of the model

Destinations of school leavers were incorporated as the dependent variable using five categories. Language proficiency with English as first language as the reference category, gender, additional support needs, free school meal entitlement, and ethnicity with white-UK as the reference and school type were entered as explanatory variables. Years and individual schools were entered as fixed effects in the regression model and not reported other than the binary measure of the effect on outcomes whether a school was denominational or non-denominational. No interaction terms were included. The Likelihood Ratio chi-square test was significant $\chi^2 = 6223.36$, ($p < .001$), and the reduced -2 Log Likelihood (41,096) indicated improved fit over the null model (47,318).

The effects of English language proficiency at S4 on destinations

The results in Table 2 indicate an association between English language proficiency and entering employment. The language coefficient increased as proficiency increased compared to English as first language students. Beginners (new to English and early acquisition) were statistically significantly different from English as a first language with a negative association to employment transition.

³⁵ Association between EAL and ethnicity was not unexpected. Most English as first language students had white ethnicity recorded, with greater diversity evident among EAL students. Separate diagnostics checks for the English as a subject, and Mathematics variables, confirmed there were no issues of collinearity (VIF of 1).

Once reaching developing competence there were no statistically significant differences with English as first language students. In contrast, increased EAL proficiency indicated students were more likely to enter higher education than unemployment, with no statistically significant difference between lower levels of proficiency and English as a first language. However once reaching the level of developing competence the coefficient changed from negative to a strong positive statistically significant association for competent (1.229, $p < .001$) and fluent (1.382, $p < .001$) levels.

There were no statistically significant differences between proficiency levels for training destinations. There was no negative effect of not being a native English language speaker on entering further education. The results confirmed the primary hypothesis, (1) improvement in English language proficiency increases the likelihood of being employed, and (2) an increase in English language proficiency increases the likelihood of entering higher education.

Table 2: Multinomial Logistic Regression on Initial Destinations of School Leavers^a

	Employed			Further Education			Higher Education			Training or other destination		
	β	SE	Exp(B)	β	SE	Exp(B)	β	SE	Exp(B)	β	SE	Exp(B)
Intercept	0.09	0.30		0.79**	0.28		-3.63***	0.64		0.88**	0.31	
Language proficiency at S4^b												
New to English	-1.34*	0.63	0.26	0.43	0.41	1.53	-0.30	0.46	0.74	-0.52	0.64	0.60
Early Acquisition	-0.64*	0.31	0.53	0.45†	0.24	1.57	-0.14	0.25	0.87	0.05	0.33	1.06
Developing Competence	-0.29	0.19	0.75	0.51**	0.16	1.67	0.42*	0.17	1.52	0.08	0.23	1.09
Competent	-0.06	0.21	0.94	0.34†	0.18	1.41	1.23***	0.18	3.42	0.00	0.25	1.00
Fluent	0.02	0.31	1.02	0.24	0.28	1.27	1.38***	0.26	3.98	-0.06	0.40	0.94
Examination scores at S4												
English as a subject	0.08**	0.03	1.08	0.08***	0.02	1.09	0.32***	0.03	1.37	0.07**	0.03	1.08
Mathematics	0.20***	0.02	1.22	0.17***	0.02	1.18	0.40***	0.02	1.50	0.02	0.03	1.02
Control variables^c												
Girls	-0.03	0.05	0.97	0.56***	0.04	1.74	0.54***	0.05	1.71	-0.11*	0.05	0.90
No ASN	0.48***	0.06	1.62	0.04	0.06	1.04	0.44***	0.06	1.55	0.00	0.07	1.00
No FSM	0.78***	0.05	2.19	0.45***	0.04	1.56	1.16***	0.05	3.19	-0.09†	0.05	0.91
African or Caribbean	-0.15	0.32	0.86	0.64*	0.26	1.90	1.31***	0.25	3.71	-0.04	0.33	0.96
Asian	-0.18	0.18	0.84	0.03	0.16	1.03	-0.06	0.16	0.95	-0.52*	0.22	0.59
Chinese	0.56	0.61	1.75	0.20	0.57	1.22	1.37*	0.53	3.92	0.07	0.73	1.07
White-Other	0.04	0.19	1.04	-0.06	0.17	0.94	0.20	0.17	1.22	-0.25	0.23	0.78
Other-Ethnicity	-0.02	0.15	0.98	0.21	0.13	1.23	0.49***	0.13	1.63	-0.41*	0.18	0.66
Denominational school	0.14	0.19	1.15	-0.04	0.17	0.97	0.44*	0.19	1.56	-0.35†	0.19	0.71

Levels of significance: †p < 0.10; *p < 0.05; **p < 0.01; ***p < 0.001. Reference categories are: a. Unemployed; b. English as a first language; c. White-UK ethnicity. Schools and years included as fixed effects and not reported.

The effects of educational attainment at S4 on destinations

Scores in English as a subject had a positive effect on the likelihood of transition to higher education (0.318, $p < .001$) and a very small positive effect on training-other destinations (0.072, $p = .009$). Scores in English as a subject were not statistically significant for employment or further education. Mathematics scores had a strong positive effect on higher education (0.403, $p < .001$), and small positive effect on employment (0.202, $p < .001$) and a smaller but statistically significant effect on further education destinations (0.165, $p < .001$). Mathematics scores were not statistically significant for training-other destinations.

The effects of other control variables on destinations

The results indicated a strong positive effect for girls on transitioning to further education (0.556, $p < .001$) and higher education (0.538, $p < .001$). There was no statistical difference by gender for employment compared to unemployment. The results indicated a positive association between not having any additional support needs and employment (0.483, $p < .001$) and higher education (0.438, $p < .001$). There was a positive effect of not having FSM entitlement with the largest effects found in higher education (1.159, $p < .001$), employed (0.784, $p < .001$) and further education transitions (0.445, $p < .001$).

Compared to the reference category (white-UK), there was no effect of ethnicity on transitioning to employment. For training-other destinations, Asian (-0.523, $p = .019$) and other-ethnicity students (-0.409, $p = .022$) were the only groups statistically significantly different from white-UK students as less likely to transition to training-other. African or Caribbean students were more likely to enter further education (0.644, $p = .012$) than white-UK students. The effects of ethnicity

however were more evident in transition to higher education with a large positive effect for African or Caribbean (1.312, $p < .001$), Chinese (1.366, $p = .01$) and other-ethnicity groups (0.486, $p < .001$).³⁶

What are the probabilities of school leaver destination outcomes by English language proficiency controlling for student characteristics and public examination outcomes at age 15-16?

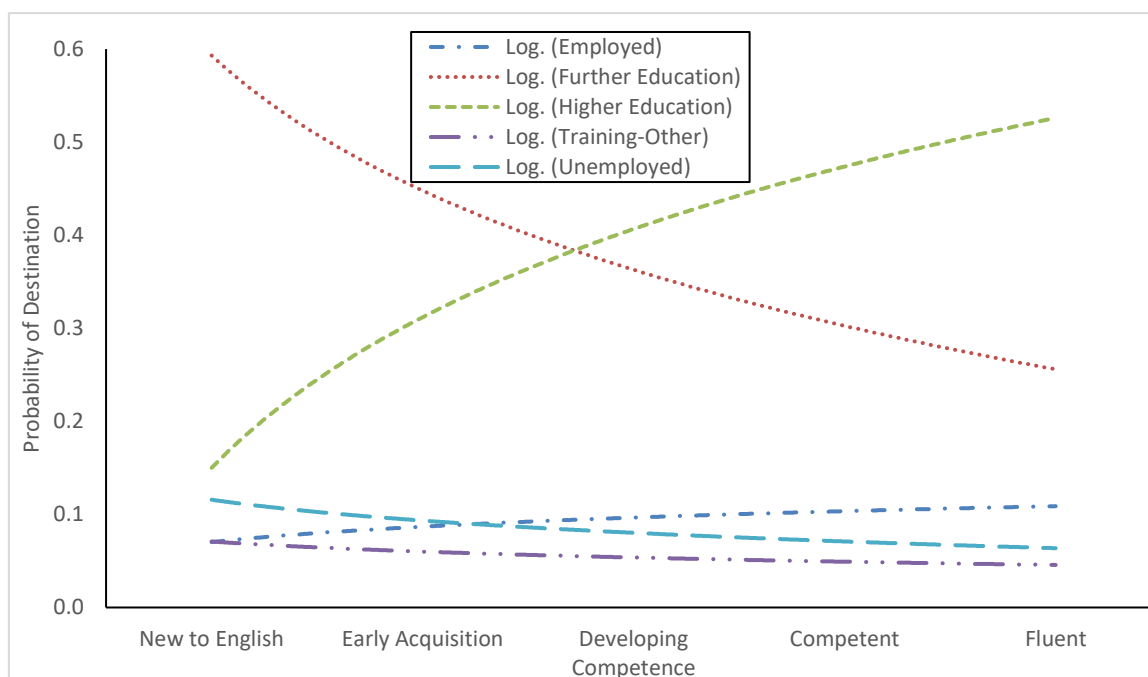
Based on the results of the regression model presented in Table 2, the estimated probabilities in Figure 2 indicate students new to English at S4 were most likely to transition to further education (56% probability), and the same is true of early acquisition (47%) and developing competence (43%) students. Native English language students also had a 31% probability of transitioning to further education destinations. Native English speakers had the highest probability of transitioning directly to the labour market from school (23%). English as a first language students had a relatively even spread between employment, further and higher education outcomes.

However, the results showed a distinct shift in the probability of an EAL student entering higher education once the level of 'competent' in the English language had been reached. There was a clear stepped pattern: as English language increased, the probability of entering further education decreased from 56% to 22%, while the probability of entering higher education increased from 21% to 58%. Figure 2 shows the further education slope tails off from 'developing competence' to 'fluent', while the curve is steeper from 'new to English' to

³⁶ No differences were found by school type for students entering employment or further education compared to unemployed destination category. Although a negative coefficient was returned for training-other destinations (-0.35, $p = .066$), and positive coefficient for HE (0.44, $p = .021$) for denominational compared to non-denominational schools.

‘developing competence’ for higher education transition. This suggests a pivotal role of ‘developing competence’ at S4 as the nexus between the probability of entering further or higher education.³⁷

Figure 2: Estimated Probability of Initial Destination by EAL level



Level of English language proficiency at S4	Employed	Further Education	Higher Education	Training or Other	Unemployed
New to English	6%	56%	21%	6%	11%
Early Acquisition	9%	47%	25%	8%	10%
Developing Competence	10%	43%	30%	7%	10%
Competent	10%	27%	52%	4%	7%
Fluent	10%	22%	58%	4%	6%
English as first language	23%	31%	24%	11%	11%

Note. Percentages may not total 100% due to rounding.

Note. Estimated response probabilities derived from multinomial regression output controlling for entered variables.

³⁷ The probability of a student entering a destination was based on a level of English language proficiency measured at S4 (approximately age 15-16), not necessarily the level of proficiency of the school leaver.

6. Discussion

The central aim of this paper was to ascertain the association between English language proficiency and initial school leaver destinations. The association pattern differentiated by level of English language proficiency confirmed the primary hypothesis: increased English language proficiency increases (1) the likelihood of being employed as initial destination, and (2) the likelihood of entering higher education. The associations for included control variables suggest post school transitions are influenced by a variety of factors. The results are in line with the literature that a combination of variables can cumulatively disadvantage students (see for instance Faas et al, 2019). However, the analysis confirms the important role that linguistic proficiency plays in EAL students post school transitions, which holds after accounting for school attainment at S4 and other controls.³⁸

Other associations contributing to initial destinations

Educational attainment at S4 was particularly important to control for as it has an established association with destinations in England at the equivalent stage (Crawford and Greaves, 2015; DfEb, 2019; Richardson et al., 2020). For example, performance at Key Stage 4 is strongly associated with participation in higher education, even after controlling for later educational performance (Crawford and Greaves, 2015). The findings here suggest scores in English as a subject are positively associated with destination outcomes compared to unemployment, as are mathematics scores.³⁹ The strongest association for these

³⁸ This study is not immune to confounding, unobservable variables, whether positive or negatively associated with outcomes.

³⁹ Except for 'training-other' destinations. The results suggest located in a Denominational school adds to the likelihood of transition to HE.

two academic subjects, transition to further education, chimes with the literature (McKinney et al., 2012). As the “educational progress of children is closely related to the socio-economic position of the family.” (McKinney et al., 2012), so too the socioeconomic indicator used in this study (having FSM entitlement) is associated with less progression to employment, further education, and in particular, higher education. The results are consistent with McKinney and colleagues (2012) study of school leaver destinations in Glasgow. The association between FSM entitlement and training destinations echoes the findings of McKinney et al. (2012) of an association between training destinations and schools in areas of higher deprivation.⁴⁰ That white-UK ethnicity students were among the least likely to transition directly to higher education, and more likely for girls, is also consistent with the literature (Crawford and Greaves, 2015; Richardson et al., 2020).⁴¹ The positive association with education destinations for girls generally aligns with the findings of Iannelli and Duta (2018) on labour market outcomes in Scottish longitudinal datasets.

Extended causal chain and explanatory mechanisms

The causal chain may be more elongated for some EAL students. Factors associated with outcomes such as socioeconomic background, gender, and social class help to explain variation in native English language student outcomes. They are therefore likely to contribute to variation in outcomes within the same level of English language proficiency. Moreover, the mechanism may be more complex for

⁴⁰ Although viewed as a positive outcome, it is not possible to establish what follows training, the duration, whether paid or unpaid. There is only a small percentage difference in probability between EAL levels, therefore language proficiency is not a strong predictor of training-other destination outcomes. Albeit ‘other’ destinations could include a student moved overseas or illness, unemployed or other destinations are not deemed positive outcomes by the Scottish Government.

⁴¹ University students’ ethnicity or social class are more strongly associated with HE outcomes than gender (Richardson et al., 2020).

immigrant children when ethnicity, migration experience, and first language literacy are considered. Thus, the estimates from the results in the present findings are averages. There will be students who performed above and below average at each level of English language proficiency at age 15-16, in examinations, and subsequent school leaver outcomes. As a result, the explanatory mechanism appears to involve a combination of ethnic background, with which motivation may be associated, proficiency in the English language, and potentially bilingualism⁴² which lead to better educational outcomes, and improved school transitions.

For example, Chinese students, found here to have a strong positive association with higher education, are among the top performers in UK studies of educational attainment (Dillon, 2020a; Francis et al., 2017; Gates and Guo, 2014; Leckie and Goldstein, 2019). This contrasts with Roma children who are susceptible to low educational attainment as a marginalised group, hindering integration, employment, and educational opportunities (Sime, 2018; Sime et al., 2017). In addition to proficiency in the English language, motivation to succeed and social class of parents may be the mechanism underpinning certain ethnic minority students' success that explain for instance, why some non-native English language speakers are more likely to transition to university than native English language speakers. Such motivation is inferred by Gates and Guo (2014), and Burgess (2014) comparing educational attainment of ethnic minority groups with white-British students. Conversely, in a case study of the Roma community in

⁴² Bilingualism is associated with higher academic achievement (Demie and Lewis, 2018; Spencer et al., 2017; Strand and Hessel, 2018).

Glasgow “There was a perceived hopelessness in relation to the chances that Roma children have to overcome their marginalisation” (Sime et al., 2017, p.316).

Improved English language proficiency slightly increases the prospect of entering employment

The finding that the probability of EAL students entering unemployment decreases as English language proficiency increases (falling from 11% for beginners to 6% for fluent) confirms that acquiring a higher level of English language proficiency increases the chance of EAL students avoiding unemployment. However, with only a few percentage points between EAL levels compared to native English language speakers, English language proficiency is not a strong predictor of employment.⁴³ This may reflect that (a) employment is generally not EAL students’ favoured choice of initial destination, or (b) lack of preparedness for employment with a corresponding need to gain school qualifications or improve linguistic proficiency for later transition to the labour market, or (c) rather than English language proficiency, as Iannelli and Duta (2018) find, parental social class and disadvantaged background contribute to whether a student enters employment or unemployment. The inference drawn from those probabilities is encouraging particularly for beginners. They are no more likely to be classified NEET than students with English as a first language.⁴⁴

However, the association between language proficiency and an initial employment destination, compared to unemployed, indicates ‘developing competence’ as the point where differences between EAL students and native

⁴³ Gender, additional support needs, ethnicity, or school type do not explain employment outcomes. Proportionally more English as first language than EAL students enter employment directly from school. Most likely to enter employment destinations are those without FSM.

⁴⁴ See Powell (2018) for UK data on Not in Education, Employment or Training (NEET).

English language speakers are removed. This resonates with study of refugee employment, where similarly an intermediate level of host-language proficiency is a threshold which once reached, increases the likelihood of employment in European labour markets (Brell et al., 2020).

Further education is the most likely transition for ‘new to English’ and ‘early acquisition’ students

Further education (FE) is an important destination for native English language students. For students from disadvantaged socio-economic backgrounds, FE is key to supporting entry into the labour market and higher education (Colleges Scotland, 2020). It is also the most likely destination for a large proportion of EAL students. However, the pattern is clearly stepped. As English language proficiency rises EAL students are less likely to enter further education: the majority are beginners (new to English and early acquisition). That fluent students are not well represented in further education signals it is not their destination of choice. Further education colleges provide opportunity for students to repeat national examinations not attained in school, which may include ESOL⁴⁵. The results thus signpost the importance of further education for sub-fluent EAL students. There are other routes to university (Moulton et al., 2018), and therefore further education may function as a vital bridge for late arrivals with academic aspirations to catch up on their peers.⁴⁶

⁴⁵ English for Speakers of Other Languages (ESOL), see SQA. (n.d.).

⁴⁶ Aspirations are discussed by Archer et al. (2014), Berrington et al. (2016), Platt and Parsons, (2018), Richardson et al. (2020).

English language proficiency is a gateway to higher education

Crawford and Greaves (2015) found EAL boosted the likelihood of participating in higher education over and above ethnic background when compared to white-UK students. The analysis here shows those findings are not universal. Fluent EAL students have a greater probability of progression to a higher education destination than any other level of proficiency, including native English language speakers. The stepped probability (21% for new to English students, to 58% for fluent students at S4), signposts a strong association, confirming the primary hypothesis increased English language proficiency increases the likelihood of entering higher education. The lack of representation of sub-fluent students in transitioning directly to higher education, resonates with studies highlighting the challenges faced by non-fluent speakers in university settings (see McMillan, 2008; Fenton-Smith and Humphreys, 2017). Although higher education is not the goal of all students,⁴⁷ a significant barrier remains without command of the English language. However, as ‘developing competence’ and above proportionally transition to higher education more than English as first language students, suggests full command of the English language is not the only determinant.

Certainly, here the strongest effect of attainment scores is seen, consistent with the literature (DfE, 2019b; Richardson et al., 2020).⁴⁸ The analysis signals issues for English as first language students with a white-UK ethnic background,

⁴⁷ See for example Archer and Yamashita (2003).

⁴⁸ An advantage for girls, not having ASN, or FSM entitlement, or non-white UK ethnicity, have positive effects on transition to FE. That ethnicity partly explains the transition, particularly for white ethnicity students, is consistent with the literature (Crawford and Greaves, 2015; Richardson et al., 2020). That having ASN had a negative effect on the likelihood of entering HE, contrasts with findings in England. Crawford and Greaves (2015) suggested students with special education needs were more likely to enter university.

particularly the disproportionate numbers entering further education compared to EAL students.⁴⁹ Still, native English language students as a large heterogeneous group, restricts comparison, as variation within this group may be large in terms of social background, or for instance aptitude in English as a subject.

Language proficiency is the key explanatory mechanism

Here, a hypothetical example of how English language proficiency might work as the explanatory mechanism is considered. Two students, Student A and Student B, similar in ethnic background and other characteristics, both aspire to attend university. They substantively differ only in their level of English language proficiency. Student A (below the threshold) enters further education, while Student B enters university. Although educational attainment is crucial, the underlying mechanism is English language proficiency. Without adequate proficiency in the English language, acquisition of English as a subject is out of reach, and subsequently acceptance by a university for undergraduate study, irrespective of an EAL student's ethnic background, gender, or social class.⁵⁰ Attendance at university is associated with examination scores at age 16 (Crawford and Greaves, 2015), which are known to be associated with level of English language proficiency (Dillon, 2020a). Hence, it is the level of English language proficiency, by way of its association with educational attainment, which is the mechanism determining an initial or potentially later transition to higher education for those who aspire to do so. Therefore, whether the causal chain is

⁴⁹ There was a large difference in sample size between English as first language and EAL students, which may have some effect.

⁵⁰ Educational attainment at age 15-16 is important for future transitions. Although universities set their own admission criteria, usually requiring higher level qualifications attained in S5-S6, a prerequisite is "pre-16 qualifications, such as GCSE English and maths, or their equivalents" (UCAS, 2020, non-paginated).

viewed as driven by a cumulative series of factors or intersectionality, nevertheless, English language proficiency is the key component.

Stage of leaving secondary school

The focus of this paper was on what is known at S4 stage, and the impact on initial school leaver destinations. Whether a student left at S4, S5 or S6 was not controlled for in this paper. The patterns of leavers by stage are well established. For example, national summaries published by the Scottish Government (2019b), confirm approximately 50% of S4 leavers enter a further education initial destination, followed by employment (25%). Less than 1% nationally transition from S4 to higher education. The majority leaving at S5, enter further education (40%) or employment (34%), while only 12% enter higher education.⁵¹ At S6, 61% of initial destinations are to higher education, with 17% transitioning to further education, or employment (18%). The S4 measure allowed insight into the potential outcomes for 15-16 year old students, useful for students and educators to plan for S4-S6 and post-secondary school transitions.⁵²

The contribution and limitations of this paper

This paper makes a unique contribution. It introduced new data, shed light on the transitions of students who are not fluent in the English language, and possible life chances following post-compulsory education, adding to the integration of non-native language speakers and educational inequalities literatures.⁵³ The percentage of students entering each destination category were

⁵¹ Only likely for more able students (Machin et al., 2013).

⁵² Students are highly unlikely to transition to university from S4, as higher level qualifications are required for entry, acquired in S5-S6 (see UCAS, 2020).

⁵³ It particularly shed light on Crawford and Greaves (2015) finding of EAL students more likely to enter university, which seemed counterintuitive for students with an immigrant background, explained in a large part by level of English language proficiency.

analogous with Scottish Government summaries (in which English language proficiency is omitted). However, the major contribution of this paper is the revealing of patterns of destinations for EAL students differentiated by level of English language proficiency: they do not correspond to those of the majority population (students with English as first language and white-UK ethnicity). It adds an important caveat to the findings of Crawford and Greaves (2015) of EAL students being more likely to enter university.

Nonetheless, it was not possible to determine the duration in each destination or further transitions.⁵⁴ The analysis did not consider if English language proficiency increased for students who remained beyond S4, or the stage a student left school, which may have a bearing on initial destinations.⁵⁵ The transition through the S4-S6 senior stage is beyond the scope of this paper. Although there is a body of literature on the implications of early leaving (see Canduela et al., 2010; Howieson, 2003), that merits separate study exploring the implications for EAL student (1) attainment, and (2) initial destinations.

The analysis did not explore interactions between individual effects.⁵⁶ There may be additional factors which impact on a student entering higher education, for instance tuition fees or outreach programmes aimed at widening participation (see Richardson et al., 2020). Moreover, students' EAL level and associated school attainment may have been influenced by further unmeasured cofounders, such as migration experience, children of highly skilled economic migrants with a high level

⁵⁴ A follow up survey is conducted by SDS approximately 9 months after leaving school but has a lower sample and does not address the absence of longitudinal data (See Iannelli and Duta, 2018).

⁵⁵ The consequences of early leavers are discussed by Canduela et al (2010), and Howieson (2003). A student entering secondary school at S1 as 'new to English' will have marginal improvement in proficiency at S5 compared to S4 (Dillon, 2020c).

⁵⁶ For a discussion of the potential intersectionality of variables, see Richardson et al. (2020).

of L1 literacy, or an unaccompanied child with interrupted schooling, or low level of literacy which could not be controlled for in this study.⁵⁷

7. Conclusions and policy implications

The aim of this paper was to establish: (1) What is the impact of the association between English language proficiency and initial post-secondary school destinations? (2) What are the probabilities of destination outcomes by level of English language proficiency? (3) How important is the level of ‘developing competence’ threshold of English language proficiency for destination outcomes? In a case study of secondary school students in the city of Glasgow, English language proficiency and background characteristics, together with educational attainment measured by points accumulated at age 15-16 in public examinations, were explored through descriptive analysis followed by estimation of a multinomial regression model.

Regarding the central question, the paper ascertained the majority of EAL students entered further or higher education. Beginners entered proportionally more further education destinations and fewer higher education destinations compared to English as first language students, confirming an association between English language proficiency and initial post-school destinations. Concerning the two sub-questions, the level of ‘developing competence’ is an important threshold, however acquisition of ‘competent’ improves the likelihood of transitioning directly to further education.⁵⁸ Thus, the probabilities of destination

⁵⁷ Parental background, intelligence or general ability of students, time spent in the UK are not controlled for.

⁵⁸ Intermediate to advanced EAL level students (developing competence to fluent) exceeded the probability of English as first language students transitioning to HE.

outcomes are largely explained by linguistic proficiency, but also by ethnic background which may provide an additional motivational factor. Other factors play an important role, such as the established socioeconomic effects, gender, and educational attainment, potentially more complex for migrant children depending on their L1 literacy, migration experience, and parental social class. The evidence suggests lower proficiency EAL students transition to the labour market later, first transitioning to further education. This confirms the hypothesis, increased English language proficiency increases the likelihood of entering higher education. Although, English as a subject and mathematics scores at S4 remain a strong indicator of a higher education destination.

In summary, the analysis confirms the important role linguistic proficiency plays in EAL students school transitions. The papers key finding is the distinct shift from further education to higher education associated with level of English language proficiency. The patterns hold after controlling for other variables. This indicates improved proficiency is aligned with improved destination outcomes, notwithstanding potential unobservable cofounders such as parental social class together with established associations that may be contributing to the effect. Although these are initial destinations, recorded only 3 months after leaving school, they provide an important first step in understanding EAL students life chances, previously unexplored in the literature.

From a policy perspective, the probabilities provide a mechanism to identify students who may require additional support to improve their destination outcome. There is clearly a pivotal point for sub-fluent EAL students in likely initial school leaver destinations associated with an intermediate level of English language proficiency. This signals that additional language support is required. The level of

‘competence’ in the English language opens more destinations opportunities and therefore improved life chances. The policy goal should be to support students in achieving the level of ‘competent’ or at least ‘developing competence’ to mitigate the negative effects that lack of proficiency in the English language has on initial destinations, and associated potential for instability in the labour market. As it was established that further education is the main destination for the majority of sub-fluent EAL students, where existing partnerships exist between secondary schools, local authorities, and further education institutions, these should be enhanced, and where absent they should be forged. Notwithstanding the likely funding implications for language support, the implementation of a clear pathway to help low proficiency late arrivals forward plan for almost certain entry into further education is vital.

References

- Anderson, L.W., Jacobs, J., Schramm, S. and Splittgerber, F. (2000) “School Transitions: Beginning of the End or a New Beginning?” *International Journal of Educational Research* 33 (4): 325–339.
- Archer, L. and Yamashita, H. (2003) 'Knowing their limits'? Identities, inequalities and inner city school leavers' post-16 aspirations, *Journal of Education Policy*, 18:1, 53-69, DOI: 10.1080/0268093032000042209
- Archer, L., DeWitt, J., & Wong, B. (2014). Spheres of influence: What shapes young people’s aspirations at age 12/13 and what are the implications for education policy? *Journal of Education Policy*, 29, 58 –85.

- Berrington, A., Roberts, S., & Tammes, P. (2016) Educational aspirations among UK young teenagers: Exploring the role of gender, class and ethnicity. *British Educational Research Journal*, 42, 729–755.
- Blackburn, L. H., Kadar-Satat, G., Riddell, S., & Weedon, S. (2016) Access in Scotland: Access to higher education for people from less advantaged backgrounds. Sutton Trust. Online available: https://www.suttontrust.com/wp-content/uploads/2016/05/Access-in-Scotland_May2016.pdf [Accessed: 29 May 2020]
- Brell, C., Dustmann, C. and Preston, I. (2020) The Labor Market Integration of Refugee Migrants in High-Income Countries. *Journal of Economic Perspectives*, 34(1), 94–121
- Budría, S., Colino, A. & Martínez de Ibarreta, C. (2019) The impact of host language proficiency on employment outcomes among immigrants in Spain. *Empirica* 46, 625–652.
- Burgess, S. (2014) Understanding the success of London's schools. *Centre for Market and Public Organisation (CMPO) Working Paper*, 14, 333.
- Canduela, J., Chandler, R., Elliott, R., Lindsay, C., Macpherson, S., McQuaid, R. W. & Raeside, R. (2010) Partnerships to support early school leavers: school–college transitions and 'winter leavers' in Scotland, *Journal of Education and Work*, 23:4, 339–362, DOI: 10.1080/13639080.2010.490550
- Colleges Scotland. (2020) *Keyfacts 2020*. Colleges Scotland. Online available: <https://collegesscotland.ac.uk/briefings-and-publications/publications/1563-colleges-scotland-keyfacts-2020/file.html> [Accessed: 7 Oct 2020]

- Crawford, C., & Greaves, E. (2015). *Socio-economic, ethnic and gender differences in HE participation*. BIS Research Paper No. 186. Department for Business Innovation and Skills. Online Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/474273/BIS-15-85-socio-economic-ethnic-and-gender-differences.pdf [Accessed: 29 May 2020]
- CSMP. (2019) *Asylum Dispersal*. COSLA Strategic Migration Partnership (CSMP). Online Available: <http://www.migrationscotland.org.uk/our-priorities/current-work/asylum-dispersal> [Accessed: 13 May 2020]
- Demie, F., & Lewis, K. (2018) Raising achievement of English as additional language pupils in schools: Implications for policy and practice. *Educational Review*, 70(4), 427-446. 10.1080/00131911.2017.1344190
- DfE. (2019a) *Destinations of KS4 and KS5 pupils: 2017*. UK Government. [Online] <https://www.gov.uk/government/statistics/destinations-of-ks4-and-ks5-pupils-2017>
- DfE. (2019b) *Destinations of key stage 4 and 16-18 students, England, 2017/18*. Department for Education. Online available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/860135/Destinations_main_text_2020_REV.pdf [Accessed 28 May 2020]
- Dillon, S. (2020a) *The Positive Association Between English Language Proficiency and Educational Attainment: A Fixed Effects Multiple Regression Model*. [Unpublished Paper 1 of DPhil Thesis].

Dillon, S. (2020b) English Language Proficiency & Secondary School Attainment: A Multilevel Regression Model. [Unpublished Paper 2 of DPhil Thesis].

Dillon, S. (2020c) The Effect of Mainstreaming Policy on English as an Additional Language Students and the Importance of Thresholds of Proficiency for Outcomes: A Multilevel Difference-in-Differences Regression Model. [Unpublished Paper 3 of DPhil Thesis].

Dorsett, R. and Lucchino, P. (2015) *The School-to-Work Transition: An Overview of Two Recent Studies*. Discussion Paper No. 445, London: National Institute of Economic and Social Research.

Dustmann, C. and Fabbri, F. (2003) Language Proficiency and Labour Market Performance of Immigrants in the UK, *The Economic Journal*, 113;489, 695–717, <https://doi.org/10.1111/1468-0297.t01-1-00151>

Education Scotland. (2020) *Further education*. Online available: <https://education.gov.scot/parentzone/learning-in-scotland/post-16-opportunities/further-education> [Accessed: 7 Oct 2020]

Faas, D. Darmody, M. and Foley, H. (2019) Post-school transitions in Ireland: a case study of Russian-speaking students, *Comparative Education*, 55:3, 326-346, DOI: 10.1080/03050068.2019.1619329

Flynn, N. & Curdt-Christiansen, X, L. (2018) Intentions versus enactment: making sense of policy and practice for teaching English as an additional language, *Language and Education*, 32:5, 410-427, DOI: 10.1080/09500782.2018.1475484

Foshay, A. W. (1991) The Curriculum Matrix: Transcendence and Mathematics.

Journal of Curriculum and Supervision, Vol. 6(4), p277-293.

Francis, B., Mau, A., & Archer, L. (2017) The construction of British Chinese

educational success: Exploring the shifting discourses in educational debate, and their effects. *Journal of Ethnic and Migration Studies*, 43(14), 2331-2345.

Francis, B., Mills, M. and Lupton, R. (2017) Towards social justice in education:

contradictions and dilemmas, *Journal of Education Policy*, 32:4, 414-431, DOI: 10.1080/02680939.2016.1276218

Froy, F., and Pyne, L. (2011) *Ensuring Labour Market Success for Ethnic Minority*

Children and Immigrant Youth. Paris: OECD Local Economic and Employment Development Working Papers 2011/09.

Gates, P. and Guo, X. (2014) How British-Chinese parents support their children:

a view from the regions, *Educational Review*, 66:2, 168-191, DOI: 10.1080/00131911.2013.768958

GCC. (2010) English for Speakers of other Languages: Policy for Glasgow schools. Glasgow: Glasgow City Council.

<http://www.glasgow.gov.uk/CHttpHandler.ashx?id=12204>

GCC. (2011b) *Children and Families Policy Development Committee*. Report by

Executive Director of Education. Glasgow City Council. Online Available:

<http://www.glasgow.gov.uk/Councillorsandcommittees/viewSelectedDocument.asp?c=P62AFQZ3T12UUTNT> [Accessed: 12 May 2020]

Geay, C., McNally, S. and Telhaj, S. (2013) Non-native Speakers of English in the Classroom: What Are the Effects on Pupil Performance? *Econ J*, 123: F281-F307. doi:10.1111/econj.12054

Hammond, C. (2018) *New Scots 2 – Engagement analysis of the New Scots Refugee Integration Strategy 2018 to 2022*. The Scottish Government: Edinburgh.

Harder, N., Figueroa, L., Gillum, R. M., Hangartner, D., Laitin, D. D., and Hainmueller, J. (2018) Multidimensional measure of immigrant integration. *Proceedings of the National Academy of Sciences*, 115 (45) 11483-11488; DOI: 10.1073/pnas.1808793115

Harrison, N. (2017) Patterns of participation in a period of change: Social trends in English higher education from 2000 to 2016. In R. Waller, N. Ingram, & M. R. M. Ward (Eds.), *Higher education and social inequalities: University admissions, experiences, and outcomes*. London: Routledge.

Hegna, K. (2014) Changing educational aspirations in the choice of and transition to post-compulsory schooling – a three-wave longitudinal study of Oslo youth, *Journal of Youth Studies*, 17:5, 592-613, DOI: 10.1080/13676261.2013.853870

Hills, J. (2010) *An Anatomy of Economic Inequality in the UK - Report of the National Equality Panel*. LSE STICERD Research Paper No. CASEREPORT60. Available at SSRN: <https://ssrn.com/abstract=1546894>

Howieson, C. (2003) *Destinations of Early Leavers*. Centre for Educational Sociology, University of Edinburgh [Online:] <http://www.leeds.ac.uk/educol/documents/159736.pdf>

- Howieson, C. and Iannelli, C. (2008) The effects of low attainment on young people's outcomes at age 22–23 in Scotland. *British Educational Research Journal*, Vol. 34, No. 2, pp. 269–290
- Iannelli, C. & Duta, A. (2018) Inequalities in school leavers' labour market outcomes: do school subject choices matter?, *Oxford Review of Education*, 44:1, 56-74, DOI: 10.1080/03054985.2018.1409970
- Iannelli, C. & Smyth, E. (2017) Curriculum choices and school-to-work transitions among upper-secondary school leavers in Scotland and Ireland, *Journal of Education and Work*, 30:7, 731-740, DOI: 10.1080/13639080.2017.1383093
- Ionescu, A. M. and Cuza, A. I. (2012) How does education affect labour market outcomes? *Review of Applied Socio- Economic Research*, Vol. 4(2), pp. 130-144.
- Jensen, O. and Gidley, B. (2014) *The Politics of Mainstreaming Immigrant Integration Policies: Case study of the United Kingdom*. Center on Migration, Policy and Society (COMPAS): University of Oxford.
- Kaya, G. and Barmark, M. (2019) Traditional versus experimental pathways to university: Educational aspirations among young Swedes with and without an immigrant background, *Journal of Youth Studies*, 22:7, 891-906, DOI: 10.1080/13676261.2018.1548759
- Lagana, F., Chevillard, J. and Gauthier J. A. (2014) "Socio-economic Background and Early Post-compulsory Education Pathways: A Comparison between Natives and Second-generation Immigrants in Switzerland." *European Sociological Review* 30 (1): 8–34.

- Leckie, G. and Goldstein, H. (2019) The importance of adjusting for pupil background in school value-added models: A study of Progress 8 and school accountability in England. *British Educational Research Journal*, 45: 518-537. doi:10.1002/berj.3511
- Machin, S., McNally, S. and Wyness, G. (2013) Education in a Devolved Scotland: A Quantitative Analysis. Report to the Economic and Social Research Council. CEP Special Paper No. 30. Online available: <http://cep.lse.ac.uk/pubs/download/special/cepsp30.pdf> [Accessed: 12 Feb 2021]
- McCluskey, G. (2017) Closing the attainment gap in Scottish schools: Three challenges in an unequal society. *Education, Citizenship and Social Justice*, Vol. 12(1) 24 –35.
- McKinney, S., Hall, S., Lowden, K., McClung, M. and Cameron, L. (2012) The relationship between poverty and deprivation, educational attainment and positive school leaver destinations in Glasgow secondary schools, *Scottish Educational Review* 44 (1), 3-45
- McKinney, S. J., Hall, S. T. and Lowden, K. (2017) Catholic Schools and attainment in Scotland. *Open House*, 269, pp. 14-15.
- Migration Scotland. (n.d.) Migration to Scotland. COSLA Migration, Population and Diversity. Online available: <http://www.migrationscotland.org.uk/migration-information/migration-statistics> [Accessed: 2 Oct 2020]
- Moulton, V. Sullivan, A. Henderson, M. & Anders, J. (2018) Does what you study at age 14–16 matter for educational transitions post-16?, *Oxford Review of Education*, 44:1, 94-117, DOI: 10.1080/03054985.2018.1409975

OECD. (2015) *Helping immigrant students to succeed at school – and beyond*.

OECD. [Online] <http://www.oecd.org/education/Helping-immigrant-students-to-succeed-at-school-and-beyond.pdf>

Platt, L., & Parsons, S. (2018) Occupational aspirations of children from primary school to teenage years across ethnic groups. A joint report by the Centre for Longitudinal Studies and the Runnymede Trust. Online available:

https://cls.ucl.ac.uk/wp-content/uploads/2018/09/9948_CLS_Paper_Occupational_Aspirations_of_Children_WEB_FINAL.pdf [Accessed: 29 May 2020]

Powell, A. (2018) NEET: Young People Not in Education, Employment or Training. BRIEFING PAPER, Number SN 06705. London: House of Commons Library.

Reino, M. F. (2019) *English language use and proficiency of migrants in the UK*.

The Migration Observatory, University of Oxford. Online Available: <https://migrationobservatory.ox.ac.uk/wp-content/uploads/2019/07/Briefing-English-language-use-and-proficiency-1.pdf> [Accessed: 2 Nov 2020]

Richardson, J.T. E. Mittelmeier, J. & Rienties, B. (2020) The role of gender, social class and ethnicity in participation and academic attainment in UK higher education: an update, *Oxford Review of Education*, DOI: 10.1080/03054985.2019.1702012

Rodeiro, C.V. and Williamson, J. (2018) Meaningful destinations: using national data to investigate how different education pathways support young people's progression in England, *Research Papers in Education*, DOI: 10.1080/02671522.2018.1536889

Sawkins, J. W. (2002) Examination performance in Scottish secondary schools: an ordered logit approach, *Applied Economics*, 34:16, 2031-2041, DOI: 10.1080/00036840210124559

Scotland. (n.d.a) *Scotland Welcomes Refugees*. Scotland.org, Scottish Government. Online available: <https://www.scotland.org/about-scotland/scotlands-stories/scotland-welcomes-refugees> [Accessed: 29 Oct 2020]

Scotland. (n.d.b) *Scottish Education and School Systems*. Scotland.org. Scottish Government Online available: <https://www.scotland.org/live-in-scotland/school-systems> [Accessed: 7 Oct 2020]

Scottish Government. (2014) *Local Area Labour Markets in Scotland: Statistics from the Annual Population Survey, 2014*. Edinburgh: The Scottish Government.

Scottish Government. (2017) *Supporting Children's Learning: Statutory Guidance on the Education (Additional Support for Learning) Scotland Act 2004 (as amended), Code of Practice (Third Edition)*. Edinburgh: The Scottish Government.

Scottish Government. (2018) *Initial Destinations of Senior Phase School Leavers*. No. 2: 2018 Edition. Edinburgh: The Scottish Government.

Scottish Government. (2019a) *School Leaver Attainment and Destinations Statistics*. SG Education Analytical Services. [Online] <https://public.tableau.com/profile/sg.eas.learninganalysis#!/vizhome/SchoolLeaverAttainmentandDestinationsDashboard/Home>

Scottish Government. (2019b) *Summary Statistics for Attainment and Initial Leaver Destinations*, No. 1: 2019 Edition. Edinburgh: The Scottish Government.

SDS. (n.d.) *School Leaver Destinations*. Skills Development Scotland. [Online]
<http://www.skillsdevelopmentscotland.co.uk/publications-statistics/statistics/archived-school-leaver-destinations/?page=1&statisticCategoryId=8&order=date-desc>

SDS. (2015) *Scotland: Initial School Leaver Destinations 2014/15*. Glasgow: Skills Development Scotland.

SDS. (2019) *Annual Participation Measure for 16 – 19 year olds in Scotland 2019*. Glasgow: Skills Development Scotland.

Shapira, M. & Priestley, M. (2019) Do schools matter? An exploration of the determinants of lower secondary school subject choices under the Scottish Curriculum for Excellence. *Review of Education*.
<https://doi.org/10.1002/rev3.3180>

Shields, J. & Gunson, R. (2017) *Autonomy in the right place: School governance reform in Scotland*, IPPR Scotland.
<http://www.ippr.org/publications/autonomy-in-the-right-place-school-governancereform-in-scotland>

Sime, D. (2018) Educating migrant and refugee pupils. In T. Bryce, W. Humes, A. Kennedy, & D. Gillies (Eds.), *Scottish Education* (5th ed.). Edinburgh University Press.

Sime, D. Fassetta, G. and McClung, M. (2017) 'It's good enough that our children are accepted': Roma mothers' views of their children's education post-migration, *British Journal of Sociology of Education*, DOI: 10.1080/01425692.2017.1343125.

Spencer, S., Clegg, J., Stackhouse, J., & Rush, R. (2017) Contribution of spoken language and socio-economic background to adolescents' educational achievement at age 16 years. *International Journal of Language & Communication Disorders*, 52(2), 184-196.

SQA. (n.d.) *ESOL*. The Scottish Qualifications Authority. Online available: <https://www.sqa.org.uk/sqa/45678.html> [Accessed: 7 Oct 2020]

Strand, S. & Hessel, A. (2018) *English as an additional language, proficiency in English and pupils' educational achievement: An analysis of Local Authority data*. London: Bell Foundation.

Strand, S., Malmberg, L., & Hall, J. (2015) *English as an additional language and educational achievement in England: An analysis of the national pupil database*. London: Educational Endowment Fund.

Tinklin, T. and Raffe, D. (1999) *Scottish School Leavers' Survey: Entrants to Higher Education*. The Scottish Office Education and Industry Department. Online Available: <https://files.eric.ed.gov/fulltext/ED446521.pdf> [Accessed: 19 Jan 2021]

Wiren E. (2014) Migrant Education. In: Michalos A.C. (eds) *Encyclopaedia of Quality of Life and Well-Being Research*. Dordrecht: Springer.

Appendix A

Table 3: Positive and negative Destinations of School Leavers categories used in Scottish Government publications

Positive	Negative
Activity Agreement*	Economically Inactive
Employed	Excluded
Employed - with Training	Moved Outwith Scotland
Employed - without Training	Unavailable - Ill Health
Further Education	Unemployed
Get Ready for Work**	Unemployed not Seeking
Higher Education	Unemployed Seeking
Part-time Employment	Unknown
Training	
Voluntary Work	

Note. * "... an agreement between a young person and an advisor that the young person will take part in a programme of learning and activity which helps them to become ready for formal learning or employment." (SDS, 2015, p.21).

Note. ** Get Ready for Work (GRfW) was a national programme providing basic skills training, including literacy.

Appendix B

Table 4: Definition of Destinations Used in Scottish Government Outputs

Positive destination	Higher education, further education, training, voluntary work, employment and activity agreements.
Higher Education	HND (Higher National Diploma) or HNC (Higher National Certificate) courses, degree courses, courses for the education and training of teachers and higher level courses for professional qualifications. Includes programmes at a level higher than the standard of the National Qualifications, i.e. above SCQF level 7. Leavers with a deferred, unconditional place in higher education have also been included in this category.
Further Education	Full-time education which is not higher education and no longer on a school roll. This may include National Qualifications.
Training	On a training course and in receipt of an allowance or grant, such as the Employability Fund national training programme. Includes leavers who are on local authority or third sector funded training programmes that are in receipt of a training allowance.
Employment	Employed and in receipt of payment. Includes training in employment through national training programmes such as Modern Apprenticeships.
Voluntary work	Voluntary work, with or without financial allowance, who are not 'unemployed and actively seeking'.
Activity Agreements	Agreement between a young person and a trusted professional that the young person will take part in a programme of learning and activity which helps them become ready for formal learning or employment.
Unemployed and seeking employment or training	Registered with Skills Development Scotland (SDS) and are known by them to be seeking employment or training. This does not refer to the definition of 'unemployed' used by the Department of Work and Pensions to calculate published unemployment rates. Young people participating in Personal Skills Development who do not fit in any of the existing categories are counted in this category.
Unemployed and not seeking employment or training	Not actively seeking employment/training, includes those receiving support from SDS, DWP and other Opportunities for All partners. Individuals can be in this category for a range of reasons. The reasons may involve sickness, prison, pregnancy, caring for children or other dependents or taking time out.
Not known	Destination is not known either to SDS or to the school attended.

Source: Scottish Government (2018). Destinations are based on self-reporting by school leavers or administrative data.

Appendix C

Table 5: Ethnicity Variable

Category	Code	Groups included in category
African or Caribbean	1	Black–African, African–Other, African–Scottish/British, Black–Caribbean, Caribbean or Black–Other, Caribbean or Black–British/Scottish
Asian	2	Asian–Indian/British/Scottish, Asian–Pakistani/British/Scottish, Asian–Bangladeshi/British/Scottish, Asian–Other
Chinese	3	Asian–Chinese/British/Scottish
White-Other	4	White–Irish, White–Polish, White–Gypsy/Traveller
Other-Ethnicity	5	Black–Other, Other–Arab, Not Known, Other–Other, Not Disclosed, Mixed or multiple ethnic groups, Mixed, Occupational Traveller, Gypsy Traveller, Traveller, Other Traveller
White-UK	6	White–Scottish, White–Other British

Note. Chinese ethnicity was included separately as the literature indicates strong academic performance.

Overview of Thesis and Conclusions

This thesis has focused on the association between English language proficiency and educational outcomes in secondary school settings. The existing scholarship identifies a hierarchical association of improved outcomes following improved linguistic proficiency for students without English as their first language, to the extent advanced proficiency EAL students are top performers in UK schools (Demie and Lewis, 2018). What has not been clearly articulated is the pivotal point where having EAL shifts from an indicator of lower than average outcomes to above average, the impact of mainstreaming, nor the fate of EAL students transitioning from secondary school towards the labour market. Moreover, despite considerable literature on the topic of English as an additional language, insufficient attention has been paid to the Scottish educational context. To resolve this, by way of a case study of Glasgow, the four empirical papers in this thesis centred on first establishing in Paper 1, the association between English language proficiency and scores at age 15-16 in national examinations. Next in Paper 2, how that association varied across schools, and in Paper 3 the effects of policy and outcomes over time, then finally in Paper 4 how the association impacts on post-secondary school transitions. Throughout each paper, a 'threshold' hypothesis considered the importance of an intermediate level of proficiency in the English language for outcomes compared to English as first language students. In this concluding section, the key findings from each paper are summarised, their contribution to the literature considered, and implications for policy discussed. Lastly, I present suggestions for future research that build on the four papers findings.

1. Summary of individual papers findings

Paper 1 *The Positive Association Between English Language Proficiency and Educational Attainment*

Paper 1 confirmed English language proficiency as the *main* predictor of success for EAL secondary school students in Glasgow. It confirmed the hypothesis (1) attainment increases as EAL student linguistic competence increases with gaps between EAL and students with English as a first language outcomes correspondingly reducing. Secondary hypotheses were confirmed (1) English language proficiency was more important for performance in English as a subject than mathematics (2) the EAL level of 'developing competence' is associated with educational outcomes equivalent to English as first language students. Regression models established English language proficiency explains as much variation in student outcomes as other background control variables combined. Ethnicity has an association, but the results suggest it is not greater than the effect of EAL for students at the extremity of the proficiency spectrum (new to English and fluent students), consistent with Demie (2013).

Paper 2 *English Language Proficiency and Attainment in Secondary Schools: A Multilevel Regression Model*

The purpose of this paper was to answer three central questions: (1) How much variation in student outcomes between schools is explained by English language proficiency? (2) How much does school EAL composition explain variation in student outcomes between schools? (3) To what extent is there a universal threshold of English language proficiency that allows EAL students to

match English as a first language student outcomes across schools? Student and school level variables were controlled for in multilevel statistical models.

Educational outcomes are partially shaped by educational environments (Sammons et al, 2014; Willms, 2010). A greater concentration of an influential factor such as deprivation within a school catchment area may have a cumulative detrimental effect on the learning environment (Wodtke and Parbst, 2017). Here, that factor was found to be EAL composition. Although approximately 3% of variation in student scores between schools is apportioned to level of English language proficiency,¹ though modest variance, differences are more pronounced for 'beginners' due to an effect of school EAL composition, indicating a negative direction in schools with higher percentage of EAL students measured in 'all subjects' combined, and in English as a subject.² Higher levels of English language proficiency at the school level, help EAL students mitigate the school composition effect. The threshold hypothesis was confirmed – intermediate level 'developing competence' allows students to match the outcomes of English as first language students in most schools. The findings from Paper 2 indicate differences in school effectiveness for beginners at greater risk of educational inequality. Such school effects are in line with Raudenbush and Willms (1995) definition – attending certain schools modify student outcomes.

¹ Derived from the random effect parameters representing the general variability between level-2 units (schools).

² School composition effects are the measured influence of aggregated student characteristics on the educational achievement of students (Harker and Tymms, 2004; Lauder et al, 2010; Timmermans and Thomas, 2015). In other words, the characteristics of students within individual schools may effect a change in the learning environment.

Paper 3 *The Effect of Mainstreaming Policy on English as an Additional Language Student Outcomes and Key Thresholds of Proficiency: A Multilevel Difference-in-Differences Regression Model*

Paper 3 presented a picture of EAL student outcomes over time, against the policy backdrop of mainstreaming. The papers findings suggest (a) a separate language support unit may have a positive effect on the educational outcomes of ‘new to English’ students (b) the EAL level of ‘developing competence’ is a consistent threshold for student outcomes over time (c) more than three years support is required to reach the ‘developing competence’ threshold. A higher entry level threshold than ‘new to English’ at S1 is needed to match native English language speakers’ outcomes by the end of compulsory schooling.

These findings contrast with the OECD (2015) assertion that educational outcomes are improved when non-native language speaking students are integrated immediately into mainstream education, rather than initially instructed separately. No evidence was detected of mainstreaming benefiting academic achievement.³ The findings similarly challenge the Department for Education in England assertion 3 years language support is adequate (DfE, 2012). However, an important finding for the overall resilience of the education system is no evidence emerged of an impact of increased EAL student population on English as first language student educational outcomes.

Paper 4 *The Association Between English Language Proficiency and Initial School Leaver Destinations: A multinomial Logistic Regression Model*

³ This was measured by comparing scores for ‘new to English’ and English as a first language students when a separate language support unit was in operation (2009-2011) with scores after its closure (2014-2016).

OVERVIEW AND CONCLUSIONS

The aim of this paper was to establish: (1) What is the association between English language proficiency and initial post-secondary school destinations? (2) What are the probabilities of destination outcomes by level of English language proficiency? (3) How important is the level of 'developing competence' of English language proficiency for destination outcomes? The paper employed a multinomial regression model.

Regarding the main question, the paper ascertains the majority of EAL students enter further or higher education. Beginners enter proportionally more further education destinations and less higher education destinations compared to English as first language students. The paper thus confirms an association between English language proficiency and initial post-secondary destinations. Concerning the two sub-questions, the probabilities of destination outcomes are largely explained by linguistic proficiency, but also by ethnic background which may provide an additional motivational factor. Other factors play a role in the causal chain, such as established socioeconomic effects (measured by entitlement to free school meals), gender, and educational attainment. The level of 'developing competence' is an important threshold, however, acquisition of 'competent' improves the likelihood of transitioning directly to further education.⁴ The paper confirms the hypothesis, increased English language proficiency increases the likelihood of entering higher education, notwithstanding English as a subject and mathematics scores at S4 are a strong indicator of higher education participation.

⁴ Intermediate to advanced EAL level students (developing competence to fluent) exceeded the probability of English as first language students transitioning to higher education.

The paper's key finding is the distinct shift from further education to higher education associated with reaching the 'developing competence' threshold. The pattern holds after introducing statistical controls. This indicates improved proficiency is aligned with improved destination outcomes, aside from potential unobservable cofounders such as parental social class together with established associations that may be contributing to the effect.⁵ The evidence suggests lower proficiency EAL students transition to the labour market later, after first transitioning to further education.

2. Summary and Contribution of overall findings

Each of the papers summarised in sections 2-5 explored different aspects of EAL education in Glasgow secondary schools. Emerging from all four papers is a clear indication of stratified educational outcomes associated with English language proficiency, consistent with study elsewhere in the United Kingdom. They collectively confirm the hierarchical association – increased proficiency leads to increased outcomes for EAL students. The importance of 'developing competence' as a threshold of English language proficiency is consistent across each paper. Taken together, they highlight the importance of this threshold and a vulnerability for students below it. The positive association between higher proficiency in the English language and educational attainment in Glasgow schools holds in each paper after controlling for student background characteristics, congruent with the literature in England (Demie, 2013; Demie, 2018; Demie and Lewis, 2018; Demie and Strand, 2006; Strand and Hessel,

⁵ Motivation of students by ethnic group may also be a factor: See Gates and Guo (2014), and Burgess (2014).

2018). Still, for students who enter the senior (assessment) phase of secondary school at the early stages of proficiency, each paper attests that EAL is associated with below average outcomes at age 15-16 in 'all subjects' combined, in English as a subject and in mathematics. For 'new to English' students, although mainstreaming is likely to have little impact on outcomes in subjects with less demand for English language proficiency, nevertheless, it may not be the best policy option for outcomes in English as a subject.

Each of the empirical papers broadened the scope of current understanding. One salient distinguishing feature lies in use of Scottish data, previously unexploited for academic research, used here to construct a unique database necessary for addressing the study's goals. Although this is not the first study to use disaggregated English language proficiency levels (rather than relying on a binary variable), nevertheless in doing so it also adds to a very limited set of existing literature. The thesis makes an **original contribution** to scholarship by

(1) studying the association between English language proficiency and educational attainment in the previously unexplored distinctive **Scottish educational context**. Although the association between proficiency and educational attainment is not unexpected, the unique contribution to knowledge is until now, the association in the Scottish context was unconfirmed.

(2) Exploring whether a language proficiency threshold for performance could be identified, and confirmation of that **'threshold' of proficiency** as consistent across schools and time.

(3) Discovering a potential negative **effect of school EAL composition** on ‘new to English’ students, previously not fully explored in the literature in the UK secondary school context.

(4) Assessing the **efficacy of mainstreaming** by comparing outcomes between contrasting policy approaches to language support, finding a negative impact on the educational outcomes of ‘new to English’ students.

(5) Extending analysis beyond schooling to encompass initial post-school destinations is innovative, uncovering the association between English language proficiency and the **post-secondary school transitions** of EAL students, hitherto unexplored in the UK educational context. The thesis thereby contributes to knowledge of English as an additional language students’ educational outcomes and life chances.

Although Paper 4 lacks longitudinal data, a clue as to how low proficiency leavers may fare in the labour market in the longer term may be gleaned from the broader literature. Certainly, there are some similarities between the findings of this thesis and the literature on integration, particularly the labour market outcomes of refugees. Studies conducted in the UK and across Europe have identified some of the most vulnerable migrants (refugees) reporting difficulty entering the labour market due to language barriers (Bloch, 2008; Brell et al., 2020; Fasani et al., 2018; Ruiz and Vargas-Silva, 2018). The UK Labour Force Survey (LFS) data 2010-2016, indicates almost 70% of refugees are unlikely to speak English at home (Ruiz and Vargas-Silva, 2018). Indeed, the ‘developing competence’ threshold also resonates with the refugee integration literature. In the European Union, most refugees in the labour market have intermediate host-

language proficiency or above – fewer are in employment below that threshold (Brell et al., 2020).

Negative labour market consequences of low educational attainment at S4 are known to persist long-term (Howieson and Iannelli, 2008). Howieson and Iannelli (2008), found low attainment at S4 influenced levels of employment and wages, which remained below average at age 18-19 and even 22-23. That study found initial destinations to be an important marker for the labour market trajectory. Unemployment experienced in initial school leaver destinations increased the likelihood of being unemployed at age 22-23. Conversely, a higher initial occupational entry brought continued advantage at later stages. The concern for low proficiency EAL students with low attainment at S4 would therefore be the risk of long-term unstable labour market outcomes seen in the integration literature.

This study of the EAL population in Glasgow indicates a lack of English language proficiency is not exclusive to first generation immigrants. Although ethnic background was also found to be a predictor of educational outcomes in this study, lower level English language proficiency was a stronger predictor of lower educational attainment. These findings are therefore relevant for broader research looking at long term educational disadvantage associated with an immigrant background, including those centred on ethnicity. For example, how much is the ‘London effect’ identified by Burgess (2014) underpinned by the language mechanism found to be central in this study?⁶ Likewise, Lenkeit et al.

⁶ Burgess (2014) argues the ‘London effect’ as higher performance of disadvantaged students in London explained by their ethnic background and greater motivation.

(2015) found refining socioeconomic indicators contributed to understanding persistent unexplained gaps in educational attainment for students with an immigrant background. The findings here suggest some of those remaining gaps could be explained by the addition of levels of English language proficiency in such analyses. The study particularly shed light on the Crawford and Greaves (2015) finding of EAL students being more likely to enter university, which seemed counterintuitive for students with an immigrant background but explained here in a large part by level of English language proficiency. Therefore, rather than competing paradigms, ethnicity and English language proficiency are key to understanding their positive and negative effects on educational outcomes.

The findings presented in this thesis thus improve understanding of the way lower levels of English language proficiency shape EAL students' educational outcomes and the consequences of not being fully conversant in the language of instruction and assessment in Glasgow secondary schools. This improves knowledge of EAL education and in particular the integration of 'new to English' students. Although the city of Glasgow sits within "a distinct institutional, political and social context" dissimilar from elsewhere in the UK (Sawkins, 2002, p.2031-2032), the fundamental underlying issue shared by EAL students across the UK is accessing the curriculum in the English language. Therefore, the present findings are an important contribution to knowledge, relevant for EAL education across the UK and beyond.

3. Policy implications and recommendations

The EAL label offers little analytic value

To be clear, the binary EAL versus non-EAL variable has some utility. For instance, when EAL levels of proficiency are aggregated it highlights underperformance for EAL students prior to the S4 assessment phase in Scotland, and strong performance for EAL students in the National Pupil Database (NPD) in England. However, the results presented in this thesis could not have been obtained with a binary EAL variable. Each paper conclusively shows the necessity of disaggregated data for analysis of EAL student outcomes. The binary EAL or non-EAL labelling employed in official outputs and published research, implies homogeneity, and of limited analytic value. The advantage of English language proficiency data made available by the Scottish Government for inclusion in this thesis, allowed a vital light to be shone on this heterogeneous group, uncovering vulnerable subgroups. The findings underscore the need to maintain collecting data on students' level of English language proficiency in England. This echoes Demie (2017), and Strand and Hessel (2018) in England, that proficiency in English should be reintroduced in the NPD and made accessible to the research community. Moreover, it may well be that a prefix is required in policy discourse to clearly distinguish between beginner-EAL, intermediate-EAL, and advanced-EAL students. There are strongly contrasting fortunes between the former and the latter in terms of required support and projected outcomes. What is argued for here is a move away from the juxtaposition of EAL against non-EAL in discourse, to a binary within EAL labelling indicating those above vis-à-vis those below the established intermediate threshold of English language proficiency.

School performance league tables

There are implications for publication of league tables comparing school performance. The differences in results by measure of attainment reiterate the need for caution when choosing a measure to compare school effectiveness. In addition to differences in school rankings between subjects. Although Paper 2 finds modest between school variance, it is potentially greater for beginners, at risk of low educational outcomes.

Language support

The 'developing competence' threshold is clearly a pivotal point for academic and school leaver outcomes. The tracking of English acquisition in Paper 3, finds students 'new to English' at S1 are at best 'developing competence' by S4 (approximate to Key Stage 4 in England). The Department for Education (DfE) however assert 3 years EAL support is adequate for secondary school students in England (DfE, 2012). The policy goal should be to effectively support students achieve this linguistic threshold to mitigate the negative effects lack of proficiency in the English language has on outcomes, rather than restricted by time.

Separate language support (outreach)

The key difference in policy over time was the move from in-reach to exclusively an outreach (in-school) service. The interaction between level of English language proficiency and school EAL composition may have implications for placing beginners into mainstream classes upon arrival to secondary school. As a result of a negative effect in English as a subject for 'new to English' students compared to English as first language in Paper 3, it may be for some late arrivals

with low proficiency in the English language, cost implications aside, separate educational units are a more appropriate policy option.⁷

The previous approach centred on a language support unit set up to instruct across curriculum subjects. The results implied performance in subjects with less demand for English language proficiency are not impacted on by peer effects, and in general, beginners need more help in English as a subject than in mathematics. Therefore, such discriminant validity between English as a subject and mathematics, and 'all subjects' outcomes, suggests targeted instruction for English as a subject would be more productive in a language support unit, prioritising new to English students from schools with higher EAL student composition.⁸ The caveat would be further study is needed to explore if the interaction is general increased EAL or driven by a specific level. For instance, perhaps more beginners in a school drives the effect. The evidence of difference in the association between English language proficiency and attainment in English as a subject vis-à-vis mathematics, supports the idea a more targeted response is required than before. Omitting instruction of mathematics would reduce the costs in a more focused language support unit for beginners.⁹

Separate linguistic units may not be palatable or currently fiscally viable.¹⁰ Mainstreaming newly arrived EAL students who are new to the English language, may on the one hand appear equitable,¹¹ yet the evidence in Paper 3 of a

⁷ Costs may be higher for new arrival EAL secondary school students compared to primary school (DfE, 2012).

⁸ Structuring EAL students timetabling accordingly. Although some schools may have more expertise, it may be more thinly spread in others. Pooling of resources into smaller localised support units could also be explored.

⁹ Or in general, subjects with less demand for a higher level of English language proficiency.

¹⁰ Arguably a different social context from historic 'busing' of ethnic minority students in the US.

¹¹ Or financially expedient at the time in Glasgow. See GCC (2011).

decrease in outcomes following closure of the language support unit suggests otherwise. Although a case study of Scotland's largest city, mainstreaming is an established UK wide policy approach. Therefore, these findings are relevant for EAL education across the UK.

4. Limitations and directions for further research

There are limitations to this thesis. In view of the limits of the data and potentially unseen confounders, it stands to reason findings presented here ultimately cannot claim to have identified causal relationships. Therefore, the realistic aim was to provide descriptive and advanced statistical analysis to uncover patterns in associations and potential causal mechanisms. In all four papers, the analysis lacks information on students' family background, parental education, and home learning environment, neighbourhood characteristics, attendance records and so forth. Moreover, English language proficiency, rate of acquisition, and attainment may have been influenced by additional cofounders, such as migration experience,¹² and level of L1 literacy. The analysis did not explore interactions between individual effects, other than the school EAL composition explored in Paper 2.¹³

In the analysis, an early choice was made to follow an orthodox approach to measure disadvantage by incorporating FSM entitlement. It included an improved measure not unlike that employed by the Department for Education in England, which takes account of whether a student had eligibility during a six year period. However, Gorard and Siddiqui (2019) draw attention to how such

¹² Which may extend to trauma experienced prior to or during migration (Brell et al., 2020).

¹³ For discussion of intersectionality see Richardson et al. (2020).

measures fail to capture students long term eligibility, who in some instances may have been eligible since primary school. As a final reflection, it was considered if there might be a hidden association between FSM entitlement and EAL, complementary to one another rather than competing explanations. For instance, might there be an association between EAL and FSM particularly for new arrivals with low proficiency? Descriptive analysis in Table 1 provided in the supplemental materials at the end of this section indicate no discernible pattern (see Appendix A). Nevertheless, it would still be a worthwhile exercise to construct a measure to take account of the duration of FSM eligibility. This has been shown by Gorard and Siddiqui (2019) to offer more predictive power in assessing the impact of disadvantage on educational outcomes. The problematic aspect however will be the lack of such recorded data for new arrival EAL students.

In terms of the methodology, there was a small sample of level-2 observations in multilevel models in Paper 2.¹⁴ The analysis could not account for the possible effects of student-teacher ratios, the central role of leadership, the diversity or linguistic skills of teachers, or fiscal constraints which may account for between school differences. In Paper 4, it was not possible to determine the duration in each destination or if a series of transitions were made after the initial 3 months of leaving school. The analysis did not consider whether a student remained in school through to S5 or S6, or whether a student left school at S4.¹⁵

There are also underlying methodological concerns about the endogeneity of the key language proficiency variable. The exploration of this issue outlined in the supplementary material sections, combined with the long term reporting of

¹⁴ Although, still within the parameters advocated by Bryan and Jenkins (2016).

¹⁵ Consequences of early leavers are discussed by Canduela et al (2010) and Howieson (2003).

EAL levels in Glasgow secondary schools census returns, does provide some reassurance of its validity. The Bell Foundation (2018) have produced an assessment framework which takes account of how proficiency may vary for different aspects such as in reading, writing, speaking, and listening, designed to facilitate initial assessment and ongoing progress tracking. The implementation of a consistent framework throughout the UK would help alleviate concern over endogeneity.

Several avenues for further study emanate from this thesis. A natural progression could be to conversely apply the methodology used in the Scottish context to that of England to see how the association holds there, data permitting. An interesting question would be whether the associations found between English language proficiency and destinations of school leavers (after controlling for background characteristics) are uniform or differ across the UK's educational systems by way of comparative study.

Another way in which the research might be expanded is to explore the stability of initial destinations of school leavers. Although beyond the scope of this study, the subset 'follow up' data (collected nine months after leaving), could be employed to compare initial and follow up destinations.¹⁶ An important question would be: are there differences between levels of proficiency, in the stability of the transition from school? This would give further insight into the potential life course of EAL students. The possibility of linking to labour force datasets could also be explored with the Scottish Government.

¹⁶ Initial destinations are collected approximately three months after leaving school. The follow up is collected nine months after leaving. The former was used in this thesis as it provided a larger sample.

However, arguably the most pressing need for further research is to explore further the school EAL composition effect. Research questions could investigate what level of EAL drives the effect: if driven by greater numbers of 'new to English' students, it would lend further support to a separate language support unit. Another area concerns measurement of attainment. The four empirical papers focused on a total-points score measure. Further study might look more closely at subject choice, in detail which subjects and at which level EAL students are picking up points in. Moreover, how do EAL students transition through the senior phase into S5-S6. This thesis focused on performance at S4 (age 15-16), and therefore further directions for research might include exploring those transitions. This could be accommodated in a pupil fixed effects approach, exploiting further the rich data held within the bespoke dataset constructed for this thesis. Within person analysis, could include performance of students in different subjects, to explore whether the association is present in for example science subjects, individual rates of English acquisition, or their progress through stages of secondary school (See Altinok and Kingdon, 2012, for an educational research example of the methodology).

The probabilities in Paper 4 provide the possibility to identify students who may require additional support to improve their destination outcome. The research may well be extended by exploring the intersectionality of language, ethnicity, gender, additional support needs, free school meal entitlement, and so on with the aim to better identify need for targeted intervention. In particular, the vulnerability of EAL students with additional support needs (ASN) is an under researched area. The ASN variable was only explored in this thesis as a binary control. Research could introduce an expanded variable breaking down type of need and support, to

explore the intersectionality of ASN for EAL students. This could be tied into an investigation of how students recorded as having an English language proficiency of Limited Communication (LC) progress, in terms of English language acquisition and educational outcomes.¹⁷

References

- Altinok, N. and Kingdon, G. (2012) New Evidence on Class Size Effects: A Pupil Fixed Effects Approach. *Oxford Bulletin of Economics and Statistics*, Vol. 74, issue 2, 203-234.
- Bloch, Alice. 2008. "Refugees in the UK Labour Market: The Conflict between Economic Integration and Policy-Led Labour Market Restriction." *Journal of Social Policy*, 37 (1): 21–36.
- Brell, C., Dustmann, C. and Preston, I. (2020) The Labor Market Integration of Refugee Migrants in High-Income Countries. *Journal of Economic Perspectives*, 34(1), 94–121
- Bryan, M. L., and Jenkins, S. P. (2016) Multilevel Modelling of Country Effects: A Cautionary Tale. *European Sociological Review*, 32(1), 3-22.
- Burgess, S. (2014) Understanding the success of London's schools. *Centre for Market and Public Organisation (CMPO) Working Paper*, 14, 333.

¹⁷ Students with English language proficiency recorded as 'limited communication' were omitted from analysis as the category does not inform whether lack of communication is due to absence of English language skills or underlying additional support need. In preliminary analysis, they were found to perform lower than students recorded as 'new to English'.

OVERVIEW AND CONCLUSIONS

Canduela, J., Chandler, R., Elliott, R., Lindsay, C., Macpherson, S., McQuaid, R.

W. & Raeside, R. (2010) Partnerships to support early school leavers: school–college transitions and ‘winter leavers’ in Scotland, *Journal of Education and Work*, 23:4, 339-362, DOI: 10.1080/13639080.2010.490550

Crawford, C., & Greaves, E. (2015). *Socio-economic, ethnic and gender*

differences in HE participation. BIS Research Paper No. 186. Department for Business Innovation and Skills. Online Available:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/474273/BIS-15-85-socio-economic-ethnic-and-gender-differences.pdf [Accessed: 29 May 2020]

Demie, F. (2013) English as an additional language pupils: how long does it take

to acquire English fluency? *Language and Education*, 27:1, 59-69.

10.1080/09500782.2012.682580

Demie, F. (2017) *English as an Additional Language: Good Practice to Raise*

Achievement in Schools. Lambeth LA: Lambeth Research and Statistics Unit.

Demie, F. (2018) English language proficiency and attainment of EAL (English as

second language) pupils in England. *Journal of Multilingual and*

Multicultural Development, 1-13. 10.1080/01434632.2017.1420658

Demie, F. (2019) *Educational Inequality: Closing the Gap*. London: UCL Institute of Education Press.

OVERVIEW AND CONCLUSIONS

- Demie, F., & Lewis, K. (2018) Raising achievement of English as additional language pupils in schools: Implications for policy and practice. *Educational Review*, 70(4), 427-446. 10.1080/00131911.2017.1344190
- Demie, F., & Strand, S. (2006) English language acquisition and educational attainment at the end of secondary school. *Educational Studies*, 32(2), 215-231. 10.1080/03055690600631119
- DfE. (2012) *School funding reform: Arrangements for 2013-14*. Department for Education
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/244364/school_funding_reform_-_final_2013-14_arrangements.pdf
- Fasani, F., Frattini, T. and Minale, L. (2018) "(The Struggle for) Refugee Integration into the Labour Market: Evidence from Europe." *IZA Discussion Paper*, 11333.
- Gates, P. and Guo, X. (2014) How British-Chinese parents support their children: a view from the regions, *Educational Review*, 66:2, 168-191, DOI: 10.1080/00131911.2013.768958
- GCC. (2011) *Consultation on the Proposed Reconfiguration of English as an Additional Language Service*. Glasgow City Council. Online Available: <https://www.glasgow.gov.uk/councillorsandcommittees/viewSelectedDocument.asp?c=P62AFQZLNT2UDN2U> [Accessed: 21 May 2020]
- Gorard, S. and Siddiqui, N. (2019) 'How trajectories of disadvantage help explain school attainment.', *SAGE open.*, 9 (1). pp. 1-14.

OVERVIEW AND CONCLUSIONS

- Harker, R., & Tymms, P. (2004). The effects of student composition on school outcomes. *School Effectiveness and School Improvement*, 15, 177–199
- Howieson, C. (2003) Destinations of Early Leavers. Centre for Educational Sociology, University of Edinburgh. Online Available: <http://www.leeds.ac.uk/educol/documents/159736.pdf> [Accessed: 29 May 2020]
- Howieson, C. and Iannelli, C. (2008) The effects of low attainment on young people's outcomes at age 22–23 in Scotland. *British Educational Research Journal*, Vol. 34, No. 2, pp. 269–290
- Lauder, H., Kounali, D., Robinson, T., & Goldstein, H. (2010) Pupil composition and accountability: An analysis of English primary schools. *International Journal of Educational Research*, 49, 49 –68.
- Lenkeit, J., Caro, D. H. & Strand, S. (2015) Tackling the remaining attainment gap between students with and without immigrant background: an investigation into the equivalence of SES constructs, *Educational Research and Evaluation*, 21:1, 60-83, DOI: 10.1080/13803611.2015.1009915
- OECD. (2015) *Helping immigrant students to succeed at school – and beyond*. OECD: [Online] <http://www.oecd.org/education/Helping-immigrant-students-to-succeed-at-school-and-beyond.pdf>
- Raudenbush, S. W. & Willms, J. (1995) The estimation of school effects, *Journal of Educational and Behavioral Statistics*, 20, 307–335.
- Richardson, J.T. E. Mittelmeier, J. & Rienties, B. (2020) The role of gender, social class and ethnicity in participation and academic attainment in UK higher

OVERVIEW AND CONCLUSIONS

education: an update, *Oxford Review of Education*, DOI:

10.1080/03054985.2019.1702012

Ruiz, I. and Vargas-Silva, C. (2018) Differences in labour market outcomes between natives, refugees and other migrants in the UK. *Journal of Economic Geography*, 18, pp. 855–885

Sammons, P., Sylva, K., Melhuish, E., Siraj, I., Taggart, B., Toth, K. & Smees, R. (2014) *Influences on students' GCSE attainment and progress at age 16: Effective Pre-School, Primary & Secondary Education Project (EPPSE)*. Online Available: https://dera.ioe.ac.uk/20875/1/RR352_-_Influences_on_Students_GCSE_Attainment_and_Progress_at_Age_16.pdf [Accessed: 23 July 2020]

Sawkins, J. W. (2002) Examination performance in Scottish secondary schools: an ordered logit approach, *Applied Economics*, 34:16, 2031-2041, DOI: 10.1080/00036840210124559

Strand, S. and Hessel, A. (2018) *English as an additional language, proficiency in English and pupils' educational achievement: An analysis of Local Authority data*. London: Bell Foundation.

The Bell Foundation. (2021) *EAL Assessment Framework*. Online Available: <https://www.bell-foundation.org.uk/eal-programme/eal-assessment-framework/> [Accessed: 29 Jan 2021]

Timmermans, A. C., & Thomas, S. M. (2015) The impact of student composition on schools' value-added performance: a comparison of seven empirical studies. *School Effectiveness and School Improvement*, 26(3), 487-498.

OVERVIEW AND CONCLUSIONS

UCAS. (2020) *UCAS Undergraduate Entry Requirements*. Universities and Colleges Admissions Service. Online available:

<https://www.ucas.com/undergraduate/what-and-where-study/ucas-undergraduate-entry-requirements> [Accessed: 20 Jan 2021]

Willms, J. (2010) School Composition and Contextual Effects on Student Outcomes. *Teachers College Record*. 112. 1008-1037.

Wodtke, G., & Parbst, M. (2017) Neighborhoods, Schools, and Academic Achievement: A Formal Mediation Analysis of Contextual Effects on Reading and Mathematics Abilities. *Demography*. 54. 10.1007/s13524-017-0603-1.

Appendix A

Table 1: FSM entitlement recorded and level of English language proficiency at S4

	No FSM recorded		FSM recorded		Total	
	N	%	N	%	N	%
NE	118	55%	95	45%	213	100%
EA	317	59%	224	41%	541	100%
DC	1075	49%	1103	51%	2178	100%
C	1151	54%	964	46%	2115	100%
F	353	66%	182	34%	535	100%
EN	22418	60%	14817	40%	37235	100%
Total	25432	59%	17385	41%	42817	100%

Note. NE (new to English), EA (early acquisition), DC (developing competence), C (competent), F (fluent), EN (English as first language).