Growing Up Bilingual: Understanding specific benefits across the mainstream and complementary education sectors

Layal Husain

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Abstract

There is a paucity of longitudinal research on the development of younger bilinguals, particularly those with a heritage language (HL). Complementary schools (CS) that promote HL learning have become increasingly prominent and are also underrecognized. This project applied a mixed-methods approach to examine the cognitive, social and educational outcomes of children with or without CS longitudinally.

The quantitative component of this research assessed cognitive and social developmental outcomes of 153 bilingual children (aged 4-9 years) across four mainstream primary schools and five CSs across East London. Following initial data collection (timepoint1) in 2019, eleven interviews were conducted with school staff and parents from each setting, focusing on language attitudes and practices, to help explain some of the initial findings. Ninety children (aged 6-12 years) from the initial sample were then revisited in 2021 (timepoint2) following the Covid-19 lockdowns, for reassessment of outcomes. Cognitive measures included executive functioning, attentional control and English object naming. Social measures included strength of ethnic and national identities, and cognitive, athletic and social competences. Teacher ratings of school adjustment were taken at timepoint2 as an educational outcome. Perceived HL and English language proficiency and exposure and family affluence (FA) were measured at both timepoints.

Findings indicated the supportive role of CSs in children's perceived HL proficiency, particularly literacy, and developing ethnic identity. Apart from age, the impact of FA and proficiency of both languages on cognitive and social outcomes were also implicated. The sample showed a decline in perceived HL proficiency and competences post-pandemic, but the decline was smaller among CS-attendees. Interviews further highlighted the challenges of HL learning, the role of CSs in parental engagement, and the efforts by primary schools to support bilinguals' English with

a desire for greater inclusivity. The potential implications of these findings on education and policy are considered.

Declaration

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This project was proposed in collaboration with the Newham Partnership for Complementary Education, a voluntary network and forum serving supplementary, complementary and part-time community schools in Newham, East London.

Table of Contents

List of Tables

List of Figures

Abbreviations

AC	Attentional Control
ANT	Attention Network Task
AoA	Age of Acquisition
CLT	Cross Linguistic Task
CS	Complementary School
DCCS	Dimensional Change Card Sort
DfE	Department for Education
EAL	English as an Additional Language
ESRC	Economic Social Research Council
EF	Executive Function
FA	Family Affluence
GCSE	General Certificate of Secondary Education
GUB	Growing Up Bilingual
NIH	National Institute of Health
HL	Heritage Language
LEAP	Language Experience and Proficiency
RQ	Research Question
SD	Standard Deviation
SoIS	Strength of Identification Scale
SES	Socioeconomic Status
START	Secondary Transition Adjustment Research Tool
NPCE	Newham Partnership for Complementary Education
UK	United Kingdom

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Chapter 1: Introduction

This chapter will give a concise introduction to the research rationale of this project and will provide an overview of why it was proposed and how the research was conducted. This will include the presentation of the project's research objectives and questions, and an outline of the thesis' chapters.

1.1 Research Rationale

Bilingualism, the ability to speak two languages, appears to have become the norm as more than half of the world is estimated to speak more than one language (Grosjean, 2010). Despite this, and the accompanying increasing amount of research into bilingualism, the specific benefits that result from additional language learning, as well as any mechanisms that underpin a potential advantage, are not widely agreed upon and continue to be debated (Antoniou, 2019). This has particular significance within the context of the United Kingdom, whereby there has been growing concern over a steady decline in the uptake of modern language subjects, along the shortage of funding and teachers for language learning (Ratcliffe, 2013). Currently there is also no overall official policy on multilingualism in the UK, and despite significant changes in the country's linguistic landscape in response to migration, the increasing diversity of community languages is not being valued as a national asset (Taylor, 2013).

Corresponding to these changes, complementary schools (CSs) have become an important socio-political and educational movement in the UK for nearly half a century (Li, 2006). Voluntary-run schools, they are set up by communities as a safe space outside mainstream schools for the maintenance of young people's languages, with up to 5,000 now in England (Lytra & Martin, 2010). While they have recently received interest in research, their contributions to language learning are largely not

understood and underrecognized, and as such they provide a unique opportunity to study bilingualism within the UK.

Much of the earlier research into bilingualism and its benefits has involved cross-sectional studies with adult bilinguals. More recent research, particularly into the cognitive effects of bilingualism, have included more longitudinal designs (Tran, Arredondo, & Yoshida, 2015; Ljungberg, Hansson, Andrés, Josefsson, & Nilsson, 2013) , but this is still scarce for young bilinguals. Some longitudinal research has also emerged on children's language maintenance and development (Hiebert & Rojas, 2021; Oppenheim, Griffin, Peña, & Bedore, 2020) and its effects academically (Collier & Thomas, 2017; Maluch, Neumann, & Kempert, 2016) and socially (Axelrod, 2014; Oades-Sese, Esquivel, Kaliski, & Maniatis, 2011). With that said, rarely does such longitudinal research employ mixed-methodology or take into account different settings of language learning. This research was designed to add to the growing literature and need for integrated longitudinal studies on childhood bilingualism, particularly considering the under-recognized settings of CSs.

1.2 Growing Up Bilingual Project

This project, known as the Growing Up Bilingual (GUB) project, was proposed in collaboration with the Newham Partnership for Complementary Education (NPCE), and in consultation with their sister organization the National Resource Centre for Supplementary Education, in order to gain a deeper understanding of children's bilingual development and in consideration of the extra context of CSs. To the best of our knowledge, no research has trialed a mixed methods approach within a longitudinal project that involves both the mainstream and CS sectors to closely examine bilingual development in children. This approach also importantly includes inputs from children, parents, and school staff, for a more comprehensive interpretation of findings. By using consistent measures and

considering extraneous factors such as proficiency and family affluence, this research seeks to ascertain potential outcomes of bilingualism debated in the literature, across cognitive, social, and educational domains and in under researched contexts. Notably, it will examine potential benefits across different cohorts, comparing bilinguals that attend CSs to bilinguals that do not, for a clearer understanding of what CSs provide and contribute to language learning. In doing so, features of complementary schools that could be associated with benefits will be identified; giving them recognition and enabling them to further connect with the mainstream educational sector.

The project was planned as an explanatory mixed-methods design, such that quantitative data was initially collected from bilingual children, and subsequently qualitative data was collected from parents and school staff to help understand some of the initial findings. The quantitative component of this research consisted of collecting cognitive and social developmental outcomes from bilingual children who attended CSs and those who did not, across four primary schools and five CSs in East London. Following the first timepoint of quantitative data collection, online interviews were conducted with school staff and parents from each setting. Bilinguals from the initial sample were then revisited throughout the Covid-19 pandemic, which enabled comparisons between the two quantitative timepoints. Cognitive measures included tasks of executive functioning, attentional control, and English picture naming. Social measures included strength of ethnic and national identities, cognitive, athletic, and social competences. Perceived language proficiencies and exposure, family affluence, and ratings on school adjustment were also collected to further examine their impact on outcomes, and any differences between CS-attendees and non-attendees.

As the research was conducted with primary school children, who are visited across two time-points, this allowed for the creation of longitudinal and comparative datasets of cohorts as emerging bilinguals. This pivotal period of development, and any potential bilingual benefits that may arise, are not well understood longitudinally, and as such this research provides important insight into early language learning. Research was presented and published throughout this PhD, including one

published paper in a peer-reviewed journal, and two accepted papers at international conferences (all of which will be referenced as appropriate in upcoming chapters).

Alongside the academic outputs, as this was a collaborative project with the NPCE it was also proposed with the applicability of its findings in mind. Throughout the four years of research, the project has had an emphasis on public engagement which has included organizing parent events with the CSs of this research, taking part in an-service training day at a mainstream primary school, and presentations of findings at the settings of this project. A blog and website were also created to collate and share on the project's progress and to invite feedback. The project helped spearhead some other collaborations, including a successful photography project with two of the CSs of this research, and connecting CSs to an event at the Museum of London celebrating language learning. A grant was also won from the British Psychological Society, at the final stages of this research, to further disseminate findings and bring academics and practitioners together under the topic of bilingualism. Three public seminars were successfully held, and a network of academics and practitioners continues to be maintained to allow for further collaboration.

As part of the project's initial research proposal that was granted funding by the Economic and Social Research Council, plans for non-academic deliverables were also outlined in order to make this research further accessible. Following the completion of this PhD, future work will aim to create a set of toolkits, or resources, tailored differently for schools and families, based on the research findings and inputs from this project's stakeholders and expert advisors. Aside from describing this project's findings, it will also aim to report and recommend good practice and partnerships between schools, families, and communities for language learning. These can serve as important outputs to complement the research contributions of this project, with potential contributions to education and policy by further enabling mainstream education to connect with the complementary sector and promoting additional language learning.

1.3 Project's Research Objectives and Questions

This project therefore aims to understand the potential cognitive, social, and educational outcomes of growing up bilingual across mainstream and complementary schools.

The research's objectives are:

1) To ascertain specific cognitive, social, and educational outcomes often associated with bilingual development

2) To examine if children who develop bilingually with the extra context of CSs differ than their bilingual counterparts without such schooling in these outcomes

3) Based on the findings, to examine specific features across the CSs in terms of how they may especially facilitate bilingual/bicultural development.

Correspondingly, the project seeks to answer the following research questions (RQ):

RQ1: How do bilingual children develop cognitively (attentional control, executive function, naming), socially (social competence, ethnic/cultural identity), and educationally (school adjustment) and in relation to their language development (proficiency and exposure)?

RQ2: Do bilinguals growing up with the extra context of complementary schools differ from their bilingual counterparts without such schooling in the aforementioned outcomes?

RQ3: If so, what are the features across complementary schools that facilitate children's bilingual (and bicultural) development and may result in the above differences?

1.4 Use of Terms in this Research

` Before covering the relevant literature in depth in the next chapter, it is worth noting the choice to use specific terms in this project and indicate their relevance to this research.

1.4.1 Bilingualism

While the children in this project are referred to as bilinguals, and this project focuses on the benefits of this bilingualism, it's worth noting that participants also sometimes reported being exposed to more than two languages. The term bilingualism was used over multilingualism as children's heritage language was of focus, and its relationship with their English (the language that the majority of this sample were dominant in). The majority of the project's sample were also second-generation children, whose parents were born in the United Kingdom, and how they chose to preserve their heritage language was therefore of particular interest in this project. While children were only asked to rate their proficiencies in the two languages they were most proficient in, information was also collected on which other languages they were exposed to (reported in the thesis' Methodology chapter). As the national curriculum for maintained schools in England requires the teaching of modern foreign languages from key stage 2 (ages 7-11) and key stage 3 (ages 11-14) (Long & Danechi, 2022), all children in this project reported this as part of their language exposure. For the schools of this project, Spanish was the common language being taught, while at a limited capacity. Third and fourth languages reported by children were of limited exposure, usually being taught one hour a week at their primary school, or through extended family members or through the consumption of media.

The general literature review of this thesis (Chapter 2) further defines bilingualism and relevant research in the context of this project. Much of this research's sample were simultaneous bilinguals, being exposed to English and their heritage language from an early age. A dynamic view of bilingualism was taken throughout this project, recognizing that language use is complex across different purposes and contexts. Information on perceived language proficiencies and exposure were, as such, collected in both timepoints of this project and differences in patterns discussed. Interviews with parents and school staff on language learning further complemented the understanding of bilingualism and how it was being experienced in this sample. Bilinguals in this project were defined

as anyone who uses two or more languages regularly, even if at a limited proficiency. The resulting range of reported proficiencies and exposures in the sample allowed for the outcomes of this project to be explored in depth, considering different factors.

1.4.2 Heritage Language

The term heritage language (HL) was used in this project to describe children's language other than English. While research has not found consensus on a precise definition of HL (Wiley & Valdés, 2000), the term is often used in research to refer to an immigrant or ancestral language that a speaker has a personal relevance or desire to connect with (He, 2010; Cummins, 2005). When looking at HL learners in this project, the definition by Valdés (2001) was used as a guide, such that HL speakers are seen as individuals who were raised in homes where a language other than the dominant community language was spoken, resulting in them speaking or at least understanding the language and being bilingual to some degree in the language and English. With this, HL speakers are therefore seen as a continuum (Polinsky & Kagan, 2007), recognizing that bilingualism may be more in favor of the dominant language but that some abilities in the heritage language persist. The term therefore reflects and acknowledges the range of proficiencies amongst speakers and is applicable to this project's diverse sample.

Other interchangeable terms include community language, native language, and mother tongue. The term heritage language, however, was seen as the most appropriate due to its growing association in research with one's culture and identity. Earlier research on heritage language education in the United States was often tied to cultural identity and politics (Leeman, Rabin, & Román-Mendoza, 2011), and research in the past decade has focused further on the link between heritage language and identity development (Leeman, 2015; Abdi, 2011; Blackledge et al., 2008). Alongside this, there is also more interest in examining HL maintenance, and the challenges of this

while becoming acculturated in the mainstream society (Zhang & Slaughter-Defoe, 2009; Papapavlou & Pavlou, 2001). The term is therefore used appropriately here to situate this research amongst relevant literature, particularly as this project examines sites of heritage language maintenance (CSs).

1.4.3 Complementary Schools

The term "complementary schools" is used in this project to describe the voluntary schools set up by specific communities for the maintenance of community languages and cultures. These settings are independent of mainstream schools and operate outside of normal school hours, usually for a few hours in the evenings or at weekends. They can vary in the range of provision they provide, but largely cover heritage language and culture and/or faith-based teaching for migrant communities (Rose, 2013). The term complementary schools is used here as it is in alignment with previous research to highlight their importance in the lives of their communities, with the term signifying the "positive complementary function between these schools and mainstream schools for those who teach and learn them" (Creese and Martin, 2006, p.1). More than just complementing young people's mainstream education, the term embodies how these schools are providing flexible spaces to develop their language and identities that often go unrecognized by the rest of society (Lytra & Martin, 2010), and has become commonly used in describing such settings. Other terms, such as community schools, culture schools, or heritage language schools, similarly share an understanding that in these sites bilingualism is the norm and embraced.

The term complementary was used over another common term "supplementary schools", as it is often more associated with the earliest functions of these contexts which emerged in the late 1960s for children of Afro-Caribbean families. Supplementary schools initially emerged because of families' dissatisfaction with mainstream education and due to the limited representation of the Afro-

Caribbean community in education (Li, 2006). They provided support for children to learn English in a friendly and safe environment, and supplementary schools with this provision of support still exist usually covering National Curriculum subjects such as Mathematics, English, or Science, rather than aid in the preservation of heritage languages. The importance of this early movement is highlighted, and the history of complementary schools, in the next chapter of this thesis (general literature review, section 2.4.1). For the context of this project, however, the schools visited were better referred to and identified with the term complementary schools, which is why the term is adopted in this project to describe their actions in language and culture learning.

1.5 Organization of the Thesis

This thesis is divided into eight main chapters: a general introduction, a general literature review, two chapters covering the empirical findings of the project's first timepoint of quantitative data collection with bilingual children, a chapter on the qualitative findings based on online interviews with school staff and parents, a chapter covering the empirical findings of the project's final timepoint of quantitative data collection with bilingual children, and a concluding chapter discussing and summarizing results.

Following the outlining of this research project, the next chapter will present an overview of the relevant literature on bilingualism and associated cognitive and social outcomes. Language learning in the context of the UK will also be discussed and particularly in the borough of Newham which is where this research was situated. Relevant research on bilingual learners, known as English as an Additional Language learners in mainstream schools, will also be highlighted. Research on complementary schools in the UK will be summarized, including their history and relevance to this project. This is linked to research within other bilingual educational settings. The present project is then briefly reintroduced, and how it complements the existing literature.

Chapter three will detail the project's methodology. This begins with an explanation of the study's research design, alongside its associated epistemological and ontological assumptions. The schools of this project are then detailed, alongside the child samples of the first and second timepoint of quantitative data collection. Demographics of the sample are also outlined for each timepoint. The qualitative sample of the project, consisting of school staff and parents, and how interviewees were recruited are similarly outlined. This is followed by a description of the cognitive, social and background measures of this project, and how they differed between timepoints including any adaptations made due to the older age of participants and the Covid-19 pandemic. The procedures followed during quantitative and qualitative data collection are also separately summarized, as were changes to school visits during the pandemic. The chapter ends with some ethical considerations and a summary of the impact of the pandemic on fieldwork.

Chapter four discusses the results from the cognitive measures from the first timepoint of data collection with bilingual children. Sample trends in perceived language proficiencies and exposure are considered, as well as their relationships with the cognitive measures of this project (executive functioning, attentional control, and English picture naming). The roles of age and FA on the measures are similarly discussed. CS and non-CS attendees are compared across the measures, and regression analyses are conducted to predict performance in the cognitive tasks.

Chapter five similarly discusses the results from the social measures from the first timepoint of data collection with bilingual children. Relationships between perceived language proficiencies, exposure, identities and competences are explored and discussed, and CS attendees and non-attendees are compared. The roles of age and FA are also considered, alongside regression analyses to predict strength of British and ethnic identification, and social competence.

Chapter six details the qualitative strand of this project, which included eleven interviews with school staff and parents across the nine schools. An overview of the research design is given, as

well as further details on the interviewees and the contexts studied. Details of the procedure followed are also given, and the approach to the thematic analysis of interview data. Themes are identified and discussed, separately for the mainstream and complementary school interviewees, and how these findings help complement the understanding of the project's initial quantitative findings. Limitations and implications of the qualitative findings are also discussed.

Chapter seven presents the results from the final timepoint of data collection with bilingual children, including both cognitive and social measures to allow for considerations of timepoint changes. Sample demographics and trends at this timepoint are explored, followed by analyses of cognitive and social developmental outcomes. This was done for the sample as a whole, as well as noting some differences between CS attending/non-attending groups, and the roles of background factors are accordingly considered. Changes between timepoints are analysed and the longitudinal trends observed are discussed. The additional educational measure of school adjustment is also included in this timepoint and analysed, alongside the potential effects of the pandemic.

Chapter eight is the final chapter of this thesis and separately summarizes the findings from the first and second quantitative timepoint, as well as the themes from the qualitative study. Limitations of the research are also highlighted, and suggestions for further research. The implications of these findings are then collectively discussed and their potential contribution to education and policy.

Chapter 2: General Literature Review

This review will begin by summarizing relevant research literature into the potential effects of bilingualism, followed by recent research into complementary schools. In doing so, the relation of the summarized previous work to this current project and its methodology will be further clarified.

2.1 Aims and Rationale of Literature Review

Given the broad and increasing range of research into bilingualism, the review of the literature was focused on specific measures and terminology (organized as subheadings in this chapter), and particularly the complementary school context. Rather than being a systematic review, the aim was to summarize and discuss the available and relevant knowledge in the field that helped guide and explain this project and its rationale. Articles were searched for on Scopus, ScieneDirect, and PsychINFO. Different keywords were used in addition to bilingual* as outlined below (e.g., bilingual* AND executive function*; bilingual* AND attentional control). Particularly when searching the literature around cognitive and social outcomes, meta-analyses and reviews were included and prioritized given the increased interest in research in these areas. This approach was taken as it allowed for a more concise, focused, and manageable overview of the relevant literature, while still giving enough breadth across different concepts. While this was predominantly done early on in the research, the review was regularly updated and refined as the project progressed.

Separately, Google Scholar was also used to search for related reports alongside guidance from the project's collaborator on previous funded projects and research on Newham and complementary schools. This was important to do not just to comprehensively review what is known about complementary schools in the UK, but also aided in further detailing the UK context and English as an Additional Language (EAL) provision. Reports from the Department for Education, the Bell Foundation, and the National Subject Association for English as an additional language (NALDIC) were considered in this review.

2.2 Defining Bilingualism

What it means to be bilingual has been debated and understood differently throughout history. While early scholars defined bilingualism as a "native-like" control of two languages (Bloomfield, 1933), the complexity of bilingualism, including the ways and contexts in which languages are learnt, has since been considered. In particular, since the emergence of the field of sociolinguistics in the 1960s, the concept of bilingualism has changed such that we now know that the languages of an individual are rarely equal: socially, by having different power and prestige and being used for different purposes and contexts; and in competency, not necessarily occupying the same fluency (Garcia, 2009). Put simply, bilinguals can be defined as those who use two or more languages in their everyday lives (Grosjean, 2010), who are able to function, even to a very limited degree, in more than one language (Valdés, Poza, & Brooks, 2015).

With the above in mind, within research bilingualism tends to be classified based on ability. Mackey's (2000) continuum proposes the labels of passive, dominant, balanced, and equilingual. This is usually looked at across four basic language domains or abilities: listening, speaking, reading, and writing, to consider both receptive and productive skills, and each of these can be more or less developed across different contexts (Baker, 2001). However, it's important to note that bilingual people will rarely develop balanced or equal proficiency in all aspects of each language (Shin, 2017). Differences in a bilingual's individual proficiencies in each of their languages can also lead to language dominance, whereby one language is the more proficient or developed language (Snape & Kupisch 2016). The age at which a language is acquired is also considered, with research tending to focus on either early bilinguals, who have simultaneously or sequentially learnt their language, versus late bilinguals, who learn a second language after the age of six or seven, and usually in adolescence or adulthood. While these distinctions exist, it is nonetheless important to note that bilingualism is on a multidimensional continuum and is not focused on a single dimension such as proficiency (Weir, 2000). We also know that bilingual language use is complex and interrelated and

does not emerge in a linear way (Garcia & Sylvan, 2011). A dynamic view of bilingualism is now more in favor of moving away from looking at bilingualism as using two separate languages, or bilinguals as being two monolinguals. To classify people as either bilinguals or monolinguals is furthermore considered simplistic (Baker & Wright, 2017), and how one acquires and interacts with their languages is multifaceted and individual.

This perspective is underscored in many of the bilingual education authority Jim Cummins' theories (1979, 2000), which are relevant to this research. Importantly, his theory of linguistic interdependence argues that both languages support the acquisition of knowledge and language. Hence, by learning a language one acquires a set of skills and knowledge that can be drawn upon when learning and working in another language. He further theorizes that there is a "common underlying proficiency" that provides the basis for the development of both languages, so that essentially the more you develop both languages, there is a larger potential to accrue benefits in learning. The model led Cummins to propose the Threshold Theory or Hypothesis (1976), which addresses the relationship between bilingualism and cognition and postulates that benefits of bilingualism, particularly academic and cognitive benefits, will be seen only when both languages have been fully developed. He stresses that only when age-appropriate competence is reached in both languages, can much of this learning be transferred and yield greater advantages, while low levels of proficiency in both languages would conversely yield deficits. It is therefore important to know the level at which a bilingual knows, and is learning and using, their languages, and for children to be given the opportunities to continue to develop their abilities in all their languages.

It's also important to recognize that language use cannot be separated from the context in which it is used, and it is not produced in a vacuum, rather as children learn language they also learn about relationships and social structures. This follows a more interactionist or social theory of acquisition which while acknowledging the presence and importance of innate biological mechanisms, particularly emphasizes the role of the environment and culture, and social interactions

14

in language learning (Mackey, Abbuhl,& Gass, 2012). Following Vgotsky's theories of the role of nurture over nature, an important concept that has emerged is the Language Accquistion Support System (Bruner, 1981), which refers to the adult support a child receives but also the child's culture as a whole in and the community that surrounds them, and how this can be critical for development. Since then, a large body of research has highlighted the relevance of how and why a language is acquired. The element of choice has been highlighted, as bilingualism can be elective whereby individuals will choose to learn a language (Valdés , 2005), or more circumstantial whereby one must learn another language to function or meet the needs of the society they are placed in. This is often the case with immigrants, who must become bilingual to operate in the majority language, thereby being more of a subtractive context where their first language is at risk of being lost (Guerrero, 2010). The language and cultural learning of immigrants has been studied in a process often referred to as acculturation, as they learn the language of the host country and either maintain, shift, or lose their HL language and make sense of both their cultures (Yağmur & van de Vijver, 2012; Berry, 2006). While considerably varied, research has shown that first generation immigrants usually stay dominant in their HL, while the second generation is more bilingual, and the third generation is more dominant in the host language (Waters & Jiménez, 2005). How this links to identity is also further reviewed in this chapter, as one of the social outcomes of interest in this project.

In line with research, bilingualism in this project is not being investigated as categorical; rather as a continuous dimension shaped by various cognitive and environmental factors. The context of language learning, or when and where the language is being used, is also an essential aspect of this project. This stems from previous research that has observed that factors such as personal motivation and the learning environment can be even more significant than fixed factors such as age in language learning (Robertson, 2002). It is also worth noting that the children in this project were all early bilinguals, largely simultaneously acquiring their languages but some also learning English sequentially after moving to the UK at a very young age. They all had at least one parent speaking a HL to them, and some

attended extra HL schooling. Bilingualism is therefore being identified based on use, as all the children used both their languages regularly, but varied across several other factors which will be explored more in depth. By studying bilinguals longitudinally and considering an array of factors within their experience of language learning and development, more can be contributed towards understanding bilingualism and its outcomes.

2.3 The Debate on Bilingualism Benefits

There has been much debate on the existence and, if so, extent of bilingual 'benefits', with more research and media attention on cognitive benefits in the past few decades. While it has long been assumed that bilingualism affected the developing mind, early research made general claims that bilingualism would confuse a child and stunt their language growth, with studies largely focusing on poorer results in intelligence tests that were not methodologically sound (Hakuta, 1986). Such studies also failed to account for confounds such as age, socioeconomic status, or the degree of language proficiencies in their sample, for example having samples that included refugees with interruptions to schooling that were not accounted for (Antoniou, 2019). A more positive view of bilingualism was introduced with more extensive studies since Peal and Lambert (1962), who found that bilinguals outperformed monolinguals on both verbal and nonverbal intelligence tests, leading them to suggest that bilinguals may have a more diverse set of "mental abilities". Since then, a considerable amount of research has looked at the extent of bilingualism benefits on cognitive development, but there still remains no clear consensus in research (von Bastian, Souza,& Gade, 2016; Duñabeitia et al., 2014), with issues raised of a potential publication bias of only positive results (De Bruin, Treccani, & Della Sala, 2015), and difficulties replicating studies due to their wide variation (Van Den Noort et al., 2019). Research has also called for more longitudinal studies capturing the heterogeneity of bilingualism (McCardle & Hoff, 2006), and a more developmentally informed and systematic approach considering bilinguals across the lifespan (Filippi, D'Souza, & Bright, 2018). Some of this relevant research will be reviewed followed by more commonly accepted, but not entirely understood, social outcomes of

bilingualism, as both aspects of development are of interest in this research project.

2.3.1 Bilingualism and Cognitive Outcomes

The basis of a cognitive bilingual advantage stems from research revealing that both languages are active at the same time, requiring a bilingual to therefore control or inhibit one language while using the other. Support for this comes from eye-tracking studies showing bilinguals attending to crosslinguistic competitors automatically, suggesting that what they are hearing is mapping onto words in either language (Marian & Spivey, 2003), with similar findings across tasks of cross-language priming (Hernandez, Bates, & Avila, 1996) and lexical decision (Costa, Miozzo, & Caramazza, 1999). The consequences of this co-activation beyond the brain's language networks have been indicated in neuroimaging studies, which show increased activation in brain regions associated with cognitive skills such as attention when bilinguals are alternating between their two languages (Bialystok, Craik, & Luk, 2012). As such, there has been a wide range of bilingual cognitive advantages cited in research (Adesope et al., 2010), which includes greater metalinguistic and metacognitive awareness (Ransdell, Barbier, & Niit, 2006; Bialystok, Majumder & Martin, 2003) and enhanced working memory (Warmington, Kandru-Pothineni, & Hitch, 2018; Grundy & Timmer, 2017)

2.3.1.1 Executive Functioning

One of the largest bodies of research, however, suggesting potential cognitive benefits of bilingualism has been from investigating a set of skills broadly termed as executive functions (EF). These encompass processes that plan, organize, and monitor the execution of goal-directed behaviours (Hughes, 2013). This has been interpreted as a range of abilities, but Miyake and Friedman (2012) defines it more specifically by separating EF into two components: updating and shifting, that both also share a third component of inhibition. The development of EF has been studied across the life-span, peaking in early adulthood and then beginning to decline into old age (Buckner, 2004), and it has been identified as a significant predictor of academic achievement (Best, Miller, & Naglieri, 2011)

and social behavioral outcomes (Zorza, Marino, & Acosta Mesas, 2016). Bilingualism has been particularly associated with advanced EF skills, possibly because of the need to continuously inhibit interference from one language over the other (Marian & Shook, 2012).

The advantage of bilingualism in EF has been found in research on adults, across a variety of tasks (Degirmenci et al., 2022; Warmington, Kandru-Pothineni, & Hitch, 2018; Bialystok et al., 2014; Bialystok, 2009), even suggesting it protects against age-related cognitive decline (Bialystok, Craik, & Freedman, 2007). There's been great research interest, however, in this advantage when investigating bilingual children as their EF system is crucially developing (Bialystok & Craik, 2010), with some studies finding an advantage and others finding none (Arizmendi et al., 2018; Carlson & Meltzoff, 2008). Advantages are particularly seen in tasks that involve attention and inhibition which are more facilitated in bilingualism (Bialystok, 2005). Variability in findings could be due to the age range considered, as throughout childhood critical changes occur in executive function and cognitive development (Brocki & Bohlin, 2004), as well as potential confounding factors, most notably socioeconomic status such that higher SES bilinguals show an executive function advantage in early development (Ardila, Rosselli, Matute, & Guajardo, 2005). It is also challenging to measure executive functioning, as not only is there great variability in the tasks used, many tasks inevitably also tap into other cognitive components that are not part of executive function, which then makes the precise extent or role bilingualism plays on an observed effect on executive functioning elusive (Valian, 2015). Research has therefore stressed the importance of adopting multiple tasks that tap into different executive processes when investigating such relationships (Paap, Johnson, & Sawi, 2015).

Despite these challenges, one task that has become a relatively reliable measure of EF is the Dimensional Change Card Sort (DCCS), due in part to its adaptability of use with a wide age range of participants. Developed by Zelazo (2006), in its most standard version children are shown cards containing pictures of two targets, such as a blue rabbit and a red boat, and are asked to sort them according to one dimension (e.g. colour), before the rules change and they then have to sort the cards according to another dimension (e.g. shape). This particularly taps into the shifting component of

executive functioning, and comparisons on the second sort (post-switch) can reveal advantages. Bilingual children have been shown to perform significantly better than monolinguals, responding more accurately, but also more quickly reflecting a lower switching cost (Bialystok and Martin, 2004; Bialystok, 1999). While this result has been replicated across different samples (Carlson & Meltzoff, 2008), the extent of this advantage has recently been disputed. A large-scale study by Gathercole et al. (2014) revealed no consistent bilingual advantage across sets of executive function tasks, including the DCCS task, across seven age groups. They, alongside similar recent studies reporting null results, call for closer scrutiny of what type of bilinguals might demonstrate an advantage, and under what conditions. They particularly point out the importance of language dominance and proficiency and suggest that a bilingual advantage may be more prominent in less fluent bilinguals who may need to conduct greater control, compared to more fluent bilinguals who could have more automaticity of their linguistic knowledge in both languages.

Despite the lack of consensus in findings, the research in EF nonetheless encourages more innovative ways of examining a potential advantage, in a more integrated approach considering the many factors behind bilingualism. For example, a recent study by De Cat, Gusnanto, and Serratrice (2018) attempted to identify a threshold for bilingual experience from which an executive function advantage can be observed, in a sample of children from heterogenous backgrounds. They compared large samples of monolingual and bilingual children with varying degrees of second-language experience and found a bilingual EF advantage emerge at a critical point of balanced language exposure, alongside other significant predictors of age and socioeconomic status. This corroborates other research that has shown that enhanced EF is limited to bilinguals who are sufficiently proficient in both languages (Rosselli et al., 2016). The importance of studying bilingualism from various angles is therefore increasingly evident.

2.3.1.2 Attentional Control

There has also been growing literature into a related aspect of cognitive development and EF,

and its role in bilingualism: attentional control. This refers to the skills of attentional monitoring and attentional inhibition; being able to focus attention on relevant information, and respond to changing task demands while ignoring distracting or conflicting information (Kapa & Colombo, 2013). The source of this bilingual advantage is still debated, but the need to continuously monitor, and manage two languages, therefore relying on EF and attention, is often referenced (Colzato et al., 2008).

One of the most common ways to measure this is through a flanker task, which involves selective attention such that participants are asked to respond to a target arrow surrounded by other arrows, known as flankers. In incongruent trials the target arrow is oriented in the opposite direction of the surrounding arrows, requiring participants to ignore the flankers, while in congruent trials the target arrow is oriented in the same direction of the surrounding arrows and there is no conflicting information to ignore. As responses tend to be slower for incongruent compared to congruent trials, producing a conflict effect, the extent of this effect can reflect participants' attentional control abilities such that smaller differences between trials would indicate less cost in having to ignore conflicting information, and therefore more effective attentional control. A type of flanker task known as the Attention Network Task (ANT), developed by Fan et al. (2002), has gained reliability in bilingual research and has been adopted for use with children successfully (Rueda et al., 2004). The ANT was designed with three particular attentional components in mind: alerting, orienting, and executive control; all which contribute towards attentional control, and has made the task ideal for investigating a bilingual advantage as it does not depend on linguistic or memory processes that could act as confounding variables. This is done by using a combination of flanker and cue conditions, and comparing reaction times.

Research using the ANT have revealed smaller differences in reaction time between congruent and incongruent trials in bilinguals compared to monolinguals, showing a reduced conflict effect with faster reaction times, and suggesting a cognitive bilingual advantage (Pelham & Abrams, 2014). Research has also indicated an advantage in the use of attentional resources in both bilingual adults and bilingual children (Zhou & Krott, 2018; Pelham & Abrams, 2014; Bialystok, 2001). With a sample

of a range of different bilingual and monolingual children, Poarch and Van Hell (2012) conducted two experiments on both inhibitory control (through the Simon Task) and selective attention (through the ANT task). They found a bilingual advantage in performance in both tasks, but this was more marked for early bilinguals, compared to more recent second language learners, in the attention task suggesting that having more experience in controlling both languages provides more advantages. Similarly, degree of bilingualism has been seen to mediate the extent of bilingual benefits seen in the flanker task (Chung-Fat-Yim, Sorge, & Bialystok, 2020).

Research with children and young adults, however, have also yielded relatively modest or no advantage in attentional control (Antón et al., 2014), which could be attributed to the potential presence of a ceiling effect in the development of the attentional system. By young adulthood one would be at the peak of their attentional abilities, allowing little opportunity for bilingualism to provide any additional significant benefit (Costa, Hernández, & Sebastián-Gallés, 2008). Similar to research into executive control benefits, there is research suggesting that an attentional control bilingual advantage is mediated by several factors, including the age at which one acquired their second language, with early bilinguals showing greater gains in attentional control, as they increase in their language proficiency (Luk, Sa, & Bialystok, 2011). The presence of this potential advantage continues to be debated (Paap et al., 2018), and as such, there is still a need to explore it particularly in the under-represented sample of young and early bilinguals, as they develop their language.

2.3.1.3 Lexical Growth & Processing

Despite the relatively positive cognitive effects associated with bilingualism, there has also been research suggesting consequences on vocabulary growth and the speed of lexical processing. This can seem quite paradoxical, as bilingual cognitive advantages have been shown to also extend to advantages in novel-word learning (Warmington et al., 2018; Singh et al., 2018; Kaushanskaya & Marian, 2009) and meta linguistic awareness (Reder et al., 2013). What has become clearer is that one's language system is dynamic, and a bilingual's languages show far greater interplay and

consequences on one another (Kroll et al., 2012).

While bilinguals produce their first words at similar times to monolingual children (Patterson & Pearson, 2004), they've been shown to ultimately have smaller vocabularies in both of their languages, compared to monolinguals of each language (Bialystok & Luk, 2012; Oller, Pearson & Cobo-Lewis, 2007), and this has been shown to be mediated by several significant predictors, notably age, socioeconomic status (SES), and exposure to each language (Hoff et al., 2018; Unsworth, 2016). A bilingual lexical deficit has also been demonstrated in a variety of psycholinguistic tasks, but most commonly in tasks that rely on rapid lexical retrieval such as picture naming in which they show longer response times (Sullivan, Poarch, & Bialystok, 2018), and verbal fluency in which they produce fewer words (Friesen, Luo, Luk, & Bialystok, 2015), as well as have more tip-of-the-tongue states whereby they temporarily cannot produce a well-known word or name (Gollan, Montoya, & Bonanni, 2005).

The reasons behind this disadvantage continue to be debated, but numerous factors have been associated with smaller bilingual vocabularies which includes the amount and nature of language exposure or input from each individual language (Soto-Corominas et al., 2020; Hoff, 2018; Gathercole & Thomas, 2009), or efficiency in lexical processing (Marchman, Fernald, & Hurtado, 2010). Bilingual children who have less exposure to each of their languages have also been shown to acquire each language at a slower rate compared to monolinguals (Hoff et al., 2012), and often show more advanced receptive skills in at least one of their languages (Ribot, Hoff, & Burridge, 2018; Gibson et al., 2014). Correspondingly, there has also been various explanations for a slower lexical retrieval in bilinguals. While we know that producing words in a second language takes longer than in a first or stronger language, even proficient and more "balanced" bilinguals still perform more slowly than monolinguals in the same language (Gollan et al., 2007). While bilinguals having to inhibit interference from their other language may yield certain cognitive benefits (e.g. EF), this has also been suggested to impact slower lexical retrieval, as well as potentially weaker conceptual links to words (Costa, 2005; Gollan & Acenas, 2004).

It's important to further investigate these differences to understand how bilinguals may be impacted early in development. Relative to their monolingual peers, bilingual children do seem to show age-appropriate reading accuracy and fluency skills, but have also been shown to underperform in reading comprehension which is directly linked to their smaller English vocabulary size (Babayiğit et al., 2022; Raudszus, Segers & Verhoeven, 2018). Furthermore, early efficiency in lexical processing has been linked to faster vocabulary growth and positive language outcomes (Marchman & Fernald, 2008), and similarly vocabulary size has been shown to be a significant predictor of academic achievement and literacy acquisition (Lee, 2011; Kastner, May & Hildman, 2001).

However, a limitation of many of these findings is that often only one of the bilinguals' languages are considered, and these are often compared to monolingual norms. This relies on the assumption that vocabulary development will be similar across languages, an assumption that may not be valid, and is problematic considering vocabulary size is linked to lexical retrieval (Bialystok, Craik, & Luk, 2008). Some research has therefore argued that when considering both languages, bilingual performance may not be so different from monolingual norms (Marchman, Fernald, & Hurtado, 2010), suggesting a need for comparable measures of lexical knowledge across languages. Recently, cross-linguistic tasks were developed by Haman et al. (2017) for this purpose, as a comparable assessment of vocabulary and lexical processing across 34 languages. The tasks specifically target the production and comprehension of nouns and verbs, in early lexical development, to give an indication of vocabulary growth. This is also particularly relevant as nouns seem to take precedence in lexical development (Bornstein et al., 2004).

When analyzing children's English vocabulary using a common picture test in more detail, across the ages of three and ten years, Bialystok et al. (2010) found, as expected, that there was a significant difference between the vocabulary sizes of monolingual and bilingual children. However, much of this difference was attributable to words that are part of home life, and when looking at the school vocabulary of the children the two groups were more comparable. This helps explain how a

lack of English exposure at home can affect certain aspects of vocabulary growth, but that overall bilinguals are not largely disadvantaged in academic achievement. Research has come to show that differences in vocabulary seem to be overcome, as bilinguals catch up to their peers as they become more experienced in both their languages, while this is mediated by several factors, notably amount of language exposure (Paradis & Jia, 2017; Hammer, Miccio, & Rodriguez, 2004). This is also suggested by research examining longitudinal data of academic achievement as in one of the largest studies, Yeung, Marsh, and Suliman (2000) found positive associations between overall grades in secondary school and the use of heritage languages, with no negative effect of increasing heritage language proficiency on English test scores. Similarly, longitudinal reading achievement data reveals that those with higher heritage language proficiencies at nursery were the quickest to transition to English reading and attain higher English literacy proficiency by adolescence (Reese et al., 2000). The researchers argue that rich and sustained early literary experiences, regardless of the language, provide more learning and developmental opportunities, mediated by the factors of parental SES and home literacy practices. It could therefore be that while the simultaneous and competing processing of both languages can yield advantages in broad cognitive skills, it may also lead to some consequences and early difficulties for bilinguals that are eventually overcome. Further research examining how this develops across different contexts and levels of bilingualism is necessary, to inform best practice and predict any need for support or interventions.

2.3.2 Bilingualism and Social Outcomes

While there is a growing amount of research into the cognitive effects of bilingualism, the social benefits that are linked to learning an additional language, particularly maintaining a heritage language, and how this is borne out in one's psychological development are not often considered in parallel. Research has emphasized the importance of children maintaining their heritage language for their overall personal and educational development, influencing individual and collective identities and relationships (Murillo & Smith, 2011; Cummins 2001, Skutnabb-Kangas, 2000). Benefits of

maintaining a HL range from better emotional adjustment (Liu et al., 2009), more positive attitudes and lower emotional stress (Kaufman, 2004), and overall better mental health (Willgerodt & Thompson, 2006). Just as maintaining a heritage language is linked to more prosocial attitudes and parental support (Smith et al., 1999), heritage language loss is linked to communication rifts within families, potential alienation from the community, and a sense of cultural loss, low self-worth or identity crises (Brown, 2009). However much of this research has involved adolescents or adults, and how these benefits may manifest through childhood and early development is of interest in this project, across two domains:

2.3.2.1 Ethnic & National Identification

As a language reflects the culture of a community in which it is used, being bilingual will often involve developing a sense of oneself, or identity, as a member of more than one cultural or ethnic group. Defining identity is not straightforward, as it's multidimensional, fluid, and individuals may often have multiple and overlapping identities (Riley 2007). While the subjective sense of identity is a complex construct, studies have found that children from the ages of four to five years are able to talk about their belonging to a national or ethnic group (Barrett, 2005). This sense of identify increases significantly during childhood, driven both by cognitive changes and social influences. The construct of ethnic identity has been studied across many different domains, across many components (Leach et al., 2008; Phinney & Ong, 2007; Chandra, 2006), but can be broadly defined as one's sense of belonging, or subjective experience of being a part of, an ethnic group, and that this ethnic group membership embraces one's thinking, perceptions, feelings, and behavior (Ashmore, Deaux, & McLaughlin-Volpe, 2004; Phinney & Rotheram, 1987). Similarly, national identity signifies individuals' membership in the broader national-country culture into their sense of self and how an individual fits into the larger society (Rodriguez, Schwartz, & Whitbourne, 2010). The concept of national identity in the UK can be a complex one, as what it means to be 'British' continues to change, but the most common factor associated with being British is the ability to speak English, followed by having British citizenship and respecting the country's political institutions and laws (Kiss & Park,

2014).

Several theories have been developed to help explain the development of children's racial and ethnic attitudes. Of note, is Nesdale et al.'s, (2004, 2003) social identity development theory, which outline four stages. From about three years of age, awareness of racial and ethnic cues begins to emerge, and children gradually become more able to identify and distinguish members of different groups. Young children gradually become aware of those groups that have social significant within their own community and by the third phase, which begins at about four years of age, there is a particular focus on and preference for the in-group as a consequence of self-identification. Related to this, Barret (2007) also proposed the societal-social-cognitive-motivational theory which emphasizes that a child's development is always situated within a particular society and social niche. A range of potential sources and information are therefore available for the child including parental and teacher discourse and practices, school curriculum, peer groups, and media that can influence ethnic and national attitudes.

Early research has also helped understand how language learning could be linked to identity formation. Lambert's (1967, 1980) research described several patterns of how a majority language and culture can be acquired and be subtractive, losing their own language and culture in the process, or be integrated into their own. He emphasized how language learning involves the saliency of a personal and group identity, involving an interpretation of a language's cultural aspects too. Concepts of subtractive and additive bilingualism have since been regularly referred to in research (Cummins, 2017) across different social and political contexts (Sachdev, Giles, & Pauwels, 2012).

Recent research has since shown how language can be an important factor in the development and maintenance of identities (Martono et al., 2022; Cárdenas & Verkuyten, 2021; Jospeh, 2004), as migrants who regularly use and are competent in the host country language show stronger national identification (Hochman & Davidov, 2014; Chen, Benet-Martínez, & Bond, 2008), and similarly heritage language maintenance amongst immigrants has been linked towards positive ethnic identity

orientation (Norton, 2022; Kang & Kim, 2012). In a recent meta-analysis (Mu, 2015), a significant overall moderate positive correlation was found between sense of ethnic identity and proficiency of HL, and this was found while considering various different ethnic groups. However, the strength of this correlation varied across contexts and how language practices therefore influence identity formation continues to be of interest particularly in the UK as it increases in diversity. A definite relationship between language and identity should also not be assumed, with previous research with children showing variability in children's ratings, knowledge, beliefs, and feelings about national and ethnic groups (Trofimovich & Turuševa, 2015; Barrett & Oppenheimer, 2011).

It's also important to highlight that there are implications for ethnic identity in how immigrants choose to adapt and identify with a new society. Phinney et al., (2001) identified four approaches to acculturation as the values, beliefs, and language of a new country are learned. Integration, which involves maintaining an ethnic identity as well as identifying with a new one, is in contrast to assimilation, which involves the shifting of ethnic identity to a new one. Individuals may also develop a separated identity, maintaining their ethnic identity without identifying with the host community, or give up both the ethnic and host identity and acquire a new identity in a process of marginalization. This is moderated by the circumstances, attitudes, and characteristics of the immigrant group as well as the responses of the receiving society. Contexts have since been studied with this in mind, highlighting the conditions for integration (Lauglo, 2017; Flannery, Reise, & Yu, 2001).

Being bicultural, while previously more negatively viewed as a potential source of struggle or distress (Park, 1928), is now viewed quite differently. There is growing research that suggests that those who form strong and positive multi-ethnic identities report better psychological well-being (Ferrari et al., 2015, Basow et al., 2008), self-esteem (Mohanty, 2013; Phinney, Cantu, & Kurtz, 1997), and even better academic attainment (Fuligni & Witkow, 2004) than their peers with singular ethnic identities. Specifically, when considering minorities, the development of cultural identity,

which is linked to the process of acculturation, should ideally be through bicultural adaptation in which the individual adapts to the dominant culture while retaining their ethnic attachments, therefore understanding, and belonging to two different cultures simultaneously (Lam, Chaudry, Pinder, & Sura, 2019; Lee, 2002). A such, biculturalism can be defined as having comfort and proficiency with both one's heritage culture as well as the culture of the country or region in which one has settled in (Schwartz & Unger, 2010). The two identities of adolescents growing up bi-culturally in the UK have been shown to be significantly correlated and enhance one another positively (Lam et al., 2019), and bilinguals who learn to value and appreciate both cultures has been associated with positive outcomes, notably developing a greater respect for and ability to collaborate with others (Chen & Padilla, 2019; Mok et al., 2007; Nowak-Fabryskowski & Shkandrij, 2004).

This warrants the study of identities as an outcome of bilingualism and a predictor of other outcomes, considering that the construct is under-researched longitudinally and quantitatively (Wei et al., 2022; Marks, Patton, & Coll, 2011). The unique contexts of CSs, and how they may contribute to this, are worth considering as will be further discussed later in this chapter.

2.3.2.2 Social and Academic Competences

The development of social-emotional and academic competence has been found to be critical for later achievement, and has also been studied in association with bilingualism. It reflects the ability to handle social situations effectively, and includes skills such as getting along with others, forming and maintaining close relationships, and being likable amongst peers (Harter, 1982). In early childhood, social competence specifically has become more emphasized and studied as a predictor of an array of outcomes including school readiness and early academic achievement (Galindo & Fuller, 2010; Denham, 2006; Raver, 2002), resilience (Luthar & Zigler, 1991), and vocabulary development (Mendez, Fantuzzo, & Cicchetti, 2002), placing it as an important factor in early language learning and second language acquisition.

Social competence has important implications for child development. Children with good

social skills are better prepared for school, have higher attendance rates, report increased enjoyment of school, and achieve at higher levels than their peers (Ladd, 1990; Ladd, Kochenderfer, & Coleman, 1997). In a longitudinal study, Oades-Sese, Esquivel, Kaliski, and Maniatis (2011) examined the social-emotional competencies and academic achievement of bilingual preschool children. They found a significant relationship between early social-emotional development and bilingualism, with monolingual children having the lowest social competencies scores. Following up two years later, they found that the bilingual children identified as socially competent showed significantly better English oral language skills and overall academic success than their bilingual peers. With that said, this effect was strongly mediated by proficiency, and the sample is limited in being predominately from low-income backgrounds, with no further consideration of parental factors and children's home environment. The extent bilingualism acts as a mediating factor therefore needs to be further explored in consideration of such extraneous variables.

Other research has similarly investigated language as a predictor for social competence. Just as the process of language learning can contribute towards identity formation, it can also contribute towards the learning of behavioral norms and social practices, and in developing a sense of positive self-image (Ochs & Schieffelin, 2011). Children with better language abilities have been found to do better with peer play in classroom settings (Hebert-Myers et al., 2010; Mendez, Fantuzzo, & Cicchetti, 2002). English proficiency, specifically, has also been shown to be positively associated with competence in peer relationships, teacher-rated social skills, and perceived self-worth (Chen & Tse, 2010; Longoria et al., 2009), as well as higher levels of social competence and more prosocial behaviors (Goldfeld et al., 2014). This link extends to research with older samples, as better English was associated with better social skills and support from a host society (Yashima & Tanaka, 2001). This relationship however is complex and not linear and need to be considered across different interactions (Ren & Wyver, 2016).

Linked to this, is self-concept, or one's sense of self, which has been shown to play a

significant role in academic achievement and language learning (Csizér & Magid, 2014; Schunk & Pajares, 2005). This encompasses being part of an ethnic group, which also plays a role in the developing of self-concept and perceptions (Phinney et al., 2001). Previous research has shown a positive relationship between self-concept and acculturation, possibly because of self-concept being partly derived from social interactions (Valentine, 2001; Moyerman & Forman, 1992). Students enrolled in bilingual programs also showed significant positive links between their ethnic identity, self-concept, and acculturation (Cavazos-Rehg & DeLucia-Waack, 2009). There is increasing research supporting the view that bilingualism and biculturalism positively impact intellectual development and self-concept (Chen, 2015), but how these social factors interact is of interest, with research needed incorporating the many facets of the bilingual experience.

While recognizing the culture and identity of students has been shown to be important for social integration in schools and language development (Arnot et al., 2014), this is challenging in the UK environment where there is more pressure to conform to speaking English, making it more difficult to successfully maintain another language without a large linguistic community and active parental participation (Haneda, 2006). This has wide implications which will be further discussed in the next subsections.

2.4 The UK Context

The UK is linguistically rich not only in its indigenous languages, such as Welsh and Gaelic, but in the thousands of languages from around the world spoken among its diverse population. London alone is one of the most multilingual cities in Europe, with more than 5,000 languages recorded as spoken by school children (Mehmedbegović et al., 2015). Despite this, it is also reported that only one in three Britons is able to hold a conversation in another language (Tinsley & Board, 2017). There has also been a drastic continual decline in the numbers studying languages at secondary school and consequently at university, especially over the past two decades (Tinsley & Doležal, 2018).

While modern foreign languages such as French, Spanish, or German are studied as part of the curriculum in mainstream schools, the teaching of community languages is not usually widely supported (Hall et al., 2002), with only some schools offering the study of certain HLs for GCSEs in the last few years at secondary school. The teaching of modern foreign languages is also limited, at primary schools this is up to just one hour a week. Research has shown that teachers have a lack of guidance on teaching these languages, and UK's recent exit from the European Union and the promotion of English as a "global" language means students are less likely to see the value in learning languages and lack opportunities to practice them outside of the classroom (Collen, 2020). As such, there seems to be a lack of encouragement for bilingualism to be cultivated, and this includes outside mainstream provision, with previous policies showing concern for special language teaching as a risk of social fragmentation amongst youth, and government educational policy in the UK increasingly asserting the notion of Anglo-ethnicity (Rampton, 2005). This has effects as for recent generations particularly, although their extra linguistic competence has the potential to be an educational asset, some of the children actively conceal it, feeling that it is irrelevant or embarrassing (Mehmedbegović, 2011).

It's also worth highlighting that experiences of bilingualism in England vary considerably, with cities like London offering more provisions and support for bilingual children to maintain their HL and achieve well academically in relation to their monolingual counterparts. This plays a role in what is often referred to as the 'London effect', whereby disadvantaged pupils in London, but also large cities such as Manchester and Birmingham, show improved performance relative to elsewhere in England. This is likely linked to a number of characteristics, including having English as an additional language, expectations and engagement of parents, self-belief and personal aspirations, and even ethnicity or immigration differences (Ross, Lessof, & Brind-Katar, 2022). Despite England's long history of migration, the lack of comprehensive guidance, support, and training for additional language provision means educational policy and practice is inconsistent and contributes to the disparities seen across regions (Szymczyk, Popan, & Arun, 2022).

When looking at the policy background for the management of bilingualism in the UK, the Swann Report in 1985 transferred the responsibility of teaching community languages from schools to the communities themselves, which started a long process of marginalizing community languages and their teaching (Conteh, Martin, & Robertson, 2007). Some efforts have been made since then to try and facilitate language learning, notably Scotland has a 1+2 Language Policy since 2012, and research has called for even greater engagement with language communities through this strategy (Hancock & Hancock, 2021). Similarly, Wales has a Welsh Language Strategy since 2017, The Cymraeg 2050, and Northern Ireland has a Languages for the Future Strategy since 2012. However, England still has no official policy on language education. This is in stark contrast to nearby countries that have successfully protected or promoted minority languages. In Scandinavia, for example, indigenous and minoritized languages are regarded as part of the national heritage and have been implemented into the curriculum and linked to several beneficial outcomes (Huss, 2016). More research within the UK is crucial to inform educational and wider policy, with a particular need to recognize the value and breadth of the community languages already being used.

2.4.1 The Borough of Newham

All the schools in this project (both CS and mainstream) were situated in Newham, with two of the CSs also having branches in other areas of London or nearby boroughs. Newham was considered the ideal location for this research, not only because it is part of one of the most diverse and largest cities in Europe, but also because it chiefly has one of the most multilingual populations in both London and all the UK. The borough is situated in East London, part of Inner London, and is also one of the most populous areas in England. Between the last two censuses (held in 2011 and 2021), the population of Newham increased by 14%, now having around 351,000 residents (Office for National Statistics, 2022). The population increased by a greater percentage than the overall population of London, as well as the whole of England, capturing Newham's growing diversity.

Over a third of the population are also under 25 years old, with a high proportion of people moving in and out of the borough (Newham Info, 2021). There was actually a declining population in the borough, largely in part because of the Second World War and increasingly high unemployment, but since the 1960s East London has become more of a historical entry point for immigrants (Butler & Hamnett, 2011) and the redevelopment of areas such as the Docklands and the development related to hosting the 2012 Olympics has contributed towards a fast-growing young population (McGlynn, 2015).

In the latest census, Newham also continued to have the lowest percentage of residents that speak English as their "main" language (65.37%) in all of England and Wales, with more than a hundred languages recorded. More than 50% of residents also reported their country of birth as outside of England, making it one of the most ethnically diverse districts in the country (Office for National Statistics, 2022). This is similarly reflected in Newham's schools, as in 2015 the borough had the highest proportion of minority ethnic pupils in London at both primary and secondary levels (Aston-Mainsfield, 2017). Correspondingly, 73.3% of children in Newham have mothers who were born outside of the UK, which is much higher than the London average of 57.7% (Roszczynska & Crisp, 2021). The largest ethnic group reported in the census has been Asian or Asian British (42.2%), most likely linked to migration post the Second World War and the breakup of the British Empire, but there have also been a growing number of other communities including more recently one of the highest populations of Ukrainians in the UK.

Newham was also one of the most affected London boroughs by the Covid-19 pandemic, having the second highest mortality rates in the country at the height of the pandemic, and some of the largest number of residents (102,000) who had to go on furlough or self-employment support (Newham Council, 2020). The pandemic only further emphasized existing inequalities, as Newham is considered one of the 20% most deprived districts in England (Public Health England, 2020). The borough also has a very high percentage (36%), compared to the rest of London, of employees that

are in low paid work (Tinson et al., 2017), with more recent estimates reporting that 49% of children in Newham live in poverty, which is substantially higher than the London average (35%) and set to worsen in the current cost of living crisis (Trust for London, 2021).

Despite this, there have been growing opportunities in the area, with Newham now also having the third highest rate of jobs growth in London. Recent reports in schools also suggests that the GCSE attainment gap between advantaged and disadvantaged pupils in Newham is one of the smallest amongst London boroughs (Trust for London, 2021). The council has been controlled by the Labor party since it was first elected, with varying initiatives regarding language and heritage. The council continues to offer language and cultural support, notably free classes of English for speakers of other languages, and celebrates the borough's heritage in an annual festival called "Newham Heritage Month". Recent research in the borough has also shown that shown that people took great pride in being members of Newham's diverse community and were committed to creating a vibrant community with respect for differences (Mintchev & Moore, 2017; McDermott, 2015).

2.4.2   English As An Additional Language (EAL) Learners

Most bilinguals in the UK would be classified in mainstream education as English As An Additional Language (EAL) learners. While "EAL" emerged as more a distinct discipline in the second half of the 20th century (Sharples, 2021), it's important to also contextualize it as a response to the large-scale immigration that occurred from the "New Commonwealth". As the assumption was that these young people would settle in the UK for the long term, the goal was to help them integrate through modeling Standard English. Since then, EAL provision has been "consistently inconsistent", at times recommending the removal of EAL learners from mainstream classrooms, to then advocating the importance of language development for all students regardless of their background (Costley, 2014).

The term "EAL" is now better seen as an umbrella term for a complex range of

characteristics, practices, and objectives (Welply, 2023). The broadness of the term has been considered unhelpful, as it prevents a better understanding of statistics and attainment, not separating students who are more or less proficient in English (Arnot et al., 2014). The official definition used by the Department for Education states that "A pupil is recorded as having English as an additional language if she/he is exposed to a language at home that is known or believed to be other than English." (DfE, 2020; pg. 4) They also stress that it is not a measure of English language proficiency, which is a more recent addition to reflect a growing understanding that exposure to another language is not necessarily linked to bilingual pupils' attainment (Sharples, 2021). This definition is applicable to this project's sample, as bilinguals were deemed as "EAL" in primary schools if they have encountered any other language in early childhood.

In the 2019 school census, 33.5% of pupils of school age were of minority ethnic origins, and 21% of primary school students and 17% of secondary school students did not speak English as their first language (DfE, 2019). These students often termed as "EAL", can vary greatly with some arriving later being completely new to English and others being born in the UK and acquiring English in tandem with their other language(s). The circumstance of these children also largely vary, with some belonging to well-established communities and others being children of refugees or asylum seekers. Likewise, these communities also disperse unevenly; while over half of England has an EAL enrolment of 5% or under, schools in London, for example, have much higher proportions, which may account for inconsistencies in school training (Strand, Malmberg, & Hall, 2015). More recent estimates suggest there are one and a half million students in England that are EAL learners (The Bell Foundation, 2023).

Research on EAL learners has largely focused on achievement. Proficiency in English has been found to play an important role in the educational achievement of migrant students (Arnot et al., 2014). Within the UK, while students' fluency in English is a key predictor of achievement in national tests at age 11, bilingual pupils rated as "Developing competence", "Competent" or "Fluent"

in English outperform monolingual peers and make more progress (Strand & Hessel, 2018). This highlights that for children to further benefit from their bilingualism in relation to educational outcomes, they would have to have a high enough proficiency in the medium of mainstream education. Research suggests that it takes a minimum of five years for bilingual pupils to reach fluency in English (Demie, 2018; Department for Children, Schools, and Families, 2007), and therefore be able to fully access the mainstream curriculum. There are clear challenges in doing so, notably a lack of consensus on EAL assessment, a need for more comprehensive data, a lack of funding and training, and a need to consider the effects of different languages and backgrounds (Hutchison, 2018).

It's important to also note that EAL students in London tend to achieve higher scores than EAL students in other regions. For example, in Yorkshire & the Humber the EAL gap is particularly large with EAL students scoring 8 months below their London peers. The size of the EAL advantage in progress does therefore vary across schools and geographically, being influenced by factors such as age of arrival into the UK, pupil mobility, ethnic group, and neighborhood deprivation (Strand, Malmberg, & Hall, 2015). This has important implications in identifying and targeting EAL support, as while more than 50% of students recorded as EAL are located in London, growing concentrations of EAL students can be specific to small local areas and schools even if the total numbers are low in broader geographic area (e.g., a large number of EAL students has also been reported in the West Midlands, the North West, and Yorkshire & the Humber). Within this, it's also important to consider specific linguistic groups and where they are located in the country, which is data that is generally not systematically or very accurately collected, often only being categorized by ethnicity. Many of the widest attainment gaps are present, for example, in local authorities with substantial Pakistani ethnic minority groups, such as Peterborough, Bedford, and Sheffield, who tend to experience economic disadvantage (Hollingworth & Mansaray, 2012). Further exploration is therefore certainly needed to help explain attainment gaps in such regions, as well as within specific communities and

ethnic groups, and is of consideration here in this research despite the project being based solely in London. As just previously highlighted, Newham is a diverse borough and while data on this is more readily available, many of its language groups show differences in socioeconomic factors and complex interactions between this and attainment that need to be better understood (Von Ahn et al., 2011).

Unlike Canada, the United States, Australia and New Zealand where there is clear guidance on the support that EAL children should receive, the UK also has no clear EAL policy, and there is a lack of support for the development of EAL specialist expertise in schools (Andrews, 2009). Despite this, there are clear indications that negative associations with attainment for the early stages of English fluency are often overcome and that most EAL learners eventually do become proficient in English and are able to access the mainstream school system quite successfully (Strand & Demie, 2005).

This emphasis on reaching competence in English is not missed by parents, as in recent research, many parents shared that they prioritized English learning over the maintenance of their children's HL and ethnic culture, over fears of language barriers and because they wanted their children to succeed (Tereshchenko & Archer, 2014). The same study also interviewed the children of these parents, who shared that they perceived their label as an EAL learner as a barrier to achievement, as they felt teachers held lower academic expectations of EAL students. This is despite the majority of participants in the study being fluent in English and doing well in school, and Tereshchenko and Archer (2014) postulated that this could be because of the wider negative public discourse about immigrants, as well as summative assessments in English that tended to be culturally specific and undermine performance of EAL students.

The use of the EAL label is evidently not greatly beneficial, but at the very least it captures the current diversity in UK schools. Research has shown some encouraging associations with this, as attending school with a high proportion of EAL students was found to have a positive association

with progress for all students (Strand, Malmberg, & Hall, 2015). It is also increasingly recognized that children's home languages are crucial to their development, and therefore EAL learners need opportunities to use these languages alongside their English to make sense of themselves and the cultures they live in (Conteh & Meier, 2014). Schools have been doing more to provide an inclusive and supportive environment (Anderson et al., 2016), and understanding learners and schools' experiences further are important to support these growing number of students.

2.5 Complementary Schools

Since the mid-1900s, migrants arriving in the UK have been instrumental in setting up community-led complementary, also known as supplementary or weekend, schools. While they vary in their objectives and structure, they generally provide a safe space outside of mainstream schools for the maintenance and transformation of young people's heritage languages and cultures (Lytra & Martin, 2010). They have gained recent interest in research as they grow in prominence, not just as sites for language learning, but particularly for their cultural context and their key role in the identity development of both parents and students (Blackledge & Creese, 2010).

A significant component in UK's linguistic minority communities, they are estimated to be 3,000–5,000 CSs in England alone that are voluntary-run by the linguistic, cultural, or religious communities (Lytra & Martin, 2010). They've been shown to be inclusive and cohesive spaces, meeting the needs within their community, as well as engaging with the local community and engaging greater integration into mainstream society (Rose, 2013). They are also innovative education sites, often showing creative teaching approaches and curricula, engaging partners, and building collaborations (Sneddon, 2017). As such, they have become an important movement in the country for nearly half a century, with wide-ranging implications for education, social policy and politics (Li, 2006).

Despite this, the contexts are largely under-recognized, and continue to face a range of

challenges not limited to time, resources and funding (Sneddon & Martin, 2012). Initially there was some government support for these contexts, with several initiatives taking place during the 1970s and 1980s (e.g. The Bradford Mother Tongue Project and the Linguistic Minorities Project), and some local authorities, particularly in London, providing support for HL in schools (Minty et al., 2008). There is also some guidance for these settings, of note is the National Resources for Supplementary Education (NRCSE), which provides support for community-led supplementary schools and the wider sector across England. This includes access to training and adhering to a code of safe practice and quality assurance.

Today, however, CSs are particularly vulnerable, often relying on small fees from parents to offset their expenses and volunteering staff, with teachers often being members of the community or parents of children in the school, some having overseas or UK qualifications and various teaching experience (Thorpe, Arthur, & Souza, 2018). CSs are also largely not acknowledged by local authorities and will often have to rent premises, as the teaching of HL and culture is generally no longer considered to be the state's responsibility (Blackledge & Creese, 2010; Hall et al., 2002). As these premises will tend to be shared spaces, such as mainstream schools or community centres, this also limits the resources CSs have access to (Martin, Bhatt, Bhojani & Creese 2006). While the UK government has at times recognized the contributions of out-of-school education, there is also an intention to introduce inspections of CSs, which may affect their freedom and have negative consequences (Souza, 2016; Barradas, 2015).

The history of complementary schools in the UK will be summarized, along with relevant and recent research of these contexts. As complementary schools also exist abroad, some of this research will also be highlighted and general trends seen in heritage language maintenance research.

2.5.1   History of Complementary Schools in the UK

Complementary schools in the UK have been classified into three broad groups, based on

their historical context and the communities they serve (Li, 2006). The first group of CSs emerged in and near to London in the 1960s for children of Afro-Caribbean families who were dissatisfied with mainstream education and its lack of representation of their culture and community. The emergence of these schools was a reflection on the Black population's sense of social alienation at the time (Chevannes & Reeves, 1987), and although bilingualism was not in focus, these contexts still addressed English language teaching following perceptions at the time that Afro-Caribbean children under-achieved. Today, these schools have been shown to positively impact Black and Minority Ethnic pupils' mainstream attainment and wellbeing (Maylor et al., 2013), and have become important contexts for educational change (Mirza & Reay, 2000).

The second group of CSs emerged in the late 1970s and early 1980s, as Muslim communities from South Asia and Africa wanted separate religious schools for their children. While the teaching of religion was therefore the focus, this also included some language teaching (e.g., teaching Arabic to read the Koran). Despite some controversy, this led to the recognition and support of two Muslim schools, and correspondingly led to other immigrant communities establishing their own schools with an aim to maintain their linguistic and cultural heritage (Li, 2006). This third movement of CSs differed from a more supplementary provision, as rather than be a separate education for children, these settings aimed to provide a complementary role and operate outside of mainstream schools.

This third group of CSs, largely taking place in the weekend to provide additional teaching of HLs, are now the most common type of CS in the UK and are the type of schools included in this project. It's important to recognize that the history of CSs has been in reaction to the socio-political and educational conditions in the UK, and that all three groups of CSs emerged because of communities not having their needs fully met within mainstream education. While there continues to be debate as to how these settings can be best supported, their contributions to their communities and wider society have become evident (Creese, 2009), and warrant further study.

2.5.2 Studies on Complementary Schools in the UK

During the last two decades, there has been increasing recognition of CSs in research. Of the research conducted in the UK, the majority has been qualitative studies in England, although some notable research has also been emerging in Scotland (Hancock & Curdt-Christiansen, 2014; Bell, 2013), Wales (Lewis, Jones & Baker, 2012; Edwards & Newcombe, 2005), and Ireland (Liu, 2022; Machowska-Kosciak, 2017; McDermott, 2008).

Research in England has also been across different communities, although there has been particular interest on Chinese CSs, largely looking at classroom practices and pupil and teacher perspectives (Ganassin, 2018; Wang, 2014; Francis, Archer & Mau, 2010, 2009; Archer, Francis & Mau, 2010, 2009). Research has also been emerging on Turkish (Çavusoglu, 2014; Lytra, 2012; Lytra et al., 2008), Greek (Karatsareas, 2021, 2018 ; Voskou, 2021), and Arabic CSs (Szczepek Reed et al., 2020; Soliman, Towler, & Snowden, 2016).

Through this large body of research, the importance of CSs in teaching children's HL and correspondingly introducing them to their heritage culture has been highlighted. One of the biggest studies has been from an ESRC-funded study of six Chinese schools in England on how pupils, parents, and teachers construct and negotiate culture and identity. Some of the key findings were the high value placed on CSs among parents but also pupils, mostly second-generation, who saw proficiency in Chinese as a significant component of their ethnic identity (Francis et al., 2009). Furthermore, they found that these schools were complex sites in the navigation of children's identities, allowing children the space to explore and reinvent themselves through language learning, participation in shared cultural activities, and interactions with peers and role models from similar backgrounds (Archer et al., 2010).

Another large-scale ESRC project investigated the language practices of CS attendees of Bengali, Chinese, Gujarati, and Turkish schools across four major cities in the UK, through ethnographically informed case studies (e.g., observations, interviews). They found that students who attended CSs made use of a wide range of regular linguistic resources and did so in a flexible way

(Creese et al., 2011). They also found that linguistic hierarchies existed within the classrooms, with the standard form of a HL being considered superior to its regional varieties, but that students also crossed linguistic boundaries regularly and reflected on their knowledge (Lytra et al., 2010).

As such, CS attendees hold and reflect juxtaposing beliefs on how languages should be learnt and maintained, seeing their different languages as separate but also relying on both of them to convey meaning and demonstrating multimodal practices regularly. The project also further emphasized how CSs differ from other contexts and language teaching in mainstream schools because of their community, which openly endorses multilingualism as the norm, influencing identity and extending children's bilingualism (Creese et al., 2008, 2006).

Research has since further demonstrated the classroom practices and pedagogy found across CSs, and how this allows them to be unique spaces for learning. The term translanguaging has come to the forefront, to help describe practices that allow and encourage learners to use their full linguistic repertoire (García & Wei, 2014), and CS classrooms have been shown to be spaces which include such practices by children regularly alternating between different languages and modes of communication and as such generating new understandings of language and culture (Wei, 2014). This flexible bilingual approach to language teaching and learning has been shown to be useful (Creese & Blackledge, 2011), and children demonstrate an ability to relate their everyday experiences into the CS classroom for efficient language and literacy practices (Lytra, 2011).

It's also important to note that research has shown ow CS activities and functions are wider than just language learning, operating more as community institutions (Conteh et al., 2007). As alluded to, communities perceive CSs as important, not only because they allow for children to reflect on their overlapping cultures and identities and make use of opportunities to develop as bilinguals, but because they also provide support and a familiar space for newly arrived parents and/or parents from minority communities (Gaiser & Hughes, 2015; Creese, Bhatt, Bhojani, & Martin, 2006). Attendees and their parents have also reported that CSs help with mainstream work, enable greater parental engagement, and have a positive impact on student motivation (Maylor et al., 2013). These reports are corroborated

by other research that demonstrates the importance of active parental participation and a larger linguistic community in achieving proficient bilingualism (Pearson, 2007; Riches & Curdt-Christiansen, 2010). These benefits seem to extend to the wider community as such schooling has been shown to have a positive effect on the perception and respect of community languages and bilingualism (Arnot et al., 2014).

Recent evaluations of CSs have attempted to focus on more measurable outcomes, specifically how such schooling impacts mainstream attainment. In one of the largest studies undertaken, covering seven cities across England, when comparing Key Stage results pupils that attend CSs were found to outperform their peers across almost all subjects (Evans & Gillan-Thomas, 2015). Surprisingly, this pattern was also found when considering children from low socioeconomic backgrounds, who would often show an attainment gap. With that said, the findings were merely correlational, and it is still unclear what other factors could have attributed to this difference, in particular increased parental engagement and commitment to their children's education (Wolfendale & Bastiani, 2000). In Sneddon's (2012) evaluation of a well-established CS, attendees were also found to show positive associations with mainstream school attainment, alongside their parent's also reporting more knowledge about the English educational system due to training and support from the CS. Of the few quantitative studies done in CS settings, attendance at a Greek CS was not found to negatively impact scores in English tasks, but also did not significantly predict performance in Greek vocabulary and grammar tasks (Papastergiou & Sanoudaki, 2022). While being a small-scale study, the link between proficiency and CS attendance is nonetheless a tentative one (Gaiser & Hughes, 2015), as the extent these settings can compete with the mainstream language is important to consider.

While a strong correlation with attainment cannot be concluded, the role of CS in their attendees wider education cannot be ignored, with many of these CSs now also preparing attendees for formal qualifications such as GCSEs. There is a growing need to connect them to the mainstream sector, and to further explore mainstream school teachers' awareness of and attitudes towards the

policies and practices of CSs (Li, 2006). The benefits of connecting these sectors have also been discussed in research, with much to learn from the ways CSs engage with children and their families, involve parents as an important resource, and foster positive relationships between learners and their teachers at home, school and the community (Conteh, 2012). Forging links between the two educational settings would also importantly allow for the development of integrated pedagogies and policies to recognize students' potential and full linguistic repertoire (Cushing, Georgiou & Karatsareas, 2021). One action research study in East London did set up partnerships between CS and primary school teachers in which they visited each other's settings and jointly planned lessons adapted to each context. This led to mutual respect for each other's expertise and an exchanging of useful strategies, with mainstream teachers learning more about their students as independent bilingual learners (Kenner & Ruby, 2012; Kenner et al., 2008). This only further emphasizes the need to recognize CSs as legitimate educational spaces, and for research to highlight their contributions and challenges, for better integration of knowledge and support.

2.5.3 Studies on Bilingual Educational Settings

While CSs have emerged as an important movement in the UK, it's also important to highlight that HL education has become popular and successful in other, mainly English- speaking, areas of the world. Research has looked at complementary schools in the United States (Beaudrie, Ducar & Potowski, 2014; Brinton, Kagan & Bauckus 2008; Zhou & Kim, 2006; Zhou & Li, 2003), Canada (Panagiotopoulou & Rosen, 2019; Curdt-Christiansen, 2008; Cummins, 1992), Australia (Chen & Zhang, 2014), the Netherlands (Li & Juffermans, 2014), and Norway (Lie, 2003).

There has also been a growing amount of research since the 1990s, predominantly in the United States, that has focused on heritage language education, or language instruction designed specifically for students who have community exposure to the language (Valdés, 2005). This can vary widely, as language classes meeting a few hours a week in schools or universities, or more organized CSs (Leeman & King, 2015). Much of this research has examined the teaching of Spanish and have noted

positive associations with achievement, as the more years children attended heritage language schooling, the less influence poverty had on their performance in both languages, and they were shown to outperform peers (Thomas & Collier, 2002). While children may be learning effectively in these settings, they still face similar issues of under recognition, with many informal and community learning contexts not being known by mainstream educational sectors (Gregory, Long & Volk, 2004; Hull and Schultz 2002).

While beyond the scope of this project, research in bilingual education, dual immersion, or international schools also offer some relevant findings. Notably, the effectiveness of bilingual instruction has been well documented, with positive effects on children's linguistic and educational development (Molyneux, 2009; Cummins, 2008; May, Hill, and Tiakiwai 2004). Importantly, research attests to the benefits of HL learning and promotion for both languages, with time spent learning a HL not impeded on children's overall academic development. Studies have also indicated that bilingual education positively supports children's identity construction, particularly through inclusive pedagogies (Garcia-Mateus & Palmer, 2017; Molyneux, Scull, & Aliani, 2016; Reyes & Vallone, 2007).

Throughout the world, bilingual education practices are becoming increasingly popular (García, 2009), but the context in which this takes place is crucial and outcomes may not be transferable as universally (Baker, 2001). An example of this would be in Canada, where bilingual education has been particularly successful as the government has provided support for second-language education since 1970 and introduced a federal policy of multiculturalism, encouraging immersion programs for second language learning (Mukan, Shyika, & Shyika, 2017). However, much of the research from Canada does not focus on immigrant communities (Carder, 2008), and successful bilingual programmes usually concern the country's two official languages, English and French, with largely homogenous groups of children (Biaystok, 2018; Wardman 2012). Similarly, much of the European Union countries demonstrate inclusive attitudes to languages, with noteworthy

programmes in Spain and Luxembourg (Kirsch, 2018; Lasagabaster, 2001). In the UK, and particularly England, there are unique social and political differences that make bilingual education a challenge (Wardman, 2012), and research is needed to not just capture the diversity in schools but also highlight how language learning is taking place and how it can be better supported.

2.6 The Present Research

This research project was proposed to address the need in research for more longitudinal studies on childhood bilingualism, and particularly considering the extra context of CSs. There continues to be a disconnect between mainstream education and community-based language learning. This lack of public visibility and recognition of CSs, and the language learning that occurs in them, also yields concerns for social cohesion, as it weakens any positive connection and psychological integration between the children's community or home life and their mainstream school life (British Academy, 2019). It is therefore vital to examine if and how CSs facilitate bilingual development and consider bilinguals experiences with and without these settings, to better inform further research and language learning, particularly in the UK.

A mixed-methods explanatory approach was followed, including three phases of research. The first timepoint consisted of mainstream and CS school visits with children, involving social and cognitive measures. This was followed by interviews with parents and school staff, to further understand language attitudes and experiences in this sample, and to clarify some of the project's initial findings. The final timepoint consisted of revisits with bilingual children, with the same social and cognitive measures, including an additional educational measure. The project's methodology will be further detailed in the next chapter, for each of these stages.

Chapter 3: Methodology

As a longitudinal and mixed-methods project, this methodology chapter begins with the research design followed and the assumptions that underpin it. This is followed and organized by different subsections for the different samples, methods, and procedure followed during the two timepoints of quantitative data collection, and qualitative data collection. Changes in the samples, alongside any adaptations to the measures used and the impact of the Covid-19 pandemic will also be highlighted.

3.1 Mixed-Methods Research Design

Bilingualism is a complex and arguably natural, social phenomenon, involving many linguistic and non-linguistic factors. The decision to speak more than one language is largely personal, yet common experiences are shared between communities and speakers, with a multitude of influences. Rather than being dichotomous, it is indeed a continuous dimension affected by a variety of linguistic, social, and individual factors. In this way, and in this project, bilingualism is observed as a multifaceted phenomenon and its experiences being studied across different communities and contexts. A mixed-methods approach was considered most appropriate as it allows for the use of multiple approaches in answering the project's research questions and draws on the strengths of both quantitative and qualitative measures. While it is growing in popularity, it is still not a prevalent approach and has its challenges requiring purposeful use and thoughtful integration of methods and results. Despite this, a mixed-methods approach is fitting in answering this project's research questions allowing for more perspectives on, and a complete knowledge of, the phenomena and contexts being studied, through the triangulation and enhancement of results from one method to help inform the other (Johnson & Onwuegbuzie, 2004).

The mixed methods approach to this research is novel, particularly in its study of bilingualism, and adds to the richness of the data. This approach was deemed appropriate not only to

address the gaps in the literature, but also to seek more comprehensive understandings of different outcomes of bilingualism. More specifically, a mixed methods design also allowed for different qualitative perspectives and inferences to be drawn from parents and school staff, alongside structured comparisons of quantitative measures with bilingual children to better understand their development. The use of a mixed methods design therefore allowed for the engagement and consideration of different participants, which often is not seen in other research in this field, and both phases of data collected complemented one another to help address the project's research questions.

The project followed a mixed-methods explanatory design (framework for design in Figure 1, from Creswell, 2015), such that its longitudinal measures to study bilinguals and how they compare across contexts are quantitative (cognitive and social developmental measures such as executive function and social competences), with follow-up qualitative measures being used (interviews) to help explain the findings. As such, it began with a quantitative strand and the qualitative strand was built on, and helps to explain, the quantitative findings. It can be argued that some elements of the design were convergent, such that the data could be integrated to address elements of RQ2 (if complementary attendees differ from non-attendees), and particularly RQ3 (what features of complementary schools may facilitate bilingual development/explain any differences). However, the qualitative strand was largely explanatory in that the study was initially quantitative, and the first time-point results were used to inform the interview questions for qualitative data collection and subsequent thematic analysis.
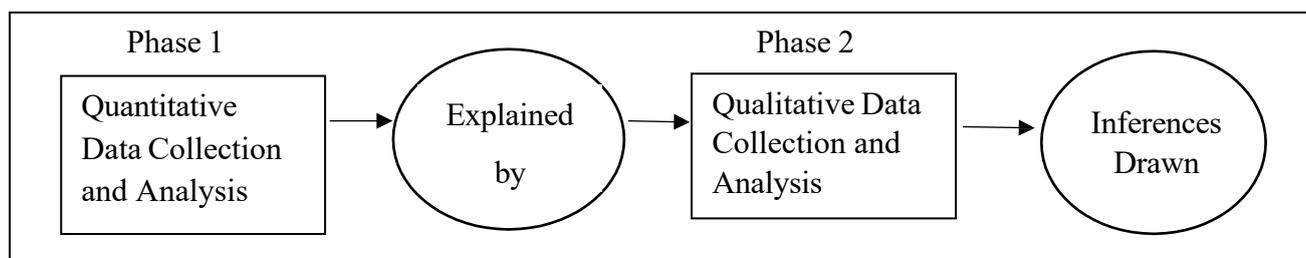
Figure 1. *Explanatory Sequential Design. Creswell (2015), from: A Concise Introduction to Mixed Methods Research (pg.39).*

The quantitative strand of this study followed a longitudinal repeated measures design, such that the same bilingual children were visited four times across two set timepoints. This included two sessions per timepoint, with one session focusing on the collection of social measures, and the second session focusing on the collection of cognitive measures, which is further detailed in the materials and procedure of this chapter.

The qualitative strand of this study included conducting interviews with parents and teachers, to provide further context and enhance the understanding of the project's initial quantitative findings. Results from the first time-point of quantitative data collection informed what questions were asked, particularly to understand more about the CS context and how schools may differ, as well as the children's home environment and exposure to each language. Particular factors were identified as potentially impacting outcome measures from the first time-point results (detailed further in Chapter 6 for the qualitative study), and parents and teachers' perspectives were obtained on these areas, alongside their own language beliefs and experiences at home and in schools, to comprehensively answer the project's research questions. Figure 2 below outlines the explanatory mixed method design of this project, including the sequence and link between the different phases of data collection and analyses, and the actions in each stage.

Timepoint 1   *January – November 2019*   *September 2020 – March 2022*

Quantitative Data Collection
- Piloting and development of measures (cognitive, social)
- Collection of baseline data
- Recruitment of sample (N=153, 9 schools)

Quantitative Data Analysis
- Input of results and cleaning of database
- Descriptive statistics
- CS & Non-CS comparisons
- Identify factors for future analyses and further qualitative study

Qualitative Data Collection
- Interviews conducted online throughout the pandemic
- Minimum of nine interviews with parents and school staff across the nine schools (one interview per setting)
- Use of interpreters within communities where preferred
- Recruitment from original sample

Qualitative Data Analysis
- Transcription of data
- Thematic analyses across CS/non-CS groups
- Interpretation of how qualitative data helps explain quantitative data

Timepoint 2   *March 2021 – January 2022*

Quantitative Data Collection
- Revisiting initial sample of bilingual children, with substantial attrition
- (N = 90, 8 schools)
- Final follow-up on cognitive and social measures
- Collection of educational measures

Quantitative Data Analysis
- Input of results and cleaning of database
- Descriptive statistics
- Final comparisons between timepoints and samples

Interpretation of how qualitative results explain quantitative results

Figure 2. *Explanatory Sequential Design of this Project and Stages of Research*

3.2 Epistemological and Ontological Assumptions

`The use of mixed methods in research can often pose a challenge regarding what paradigm, or approach, is most suitable and how best to define one's assumptions of knowledge. It's worth reiterating that the purpose of mixed methods research is to provide a more complex understanding of a phenomenon that would otherwise not have been understood by using one approach alone (Creswell & Plano Clark, 2011). This is the case in this project, in which an explanatory mixed methods design is being used for the purposes of complementarity, with an intentional mixture of both quantitative and qualitative measures being used to seek deeper and more comprehensive understandings of different outcomes of bilingualism.

It's important that there be an explicit discussion about the paradigm being used in mixed methods research, as this is often overlooked or not mentioned within research design (Creswell & Plano Clark, 2011). In this project, a critical realist perspective was taken as it adopts a view of reality as an open and complex system, where other mechanisms and conditions also exists (Zachariadis, Scott, & Barrett, 2013). This is applicable to how language learning is being viewed here, and its potential outcomes, with an emphasis on context and therefore the need to use a variety of research methods. Critical realism emerged as a response to the polarization of positivism and constructivism (Maxwell & Mittapalli, 2010), lying somewhere in between as it recognizes the partial and incomplete nature of theory to explain and capture data, and supports the idea that quantitative and qualitative research can complement one another and address the other's limitations. Under critical realism, complete objectivity is not possible, as the world is thought to be constructed through individual perceptions, but it also recognizes that reality can exist outside of perception (Shannon-Baker, 2016). For this project, casual inferences are therefore made while emphasizing context, and alternative viewpoints are accepted and discussed. My position as well, as a bilingual who grew up outside of the UK, is also reflected on particularly during qualitative analysis (Chapter 6) and how this adds to the approach and interpretation of findings. Indeed, my experiences prior to this as well as my period of engagement within each CS community, has undoubtedly shaped my perceptions of these settings, allowing me to better understand them but also meaning I needed to be aware of my subjectivity throughout the process.

The implications of this assumption can be seen in the design and analysis of this project, as critical realists use theory as a guide in the research process while also recognizing that they can be impartial or incomplete views of reality (Shannon- Baker, 2016). It is only by trying to understand the underlying factors at play, that a phenomenon can be close to

51

understood. Furthermore, the approach places high importance on understanding and representing diverse viewpoints and perspectives (Modell, 2009), which is what has been done in this project's wide sample across many different communities and the collection of different types of data from bilingual children, parents, and school staff. While the approach can present challenges in terms of interpreting causation in analysis, it nonetheless does emphasize the need to generate theory, just under more revised expectations for the generalization of findings which is more context dependent (Zachariadis, Scott, & Barrett, 2013).

3.3 Child Sample & Schools: Timepoint 1 (January – November 2019)

While initially an additional monolingual sample was considered as a control group, this was found to be difficult in a diverse borough like Newham where most children are exposed, even at a limited capacity, to another language. As previously highlighted, Newham is one of the most linguistically diverse boroughs in the UK, which meant a control group would be much smaller in number, and difficult to recruit. Recent research has even debated if monolingual controls are even needed in research as bilinguals are not, and should not be expected to be, like monolinguals (Sorace, 2016). With this in mind it was deemed more appropriate to go for a diverse group of bilinguals, some of which are less or more proficient, to allow for a better understanding and comparisons of bilingualism. In total, a sample of 153 bilingual pupils were initially recruited and tested, including 73 (43 male, 30 females) children across five complementary schools (CSs), and 80 (42 male, 38 female) children across four mainstream primary schools. This is further summarized in Table 1 below.

Table 1. *Number of participants and their associated schools in study's first timepoint*

CS/non-CS	School	Number of Participants
Complementary School	Tamil School A	17
	Tamil School B	16
	Gujarati School C	14
	Albanian School D	14
	Russian School E	12
	Total CS Participants Completed	**73**
Mainstream School	School F	44
	School G	16
	School H	10
	School I	10
	Total Non-CS Participants Completed	**80**

Participants did not have to fulfil any specific criteria, aside from age and speaking another language apart from English, that they learn through their family and ethnocultural/linguistic community, to be considered for the project and all students and their parents of participating schools were invited to take part. Recruitment of complementary school attendees, their parents, and teachers, was aided by the collaborative partner NPCE. NPCE initially suggested six well-established complementary schools in the borough of Newham which they had previously approached and represent principal communities in the area. Following meetings with the NPCE, agreements were made with five of the schools that agreed to take part in the study. I, as the researcher, then liaised with each school's key contact, who were either volunteer headteachers or founders, to arrange visits, speak to parents, and distribute information sheets and consent forms.

This included attending community events, learning more about each school's history and background, and getting the schools familiar with myself as a researcher.

All five CSs shared the objective of preserving the HL and culture, of largely second-generation children, meeting once a week on Saturday or Sunday for two to four hours, alongside yearly community events. They have been operating for at least ten years with founding ties to the heritage country. While they differed in funding sources and fees paid by families, the CSs primarily relied on volunteers. Each of the schools will be briefly described in turn:

Tamil School A

It has been operating as one of the biggest complementary schools in Newham since 1975, when they opened as the first Tamil complementary school in Europe. They are a registered UK charity and have been based at a mainstream school in East Ham for at least 30 years, paying every Saturday to have most of the classrooms and the assembly hall from 10AM to 1PM. The school is largely voluntarily run, with parents paying £85 per year per pupil to contribute towards rent and school costs. Teachers receive no salary, but travel expenses are occasionally covered. The school has around 200 students on register and includes Tamil GCSE and A level classes. Many students are second or third generation from the Tamil diaspora, of different religions, but the majority have family ties to Sri Lanka or India. The school also has an associated admin office in East Ham, and key officers include the school's President, Headteacher, Vice-Chair, Honorary Treasurer and School Coordinator. Parents often volunteer and are present at the school premises, with regular community and public events each year. Songs, dance, and recitations are included as part of classes and during festivals, and different competitions (speech, reading) are held throughout the year to engage students. The school is well recognized for their efforts to preserve the Tamil language and culture. Since the pandemic, the school's classes have moved online on the video platform Zoom.

Tamil School B

Previously a part of Tamil School A, School B is a complementary school that shares the same premises at a mainstream school and operates on Sundays between 1:30 PM to 3:45PM. The school is also a registered UK charity, has grown in a similar scale and is voluntarily run, having close to 140 students, across six year groups, as well as offering GCSE classes. The school is led by a headteacher and governed by 18 trustees under a president and has expanded into a second branch in Redbridge. Similarly, the school has its emphasis on Tamil language and culture, incorporating songs, dance, and poetry into classes and in regular events. They have a diverse student body from the Tamil diaspora, with the majority having family ties to India. The school is part of a well-established wider Tamil community centre, which has been based in East Ham since 1960 and hosts different activities including a well-stocked Tamil library with more than 5000 books, a club for the elderly, English and Hindu classes, meditation and gym classes, and support sessions for the community. Since the pandemic, the school's classes have also moved online on the video platform Zoom.

Gujarati School C

The school was founded as part of a temple, a registered charity, which was built in 1987 in Forest Gate, to meet the need from the community to teach the younger generation their mother tongue Gujarati. During this project, it has had just over 100 students across seven classes, as well as GSCE classes, running on Saturdays from 4:30 PM to 6:30 PM. The school is voluntarily run, with some funding provided by the Temple, with fifteen volunteer teachers and seven administrative staff who assist teachers in running the school. Almost half of the volunteer teachers, including the school's headteacher, are previous alumni of the school. At the start of this study, the school was renting a floor of another complementary school's premises for their classes, but since 2020 they have been operating on bigger premises near Manor Park, linked to the Temple. They are able to host the classes without paying rent as the school and the Temple are very closely associated such that many students attend the temple as part of their Hindu faith and take part in celebrations together

such as Diwali. The school also promotes some of the Temple's initiatives, such as their grassroots youth association which hosts regular social, cultural, fundraising and religious events. During the pandemic, classes did move online temporarily but due to the Temple now owning the school premises they were able to return to face-to-face teaching following the necessary guidelines.

Albanian School D

The wider programme was formed in 2002, and registered as a charity in 2005, to promote and support the Albanian speaking community to integrate into the UK. To do so, they provide and facilitate education and training. They act as the largest community-led Albanian agency in the UK. The programme is largely involved in supporting Albanian-speaking asylum seekers, refugees and migrants through several initiatives, and have published several toolkits including one on how to successfully start up, run and maintain a supplementary school, funded by the Paul Hamlyn Foundation. One of their many services includes providing Albanian classes as a complementary/supplementary school, which are hosted at two different mainstream schools on Saturdays and on Sundays from 10 AM – 1PM. While relatively new compared to other CSs in the project, the classes are particularly well attended on Saturdays with up to 50 students across two classes, one for younger students up to age 8 and the other for older students. The classes are taught by voluntary trained teachers, and are separated by age and ability, with cultural activities also incorporated. The programme uniquely runs in partnership with those mainstream schools who provide the classrooms on weekends for free. The curriculum has an emphasis on history and heritage, including poetry and songs, and the programme hosts annual celebrations with student performances. The programme also places an emphasis on parental engagement and offers them support. Notably, they offer simultaneous English classes to parents on request, focusing on practical and applicable English skills. During the pandemic, classes have moved online to the video platform Zoom, with some classes resuming face-to-face in November 2022.

Russian School E

Founded in 2003, this school is one of the largest and most successful Russian supplementary school networks in the UK, having four branches across London with classes for each Year group of up to 20 children. Participants in this study all attended its East branch in Stratford, now based at a mainstream school in the area from 10AM to 2PM. Unlike the other CSs in this project, the school is not voluntarily run; instead parents pay higher fees ranging from £533 - £575 per term per child. They offer classes for all ages, including preschool, primary, GCSE & A-Level Russian. The curriculum places an emphasis on Russian literature, culture, and history, and students are grouped based on age and ability. Other than learning Russian, students can also engage in different activities in Russian throughout the day including Math's, dance, art class, and choir. The school co-created and use their own textbooks to teach Russian, working with professional partners locally and abroad. More recently, it has expanded to open the first Russian - British 13+ full-time school in the UK and a corresponding Azerbaijani weekend School. During the pandemic, classes did move online temporarily but were then able to resume face-to-face following the necessary guidelines.

Correspondingly, all primary schools in Newham, as listed by the Council's website, were contacted by email and letters to be invited to take part. Primary schools attended by CS participants in Newham or nearby boroughs, as shared by parents voluntarily on consent forms, were also approached. This process was followed to better match demographics between CS-attendees and non-attendees (e.g., factors such as SES, neighbourhood and local authority) and to focus primarily on the communities in Newham or nearby in the interest of the project's research objectives. Meetings were arranged with headteachers or EAL coordinators of schools who expressed interest to take part. All four primary schools that agreed to take part were central or local government-funded to serve children within their 'catchment' areas. Recruitment was then agreed based on each school's preference, some preferring to approach parents through the EAL coordinator and others via their parent online platform, including information sheets and consent forms (Appendix I & II).

School F

Located in Newham, it converted into an academy in 2017 and has up to 440 students. While still a state school, as an academy it is run by a not-for-profit trust, which is independent from the local authority so they have more autonomy on managing their curriculum. It has a pupil teacher ratio of 13:7. Based on the most recent Government statistics, in 2019, the school had progress reading scores above the national average, and progress writing and math's scores well above the national average, with 72% of school pupils meeting the expected standard in reading, writing, and math's, compared to England's average of 65%. They have 39 "EAL" pupils registered at the end of key stage 2, with 64% of EAL pupils meeting the expected standard in reading, writing, and math's. 33.6% of students are eligible for free school meals. It maintained an Ofsted rating of "Good" in 2019.

School G

Located in Newham, it is a Royal Catholic & voluntary aided school with 379 pupils. While they are funded by the local authority, they also have more autonomy in school decisions being supported by a religious group. It has a pupil teacher ratio of 18:8. Based on the most recent Government statistics, in 2019, the school had average progress scores in reading and math's, and above average writing scores compared to the national average. 63% of school pupils were found to meet the expected standard in reading, writing, and math's, compared to England's average of 65%. The school has 42 "EAL" pupils registered at the end of key stage 2, with 60% of them meeting the expected standard in reading, writing, and math's. 31.9% of students are eligible for free school meals. The school maintained an Ofsted rating of "Good" in their last inspection in 2018.

School H

Located in Newham, it is a community school, meaning that it is a local authority-maintained school and follows the national curriculum. With 664 students, it has a pupil-teacher ratio of 19:5. Based on the most recent Government statistics, in 2019, the school had below average progress scores in reading and writing, and average scores in math's compared to the national average. Sixty-

five percent of school pupils were found to meet the expected standard in reading, writing, and math's, which is the same as England's overall average, but is lower than the local authority average of 76%. The school has 72 "EAL" pupils registered at the end of key stage 2, with 68% of them meeting the expected standard in reading, writing, and math's. 33.4% of students are eligible for free school meals. The school maintained an Ofsted rating of "Good" in their last inspection in 2019.

School I

Located in Barking, it is also a community school, one of the largest in London with 1161 students across several buildings. It has a pupil teacher ratio of 24:2, as they also have a Special Educational Needs (SEN) provision. Based on the most recent Government statistics, in 2019, the school had above average progress scores in reading and math's, and average scores in writing compared to the national average. Fifty-eight percent of school pupils were found to meet the expected standard in reading, writing, and math's, compared to the local authority's average of 66% and England's overall average of 65%. The school has 144 "EAL" pupils registered at the end of key stage 2, with 56% of them meeting the expected standard in reading, writing, and math's. 26.1% of students are eligible for free school meals. The school maintained an Ofsted rating of "Good" in their last inspection in 2017.

After school-level recruitment, five participants from mainstream schools were excluded because of speech difficulties or not understanding enough English, having just arrived in the UK, to complete the social sessions comfortably. However, their parents were still invited to take part in voluntary interviews or focus groups as part of the research. None of the children in the sample had a diagnosed vision problem, hearing impairment, language difficulty or learning disability.

Children were aged 4 to 9 years old (M = 6.78, SD = 1.34), to ensure that they would be in primary school for the duration of the longitudinal study. Of the total sample, 107 were born in the UK, while the remaining 46 moved to the UK at a younger age. Both CS-attendees and non-

attendees did not significantly differ in the number of years they had been in the UK (total M(CS) = 5.84, SD = 2.34; M(non-CS) = 5.65, SD = 2.31). The majority of UK-born children were 'second-generation' (N = 79), with both parents not being born in the UK (N = 125), while others were 'third-generation' (N=28) with either one parent (N=17) or both parents (N = 11) being born in the UK. The CSs involved were among the Albanian, Gujarati, Tamil, and Russian speaking communities. Within the mainstream schools, the aforementioned languages were also represented as well as 31 other languages. Tables 2,3, and 4 below list the languages reported across the diverse sample (both CS and non-CS), based on how proficient they perceived themselves in each language (e.g. third and fourth languages were of quite limited proficiency). All schools and participants were based in Newham or nearby boroughs (such as Barking & Dagenham).

Table 2. *Second languages reported across the sample (language spoken other than English)*

Language	N (CS)	N (non-CS)
Albanian	**14**	**2**
Arabic		2
Bengali		8
Bulgarian		1
Creole		2
Farsi (Persian)		3
French		2
Georgian		1
German		1
Ghanaian (Akan)		2
Gujarati	**14**	**1**
Hausa (Nigerian)		6
Hindi		2
Italian		2
Krio (Sierra Leonean)		1
Lithuanian		1
Malayalam		1
Mandarin		1
Pashto		2
Polish		5
Portuguese		7
Punjabi		1
Romanian		2
Russian	**12**	**2**
Spanish		3
Somali		2
Swahili		1
Swedish		1
Tamil	**33**	**2**
Telugu		2
Turkish		2
Twi		1
Urdu		4
Yoruba		3

Table 3. *Third languages reported across the sample (languages spoken other than English)*

Language	N (CS)	N (non-CS)
Albanian		**2**
Bengali		1
Bulgarian		1
Dutch	1	
French	12	5
German		1
Ghanaian (Akan)		2
Greek	1	
Hausa		1
Hindi	5	2
Lithuanian		1
Italian	2	
Portuguese		2
Russian		**2**
Sanskrit	2	
Slovak		1
Slovenian		1
Spanish	9	8
Somali		1
Telugu		1
Twi		1
Urdu		1

Table 4. *Fourth languages reported across the sample (languages spoken other than English)*

Language	N (CS)	N (non-CS)
Arabic		1
French	1	2
German	1	
Hebrew	1	
Hindi	1	
Pashto		1
Sanskrit	1	
Spanish	4	6
Turkish	1	

Further demographics of the sample are summarized, and any significant differences between the CS and non-CS groups noted, in Table 5 below. The groups were similarly matched in gender and age, as well as the mean number of years they've been in the UK, but CS-attendees did score significantly higher on family affluence than non-attendees.

Table 5. *Sample characteristics in the project's first timepoint across the different participant groups*

	CS-Attending Group	Non-Attending Group	T-Test Statistic (p value)
N	73	80	
Gender	43 male (59%)	42 male (53%)	
Mean Age (SD), Range: 4-9 years	6.77 (1.45)	6.79 (1.21)	-.10(.925)
Generational Status	55 second generation (parents not born in UK), 18 third generation (one or both parents UK born)	70 second generation (parents not born in UK), 10 third generation (one or both parents UK born)	
Born in the UK	55 UK-born, 18 born abroad	52 UK-born, 28 born abroad	
Number of Years in UK (SD)	5.84 (2.34)	5.65 (2.31)	.51(.608)
Main Languages Spoken Other Than English (number of speakers)	Tamil (34), Albanian (16), Russian (15), Gujarati (15)	Bengali (8), Portuguese (7), Nigerian-Hausa (6), Polish (5), Urdu (5); table 2 for full list	
Family Affluence Score	6.88 (2.27)	5.46 (2.20)	**3.91 (<.001)**

3.4 Parent and School Staff Sample for Qualitative Data Collection (September 2020- March 2022)

In line with this project's explanatory mixed-methods design, a small subset of the initial sample was recruited for the qualitative study to help explain and give context to the quantitative findings. This sampling method is outlined in Figure 3 below. Consent forms and information sheets (Appendix I & II) given to parents at the beginning of the project, to consent for their children to take part, included the option to voluntarily take part in an interview or focus group. Following the completion of the first timepoint of quantitative data collection, parents were therefore recontacted through schools to ask if they would like to take part. School teachers and staff were also approached by myself, the researcher, from each setting. A total of eleven interviews were conducted across the nine schools, including four from the non-CS sample (three school staff interviews and one parent interview) and seven from the CS sample (three school staff, two teachers, and two parent interviews). As such, each setting was represented by at least one interview. Further sample characteristics, and the backgrounds of each interviewee, are detailed in Chapter 6, alongside the qualitative data analysis of interviews.
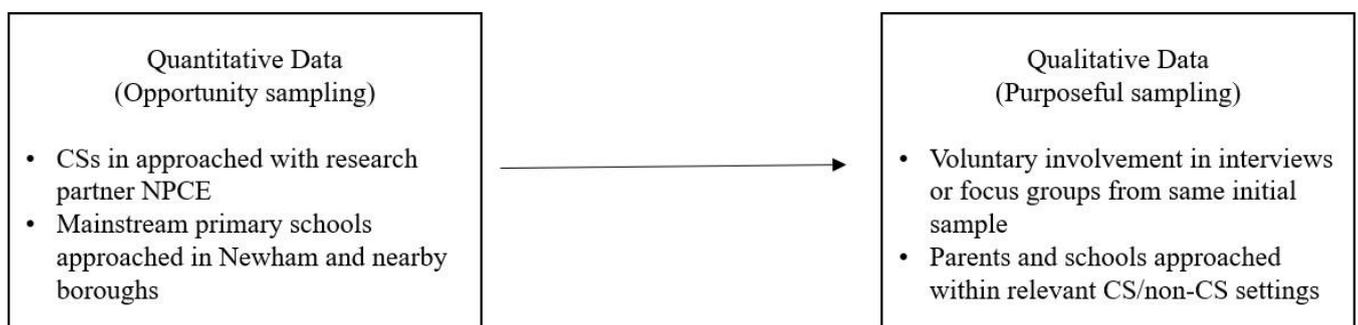
Figure 3. *Sampling Method for Quantitative and Qualitative Data Collection*

3.5 Child Sample: Timepoint 2 (March 2021- January 2022)

The same sample was revisited for the study's second timepoint (Table 6). Due to the Covid-19 pandemic, a notable attrition was seen in the CS sample as some families chose to stop attending or moved, and classes were moved online (Timepoint 2 N CS= 19; Timepoint 1 N CS = 73). However, this level of attrition was not seen with the non-CS sample (Timepoint 2 N non-CS = 71; Timepoint 1 N non-CS = 80), which allowed for a comparable final sample (Timepoint 2 N = 90, Timepoint 1 N = 153). Some of the primary schools also had changes in staff, so the project was reintroduced to new coordinators for better liaison. This is further discussed in Chapter 7, alongside the final time-points findings. Despite difficulties faced in schools and across the community, particularly when reaching out to parents, sessions were eventually still able to be organized either online or in-person to allow for sample trends to be revisited and timepoint comparisons to be made.

Table 6. *Number of participants and their associated schools in study's second time-point*

CS/MS	School	Number of Participants
Complementary School	Tamil School A	7
	Gujarati School C	6
	Albanian School D	3
	Russian School E	3
	Total CS Participants Completed	**19**
Mainstream School	School F	38
	School G	16
	School H	8
	School I	9
	Total Non-CS Participants Completed	**71**

Tables 7, 8, and 9 below also list the languages reported across the diverse sample (both CS and non-CS), in the final timepoint. The languages reported in the sample largely stayed the same, as well as the HLs examined. However, it is worth noting that as children got older, some took interest in different languages (e.g., Korean from media consumed, or Arabic to read the Koran).

Table 7. *Second languages reported across the sample in final timepoint (language spoken other than English)*

Language	N (CS)	N (non-CS)
Albanian	**3**	**2**
Arabic		1
Bengali		7
Bulgarian		1
Creole		2
Farsi (Persian)		2
French		2
Georgian		1
Gujarati	**6**	**1**
Hausa (Nigerian)		1
Hindi		1
Italian		2
Lithuanian		1
Mandarin		1
Pashto		3
Polish		5
Portuguese		7
Punjabi		1
Romanian		2
Russian	**3**	**2**
Spanish		6
Somali		3
Swahili		1
Swedish		2
Tamil	**7**	**1**
Telugu		2
Turkish		2
Twi		1
Urdu		5
Yoruba		3

Table 8. *Third languages reported across the sample in final timepoint (languages spoken other than English)*

Language	N (CS)	N (non-CS)
Arabic		4
Bengali		1
Bulgarian		1
Creole		1
Dutch		1
French	5	6
German		3
Ghanaian (Akan)		1
Hausa		2
Hindi		3
Korean		1
Latin		1
Lithuanian		1
Portuguese		2
Russian		3
Slovak		2
Spanish	8	12
Tamil	1	1

Table 9. *Fourth languages reported across the sample in final timepoint (languages spoken other than English)*

Language	N (CS)	N (non-CS)
Albanian		1
French	2	3
Japanese	1	
Mandarin	1	
Portuguese		1
Spanish	1	3
Turkish		1
Urdu		1
Yoruba		1

Further demographics of the sample are summarized in Table 10 below, and any significant differences between the CS and non-CS groups noted. While at this timepoint the groups no longer significantly differed in family affluence, they were found to significantly differ in age, with the CS sample being older on average. While the groups are unequal in sample size, they nonetheless were still largely second-generation speakers, still not differing in the number of years they had been in the UK. These groups are revisited and further explored in Chapter 7, alongside relevant analyses.

Table 10. *Sample characteristics in the project's first timepoint across the different participant*

groups

	CS-Attending Group	Non-Attending Group	T-Test Statistic (p value)
N	19	71	
Gender	13 male (68%)	39 male (55%)	
Mean Age (SD), Range: 6-12 years	9.53(1.58)	8.59(1.31)	**2.65(.009)**
Generational Status	17 second generation (parents not born in UK), 2 third generation (one or both parents UK born)	66 second generation (parents not born in UK), 5 third generation (one or both parents UK born)	
Born in the UK	14 UK-born, 5 born abroad	46 UK-born, 25 born abroad	
Number of Years in UK (SD)	8.68(2.11)	7.69(2.16)	1.79(.076)
Main Languages Spoken Other Than English (number of speakers)	Tamil (7), Gujarati (6), Russian (3), Albanian (3)	Bengali (7), Portuguese (7), Spanish (6), Polish (5), Urdu (5); table 7 for full list	
Family Affluence Score	5.42 (2.48)	5.49 (1.61)	-.14(.891)

3.6 Measures: Timepoint 1 (January – November 2019)

Prior to administering the measures, sessions were piloted with participants from one of the CSs in the project. Sessions included both cognitive and social measures, as will be further detailed in this section. Twelve participants were recruited and tested, half of which were between the ages of 4-6

years old, and the other half were older between the ages of 8-11 years old. This was done to pilot the tasks, particularly the cognitive measures, by age group and to ascertain if the measures would be suitable for the longitudinal design of the project. The same procedure was followed regarding consent, verbal assent, and debriefing, and pictorial scales were created (as further detailed below) to help aid in the sessions with children.

All participants in the pilot could comfortably complete both the cognitive and social measures and gave feedback on the sessions saying they found them enjoyable and comfortable. However, through piloting it became clear that it would work best to split the administering of measures into two sessions, one focusing on the cognitive measures and the other the social measures, to prevent fatigue and to ensure participants were not missing too much of their class or teaching time. The pilot sessions also helped guide the use of pictorial scales, as the younger children would rely on and point to these more, and it helped overcome any difficulties in verbal comprehension. Two sets of pictorial scales were piloted and decided upon based on participant responses and receptiveness in the sessions. With that said, the pilot sessions did reveal the need for children to have some functional proficiency in English, as instructions for both the cognitive and social tasks require some understanding of English. The language used was further simplified for the social sessions, in consideration of the age group, and instructions on how to administer questions further clarified in the Qualtrics form, as further detailed in the procedure section of this chapter.

Pilot scores from the scales were also preliminary analyzed to ensure there were no ceiling effects with the cognitive measures, and to get an initial understanding of the reliability of the measures. This helped regarding further organization and sorting of data, including the set-up and export of data, and also guided the project's data management plan and gave an indication of the time that would be needed for data analyses. A separate laptop was sought and provided from the university to use during the sessions, as this was found to be more secure and would allow for consistency between the sessions.

To ascertain specific cognitive outcomes often associated with bilingual development, and how

this may differ between children who attend complementary language schooling to those that do not, several measures were used across one of two approximately half-hour sessions (one for cognitive developmental measures, the other social developmental measures) for each child. The cognitive developmental measures are described in turn:

3.6.1 Measure of Executive Function

The Dimensional Change Card Sort (DCCS) task, outlined by Zelazo (2006) was used in this study as a measure of executive function due to its reliability in research (Carlson & Meltzoff, 2008; Bialystok; 1999). It was administered in this project using the NIH Toolbox® for Assessment of Neurological and Behavioral Function (NIH Toolbox) application, as part of its cognition battery of measures (Gershon et al., 2013). This was done via a password-protected iPad Pro, which had a 9.7 inch screen (NIH Toolbox App version 1.23). The application is interactive and includes clear instructions adapted by age group (3-7, 8-11). The toolbox, which includes a range of measures, was developed by a team of more than 300 scientists in the Unites States as part of the NIH Blueprint for Neuroscience Research. The measures have therefore been validated in research and have been particularly created to be well-suited for measuring outcomes in longitudinal studies. Results from this task on the app have also been shown to be highly reliable across childhood (Zelazo et al., 2013).

The researcher was given access based on evidence of appropriate qualifications in Psychology, and an annual subscription to the application was purchased for the duration of the project using research funds from the PhD's research training support grant, as coordinated by the UBEL DTP. Two versions of the task were utilized in this study, the Dimensional Change Card Sort Tests Ages 3-7, and the Dimensional Change Card Sort Test Ages 8-11, and how the task differed across the age group bands is outlined in Table 11 below, as shared by the NIH, and ensures an accurate comparison can be made across participants.

Table 11. *Outline of Dimensional Change Card Sort Task (DCCS) from NIH Toolbox App across age groups*

	Younger Child (3-7)	Older Child (8-11)
Starting Point	Intro to color	Mixed block of 30
Instructions	Different; cue word + audio reminder for "COLOR" and "SHAPE"	Different; audio reminder for "COLOR" and "SHAPE"
Practice	Max 3 sets of 4 trials; need 3/4 correct in a set to advance	Same
Items/Length	Intro to colour, 5 colour items, intro to shape, 5 shape items, must get 4/5 correct to advance to mixed block of 30	Mixed block of 30
Maximum Exposure Time per Test Item (seconds)	10.5 seconds	Same

Two target pictures were presented that vary along two dimensions (shape and color) and participants were asked to match pictures based on those dimensions. The experimenter read out the instructions to participants and pointed out relevant aspects of the stimuli on the screen. These instructions were detailed further in the procedure, from the NIH Toolbox administrator's manual (Appendix X & XI). The task began with an introduction and a short practice, before participants were asked to match a series of bivalent test pictures (e.g., yellow balls and blue trucks) to the target

pictures, first according to one dimension (e.g., colour) and then, after a number of trials, according to the other dimension (e.g., shape). "Switch" trials were also employed in which the participant must change the dimension being matched. For example, after four straight trials matching on shape, the participant was asked to match on colour on the next trial and then go back to shape. The task took approximately four minutes to administer, and if participants did not get four out of five test trials correct the task automatically ended. No additional help was given to participants during the task, but encouragement was given at the end of each trial and a sticker was given at the end of the task.

A "Home Base" created by the NIH Toolbox was printed, laminated and placed under the iPad as a consistent starting point for participants to place their index finger between trials. This was required as the score generated considered both accuracy and reaction time data. The home base, alongside examples of the cognitive stimuli can be found in Figure 4 below.
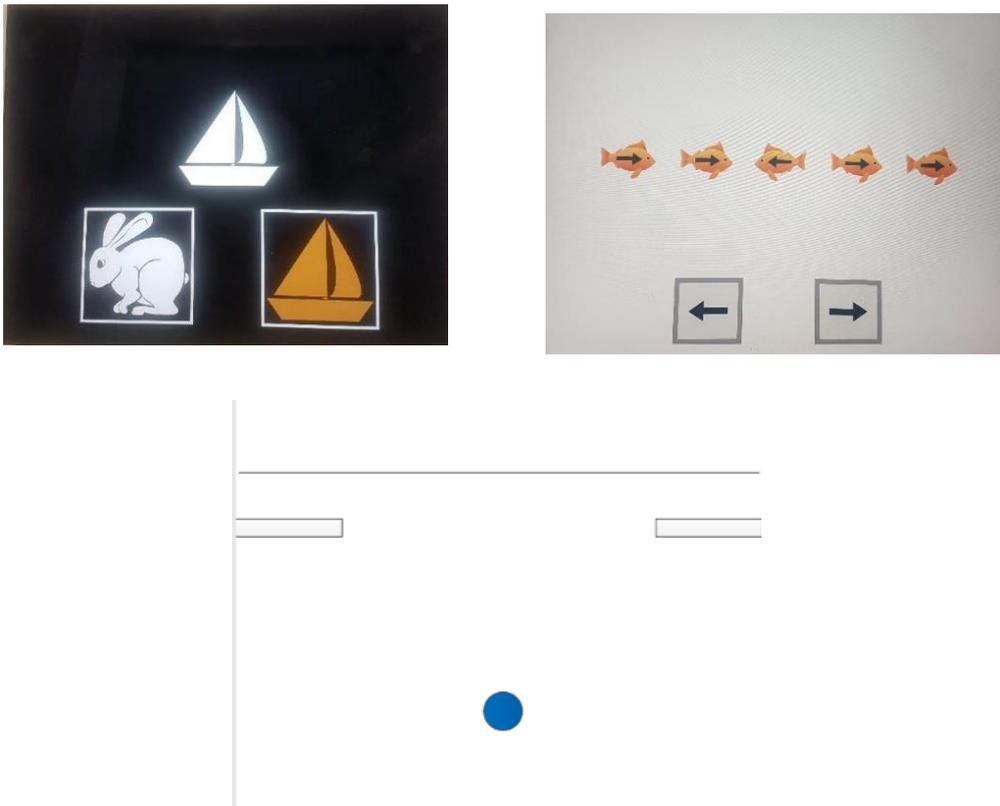
Figure 4. *Examples of Stimuli Used via The NIH Toolbox App (The DCCS Task, The Flanker Task), and The Associated Home Base*

Scoring is generated by the app itself based on a 2-vector scoring method, to consider both accuracy and reaction time performance. This is detailed further in the next chapter 4, when considering the first time-point results from the cognitive measures.

3.6.2 Measure of Attentional Control

A flanker task, adopted from the Attention Network Task (Fan et al., 2003), was adopted in this study as reliable measure of attentional and inhibitory control in research with children (Rueda et al., 2004). It was also administered via the NIH toolbox app, using the same iPad and procedure

including the home base. Two versions of the task were similarly utilized in this study based on the age of participants: the Flanker Inhibitory Control and Attention Test Ages 3-7, and the Flanker Inhibitory Control and Attention Test Ages 8-11. The task has also been validated and shown to be reliable across childhood development (Zelazo et al., 2013).

The task required participants to focus on a particular stimulus while inhibiting attention to the stimuli flanking it. The task instructions and practice trials were also adapted by age group (3-7, 8-11 years), outlined in Table 12 below, with younger participants being shown fish, and proceeding to arrows if they missed no more than one incongruent and one congruent item. Participants were instructed to choose the button that corresponded to the direction in which the middle arrow is pointing. On congruent trials, all the arrows were pointing in the same direction, while on incongruent trials the arrow were pointing in the opposite direction of the middle arrow. Congruent and incongruent trials were mixed throughout the task, taking approximately four to five minutes to administer. The same scoring method is used by the app as the DCCS Task, and the age-corrected standard scores were also used from this task for further analyses. This will also be further detailed in the next chapter alongside the presentation of the first timepoint's cognitive findings.

Table 12. *Outline of Flanker Task from NIH App across age groups*

	Younger Child (3-7)	Older Child (8-11)
Starting Point	Fish Stimuli	Arrow Stimuli
Instructions	Audio reminder to focus on "Middle". Instructions for fish, then instructions for arrows if needed	Audio reminder to focus on "Middle". Only arrow instructions
Practice	Max 3 sets of 4 trials; need 3/4 correct in a set to advance	Same
Items/Length	20 fish; if 90% correct then 20 arrows	20 arrows
Maximum Exposure Time per Test Item (seconds)	10.5 seconds	Same

3.6.3 Measure of Picture Naming

As a measure of picture naming, the British electronic English task was chosen, as part of a wider cross-linguistic task battery closely developed for preschool and young children (Haman et al., 2017; Haman, Łuniewska & Pomiechowska, 2015) to give an indication of bilingual production in nouns and verbs. Comprehension was not tested, alongside production, due to a lack of time with each child (two thirty minute sessions for each timepoint), and while it is not feasible to test participants in this project on both of their languages due to the variability of the sample (tests in most heritage languages are not available), performance reflected English proficiency and allowed an indicative measure of vocabulary growth. In using this task, accuracy and speed in the production of nouns and

verbs could be measured at the study's first time-point, early in the children's linguistic development. While fairly new in their design, they are being increasingly used in research, cross sectionally and longitudinally, and continue to be developed in different languages (Łuniewska et al., 2021; Lindgren, 2019; Altman, Goldstein, & Armon-Lotem, 2017; Khoury Aouad Saliby et al., 2017).

An electronic Windows version of the task was provided to the project in cooperation with the MultiLADA research team at the University of Warsaw, coordinated by Dr. Magdalena Łuniewska. Examples of stimuli used are given in Figure 5 below. Thirty-two verbs and nouns were included in the task, with a short break given between the verb and noun tests if required. The program would record each session and provide an excel spreadsheet of the timings for each item (when the sound was opened at the presentation of an item, and when it was closed to move to the next item), giving an indication of reaction time. These then had to be sorted manually and individual response times were calculated alongside the total time taken. Responses were recorded by hand by the researcher, on response sheets created by the Cross-Linguistic Lexical Task (CLT) team (Appendix III), and scored according to their guidelines (e.g., some synonyms for words would be accepted or regional variants) provided in (Appendix IV).

Figure 5. *Examples of Stimuli Used from the Picture Naming Task, Including Verbs and Nouns*

The other session administered the social developmental measures, which were entered into a questionnaire for the researcher to complete while with the child, via the secured online platform Qualtrics. Given the young ages of participants, questions were asked as part of an informal interview or conversation. The measures are described in turn:

3.6.4 Measure of Identity

To get an indication of children's connections with their ethnic and national identities, Barrett's (2007) Strength of Identification Scale (SoIS) was used. It has been used extensively and reliably in studies measure a range of identifications in various populations, particularly with children in the UK (Lam & Corson, 2013; Barrett & Oppenheimer, 2011; Davis, Leman, & Barett, 2007**).**

This scale, compromising five items, was used in this project to measure the degree to which participants identified with their ethnic/cultural (to which their heritage language corresponded) and national/mainstream (in this case British) groups. Participants were asked six questions from the scale

on being British, and six questions on being part of their ethnic/cultural group. To determine which ethnic/cultural group label to use, participants were asked at the beginning of the session what they would call themselves (e.g., "Some people say they are Spanish, others say they are Russian, Indian and so on, what would you call yourself?"). The questions asked, as taken from Barrett (2007, pp. 245–246), were (X refers to either British or the ethnic group children identified themselves with):

1) Degree of identification: Which one of these do you think best describes you? Response options: very X, quite X, a little bit X, not at all X.

2) Pride: How proud are you of being X? Response options: very proud, quite proud, a little bit proud, not at all proud.

3) Importance: How important is it to you that you are X? Response options: very important, quite important, not very important, not important at all.

4) Feeling: How do you feel about being X? Response options: very happy, quite happy, neutral, quite sad, very sad

5) Negative and positive internalization: How you would feel if someone said something bad about X people?, and How you would feel if someone said something good about X people? Response options: very happy, quite happy, neutral (not happy or sad), quite sad, very sad.

Following guidance on administering the scale, younger children (up to 11 years old) should have the questions read out to them and the use of pictorial aids (smileys faces) are suggested when asking questions on feeling and internalization. This guidance was adopted in this project, as pictorial scales were piloted and included to simplify the questions further for children (examples shown in Figure 6 below), and questions were read out to children before they were asked to respond by pointing on the printed and laminated scale.

To check the scale's reliability before further analyses, the appropriate items on the identity scales were reverse-scored, and questions rescaled when required (from 4-items to 5-items). Cronbach's alpha was used as a measure of internal consistency and scale reliability, as it is routinely and widely used across research. There is a range of interpretations as to what is considered an acceptable Cronbach alpha value, or a threshold for acceptability, but a value between 0.6 to 0.95 and above is often deemed acceptable (Taber 2018; Tavakol & Dennick, 2011). In this research, considering similar studies, the Bartlett's scale showed acceptable reliability, for both the British (Cronbach's $\alpha = 0.64$) and ethnic (Cronbach's $\alpha = 0.57$) scale in both the CS-attending and non-attending groups (British Cronbach's $\alpha = 0.64$; ethnic Cronbach's $\alpha = 0.53$). Other studies using the scale have shown various but similar reliability values given the communities studies (e.g., $\alpha = 0.61$, Davis, Leeman, & Barett, 2007), as well as in similar research with children (e.g., $\alpha = 0.54$, Mertan, 2011). This allowed for an aggregate score to be generated (by averaging the item scores) for each identity.
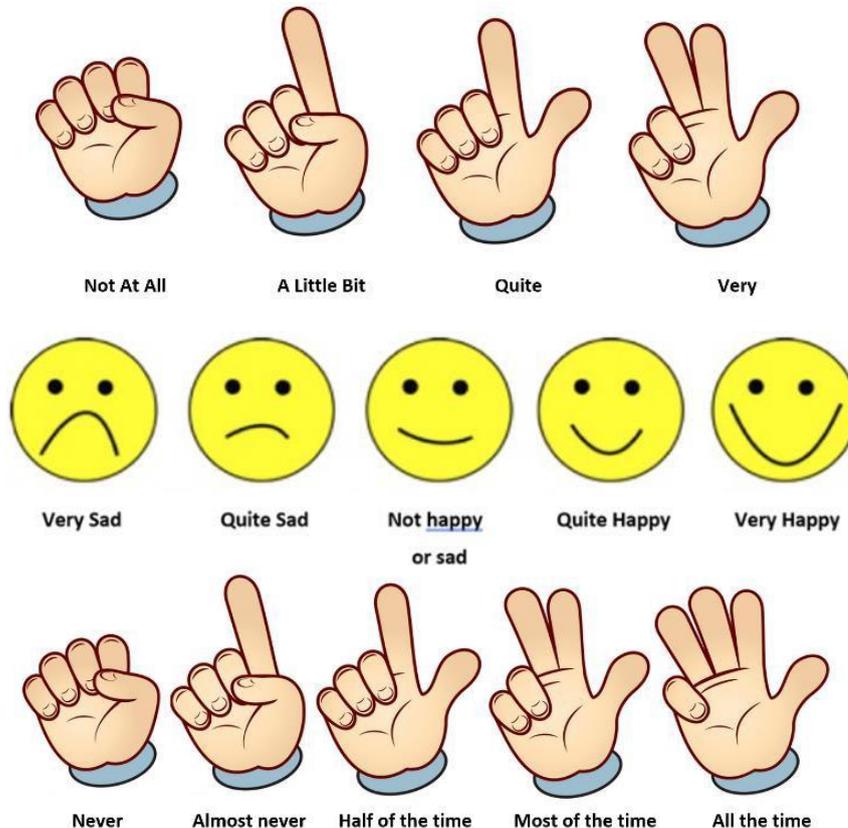
Figure 6. *Examples of Pictorial Scales Used in the Collection of Social Measures*

3.6.5 Measure of Perceived Language Proficiency

Children were asked to self-rate their language proficiencies and exposure to each language using the Language Experience and Proficiency Questionnaire (LEAP) (Marian, Blumenfeld, & Kaushanskaya, 2007). The LEAP questionnaire allows for a variety of data to be collected, has been used across various disciplines, and importantly takes into consideration where participant's languages are being used and how they are learning it (Kaushanskaya, Blumenfeld, & Marian, 2020). To simplify the questionnaire for children, a 5-point, rather than 10-point, scale was used. Pictorial scales were also used (Figure 4) as the questions were read out to the children, after being piloted with bilingual children at one of the CSs in the project.

While parents and teachers are more commonly relied on to report on children's bilingual experiences, research has indicated that it can be challenging to get comprehensive ratings as parents may be better at rating their child's home language, and teachers are limited to what they observe in the school environment in research (Bedore et al., 2011; Vagh, Pan, & Mancilla-Martinez, 2009). Research has also shown that bilingual children develop language awareness as early as two years old, being able to name and identify their languages and begin to reflect on their use (De Houwer, 2017; Arnberg & Arnberg, 1992). The questionnaire has therefore been similarly simplified and used successfully in research with children (Lam et al., 2019), and child language self-report measures have been similarly used in previous research and showed convergent validity between ratings and language skills (Castilla-Earls, Ronderos & Fitton, 2022; Babino & Stewart, 2017).

The questionnaire included four questions on proficiency, asking children to rate their speaking, understanding, reading and writing skills compared to children of their age in the UK. This was followed by four questions on how much they used the language when with family, friends, on the TV or Radio, and how much they read in that language. Finally, children were asked four questions on "how much" certain factors helped them learn the language (family, friends, TV/Radio, reading). These twelve questions were asked for each of the child's two languages, and relevant

background data (e.g., birthplace, parental birthplace, number of years in the UK) was additionally recorded.

The combined LEAP scale yielded acceptable reliabilities but were slightly lower for English (CS Cronbach's $\alpha = 0.44$; MS Cronbach's $\alpha = 0.56$), than for the heritage language (CS Cronbach's $\alpha = 0.76$, MS Cronbach's $\alpha = 0.68$), which could be due to the variability of responses given in the subscale concerning the exposure to the language. Due to the LEAP questionnaire's wide use in research, different Cronbach alpha values have been considered as acceptable, ranging from .60 to .80 (Marian, Blumenfeld, & Kaushanskaya, 2007), with values also differing in cross-cultural research (Hayakawa, Chung-Fat-Yim, & Mairan, 2022). A LEAP score was therefore generated by averaging the item scores for data analysis.

3.6.6 Measure of Perceived Competences

To measure children's perceived competencies, as an indication of their self-concept and how they perceive themselves, Harter and Pike's (1984) Pictorial Scale of Perceived Competence and Social Acceptance (for ages 4-7) and Harter's (2012) Self-Perception Profile (for ages 8 and above) was used. It has since been widely used reliably in research and cross-culturally (De Meester et al., 2016; Pereda & Forns, 2004; Eapen, Naqvi, & Al-Dhaheri, 2000). This scale was split into multiple subscales, and those of children's perceived social, athletic and cognitive competencies were used. The maternal acceptance subscale was not included as it would not address any of the project's research questions. Of the three subscales used, there were six questions each, with a practice question at the beginning of the task.

Children below the age of 8 completed the task with the pictorial scales, which were printed and bound as a booklet and had versions adapted for the sexes and age (4-5, 5-7) groups (sample shown in Figure 7 at the end of this subsection). These booklets allowed the researcher to have the question

on their side to read out, and the picture with the scale for children to answer to on the other side. The researcher would read the description for each page verbatim and point to the picture accompanying each description for children to see. The procedural manual (Harter & Pike, 1983) was used to aid in administrating the task; children were told they were going to play a (picture) game called "which boy/girl is most like me", and that in each picture or question they had to point or say which situation would be more like them, across a 4-point scale. Children would first have to point to the picture most appropriate for him or her, saying which one is most like them, and the researcher would then point to the circles directly below that picture, reading the scale, to help the child refine their choice further, starting with the larger circle first (e.g. "This child has few friends to play with, this child has pretty many friends to play with. Which one is most like you?", then once a choice is picked, "Do you have: a lot of friends, or pretty many friends?).

Children over the age of eight had the same number of questions and subscales which were read out to them without pictorial aids, also across a 4-point scale, following the age-appropriate self-perception profile for children (Harter, 2012). The questions differed in wording, but the same subscales were used (athletic competence, scholastic/cognitive competence, and social competence). For example, the corresponding question for the same example given above, measuring social competence, was "Some kids know how to become popular, other kids do not know how to become popular.". Children would also have to choose which situation was more like them, as was the case in the pictorial scale, before refining their choice (e.g., "Is that really true or sort of true?"). In all cases, the answers were recorded on the Qualtrics form by the researcher as they were given, and scored accordingly following the procedural manual.

The subscales of Harter's perceived competence scale were analyzed for reliability. The cognitive competence subscale (CS Cronbach's $\alpha = 0.63$, MS $\alpha = 0.72$) and social competence subscale (CS Cronbach's $\alpha = 0.72$, MS $\alpha = 0.57$) showed acceptable reliabilities, while the athletic competence subscale showed a lower reliability (CS Cronbach's $\alpha = 0.47$, MS $\alpha = 0.33$). Research

has shown variable reliability scores across the subscales, possibly due to limitations and potential gender-based response biases (Heritage et al., 2020). These reliability scores, however, are comparable to those reported in recent research across young samples (Mantzicopoulos, French, & Maller, 2004). Item scores were therefore similarly aggregated for each subscale for further analyses.
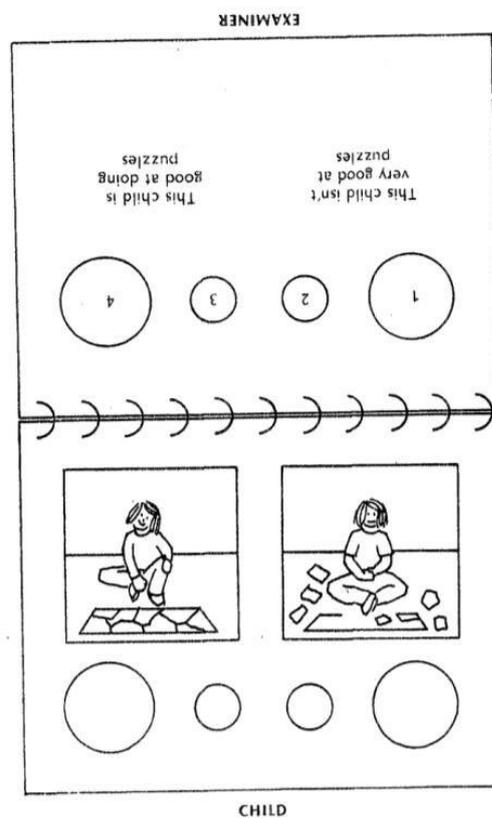
Figure 7. *Sample of Harter & Pike's (1984) Pictorial Scale of Perceived Competence and Social Acceptance used as a booklet, taken from accompanying procedural manual*

3.6.7 Measure of Family Affluence

To get an indicative measure of socioeconomic status amongst participants, the Family Affluence Scale (FAS), version III, was used (Hartley, Levin, & Currie, 2016). The scale has been shown to provide a reliable and an indicative measure of socioeconomic status, without relying completely on parental report where the disclosure of some information could be deemed sensitive, such as income and occupation. Questions required simple answers and included:

1) How many times did you and your family travel out of the UK (England), for a holiday last year? (Never = 0; once = 1; twice = 2; more than twice = 3)

2) Does your family have a dishwasher? (No = 0; yes = 1)

3) How many bathrooms (room with a bath or shower) are in your home? (None = 0; one = 1; two = 2; more than two = 3)

4) Do you have your own bedroom for yourself? (No = 0; yes = 1)

5) How many computers (PCs, Macs or laptops) does your family own? (None = 0, one = 1; two = 2; more than two = 3)

6) How many cars does you family own? (None = 0; one = 1; two or more = 2)

The 6-item FAS showed acceptable reliability for this study, but had slightly lower reliability for the non-CS group (Cronbach's α = 0.46), compared to the CS group (Cronbach's α = 0.47). This is comparable to other studies that have used the scale and found similar reliability scores (e.g., α = 0.52, Corell et al., 2021; α = 0.41, Kehoe & O'Hare, 2010), therefore justifying it's use in this research. An aggregate score was subsequently generated using the same criteria and response categories as in previous research (Hobza, Hamrik, Bucksch, & De Clercq, 2017).

3.7 Measures: Timepoint 2 (March 2021- January 2022)

The same measures were used in the second time-point, as detailed above, to allow

for a valid longitudinal comparison. However, some adjustments needed to be made due to the older age of the participants in some measures and additional questions were asked to explore the possible impact of the pandemic on their development.

3.7.1 Adjustment of Naming Task and Addition of Questions on the Pandemic

For the cognitive developmental scales, additional words/trials were added to the word naming task. Following a presentation of the study's initial findings at the BIALL 2019 research conference in Berlin, feedback suggested that words with a higher age of acquisition (AoA) be added to the task for the next time-point, as children would be older and typically the CLT are used in studies of multilingual and monolingual children aged between 3 and 7 years. This had previously been conducted with studies from the team (van Wonderen, & Unsworth, 2020), and the task was modified to include the additional ten nouns and ten verbs (examples provided in Figure 8 below) and administered using a shared PowerPoint. This meant that for the second timepoint of the study an indicative measure of reaction time of the task would be measured via PowerPoint through the researcher, using the "Rehearse timings" feature, and not via the electronic task itself which has not been developed including higher AoA words. Similar to the first timepoint, this only measures the amount of time the picture is on the screen, and not the exact time that the child needed to respond. Adapting the task ensured that no ceiling effects would be observed (which might have occurred if only the first time-point list had been re-used), and that an efficient measure of vocabulary growth was still used.
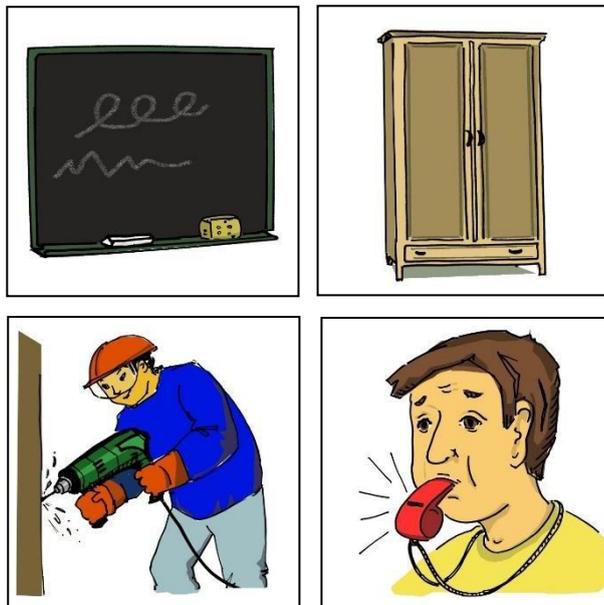
Figure 8. *Examples of Additional Stimuli Used for the Naming Task In the Study's Second Time-point*

For the social developmental session, the same measures were used, but additional questions were also asked regarding lockdown, if attendees continued to attend complementary schools and if they were doing any further activities. The additional questions asked were:

- [All children] In the last term and the term before summer holidays (autumn and summer terms), how have you been attending school? (e.g. online, in-person if vulnerable; during the lockdown some children did not attend schooling in person or attended intermittently if considered vulnerable or if their parents were classified as key workers)

- [All children] Have your parents been involved in your schoolwork when learning from home?

- [CS-attendees] How often do you attend your language school:
    - Rarely (1)
    - Some weeks (2)
    - Most weeks (3)
    - Every week (4)

- [CS-attendees] How have you been attending complementary school? (e.g., online)

- [CS-attendees] How many hours do you spend per week studying that * language?

- [CS-attendees] Do you do any other language? activities? e.g. apart from attending a CS

These are further discussed in Chapter 7, alongside the final quantitative timepoint results.

3.7.2 Measure of School Adjustment

As an educational measure in this project, the Secondary Transition Adjustment Research Tool (START) was used (Rice et al., 2015). The 4-item questionnaire was initially developed by a research team at University College London as part of a study to identify factors that make a successful transition to secondary school more likely, involving close to 2000 students in England. The measure was found to accurately and reliably predict children's transition success across all academic and behavior outcomes (Rice et al., 2015), and has been used in recent research and in schools (Rice et al., 2021; Ng-Knight et al., 2016).

This was slightly adapted for this project, such that teachers used the form to rate how likely they think the child will do in the next academic year, rather than just at secondary school, as children in this project's sample were at different albeit later stages of primary school. The same tool with the four question was otherwise used, asking teachers to rate if they believe the child will settle in well academically, socially with peers, socially with teachers, and to the new routine, on a scale of 1-5 (Strongly Disagree – Strongly Agree). The questionnaire given to teachers can be seen in Appendix V. This was considered suitable for this timepoint of the study as the children were older and returning to school following the beginning of the pandemic which was a notable transition. It allowed for teacher ratings to be collected across all the project's settings in a standardized way and provided an educational measure when Key Stage assessments where cancelled due to the pandemic and each school differed in their method for predicted grades. The questionnaire's short format and use of simple language was also ideal considering this project's diverse settings.

The 4-item rating measure showed high reliability for both the non-CS group (Cronbach's α =

0.75), and the CS group (Cronbach's α = 0.87). A score was therefore generated by adding the individual scale items.

3.8 Procedure

As the project involved both quantitative and qualitative strands of data collections, the procedures for both are separated in the subsections below. While the procedure for quantitative data collection remained largely consistent across both timepoints, adaptations from the pandemic are also mentioned here including the use of online data collection with CS attendees. Procedures in managing data, including how data was stored, are detailed in the project's approved data management plan (Appendix VI)

3.8.1 Quantitative Data Collection

Data from children was collected in two separate sessions, one consisting of the cognitive measures and the other consisting of the social measures, both not exceeding thirty minutes. Each school was visited across a set time-period of up to a month, and the date of each child's visits was recorded to take into account the lapse between first and second time-points. Written consent was obtained from parents as well as informed assent (Appendix VII) from the child at the start of each session.

During the cognitive sessions, children would start with the flanker task, followed by the dimensional change card sort task, on the NIH Toolbox App on the iPad. A break was given in between if needed or requested, but children would often not need this and would express their enjoyment of the sessions. Instructions on how to administer the tasks were followed from the NIH Toolbox administrator's manual and were also presented on the iPad screen. These are provided in Appendix (VIII- XI) for both tasks across the different age groups.

Following the two tasks on the iPad, the cognitive session would end with the picture naming

89

CLT task on the researcher's laptop. The guidelines created by Haman et al. (2017) were followed, such that the child and researcher were always in a quiet and separate room, and set instructions were given (e.g., "I am going to show you some pictures. For each picture you will hear a question. Please answer the question by giving a word which goes best with the picture. One word for each picture will be enough. I have a piece of paper here and I will take some notes, but this is not a test"). The task was run on the same Toshiba R830 laptop throughout the project, which was provided by the host university, and had a 14.1" screen. Participants were shown the stimuli on a blank screen and hear the question (e.g. "What is this?", "What is she doing"?). Thirty-two verbs and nouns were included in the task, with a short break given between the verb and noun tests if required. The researcher would manually record the child's response on prepared answer sheets (Appendix III), before clicking to the next stimulus. If the child did not respond, the researcher waited and repeated the question only once, before proceeding to the next picture. Children were made to feel comfortable during the session, speaking to the researcher prior to the session. Participants were debriefed at the end of the session, given stickers, and offered a chance to ask any questions.

During the social sessions, children were asked questions informally with the appropriate pictorial scales in front of them. I, the researcher, would ask the questions and input the answers on Qualtrics, with the child not being able to see the laptop screen. The questionnaire layout and sequence, including the scales detailed in the materials, can be found in Appendix XII for the first timepoint and Appendix XIII for the final timepoint. Participants were then similarly debriefed and given stickers before returning to class.

3.8.1.1. Final Timepoint and Online Data Collection

This same procedure was followed for the final timepoint for all non-attendees as they were able to be visited in primary schools following the lifting of lockdown measures. Some precautions were taken during face-to-face visits because of the pandemic and following necessary ethical

approval. This included the researcher undergoing regular lateral flow testing for coronavirus, the researcher wearing a mask during the session, and the sanitization of pictorial scales and the iPad screen after each session with a child. Visits to schools also had to sometimes be scheduled based on operating social "bubbles", if a child or a member of their household was found to have coronavirus

A small subset of CS attendees (N=8) were seen online, following ethical approval due to disruptions of the pandemic; some of the schools in this project did not have their own premises and were not allowed to return to face-to-face classes for the majority of this timepoint. These participants were only seen once through MS Teams, in a session not exceeding 45 minutes, with both the participant and the researcher having their cameras on. Online sessions could only include the social measures and the picture naming task, as both the flanker and DCCS task required an iPad to be used and no online version is available. Sessions was brokered through the CS, as participants continued attending HL classes online during the pandemic. The relevant CS teachers were given a link to provide participants during class and they would use this to access a separate meeting with the researcher when it was their designated time for the session.

Following risk assessment procedures and to ensure safeguarding policies, parents were also informed and consented for these sessions to take place and had to be present with the child at home but did not take part with them in the session. The same data collection protocol was followed such that the researcher asked questions as a conversation, and pictorial scales were shown on the child's screen accordingly through the share screen feature on MS teams. Participants gave verbal responses to the questions and did not have to use the chat feature. Sessions were also not recorded, and anonymity of responses were maintained, alongside the same ethical procedures (e.g. verbal assent, right to withdraw at any time).

3.8.2 Qualitative Data Collection

Parents and school staff were also invited to take part in voluntary online interviews or focus groups, as part of the study's mixed-methods design. The questions planned as part of a semi-structured interview or focus groups can be found in Appendix XV for parents and Appendix XVI for teachers and school staff. Participants were given a preference of either a focus group or interview and were also able to choose what language they would like to speak in, yet all chose to do an interview in English without an interpreter. Online interviews were conducted and recorded through Microsoft Teams, consisted of 30-40 minutes, and started with the CS sample, followed by the MS sample, with at least one interview per setting.

Consent was obtained from all participants, and they were reminded at the start of each interview that any quotes used will be anonymized. All interviews were recorded through Microsoft Teams, using the researcher's secure university account. Interviewees were not obliged to have their camera on during the interview, with two opting to have it switched off during the recording, while I, as the interviewer, did keep my camera on throughout the interview to ensure I could be better understood by participants and to keep it more personable. The semi-structured nature of the interviews allowed participants to have more flexibility and depth in their response. While the interviews were kept focused they were also kept more informal, with questions about the research being welcomed. This is further detailed, alongside thematic analysis of the interview transcripts in Chapter 6.

3.9 Ethical Considerations and Impact of Covid-19 Pandemic on Fieldwork

Ethical approval was obtained for this project on November 22nd, 2018 (ID: ETH1819-0017), along with approval of an ethical amendment following the Covid-19 pandemic, to collect data online (ID: ETH1920-0274; ETH2021-0075), as well as collect data from schools following the lifting of lockdowns and following necessary health protocols (ID: ETH2021-0075). Ethical approval was also sought for community public engagement activities, which included a linked collaborative photography project (ID: ETH1920-0083). These ethical approval letters can be found in Appendix

XIV.

Given the young ages of participants, ethical and safeguarding issues were considered in the planning of sessions. Children were briefed on the study at the beginning of each session in a simple form of words explaining that we would ask some questions about them, their languages, and their home and school-life. Children were told that they could ask the researcher if they did not understand anything, or to tell her if they wanted to omit a question or stop the session at any time. A session would not proceed unless the child clearly gave verbal assent to start, ensuring consent was ongoing and inclusive. This is in line with guidelines for conducting research with children (Shaw, Brady, & Davey, 2011). A challenge in child research, and certainly in studies such as this that rely on self-reporting, is the power imbalances at play; children may feel they must perform or answer in a particular way, assuming a familiar student role. To reduce this imbalance, the researcher aimed to be reflexive by being aware of how they presented themselves and allowing the child agency in a safe and reassuring environment (Phelan & Kinsella, 2013). For instance, questions were asked informally as a conversation and the session kept short with the use of simple language and piloted pictorial aids to ensure accessibility. While the information collected was not deemed as sensitive, a risk assessment was conducted, and a safeguarding contact for each school was maintained, should any information be shared that entailed a breach in confidentiality. The researchers (including interns), who had previously worked in primary schools and had research ethics training, made sure to stay observant to all verbal and nonverbal cues from the child and be sensitive to his/her needs, including signs of fatigue, during the research.

Due to the impact of the pandemic, the project had to adapt, and some changes were made in the project's initial methodology in order for data collection to be completed. This is summarized in the Table 13 below.

Table 13. *Project modifications due to the Covid-19 pandemic*

Pre-pandemic	Post-pandemic
Three time-points were initially planned to allow for a longitudinal comparison of the project's outcomes in the bilingual sample	Two time-points were used and considerations appropriately made. Questions were also added concerning mode of school attendance (online/in-person) during lockdown, and parental engagement during home learning. These were included in comparisons and the potential effect of the pandemic on findings was discussed in the final analyses (Chapter 7)
Interviews and focus groups were planned to happen in-person at mainstream and complementary schools.	All interviews and focus groups were moved online during the pandemic, which has also allowed participants greater flexibility and convenience. A maximum of 18 interviews and focus groups were sought, but a greater preference was shown only for interviews.
All data collection planned in face-to-face session at school premises	Due to lockdowns and continuing Covid-19 restrictions in 2021, many complementary schools could only operate online classes. For less than half of the complementary school sample in the final timepoint (N=8), online sessions were then planned which couldn't include some of the cognitive measures (Flankers task, Card-sort task). For the mainstream school sample, visits could resume face-to-face following necessary risk assessment and ethical approval, following the same procedure but with strict health guidelines being followed (e.g., wearing a mask, cleaning equipment after each use, social distancing). The implications of this are discussed in alongside relevant analyses in Chapter 7.
The project aimed to include both school adjustment and attainment as part of the educational outcomes measured. Attainment was set to be through KS1/KS2 results.	While school adjustment was still measured through teacher ratings in this project, no attainment data was provided due to Key Stage examinations not being conducted during the pandemic. School adjustment scores were considered the best standardized way to compare this wide sample.

The subsequent chapters will detail analyses from the first timepoint of quantitative data collection which occurred before the pandemic (Chapter 4 for cognitive outcomes & Chapter 5 for social outcomes). Qualitative data collection occurred during the pandemic, and the effect of this on schools and families were discussed, alongside results relevant to the research questions of this project (Chapter 6). The final timepoint of quantitative data collection was still during the pandemic,

but during some lifting of lockdown measures. While most of the non-CS sample could therefore be visited in-person as primary schools reopened, CSs were still not allowed to reopen for an extended period and many of these setting struggled to retain students. This led to a significant decrease in participants from the CS group and therefore effected what analyses could be carried out. Sample trends were still observed and relevant comparisons between timepoints discussed (Chapter 7), more notably for the social measures which could also be collected online with CS attendees.

Chapter 4: First Timepoint Quantitative Empirical Findings – Bilingual Cognitive Development

This chapter will present and discuss the findings from the cognitive measures (executive functioning, attentional control, picture naming) from the first quantitative time-point of this study. This will begin with an exploration of the study's different factors through comparisons across groups, followed by the reporting of correlations, and then more detailed regression analyses comparing the main participant groups (CS attending, non-attending) and particularly exploring the role of proficiency in these outcomes. Some of the preliminary findings from this chapter were also presented as a talk at the 2019 Bilingual Acquisition of Language and Literacy (BiALL) conference in Berlin (Husain, Lam, Vitkovitch, & George, 2019), and feedback from this helped inform the more detailed analyses and discussion presented here. Once data analysis for the first timepoint was completed, results were also presented online at the 2020 Bilingualism Matters Research Symposium as a more detailed talk (Husain & Lam, 2020), which also helped guide the writing of this chapter.

Data from this timepoint was collected in the schools (CSs and mainstream primary schools), in individual sessions with bilingual children not exceeding thirty minutes. Three cognitive tasks were administered after each other, two of which were through an iPad (the DCCS task, flanker task) using the NIH Toolbox application, and one of which was through a laptop (Haman et al.'s, 2017 picture naming CLT in nouns and verbs). Data was securely exported from the NIH Toolbox application, and reaction time data from the picture naming task, onto Microsoft Excel before further analyses using SPSS (v.26). Accuracy data from the picture naming task was inputted manually on Microsoft Excel, following the marking of individual naming sheets, before also being added to the SPSS database. Further details of the measures and procedure followed can be found in the project's previous methodology chapter, while the further processing of the data will be detailed in this chapter.

4.1 Demographic Data & Language Across CS/Non-CS groups

To revisit, in the study's first timepoint a total sample of 153 bilinguals were initially recruited and tested, including 73 (43 male, 30 females) children across five complementary schools (CSs), and 80 (42 male, 38 female) children across four mainstream primary schools. Children were aged 4 to 9 years old (M = 6.78, SD = 1.34), to ensure that they would be in primary school for the duration of the longitudinal study. Of the total sample, 107 were born in the UK, while the remaining 46 moved to the UK at a young age before or in the early years of primary school. This was similar across the CS attendee and non-attendees groups (UK Born N_{CS}= 55, N_{non-CS} = 52). The majority of the sample were therefore second generation (N = 79), with both parents not being born in the UK (N = 125), while some are third generation (N=28), with either one parent being born in the UK (N=17), or both parents being born in the UK (N = 11). The complementary schools tested were among the Albanian, Gujarati, Tamil, and Russian speaking communities. Within the mainstream schools, the aforementioned languages were also represented as well as 31 other languages, as further detailed in the previous Methodology chapter (Table 2,3,4). The sample's characteristics, mentioned here, are also summarized in the Methodology chapter alongside p values indicating any significant differences (Table 5 and discussed below). All schools and participants were based in Newham or nearby boroughs (Barking & Dagenham).

Despite the study being focused in specific boroughs, participants still significantly differed in family affluence, an indicative measure of socioeconomic status as indicated by the Family Affluence Scale (Hartley, Levin, & Currie, 2016), with the CS-attending sample being more affluent than the non-attending CS sample (M(CS) = 6.88, M(non-CS) = 5.46), (F(1,152) = 15.29, p<.001). All data analyses therefore included family affluence (FA) scores as a covariate. There was no significant difference between the groups in age (F(1,152) = .01, p = .925), but this was still added as a covariate in analyses as it is a relevant factor when considering the specific scales separately, particularly picture naming.

The majority of participants considered English as the language they were best at (n = 132), with both CS-attendees and non-attendees not significantly differing in the approximate number of years they had been in the UK (total M = 5.74, SD = 2.32). No significant differences were found between the groups on overall English proficiency or exposure (see Table 14 below). Parallel analyses on the specific subscales, however, show non-CS attendees reporting more English use with friends [$F(1,149)=7.72$, $p=.01$]. FA's effect on English proficiency reached significance [$F(1,149)=3.65$, $p=.05$]; those with higher FA reported higher English proficiency. Separate comparisons showed that FA specifically affected proficiency in English reading [$F(1,149)=4.21$, $p=.04$]. There was also an age effect on English exposure and HL proficiency [$F(1,149)=5,53$, $p=.02$; $F(1,149)=4.01$, $p=.05$]. Separate analyses found that, with age, participants reported hearing less English in the family [$F(1,149)=8.01$, p=.01], but also lower HL-speaking proficiency [$F(1,149)=3.75$, p=.05].

The groups differed in HL proficiency [$F(1,149)=9.44$, $p=.03$], with CS-attendees scoring higher versus non-attendees. Separate analyses could attribute this to CS-attendees rating themselves higher in writing and reading [$F(1,149)=4.80$, $p=.03$; F(1,149)=20.18, $p<.001$]. However, these were not accompanied by a difference in overall HL exposure. The separate comparisons reveal non-attendees reporting more exposure through TV/radio than attendees [$F(1,149)=6.83$, $p=.01$].

Table 14. *Mean English and HL perceived proficiency and exposure scores of CS-attendees and non-attendees (standard deviations in brackets)*

		CS-attendees	Non-attendees	F
Proficiency	**Overall English Proficiency**	4.46(0.47)	4.26(0.62)	2.69
	Speaking	4.56 (0.60)	4.40(0.85)	1.18
	Understanding	4.49 (0.75)	4.25(0.88)	2.81
	Reading	4.44 (0.87)	4.34(1.03)	0.01
	Writing	4.34 (0.80)	4.03(0.99)	2.42
Exposure	**Overall English Exposure**	4.06(0.56)	3.99(0.49)	0.35
	Friends	**4.52 (0.78)**	**4.80(0 .46)**	**7.72****
	Family	3.14 (1.22)	2.85(1.34)	2.01
	TV/Radio	4.14 (1.05)	3.89(1.21)	1.66
	Reading	4.45 (0.67)	4.43(0.78)	0.12
Proficiency	**Overall HL Proficiency**	**3.81(0.70)**	**3.41(0.82)**	**9.43****
	Speaking	4.05(0.93)	4.03(1.08)	0.01
	Understanding	4.14(0.86)	4.11(0.97)	0.13
	Reading	**3.36(1.20)**	**2.76(1.50)**	**4.80***
	Writing	**3.70(1.12)**	**2.75(1.43)**	**20.18*****
Exposure	**Overall HL Exposure**	3.31(0.76)	3.33(0.70)	0.39
	Friends	3.01(1.33)	2.69(1.49)	0.97
	Family	4.40(0.94)	4.60(0.63)	2.60
	TV/Radio	**2.77(1.39)**	**3.31(1.40)**	**6.83***
	Reading	3.07(1.16)	2.74(1.34)	1.85

$*p<.05$, $**p<.01$, $***p<.001$..

4.2 Cognitive Scales & Comparisons: CS-attendees and Non-attendees

When looking at executive functioning and attentional control through the flanker and DCCS task, scoring was generated by the app itself and is based on a combination of accuracy and reaction time performance through a 2-vector scoring method. The app considers accuracy first such that if accuracy levels for the participant are less than or equal to 80%, then their final score is equal to the accuracy score and is not combined with the reaction time score; as a result, getting a lower score. Four different scores are provided based on this: a raw computed score out of 10, a national percentile score, a standard score which compares the performance of the participant to those of the NIH toolbox sample regardless of any variable, and finally an age-corrected standard score which compares the performance of the participant to a NIH toolbox sample of that same age. Age-corrected standard scores were used for analyses as the study's sample varied in age and it gave a clearer indication of better/higher performance; a score of 100 indicates performance that was at the average for the participant's age, while a score of 115 means that the participant's performance is 1 SD above the average.

Both accuracy and reaction time were also considered in analyses from the picture naming task. Responses were recorded by hand by the researcher, on response sheets created by the CLT team (Appendix III), and scored for accuracy according to their guidelines (e.g., some synonyms for words would be accepted or regional variants) provided in Appendix IV. Scores were then converted into a percentage. As for reaction time, the program would record each session and provide an excel spreadsheet of the timings for each item (when the sound was opened at the presentation of an item, and when it was closed to move to the next item by the researcher clicking in next), giving an indication of reaction time. These then had to be sorted manually and individual response times were calculated alongside the total time taken.

CS-attending and non-attending groups were compared across all measures by conducting a multiple ANCOVA, entering age and family affluence as covariates. These comparisons are detailed in turn and summarized below in Table 15.

Table 15. *Mean scores across cognitive scales of CS-attendees and non-attendees (standard deviation in brackets)*

	CS Group	Non-CS Group	F
Flanker Score (Attentional Control)	102.14(10.98)	103.54(14.53)	1.34
DCCS Score (Executive Functioning)	100.11(13.27)	95.94(14.47)	2.90
Verb Naming Accuracy (%)	66.19(15.92)	64.00(12.38)	0.39
Noun Naming Accuracy (%)	87.24(10.41)	85.99(8.56)	0.29
Verb Naming Reaction Time (ss.00)	00:01.14(00:00.01)	00:01.12(00:00.02)	**6.16***
Noun Naming Reaction Time (ss.00)	00:01.18(00:00.01)	00:01.17(00:00.01)	**12.70**
Verb Naming Total Time (mm:ss.00)	03:10.79(01:28.11)	02:50.44(00:33.20)	3.19
Noun Naming Total Time (mm:ss.00)	02:12.36(00:30.76)	02.12.97(00:23.11)	0.04

*$p<.05$, **$p<.01$, ***$p<.001$..

The two groups did not significantly differ in their scores for both the flanker and DCCS tasks (Table 15). Family affluence, however, was found to have a significant effect on flanker task scores [$F(1,149)=4.41$, $p=.04$], as the higher affluence in the CS group was associated with higher scores (Table 15). The effect of age on both tasks did not reach significance.

While CS-attendees, on average, scored higher on the task than non-attendees, accuracy performance was not found to significantly differ between the groups, as well as the total time taken in the noun and verb naming tasks (see Table 15). However, mean noun and verb reaction time were

both found to significantly differ [$F(1,149)=12.70$, $p<.001$; $F(1,149)=6.16$, $p=.01$], with CS attendees showing longer reaction times. Age was understandably found to significantly effect scores for nouns and verbs [$F(1,149)=14.87$, $p<.001$; $F(1,149)=37.58$, $p<.001$], as older children scored better in the task, as well as the duration and mean reaction time in the noun task, as they were quicker in the task [$F(1,149)=10.41$, $p=.002$; $F(1,149)=8.59$, $p=.004$].

4.3 Comparing Bilinguals Based on Proficiency

As previously highlighted, there has been conflicting research findings regarding the potential cognitive benefits of bilingualism, particularly when using a variety of tasks measuring executive functioning. While several notable confounding factors to these cognitive benefits have been highlighted, the extent bilinguals are proficient in both their languages has emerged as a particularly important factor to consider (Rosselli et al., 2016). To better ascertain the role of proficiency on the outcomes, an indicative score of "balanced bilingualism" was generated by subtracting the proficiency scores from the English and heritage language LEAP questionnaires from one another. As such, a smaller difference between both scores would suggest a higher degree of bilingualism. Participants were then almost equally split and grouped based on this difference in scores; a difference between proficiencies below 1 was considered balanced (N = 76), while a difference of 1 or above was considered less balanced (N=77). The LEAP questionnaire has been widely used and adapted in research, which includes to substantiate a division of bilinguals into groups based on proficiency depending on the characteristics of the sample and the nature of the study's research questions (Kaushanskaya, Blumenfeld, & Marian, 2020). For example, previous studies have used the scores on the questionnaire to identify highly proficient bilinguals (Stocco & Prat, 2014; Krizman et al., 2012) as thresholds for participation, or to identify particular types of bilinguals.

Table 16 on the following page details the proficiency scores and measures for both groups. It is worth noting that both groups had similar amounts of CS and non-CS attendees (More Balanced CS attendees N = 42, More Balanced non-CS attendees N = 34), with the CS group having a slightly higher number of bilinguals that rated their language proficiencies more closely (CS = 56%, non=CS = 43%). The groups were found to not significantly differ in age or FA. The "balanced" and "less balanced" groups were compared across all main variables using a multivariate ANOVA, controlling for age, FA, and whether they attend complementary schooling. Significant differences were found in measures of heritage language proficiency, with more "balanced" bilinguals having higher perceived proficiency scores ($F(1,142) = 77.76$, $p < .001$), and being more exposed to their heritage language ($F(1,143) = 7.58$, $p = .007$). The groups did not significantly differ in English measures. Finally, a significant difference was also found in the card-sort scores ($F(1,143) = 4.65$, $p = .033$), with more "balanced" bilinguals scoring higher on the task, suggesting better executive functioning.

Table 16. *Mean perceived English and heritage language proficiency scores and scores across cognitive outcomes for more and less balanced bilinguals for first timepoint (St. dev.)*

		More Balanced Group	Less Balanced Group
Age		6.68(1.48)	6.87(1.15)
FAS		6.29(2.59)	5.99(2.07)
Overall English LEAP Score		**44.24(6.70)**	**37.38(6.87)**
Proficiency	Speaking	4.42(0.74)	4.53(0.75)
	Understanding	4.25(0.84)	4.48(0.81)
	Reading	4.32(0.97)	4.45(0.94)
	Writing	4.16(0.87)	4.19(0.97)

Exposure	Friends	4.64(0.73)	4.69(0.57)
	Family	3.13(1.33)	2.84(1.24)
	TV/Radio	4.01(1.22)	4.00(1.06)
	Reading	4.33(0.76)	4.55(0.68)
Overall HL LEAP Score		**44.24(6.70)**	**37.38(6.87)**
Proficiency	Speaking	4.39(0.80)	3.69(1.07)
	Understanding	4.42(0.68)	3.83(1.02)
	Reading	3.72(1.15)	2.38(1.28)
	Writing	3.83(1.14)	2.58(1.36)
	Friends	2.97(1.38)	2.71(1.46)
Exposure	Family	4.53(0.74)	4.48(0.85)
	TV/Radio	3.20(1.44)	2.91(1.39)
	Reading	3.29(1.21)	2.51(1.20)

Flanker Score (Attentional Control)	103.99(12.28)	102.05(13.96)
Card Sort Score (Executive Functioning)	**101.00(13.52)**	**94.79(13.71)**
Verb Naming Accuracy (%)	62.39(15.35)	67.02(13.18)
Noun Naming Accuracy (%)	85.56(9.42)	86.82(10.57)
Verb Naming Reaction Time (ss.00)	00:01.14	00:01.14
Noun Naming Reaction Time (ss.00)	00:01.18	00:01.18
Verb Naming Total Time (mm:ss.00)	03:02.17	02:58.28
Noun Naming Total Time (mm:ss.00)	02:14.41	02:11.26

4.4 Associations: Language Proficiency and Exposure and Cognitive Outcomes

To further explore trends within the data, two-tailed partial correlations, controlling for age and FA, were conducted to examine the associations between language proficiency and exposure and cognitive outcomes in each group (see Table 17 below).

Table 17. *Two-tailed correlation matrix, controlling for Age and FA, between Language Proficiencies and Exposure, and Cognitive Scales for both participant groups (CS-attending participants above the diagonal, non-attendees below the diagonal)*

	English Proficiency	English Exposure	HL Proficiency	HL Exposure	Flanker Task	DCCS Task	Verb Naming Accuracy	Noun Naming Accuracy	Verb Naming RT	Noun Naming RT	Verb Total Time	Noun Total Time
EP		.189	.201	**.255***	.025	.028	.080	.057	**.328****	.125	.043	-.038
EE	**.320****		-.053	-.086	-.249	.018	.221	-.119	.236	.130	-.003	.051
HLP	.126	-.076		**.525****	.181	.018	-.250	-.116	-.059	.071	.016	.118
HLE	.119	.080	**.447***		-.004	-.100	-.135	.081	.029	.225	.132	.091
FT	-.003	-.103	.065	.008		.220	.081	.038	.065	.103	**-.282***	-.127
DCCS	.012	.037	.138	.041	**.248***		.038	-.002	-.072	**-.204***	-.136	-.192
VNA	.043	-.011	-.171	**-.428***	**.229***	.002		**.550***	.117	.018	-.185	-.142
NNA	.162	.023	-.170	**-.306****	.142	.022	**.666***		.103	.063	-.043	**-.320****
VNRT	-.127	-.192	-.142	-.103	.040	-.020	**-248***	**-.294****		**.418****	-.036	-.106
NNRT	-.126	**.239***	-.196	-.146	-.058	-.095	-.052	-.021	.154		.124	.096
VTT	.068	-.112	.109	**.295****	-.020	-.082	**-.320****	-.195	.176	-.109		.084
NTT	.188	.159	**.259***	**.308****	.006	.027	**.338****	**-.431***	.034	.101	**.294****	

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

In terms of self-rated proficiency and exposure measures, HL proficiency was positively and moderately correlated with HL exposure for both groups, but English proficiency and exposure were similarly correlated only for non-attendees.

For the cognitive tasks, flanker task performance correlated with aspects of the naming task for both groups, and positively correlated with performance on the card-sort task. Comparatively, performance on the card-sort task only negatively correlated with noun naming reaction time in the CS-attending group. As for the naming task, accuracy and reaction time measures for nouns and verbs correlated with one another accordingly for both groups.

Self-rated English proficiency was found to be positively correlated with verb naming reaction time for CS-attendees. Conversely, for non-attendees, noun naming reaction time positively correlated with English exposure. Unique to non-attendees, HL proficiency and exposure were positively correlated with the total time taken for the naming task, for both verbs and nouns, suggesting that the more exposure non-attendees had to their HL the longer they would take in the English naming task. HL exposure was also negatively correlated with verb and noun naming accuracy for non-attendees, particularly for verbs, suggesting poorer performance alongside the longer times taken in the task. Performance on the flanker task and card sort task showed no significant correlations with language proficiencies and exposure across both groups.

4.5 Predicting Cognitive Outcomes

Based on the correlational relationships observed, and the comparisons made between both participant groups, hierarchical regressions were conducted to better examine and predict the contribution of language proficiency and exposure, and background factors of age, FA and CS attendance (coded as a dummy categorical variable – 0 for CS/ 1 for Non-CS), toward verb and noun task performance, attentional control (flanker task scores), and executive functioning (DCCS task scores).

To predict noun reaction time, a three-stage hierarchical multiple regression was conducted, with age and FA in the first block, HL and English proficiencies and exposure in the second, and CS (attendance/non-attendance) in the third. As the collinearity statistics (i.e., tolerance, VIF) were within accepted limits, multicollinearity was not deemed to be an issue. Age and FA explained just 5% of the variance in reaction time, which was significant (R^2=.052; F(2,143)= 3.91, p=.022). Introducing language proficiencies and exposure to the model explained a further 6% of the variance, but this change was not significant. Adding CS attendance to the model explained another 6% of the variance and this was deemed significant (F change(1,138)= 9.88, p=.002). The strongest significant unique predictors in the model were CS attendance (Beta=.270, t=3.14, p=.002) and age (Beta= -.200, t=2.44, p=.016). The final multiple regression model with all predictors explained 17% of the variance in noun reaction time, R^2=.168, F(7,138) = 3.98, p=.001.

The same procedure was followed to predict verb reaction time through a three-stage hierarchical multiple regression was conducted. Age and FA explained 4% of the variance in reaction time, which was significant (R^2=.042; F(2,142)= 3.15, p=.046). Introducing language proficiencies and exposure to the model explained a further 3% of the variance, but this change was not significant. Adding CS attendance to the model explained another 3% of the variance and this was deemed significant (F change(1,137)= 4.26, p=.041). The strongest unique predictor of verb reaction time in the final model were CS attendance (Beta=.186, t=2.06, p=.041). The final multiple regression model with all predictors explained 10% of the variance in verb reaction time, R^2=.097, F(7,137) = 2.09, p=.048.

To predict performance in noun naming accuracy (%), the three-stage regression model contained the same first three blocks as above. Age and FA explained 14% of the variance in scores, which was highly significant (R^2=.136; F(2,146)= 11.478, p<.001). Introducing language proficiencies and exposure to the model explained an additional 7% of the variance, and this change

was significant (F change(4,142)= 3.04, p=.019). Adding CS attendance to the model did not show a significant change. The strongest unique predictors in the final model were age (Beta=.304, t=3.86, p<.001) and English proficiency (Beta=.174, t=2.14, p=.034). The final multiple regression model with all predictors explained 20% of the variance in noun naming accuracy, R^2=.204, F(7,141) = 5.17, p<.01.

To predict performance in verb naming (accuracy %), the three-stage regression model contained the same three blocks as above. Age and FA explained 25% of the variance in scores, which was highly significant (R^2=.253; F(2,146)= 24.76, p<.001). Introducing language proficiencies and exposure to the model explained an additional 8% of the variance, and this change was greatly significant (F change(4,142)= 3.98, p=.004). Adding CS attendance to the model also did not show a significant change. The strongest unique predictors of verb naming accuracy in the final model were age (Beta=.484, t=6.69, p<.001), and HL proficiency (Beta=-.226, t=2.80, p=.006). The final multiple regression model with all predictors explained 33% of the variance in verb naming accuracy, R^2=.329, F(7,141) = 9.90, p<.01.

This procedure was also followed to predict performance in attentional control and executive functioning tasks. With the flanker task scores as the dependent variable, a three-stage hierarchical multiple regression was conducted, with age and FA in the first block, HL and English proficiencies and exposure in the second, CS (attendance/non-attendance) in the third. Age and FA explained just 5% of the variance in flanker task scores (R^2=.047; F(2,146)= 3.57, p=.031). Introducing self-rated language proficiency and exposure explained a further 2% of the variance in scores, and adding in CS attendance, explained an additional 1%, but both additions were not significant. In the final model, the strongest unique predictor emerged as family affluence (Beta= .179, t= 2.07, p=.040). The final multiple regression model with all predictors accounted for 7% of the variance in flanker task scores but this was not significant, R^2=.074, F(7,141)= 1.60, p=.140.

Finally for performance in the DCCS task, a three-stage hierarchical multiple regression was also similarly conducted, with the same three blocks as for the flanker task above. The age and FA block was not significant, explaining 2% of the variance, as well as the subsequent proficiencies and exposures blocks which explained another 3% of the variance, and CS attendance which explained 1% of the variance. The final model with all predictors therefore only accounted for 6% of the variance in card-sort task scores, R^2=.061, F(7,141)= 1.32, p=.246. The only significant unique predictor of DCCS scores was perceived HL proficiency in its addition at the second stage of the model (Beta=.204, t= 2.13, p=.035).

4.6 Discussion and Summary of Results

A considerable amount of research has examined the apparent bilingual advantage on cognitive development across an array of abilities and yielded different results (Gathercole et al., 2014; Bialystok, Craik, & Freedman, 2007; Ardila et al., 2005). It is clear that studies in this field face challenges in accounting for the different confounding variables present in samples consisting of often diverse language speakers (Antoniou, 2019), and an integrated approach is needed that includes several predictors. For the first time-point of this longitudinal project, significant differences were found between the two main participant groups (CS-attending and non-attending), notably regarding perceived proficiency and picture naming, and some initial trends were observed.

4.6.1 Language Outcomes

Age and FA were found to significantly effect certain aspects of this project's language measures. In particular, a positive, while weak, family affluence effect was found on perceived English proficiency, and in particular English reading. This is in line with research showing children with lower SES having different language trajectories and fewer opportunities to practice English

(Hoff, 2013). Age was also seen to effect perceived English exposure and HL speaking proficiency, as older children reported hearing less English with their family, but also lower HL speaking proficiency. These elements may be more difficult to foster in many Anglophone countries, particularly where most children here were English-dominant second-generation, and despite speaking an HL at home, would have had to prioritize their English in their education. Previous research on immigrant families has also indicated that HL proficiency declines with age (Nesteruk, 2010), particularly in a more monolinguistic community.

While the groups did not significantly differ in their perceived English proficiency, both rating it as higher than their HL, CS-attendees were found to have significantly higher heritage language proficiencies compared to non-attendees. This is particularly due to differences in literacy, as CS attendees perceived their reading and writing skills in their HL as higher. This is even though there were no significant differences between the groups in overall reported HL and English exposure. Non-attendees did, however, report significantly more time being exposed to their HL through media (TV/radio) and significantly more English exposure from friends. When examining partial correlations, controlling for age and FA, perceived HL proficiency was positively and moderately correlated with HL exposure for both groups, but English proficiency and exposure were similarly correlated only for non-attendees. This may reflect how CS attendees were more varied in their English exposure from friends and family, compared to non-attendees, and that they might be relying more on English exposure from school environment (as they reported being exposed to English more through reading and with friends).

The differences between the groups found in this timepoint emphasize the role of complementary schools in enhancing HL proficiency through literacy and peer interactions, as previously highlighted in research (Lam et al., 2019; Lytra & Martin, 2010; Sneddon, 2000), especially when exposure at home might be minimal. The higher amount of broadcast media (usually mediated in the home) reported by the non-attendees could be a further reflection of efforts

by the families for extra exposure to the HL with what resources they had (Riches & Curdt-Christiansen, 2010), if other exposure stayed broadly similar. Additionally, the greater amount of English exposure through friends may reflect the exclusivity of English use in peer relations without a CS, compared to their attendee counterparts. Non-CS attending children in this study could be showing compensatory strategies (such as using media) in the home, but it is necessary to obtain data from families to ascertain this possibility.

4.6.2 Performance on Picture Naming Task

When looking at the associations between background factors and performance across the cognitive scales, age was, unsurprisingly, found to effect accuracy scores in English picture naming, as well as reaction time and duration taken for noun naming, with older children performing better in the task. Follow-up partial correlations, controlling for age and FA, found however that naming scores also negatively correlated with perceived HL exposure for the non-attending group. While there is an ongoing debate on how bilingualism may impact language acquisition, a bilingual lexical deficit has nonetheless been found in tasks that rely on rapid lexical retrieval such as picture naming (Sullivan, Poarch, & Bialystok, 2018), and verbal fluency (Friesen, Luo, Luk, & Bialystok, 2015). This study's findings seem to reflect this, and further demonstrate how this could be due to reduced exposure to each of the two languages (Clahsen & Jessen, 2019).

Similarly, when looking at the total time taken for the naming task, this was significantly positively correlated with HL proficiency and exposure (resulted in longer recall times) for non-attendees, and CS-attendees were significantly found to take longer in the task, most notably for verbs. This support previous research that reports slower responses from bilinguals potentially due to joint activation of competing languages (Luk, Green, Abutalebi & Grady, 2012). As literature on children's early lexical development has shown a precedence of nouns over verbs, and as such a

higher accuracy for nouns over verbs (Altman et al., 2017), this would also help explain why this project's sample may be showing some lag in one of their two languages through expressive vocabulary, albeit in a much lesser scale as they are still considerably proficient in English. The hierarchical regressions conducted reaffirm this finding, as HL proficiency was found to be a significant negative predictor of verb accuracy, English proficiency a significant positive predictor of noun accuracy, and CS attendance a significant predictor on reaction times for the bilinguals in this study.

It is worth noting however that these tasks measure lexical skill, such as accuracy and speed, but research using tasks focusing more on grammatical skill have not noted a "deficit" (Meisel, 2013), and bilinguals do successfully attain languages to a comparable level to that of monolingual peers (Grosjean, 2010). Importantly, when investigating the role of balanced proficiency further, no significant differences were found between the groups in the naming task. Both FA and age, used as covariates in analyses, also were significant predictors in regression models. In previous studies using the CLT significant effects of age were found on children's performance (Haman et al., 2017), and in studies with considerable variation in the sample SES was also found to be a significant predictor of children's CLT scores (Perold Potgieter & Southwood, 2016). The role of these factors therefore cannot be undermined, as the quality and quantity of language input has been shown to be important for early vocabulary development (Rowe, 2012), and also in predicting how quickly bilinguals catch up to their monolingual peers in standardized measures of vocabulary (Paradis & Jia, 2017).

4.6.3 Performance on Card-Sort Task

When examining executive functioning performance, reflected by the DCCS task scores, CS attendees and non-attendees were not found to significantly differ in performance. However, when the sample was grouped by perceived proficiency more "balanced" bilinguals were found to perform

better for the task after controlling for age and FA. This is in line with previous research that indicates that an executive functioning advantage only emerges at a critical point of balanced language exposure and proficiency (De Cat, Gusnanto, and Serratrice, 2018), and that executive functioning is particularly enhanced in bilinguals with balanced proficiencies (Yow & Li, 2015; Martin-Rhee and Bialystok, 2008). Previous research using the DCCS task have also found a similar advantage, with highly bilingual 3- to 6-year-old children outperforming monolinguals, controlling for vocabulary and working memory (Bialystok & Martin, 2004), as well as highly bilingual 5- to 7-year-olds children outperforming monolinguals while controlling for vocabulary and despite the bilingual group having a lower SES (Carlson & Meltzoff, 2008). It seems to reflect that these benefits, particularly in the shifting component of executive functioning which the DCCS task addresses, could arise from proficient bilinguals more efficiently being able to control and switch from one language to another.

When predicting performance in the task, only perceived HL proficiency emerged as a significant predictor, and elements of the naming task also significantly correlated with DCCS performance, further suggesting the role of proficiency on the task. It is worth noting that although the task is considered to be nonverbal, it also still includes regular verbal reminders of the sorting rules, which could further be inducing this effect. This project's sample's performance on the task was also in line with age-matched performance in the task, based on their NIH Toolbox scores, not showing significantly greater performance. As previously reviewed, there is great discrepancy of these findings despite comparable methodologies used, with large-scale studies also not finding an advantage in the card sort task across ages (Timmermeister et al., 2020; Dick et al., 2019; Gathercole et al., 2014).

4.6.4 Performance on Flanker Task

CS-attending and non-attending groups were also not found to significantly differ with regards to attentional control, based on performance on a flanker task, and no proficiency-based advantage was also found. However, performance in the task positively correlated with English naming measures. A significant effect of FA was also found in the regression model which acted as a significant predictor of performance. Previous research has similarly found SES to be a significant correlate with the flanker task, with socially advantaged 4-7 years olds performing better and faster than age-matched peers (Mezzacappa, 2004). Indeed, once age and FA were controlled, the analyses revealed no significant differences in flanker task between the groups, with previous research controlling for SES also finding no advantage (Duñabeitia et al, 2014; Paap & Greenberg, 2013). The nature of why SES would play such a significant role in such tasks has been previously discussed, with the suggestion that higher SES might mean more opportunities to engage in challenging activities to develop such skills (Valian, 2015), or that the impact of bilingualism might be stronger at certain SES levels (Bialystok & Werker, 2017). This certainly needs to be considered in this study, as the CS group was more affluent and could mean parents had more time and opportunities to invest in their child's education and language learning. However, SES can't be the only factor that mediates this effect, as research has also found a bilingual advantage in socioeconomically deprived children (Calvo & Bialystok, 2014; Engel de Abreu et al., 2012).

As previously highlighted, research into attentional control is also particularly challenging with children and young adults as it's suggested that there is the presence of a ceiling effect in the development of the attentional system (Antón et al., 2014). While this project has a heterogenous sample to explore many factors and potential correlates, the sample is also largely made up of simultaneous and second-generation bilinguals, so the effect can't be examined as systematically. Additionally, although the task employed in this project is a valid and reliable measure of selective attentional control it also nonetheless includes aspects of executive functioning, most notably

inhibition. Indeed, in this study DCCS task performance and Flanker task performance were significantly correlated. This element of executive functioning has been increasingly of interest, but a bilingual advantage in inhibitory control has been more elusive in young children (Hilchey & Klein, 2011). Reviews have noted moderate advantages but that effects emerge at different ages (Donnelly, Brooks & Homer, 2015), but also that advantages tend to be found in studies with small sample sizes (Paap, Johnson & Sawi, 2014).

4.6.5 Limitations and Implications of Research

While this study has attempted to make use of extensive measures on a heterogenous sample, it is limited in that only self-reported proficiency was used and a limited number of parent forms were initially returned. While the measure used has been piloted, and showed acceptable reliability, further information on children's proficiency would have allowed for further validation of these ratings. Previous research on the LEAP questionnaire has revealed that while ratings are reliable estimates of bilingual's performance, there are also false-positive cases in which participants rate themselves as more proficient than they actual are based on performance on a listening task (Shi, 2011). Applying the picture naming task, which relies on children's English vocabulary and recall, in this sense has been useful, but the large and diverse sample has meant the same couldn't be done for children's HL.

Having a heterogenous sample did, however, allow for the exploration of factors such as age, FA, proficiencies and exposure, which have been shown to play important indicative roles in language development, and the potential bilingual advantage in switch tasks such as the DCCS. This adds to research that has emphasized the importance of considering these factors when interpreting an executive functioning advantage, and can help explain some of the variable and null findings (Arizmendi et al., 2018; Park, Ellis Weismer & Kaushanskaya, 2018). Considering the main research questions of this project, it was important to also capture the diversity in its sample and reflect

childhood bilingualism in Newham and nearby boroughs. These initial findings have indicated that the sample is largely proficient in English, and that children who attend CSs reported the benefits of this on their HL proficiency and literacy. This adds to recent research that has indicated their importance in HL maintenance (Creese et al., 2008), and gives some recognition to these largely invisible contexts for mainstream education (Kenner & Ruby, 2013). Conversely, the finding that CS attendees are slower in an English picture naming task, linked to higher HL proficiency and exposure, should not be interpreted as detrimental, but rather adds to research that bilinguals do not preform like monolinguals on such tasks, and should not be expected to (Sullivan et al., 2018; Poarch & Van Hell, 2012). These initial findings suggest it's important for mainstream schools to both be aware of these additional educational settings, as well as the prior knowledge brought by bilinguals, and how that can lead to certain advantages (e.g. executive functioning), as well as different performance on tasks assessing just one of their languages.

4.6.6 Conclusion

The project's first-timepoint has highlighted several important factors in this sample and has shown initial indications of some of the cognitive effects of childhood bilingualism. Of note, is that CS attendees rated their HL proficiency higher than non-attendees, particularly for literacy, and this is despite the group not reporting more exposure to their HL from family or media (TV/radio). As the sample are largely second-generation bilinguals, this can reflect the choice of parents sending their children to CSs as a protective measure, for them to get the necessary exposure to their HL. Effects of age and FA (SES) on proficiency and exposure ratings have also been importantly indicated, as well as the effect of FA on performance in the flanker task. A potential advantage in the DCCS task was also found, mediated by more balanced proficiency between both languages.

While CS attendees and non-attendees were not found to significantly differ on performance in the majority of the tasks, CS attendees were found to be slower in the picture naming task and showed longer reaction times. Ratings of HL proficiency and exposure were correspondingly found to correlate with aspects of the naming task, suggesting the higher HL proficiency and exposure reported, the slower the performance on the English picture naming task. This first timepoint sample will be additionally explored in the next chapter, alongside further differences between the groups on any of the social outcomes.

Chapter 5: First Timepoint Quantitative Empirical Findings – Bilingual Social Development

This chapter will present and discuss the findings from the social scales (identity and perceived competencies) from the first time-point of this study, particularly comparing bilingual children who attend CS to those who don't on their social development. A paper was published based on these findings (Husain & Lam, 2021), the results of which were included in this chapter. As was done in the previous chapter, analyses will include an exploration of different factors such as children's language proficiency, exposure, and family affluence.

5.1 Summary of Sample Demographics and Scales Used

The same sample of a total of 153 bilingual pupils were included in this analysis, including 73 (43 male, 30 female) across five CSs, and 80 (42 male, 38 female) across four state primary schools. As previously mentioned, the groups differed in family affluence ($t(151)=3.66$, p<.001), with the CS-attendees being more affluent (M=10.63, SD=2.78) than the non-attendees (M=9.00, SD=2.72). Family affluence (FA) was therefore entered as a covariate in all subsequent analyses, alongside age, which was also correlated with the dependent variables.

The four social measures that were included in this research were Barrett's (2007) Strength of Identification Scale, The Language Experience and Proficiency Questionnaire (LEAP; Marian et al., 2007), Harter and Pike's (1984) Pictorial Scale of Perceived Competence and social acceptance for children aged 4-8 years old, and Harter's (2012) Self-Perception Profile for children over the age of 8, as well as the Family Affluence Scale (FAS; Hartley, Levin, & Currie, 2016). These are described in further detail in the Methodology (Chapter 3) of this thesis. The scales were entered into an online questionnaire for the researcher to complete, while with the child, via the secured platform Qualtrics.

All the chosen scales had been widely used in previous research to reliably measure the constructs

being investigated. Once combined as a questionnaire, sessions were piloted with the use of pictorial aids (e.g., smiley faces for a 5-point Likert scale) for language and identity measures, to ensure that questions would be asked in a clear and effective way across age groups while also fitting into a 30-minute session. The scales chosen were therefore very specific and adaptable by age group where appropriate. In this time-point, all data collection happened in-person at the school premises, in a quiet separate classroom.

Following the procedural manual for the pictorial scale of perceived competence and social acceptance (Harter & Pike, 1983) and the self-perception profile (Harter, 2012), children of different ages were given scores on each of the subscales (athletic, social, and cognitive competence). Each subscale had six question each, on a 4-likert scale, with some questions also being counterbalanced. Question items were therefore coded and assigned a value on Qualtrics appropriately (1-4), for a score to be aggregated for each subscale. Children could therefore score a maximum of 24 on each subscale, or a minimum of 6.

Scores were similarly given for children's identity ratings, following guidance from Barret (2007), with the final score being the average score across the five subscale items. Scores on the 4-point scale were rescaled onto a 5-point scale prior to averaging, and reverse scored where appropriate (negative/positive internalization).

Data was downloaded from Qualtrics into the SPSS v.26 software for sorting, computation of mean/aggregate scores, and analysis of sample trends and between-groups comparisons or split-groups associations (CS-attendees, non-attendees).

5.2 Proficiency, Exposure and Social Scale Comparisons: CS-attendees and non-attendees

CS-attending and non-attending groups were compared across all measures by conducting a multiple ANCOVA, entering age and family affluence as covariates. These comparisons are detailed in turn below.

To revisit the sample demographics, the majority of participants considered English as the language they were best at (N=106), and no significant differences were found between the groups on overall English proficiency or exposure (see Table 14, Chapter 4). Effects of age and family affluence were also found and previously reported on both English and HL proficiency. The groups were found to significantly differ in HL proficiency [$F(1,149)=9.44$, $p=.03$], with CS-attendees scoring higher versus non-attendees, due to CS-attendees scoring higher in writing and reading [$F(1,149)=4.80$, $p=.03$; $F(1,149)=20.18$, $p<.001$]. However, these were not accompanied by a difference in overall HL exposure. The separate comparisons reveal non-attendees reporting more exposure through TV/radio than attendees [$F(1,149)=6.83$, $p=.01$].

The two groups did not differ in their overall British and ethnic identities (see Table 18 below). Separate analyses on the identity components also did not find differences between CS-attendees and non-attendees; both groups scored ethnic identity higher than British identity across all components. Age had a significant effect on ethnic identity [$F(1,149)=6.67$, $p=.01$]; older children reported stronger ethnic identity compared to younger children [$F(1,149)=5.70$, $p=.02$].

The CS-attendees and non-attendees also did not differ perceived social, athletic, or cognitive competences (Table 18). There was an age effect on all three subscales, with competences declining with age [social, $F(1,149)=13.39$, $p<.001$; academic $F(1,149)=16.71$, $p<.001$; athletic, $F(1,149)=7.41$, $p=.01$]. No differences were therefore found between the two groups on this project's social outcomes.

Table 18. *Means of social developmental measures for CS and non-CS groups and corresponding group differences (St. Dev.)*

		CS-attending	**Non-attending**	**F Value**
	Overall British Identity Score	3.53(0.60)	3.48(0.63)	0.04
British	Degree of Identification	2.89(0.99)	2.96(1.02)	1.10
	Pride	3.34(0.90)	3.15(0.97)	1.28
	Importance	3.11(0.89)	2.93(1.05)	1.12
	Feeling	4.03(1.03)	4.05(1.03)	0.04
	Internalization	4.30(0.86)	4.33(0.86)	0.11
	Overall Ethnic Identity Score	3.87(0.48)	3.98(0.42)	1.78
Ethnic	Degree of Identification	3.34(0.84)	3.41(0.81)	0.23
	Pride	3.64(0.56)	3.61(0.70)	0.10
	Importance	3.55(0.88)	3.60(0.78)	0.10
	Feeling	4.56(0.65)	4.70(0.58)	2.41
	Internalization	4.26(1.00)	4.58(0.74)	3.17
	Athletic Competence	18.16(3.48)	18.15(3.47)	0.08
	Cognitive Competence	21.01(2.84)	20.11(3.39)	1.93
	Social Competence & Acceptance	17.33(4.40)	17.56(3.73)	0.95

5.3 Associations: Language Proficiency and Exposure and Social Outcomes

One-tailed partial correlations, controlling for age and FA, were conducted to examine the associations between language proficiency and exposure and social outcomes in each group (see Table 19 below).

Table 19. *One-tailed partial correlations, controlling for FA and age, between English and heritage language proficiencies and exposure, Ethnic and British identities, and perceived competencies (CS-attending participants above the diagonal, non-attendees below the diagonal)*

	English Proficiency	English Exposure	HL Proficiency	HL Exposure	Ethnic Identity	British Identity	Athletic Competence	Cognitive Competence	Social Competence
EP		.142	.068	.125	.278**	.421***	.070	.279**	.041
EE	.318**		-.105	-.118	-.048	.071	.270**	.123	.197*
HLP	.125	-.076		.490***	.497***	.313**	.221*	-.101	.101
HLE	.118	.081	.448***		.288**	.223*	.079	.052	.202
EI	-.030	-.110	.357**	.160		.278**	.145	-.019	-.031
BI	.441***	.231*	.038	.193	.060		.283**	.120	.275**
AC	.493***	.089	.233*	.236*	.181	.127		.198*	.280**
CC	.499***	.246*	.272**	.293**	.062	.112	.338**		.211*
SC	.212*	.357**	.297**	.283**	.116	-.044	.389***	.391***	

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

In terms of proficiency and exposure measures, as previously discussed, HL proficiency was positively and moderately correlated with HL exposure for both groups, but English proficiency and exposure were similarly correlated only for non-attendees. English proficiency was also positively and moderately correlated with British identity, and HL proficiency with ethnic identity, for both groups. Unique to the CS-attendees, British identity was positively, if weakly, correlated with ethnic identity, and similarly between British identity and HL proficiency, and their ethnic identity was also positively but weakly correlated with English proficiency.

Most competencies also showed positive correlations with proficiency and exposure, but primarily for the non-attending group, who showed positive correlations between competences with both English and HL proficiency and exposure (except for academic competence–English exposure).

These correlations were stronger involving English, particularly for athletic and cognitive competences. Few of such correlations were found in the attendees: between athletic competence and English exposure or HL proficiency, between cognitive competence and English proficiency, and between social competence and English exposure (all weakly). All competencies correlated with one another, for both groups, but unique to the CS-attendees British identity was positively correlated with athletic and social competences.

5.4 Predicting Social Outcomes

Based on the correlational relationships observed, and to further answer this project's research questions regarding bilingual children's social developmental outcomes, hierarchical regressions were conducted to examine the contribution of language proficiency and exposure, and background factors of age, FA and CS, toward ethnic identity, British identity, and social competence.

For ethnic identity as the dependent variable, a four-stage hierarchical multiple regression was conducted, with age and FA in the first block, HL and English proficiency and exposure in the second, CS (attendance/non-attendance) in the third, and British identity in the final block. As the collinearity statistics (i.e., tolerance, VIF) were within accepted limits, multicollinearity was not deemed to be an issue. Age and FA explained just 5% of the ethnic identity's variance (R^2=.046; $F_{(2,150)}$= 3.61, p<.05). Introducing language proficiency and exposure explained an additional 14% of variance and this change was also significant ($F_{(5,147)}$= 6.78, p<.001). The addition of CS to the model explained another 4% of ethnic identity's variance, a significant change ($F_{(6,146)}$= 7.11, p<.001). Finally, British identity could explain an additional 2% of the variation in ethnic identity, but this change was not significant. The strongest unique predictor emerged as HL proficiency (Beta= .232, t=4.64, p<.001), followed by CS attendance (Beta= .193, t= 2.65, p=.009), and age (Beta= .093, t= 3.67, p<.001). The remaining predictors were not found to be significant. The final

multiple regression model with all predictors accounted for 24% of ethnic identity's variance, R^2=.240, F(8,144)= 5.69, p<.01.

For British identity, a five-stage model contained the same first three blocks as for ethnic identity above, but the final two blocks consisted of ethnic identity, and then athletic and social competences. The age and FA block was not significant, but the addition of English proficiency and exposure made the model significant, explaining 22% of its variance (R^2 =.219; F(6,146)= 6.82, p<.001). Adding CS-attendance, ethnic identity and athletic and social competencies to the model collectively explained just 2% more of the variance, and the change was not significant. The only significant unique predictor of British identity was English proficiency (Beta=.418, t= 4.63, p<.001). The final multiple regression model with all predictors accounted for 23% of British identity's variance, R^2=.231, F(10,142)= 4.26, p<.01.

Finally, for social competence, a five-stage model contained the same first three blocks as above (age and FA, English proficiency and exposure, CS attendance), but the final two blocks consisted of British identity, and athletic and cognitive competences. Age and FA explained 6% of the variance in social competence (R^2=.06; F(2,150)= 4.76, p=.01). Introducing English proficiency and exposure to the model explained a further 13% of the variance, and the change was significant (F(6,146)= 5.72, p<.001). Adding CS to the model added just 1% to the variance, and this was not significant. British identity also did not significantly add to model. The final addition of athletic and cognitive competences explained another 8% of the variance, which was significant (F(10,142)= 5.71, p<.001). The strongest unique predictors of social competence were athletic competence (Beta=.270, t=2.83, p=.001), cognitive competence (Beta=.273, t=2.47, p=.015) and English exposure (Beta=1.72, t=2.93, p=.004). Age was significant (Beta= -.66, t=- 2.71, p=.007) when first entered into the model, as well as HL exposure (Beta= 1.10, t=- 2.36, p=.02), but neither was a unique predictor in the final model, nor FA, HL proficiency, CS attendance and British identity. The

final multiple regression model with all predictors explained 28 % of social competence's variance, $R^2 = .281$, $F(10,142) = 5.54$, $p < .01$.

5.5 Discussion and Summary of Results

Prior research (Willgerodt & Thompson, 2006; Kaufman, 2004) has indicated that growing up bilingual can promote social benefits, particularly for those with proficient HL through community (such as CS) involvement. However, much of the past research has involved adolescents or adults (Brown, 2009; Phinney et al., 2001), and how bilingual social benefits may manifest through childhood or early development longitudinally is less known. This first-timepoint allowed bilingual children's' social identities and social competences to be investigated, and how these outcomes are associated with growing up bilingual with or without the CS context.

5.5.1 Comparisons between CS attendees and non-attendees

Based on previous research, one would expect CS-attendees to potentially differ in some of these social measures, as they had an additional relevant setting in which to learn the HL and would be more involved with their ethnic heritage community. As this extra context was found to be associated with an increase in perceived HL proficiency and exposure, this chapter aimed to further investigate if this in turn led to any differences in identities and competences as one would expect CS attendees to have more opportunities to explore their heritage flexibly, be part of a wider community, and navigate across different social and linguistic settings.

However, in this project's timepoint attendees and non-attendees were not found to significantly differ overall in their ratings for social identities and competences. Both groups reported higher levels of ethnic identity than national identity, and this was across all components (e.g. degree of identification, pride, importance, feeling, and internalization). Age also had a significant effect on

the strength of ethnic identification, with it increasing as children got older. Attendees and non-attendees also scored fairly similarly across all competences, therefore showing similar patterns of self-concept, both scoring the highest on perceived cognitive competence. Nevertheless, the groups did show different patterns of associations between language proficiency, exposure, and these social outcomes. The degree to which either or both languages, CS and child-background factors (age and family affluence) contributed to those outcomes can further indicate the relationships between language, identity and social competence among bilingual children.

5.5.2 Associations with Identity

Both CS-attendees and non-attendees showed positive associations between each language's proficiency and its respective identity (i.e., HL-ethnic; English-British). Additionally, positive associations were found between ethnic and British identities, and between HL and British identity unique to CS-attendees. This is in accord with previous research of other CS-attendees (Lam et al., 2019), and these findings from this study highlight the role of the CS in identity formation (Lytra et al., 2008) and the process of bicultural adaptation among bilingual children from a wider spectrum of settings.

The regression model further extricated the contributions of HL proficiency and CS to children's ethnic identity. The impact of the relevant HL on ethnic identity formation has been identified in previous research, if with adolescent minorities (Marks et al., 2011; Phinney et al., 1997, 2001). This adds to the literature by highlighting the role of HL as an integral part of the identity (Mu, 2015; Smith et al., 1999), and the facilitation by a community-based body (the CS) as purported in other research (Creese et al., 2006; Gaiser & Hughes, 2015). In contrast, English proficiency uniquely predicted British identity. However, caution must be exercised in terms of interpreting potential causation—it is quite plausible that the relationship between language and identity is bidirectional and iterative (Lam et al., 2019), and any link between HL education and

British values and identity in the CS context is complex and nuanced (Szczepek Reed et al., 2020). This timepoint nonetheless provides the initial understanding of a highly diverse group of relatively young children across multiple CS settings and those without one, in terms of their ethnic and national identities as emerging bilinguals and possibly 'biculturals' (Schwartz & Unger, 2010).

5.5.3 Associations with Perceived Competences

The CS groups did not differ in any of the competence domains, but instead competences declined with age, in line with historical trends reflecting children's more realistic self-reflection as they mature (Harter, 1982). Of interest were, however, the associations between language proficiency and exposure and competences, particularly where most of those were unique to the non-attendees and involving HL. While these might speak to the role of maintaining the HL in social competences (Ren et al., 2016), particularly for bilingual children who do not have an extra linguistically and culturally bolstering setting (CS), the associations involving English were generally stronger. Also, for CS-attendees, most of the competence associations still involved English. The function of this mainstream language in social functioning should not therefore be undermined, with it being the only common language across their diverse environments, even if its dominance may underpin the current sample's age-related decline in HL proficiency, and the progressive loss of HL over generations (Brown, 2009).

One factor to keep in mind is also the lower family affluence of non-CS-attendees versus attendees. While research of bilingual preschoolers indicates an early association between social competences and skills in both languages (Ren et al., 2016), social competences may precede and support language learning (Mendez et al., 2002). In low-income families particularly, bilingual preschoolers who are already socially competent develop better English skills later (Oades-Sese et al., 2011), and socioeconomic status has been found to relate to social competence longitudinally alongside other child outcomes (Hosokawa & Katsura, 2017). Apart from cautioning about deducing

causation, previous findings point to existing attributes and backgrounds of children that may influence language and social competence development. As a positive family affluence effect was also found on perceived English proficiency, discussed in the previous chapter, this also needs to be considered here. Although family affluence was accounted for in analyses and neither CS nor language predicted social competence, the associations between competences and language unique to non-CS-attendees should therefore be considered with the implications of affluence (such as resources and opportunities for language and other learning).

Also worthy of note is the British identity–competence (athletic and social) associations unique to the CS-attendees. Although British identity was not predictive of those competences in the regression model, that the association applied to only those with the CS context is of note and cannot be easily explained by the data available here. Previous research did identify a positive association between national identity and sport participation, which varies by SES, with children from wealthier homes reporting more participation (Lam & Corson, 2013). As sport and physical activities likely foster athletic competence, which was also associated with social competence in this study, considering the CS-attendees' higher family affluence the associations might bear out their greater opportunities to develop such competences. However, it would be necessary to source activity data to ascertain this explanation.

5.5.5 Limitations and Implications of Research

This research establishes the language proficiency and exposure and interim social outcomes of bilingual children with and without the additional context of CS. Apart from understanding the trajectories of these outcomes longitudinally, other factors that further research can address include more familial as well as school (CS and mainstream) data on language and other practices. While variability is a strength in this sample, caution needs to be exercised if attempting to generalize findings where bilingual experiences vary at multiple levels. The project's qualitative strand,

discussed in the next chapter, is important to consider, as home or school resources and parents and teachers' engagement (Hollebeke et al, 2022; Francis, Archer, & Mau, 2010) need to also be explored and would allow more insights into the motivations behind CS and opportunities and challenges of language learning, especially among the second generation. It would also enable a better understanding of the roles of family and school for bilingual language and socio-emotional development.

While this timepoint and study is limited in the amount of measures that could be used (due to scope and time), more information could have also been collected about children's backgrounds and CS attendance, to help understand the links made with identity and competences. This is explored further in the project's final timepoint, with some additional questions asked to children about CS during the pandemic, but future research could explore this more in depth and incorporate more of children's insights particularly as they get older. Previous research have explored CS attendees perceptions of these contexts in relation to their learning (Archer, Francis, & Mau, 2009), which can be expanded upon alongside these findings.

5.5.6 Conclusion

With the longstanding disconnect between community-based language learning (in CS) and mainstream education (Li, 2006), the project's initial timepoint sheds light on the role of complementary schooling, both directly in enhancing HL and ethnic identity, and perhaps indirectly in promoting bilingual and bicultural adaptation. Notwithstanding the demographic variations among children that can or cannot attend CSs, developing bilingual skills likely extends to social competences, perhaps more for those who are less affluent.

Given the increase in linguistic diversity in schools (DfE, 2019), this research informs about the value of HL and its links to identity and other social outcomes in bilinguals, the supportive role of CSs for attendees, and the potential of CSs being a resource for wider education. The additional

quantitative timepoint will allow for the roles of family affluence and other demographics to be

further teased out, alongside understanding the home and school contexts, and how these interact, to

better understand and support bilingual children's development.

Chapter 6: Qualitative Findings - Contributors to Bilingualism (Schools and Families)

This chapter focuses on the qualitative strand of this research project, which allowed for a broader understanding and an enhanced interpretation of the quantitative findings from the project's first timepoint of data collection with bilingual children, as well as providing essential context regarding children's home and school lives and particularly CS settings. More specifically, semi-structured interviews with parents and school staff explored different contributors to bilingualism, including factors identified in the quantitative analyses, and discussed language beliefs and practices at home and in school to help understand differences between CS attendees and non-attendees. This consisted of eleven interviews with parents and school staff across the four primary schools and five complementary schools.

This chapter begins with a reminder and overview of the research design, further details of the procedure, including the choice to use thematic analysis, and a summary of interviewee characteristics. This is followed by the discussion of the different themes identified, separately for the complementary and mainstream sectors, alongside relevant research. This is followed by a summary and interpretation of how these qualitative findings help understand the project's initial quantitative findings.

6.1 Overview of Mixed-Methods Design

As outlined in the project's methodology, a mixed-methods explanatory design was followed (see Figure 1 & 2, Chapter 3), such that quantitative data was initially collected from bilingual children, and qualitative data from parents and school staff was subsequently collected to help understand the initial findings. Interviews were conducted with parents and school staff, and not the

children themselves, as it was necessary to get a deeper perspective of the school and home backgrounds of the bilinguals being studied. To help address the project's three research questions, it was also essential to get the viewpoints and unique experiences of parents and teachers, from the same sample, particularly when trying to understand the CS context which is under-researched. It is worth noting that due to the young age of the bilingual children in this project, their experiences were better captured through pictorial scales and standardized questionaries, as opposed to the more in-depth interview questions used with parents and teachers.

As such, different types of data and approaches have been taken to answer each research question appropriately and purposefully, as outlined in Figure 9 below, with consideration of how the qualitative data can add further meaning to our quantitative findings.
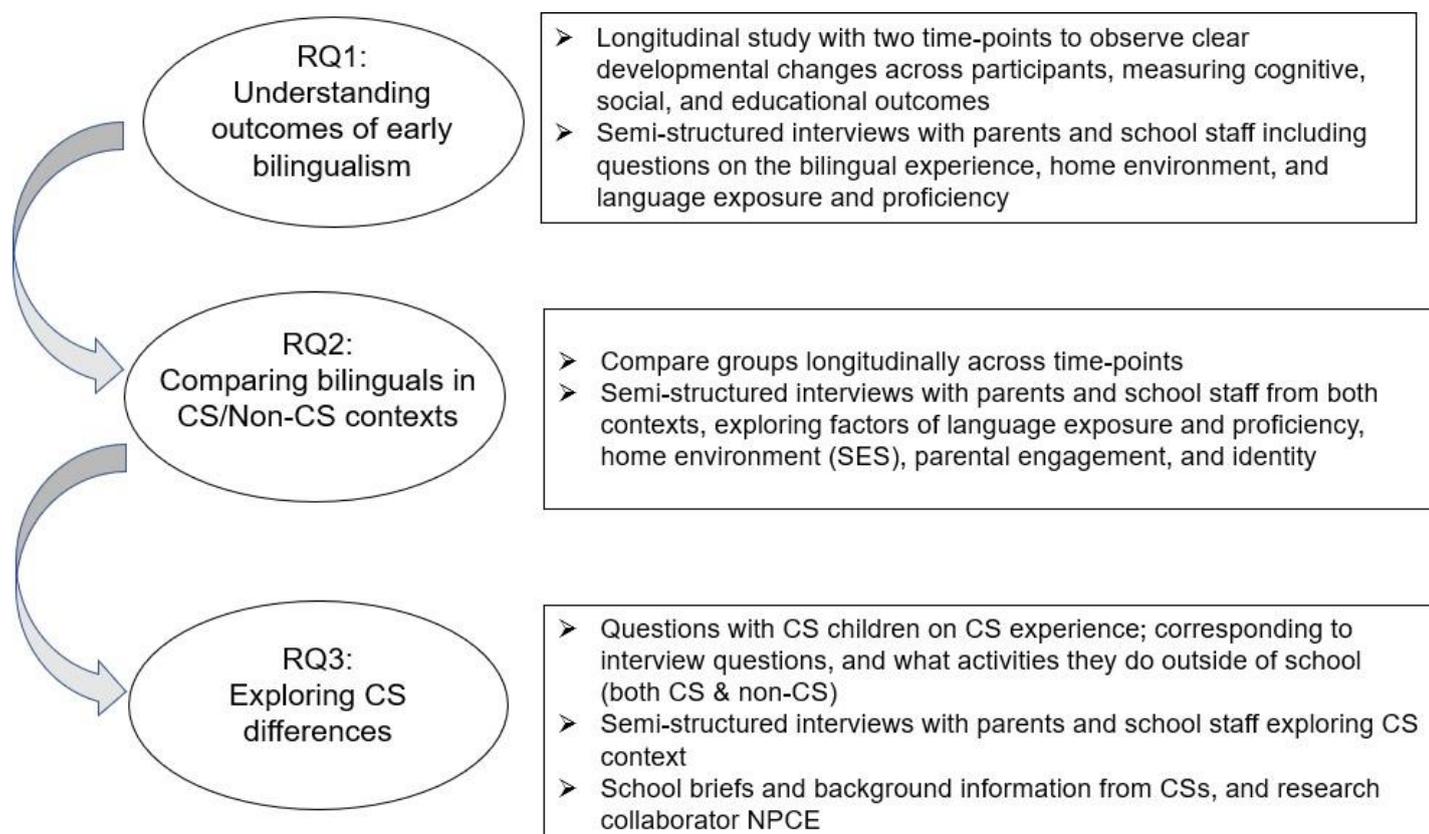
Figure 9. *Project's Research Questions and Corresponding Research Actions*

It is also important to highlight the distinct purpose for mixing methods in this project. Greene, Caracelli, and Graham (1989) suggests five different purposes, and in this case, an explanatory mixed methods design is being used for the purposes of complementarity, with results from one method being used to enhance or elaborate results from another method. The most common purpose in practice, both quantitative and qualitative measures are being used to seek deeper and more comprehensive understandings of different facets of the same complex social phenomenon, in this case bilingualism (Greene, 2007). Seeing how varied bilingual experiences can be, and also considering the lack of qualitative research in this field, a mixed methods approach is the most aligned with the project's research questions as it challenges singular ways of producing and expressing knowledge. Conducting these interviews therefore allowed for a broader exploration of linguistic/cultural knowledge and attitudes, as well as any experiences and challenges across the sample in language learning and teaching, to help unpack the reasons for the differences in the project's bilingual sample regarding exposure, proficiency, identity, and family affluence.

6.2 Overview of the Qualitative Study

In order to get a better understanding of the project's initial quantitative findings, as well as the contexts in which language learning was occurring (within families and schools), interviews were conducted with a subsample of parents and school staff from each setting. Interviewees were those that volunteered to take part from the initial recruited sample of the project. Eleven interviews (CS = 7, non-CS = 4) were conducted online throughout the Covid -19 pandemic, as and when participants were available, focusing on significant factors and differences from the quantitative research (language exposure, identity and proficiency links, and family affluence (SES)). The semi-structured interviews allowed for these factors to be explored in greater depth, alongside their relevant settings, in order to answer this project's research questions more efficiently. Thematic analysis was chosen as the appropriate qualitative method to analyse the interview data, as this approach aligns best with

the project's research design, allowing enough flexibility to identify relevant and repeated patterns amongst the different interviewees and settings, and then link it back to what was initially found. The following sub-sections will describe in further detail the planning of interviews with participants, this strand's sample, the procedure followed in data collection and analysis as well as the rationale behind the decisions taken.

6.3 Planning of Interviews

Following the completion of the study's first time-point of quantitative data collection with bilingual children in both settings (Chapter 4 & 5), the results were analysed and informed what qualitative questions could be asked, particularly to understand more about the CS context and how schools may differ, as well as the children's home environment and exposure to each language. Factors of language exposure, family affluence/SES, and identity-proficiency links were identified as key differences and potentially impacting outcome measures from the first timepoint of quantitative data collection, so this was particularly explored alongside further questions on the complementary school context. Semi-structured interview questions were drafted to allow for flexibility and scope for responses, for parents (Appendix XV), and teachers and school staff (Appendix XVI). Although it was important to explore parent and school staff experiences separately, due to the factors being examined, in practice some teachers were also parents of bilingual children themselves and were therefore open to share about both experiences - in which case, additional questions would be taken from the interview schedule as appropriate, and enough overlap was present between both schedules to allow for this. This was especially the case for interviewees teaching or volunteering at a CS, who often start off as parents taking their child to learn their HL and were keen to also reflect on their decisions to do so. Feedback was sought from the project's collaborators and the key contacts in schools before interviews took place, on the wording of questions and potential considerations, to ensure each community can be engaged suitably in the research. This has been similarly done

throughout the research, for example in the translation of research information letters and questionnaires when schools have found this useful.

It was important that the questions allowed for different parent and school staff voices to be heard, prompting discussion while not being leading in nature. Alongside considering the factors identified from the first timepoint of quantitative data collection, interview questions were linked back to the project's research questions to ensure the analysis remained focused (outlined with the interview questions in Appendix XV and XVI). Questions were therefore organized based on focus, with groups of questions focusing on language exposure and bilingual experience and identity (RQs 1 & 2), parental engagement and the home environment and the complementary school context (RQs 2 & 3), some of which were adapted from Lam, Chaudry, Pinder and Sura (2020)'s work with a complementary school. A few questions were also added to aid in the development of toolkits, which are being planned for after the submission of the thesis.

As the end of the project's first time-point of data collection coincided with the beginning of the pandemic, it was decided, following ethical approval, that focus groups and interviews would take place online. Both options, of either a focus group or interview, were initially proposed as focus groups would allow for diverse group discussion to take place and involve specific groups who may be underrepresented (Kairuz, Crump, & O'Brien, 2017). However, as the questions were being planned, it became clear that interviews would be more suitable with schoolteachers and staff, to prevent any social desirability bias, and to avoid the tendency for "groupthink" between those from the same workplace, rather allowing participants to speak more freely about their personal and professional experiences (MacDougall & Baum, 1997). Only parents, were therefore given the option of either a focus group or interview.

6.3.1 Participant Recruitment and Challenges from the Covid-19 Pandemic

Due to the many cross-cultural settings in this project, several considerations had to be made. While the first year of research allowed for an extensive period of engagement with the different communities of the project's sample, resulting in a better understanding of their languages and cultures, I as the researcher do not share those heritage languages that the parents communicate most comfortably in. This presents a challenge, as an "outsider", and requires patience, adaptiveness, and tacit learning and a building of rapport (Colucci, 2008). Within qualitative research, the process of establishing rapport, trust, and credibility is indeed chiefly essential to supporting research engagements (Pitts & Miller-day, 2007). With this in mind, because of the initial period of engagement, in complementary schools particularly, and having a key contact in each school to help broker the project in each setting, I was able to revisit the sample and attempt to reengage them in the research during what was a challenging time due to uncertainty, health inequalities, and mass lockdowns. As parents initially signed consent forms for their children to take part, this also included consenting to be contacted for a voluntary interview or focus group. The same sample were therefore purposefully revisited and invited to take part through the schools (via email or through the school's own parent communication), and I, as the researcher, also invited school teachers and staff from each setting. It was important that this be done at this stage in the research, as it allowed for enough rapport to be built and for me to have a better understanding of the different communities and settings. This sampling method is also typical of explanatory designs, such that opportunity sampling in the project's quantitative strand was followed by purposeful sampling of that same sample for the qualitative strand, by asking for volunteers (as detailed in the project's Methodology; see Figure 3, Chapter 3).

It is worth noting, that there were still challenges engaging with schools and parents. The lack of engagement from parents, in particular, could have been because of the timing of this research during the pandemic. For all five of the project's CS settings, they were facing issues with retaining

students and had to quickly adapt to move teaching online, which doesn't allow the community to meet like they're used to. Parents were therefore hard to reach, as was the case in mainstream schools. Indeed, only one parent from the project's four primary schools agreed to an interview, while others who responded couldn't find the time or asked for further monetary incentive, which there was no ethical approval for. Current research does now suggest that participants be rewarded for their time, and that monetary incentives could be the most effective in influencing participation in qualitative research (Kelly et al., 2017). Many attempts were nonetheless made to invite parents and school staff to take part, particularly when fieldwork resumed in primary schools. This included letters to parents, and flyers left at school receptions and classrooms with consent (Appendix XVII), using clear and concise language. Interviews were also planned online to be relatively short, thirty to forty minutes, therefore reducing the time commitment and any inconvenience to participants and were presented as an opportunity to also address any questions about the research as many school staff in particular were quite familiar with the project and showed engaged interest.

There are many other factors that can influence motivation to take part in such research, which is essentially voluntary. These include subjective interest, curiosity, self-expression, and representation (Clark, 2010). For the non-CS settings, interviews were not targeting a specific language community, which could be why parents did not feel as invested or interested in furthering their participation. Recruitment at the beginning of the project also included quite a lot of initial engagement with schools, and as mentioned in the thesis' introduction, the project had a big focus on engagement and dissemination of findings, which could also mean parents and school staff did not feel the need to engage further being well informed of the project. With these caveats being considered, having at least one interview per setting, and successfully including both parents and school staff, did ultimately and importantly allow for different perspectives and experiences to be considered across the various schools in this project.

6.3.2 Sample Characteristics

Participants were given a preference for when they would like to meet and what language they wanted to speak in, as ethical approval was granted to use an interpreter. For the CS settings, it was planned that real-time interpreters would be from each school, who personally knows the language and culture of the participants involved and works with the community in question. Based on previous qualitative research, a real-time interpreter would help to facilitate the interview or focus group, alongside the researcher acting as a moderator (Quintanilha, Mayan, Thompson & Bell, 2015). The interpreter would have to be aware and cautious of the aims and objectives of the research, with the questions shared and discussed with the interpreter beforehand and a consent form would need to be signed. For the mainstream schools, where an interpreter for parents for the several languages represented was unlikely, it was planned that an interpreter could be paid for using reserved research funds for fieldwork purposes. However, despite these plans, in practice when speaking to schools and communities, they were largely functional in English, the majority being second generation speakers. Despite being given the option, all interviewees chose to do an interview in English without an interpreter and said they were confident in doing so. Further characteristics of interviewees are given in Table 20 below.

Table 20. *Characteristics of interviewees (parents or school teachers/staff), for each school setting*

	School	Interviewee	Background Characteristics
Complementary Schools	**Tamil School A**	School teacher and parent of bilingual adult	• First-generation Sri Lankan female • Teaching at the school for roughly thirty years, while taking her daughter to learn Tamil • Daughter attended the school and worked as a voluntary teacher, before starting a family • Trained psychiatric nurse, currently retired
	Tamil School B	Headteacher and parent	• First-generation Indian male • Studied Tamil up to GCSE and English as second language • Volunteer at school for five years, initially joined as a parent • Family has a history in teaching Tamil
	Gujarati School C	Vice principle	• First-generation Gujarati male • Volunteering at the school for four years, starting initially in administration • Was a previous student at the school from age seven, and obtained GCSE in Gujarati

| Albanian School D | I. | Teacher and parent of bilingual child | • First-generation Albanian female.
• Multilingual (English, Albanian, Spanish, Portuguese)
• Teaches a class of 4–8-year-olds, including her son who is part of the project
• Works in a mainstream school during weekdays, with year 4 students
• Has been a teacher for five years. Qualified in Albania and the UK. |
| | II. | School coordinator and parent of bilingual child | • First-generation Albanian female, moved to London four years ago.
• Multilingual, previously also lived in Greece and Italy.
• Bilingual son attends school and is part of the project
• Was initially a parent at the school and then began volunteering, before being offered current paying role for the school
• Was working as a secondary school teacher in Albania, and currently completing teacher qualification in the UK |

	Russian School E	I. School teacher	• Female
			• Working at the school for four years, initially as a teaching assistant, and currently teaching younger age group
			• Experience teaching adults, children, and Russian as a native and foreign language
			• Students involved in project
			• Trilingual
		II. School operations manager	• Female
			• Working at the school for two years
			• Parents point of contact
			• Doesn't speak Russian (monolingual English speaker)
			• Grew up in London
Mainstream Schools	**School F**	Trust wide leader and school EAL lead	• Female
			• At the time of the interview, was doing action research at another school within the trust
			• EAL lead at School F for one year
			• Monolingual, with some foreign language learning growing up

School G	School EAL coordinator and Special Educational Needs coordinator (SENCO)	• Female • Working at the school for two years • Bilingual
School H	School EAL lead and year group leader	• Male • Bilingual • First-generation speaker • Moved to the UK during secondary school, and was classified as being an EAL learner
School I	Parent of bilingual children	• Mother of two bilingual children (older of which is part of this project) • Moved to the UK three years ago from India • Children more confident in English

All but two of the interviewees considered themselves bilingual or multilingual, therefore also having their own personal experiences of language learning which were discussed during interviews. The sample ranged in being first or second generations speakers and had a variety of different professional and personal backgrounds, which allowed for an interesting variety of perspectives to emerge. These backgrounds will be further highlighted, alongside the relevant extracts from interviews, in the thematic analysis of the data.

6.3.3 Procedure

Considering the time needed for data collection and analysis, and with the purpose of getting perspectives across the study's different settings, a minimum of nine interviews were aimed for (at least one per school), with preferably one school staff interview or parent interview per setting (maximum of eighteen interviews). These took place online, as detailed in the project's Methodology (Chapter 3).

Interviews with most of the CS sample took place between September and November 2020, although the two Tamil schools were interviewed later in 2021 as they struggled to get back into normal operations and were not as easily contactable. Interviews with the non-CS sample happened between November 2021 and March 2022, during and after data collection was completed with the primary schools for the study's final timepoint of quantitative data collection with bilingual children, as communications had resumed more normally, with slightly less pressure on schools following the end of lockdowns. Interviews were therefore carried out throughout the pandemic (September 2020 – March 2022), and while the questions still remained relevant, answers also included more spontaneous reflection on challenges unique to the situation at the time (e.g. online learning, lack of social interaction). Although more of an unexpected

outcome, this also helped in clarifying follow-up findings results (the next Chapter 7), as will be further discussed in the next subsection.

6.4 Thematic Analysis Approach and Rationale

Thematic analysis was chosen to identity overarching patterns of meaning within and across the different samples (CS/non-CS). It was considered the most suitable analyses to use as it is a flexible method, and is considered accessible and robust, being widely used in many disciplines and fields (Braun & Clarke, 2006). Even more so, it is a useful method for highlighting similarities and differences in the perspectives of different research participants (King, 2004), which suits this research's aims in trying to understand differences between CS and non-CS settings.

Rather than being a specific methodology, it encompasses a range of different approaches that share a focus on developing themes from qualitative data. For this analysis, a critical realist approach was taken as it is appropriate for explanatory mixed-methods research, while still encouraging reflexivity (Fryer, 2022). As also explored in the project's epistemological and ontological assumptions (Chapter 3, subheading 3.2), following this perspective allows findings to be interpreted alongside the importance of context, and supports the complementary use of both quantitative and qualitative data to lead to a stronger overall study. Findings from qualitative research in this perspective can therefore provide information about the mechanisms that cause the events at the empirical level (Zachariadis, Scott, & Barrett, 2013).

Adapted from Braun & Clarke's (2022) own approach of reflective thematic analysis, Fryer (2022) suggests five steps be followed with a critical realist perspective:

1) Develop your research questions

2) Familiarize yourself with the data

3) Apply, develop, and review codes

4) Develop and review themes

5) Generate conclusion and reports

These steps do not follow a linear progression, acting as guidelines rather than rules for the process of analysis, and are described, as relevant, in subsequent subsections.

A process of deductive thematic analysis was used, or more of a "top down" theoretical approach, with coding being driven by the project's research questions and an interest to elaborate on the project's initial quantitative findings. Particularly, the factors of language proficiency and exposure, their links to identity, parental engagement, and the CS context were focused on. This was to help explain the context behind the quantitative differences found between CS attendees and non-attendees, notably higher HL proficiency and strong links between their identities and proficiencies. This approach allows for a focused reading of the data, allowing one to support or challenge pre-existing assumptions, but also is limited in that some insights from the interviews can be lost because they don't fit the research agenda. As the interview questions were drafted with the research questions in mind this did help keep interviews focused while allowing room for discussion. In practice however, while the analysis was largely deductive, many interviewees also shared unique challenges they were facing in their contexts due to the pandemic that were still relevant to highlight. Themes generated by this are therefore highlighted as more inductively driven and aren't linked back to the research questions, but to the wider understanding of the project's sample. This was an unexpected finding but is relevant and important as it helped give additional pre-context to findings from the final

timepoint of quantitative data collection, in which bilingual children were revisited following lockdowns and disruptions in their learning. This was not initially planned for in the research design but does reflect the nature of mixed methods research such that the qualitative analysis complemented the quantitative analysis in more ways than anticipated. While this project does have specific research questions that guided this analysis, it was also important to attribute more power to the participants in informing the research, rather than uniformly "speaking for" them, so some reflexivity in the deductive approach was adopted to capture these experiences.

Themes were identified on a semantic level, as I was not looking for anything beyond what a participant has said or what has been written or looking for hidden meanings beyond the text (Braun & Clarke, 2021; 2006). The context, however, of what was said is still highlighted throughout the analysis following a critical realist approach, with links being made to what is already understood about these settings and language learning. While analysis was also looked at between groups (CS/non-CS settings), it was important to still try and capture the different perspectives of interviewees, and how that fits into a wider context.

6.4.1 Positionality Statement

Alongside this project's epistemological assumptions (outlined in its Methodology in Chapter 3), it's important to recognize that this research will also be situated in my particular position as a female mixed bilingual who was raised outside of the UK and is not a member of the communities in this project. This means that I am both proximate and distant to the issues being discussed in different ways and this is a key reason I have chosen to engage extensively with the communities I work with, as part of a highly reflexive process and a continuing mode of self-analysis.

I, myself, was raised bilingual and bicultural, having a Middle eastern father and British mother, and went to a bilingual school, being taught English and Arabic until the age of seventeen. I also went on to work in a bilingual school for two years, developing curriculum and professional development, so have some experience working within education. Consequently, throughout this project, and indeed these interviews, I could very much resonate with the discussions taking place and the experiences shared and came to consider this subjectivity to be a resource (Gough & Madill, 2012; Braun & Clarke, 2019). My own experiences meant that I had genuine interest and curiosity to listen and facilitate during the interviews. The timing of these interviews also meant that I had come to develop my own ideas and experiences of each of the settings and was aware of this during analysis. I've included some of my own reflections in this chapter of how my previous experiences, and my time with each community, shaped some of my understandings in the interviews and throughout the thematic analysis.

6.4.2 Familiarisation with the dataset

Familiarisation with the dataset began with transcription, as I listened to each interview several times while transcribing and went over each full transcript at least twice to ensure it was accurately presented. This initial engagement with the data, with careful consideration to what was being said and frequent revisiting of the data, was the beginning of the analysis (Bird, 2005). Interviews were transcribed manually on Microsoft Word, with the automated transcript from Microsoft Stream (where recorded videos are securely stored from Microsoft teams) sometimes being used as a guide, but in many cases, this was not accurate and was insensitive to the different accents and pronunciations of the varied interviewees. As the data was to be analysed for the content, rather than any detailed linguistic analyses, pauses and body language cues were

not included in transcription (Roulston, 2014; 2013), particularly as most interviewees were speaking in their second language (English). Pseudonyms were used throughout the transcripts to preserve anonymity, and any names of schools or persons were withdrawn.

After the collection of the CS sample dataset (seven interviews), two psychology undergraduate students joined the project as interns to assist in the project's final data collection. Each student assisted in transcribing two interviews from the dataset, and we exchanged our own reflections on the content, before I then went over the transcription myself and edited accordingly. Following this, I presented some of my initial coding of the dataset to our lab group, alongside the two students who also presented on some of their learning experience. Doing this at an early stage was a good opportunity to be reflective over any emerging ideas and potential themes, and how I was interpreting the data. It was at this point I was moving from immersing myself in the data to critically engaging with it (Braun & Clarke, 2022). I noticed that my knowledge of the CS settings meant I was engaging with the interviews in a bit more depth, and that I was relating back to previous literature and findings that aligned with some of what was being shared. The remaining interviews were transcribed only by myself, as well as all the coding and theme development.

As data collection took place over an extended period of time, transcription and coding of interviews took place before the full data corpus was available. This meant I initially transcribed and coded interviews from the CS sample dataset, before doing so with the non-CS sample. Once all the interviews were completed, and each transcribed, I then went back to all the transcripts for the second or third read and rewatched any parts of the recording needed to refamiliarize myself with the content. During the interviews themselves, I would also be hand-writing rough notes about any reflections or ideas that were standing out, especially if they related to the project's

research questions and previous findings. I referred to these notes as I was familiarising myself with the data and found them useful to continue to stay engaged with the data in a protracted period.

6.4.3 Coding and generation of themes

Completed transcripts were printed and initial descriptive codes were generated by hand, with pens and highlighters, noting passages of interest. I found this manual approach worked better for me at first as I could engage with, read through, and compare the transcripts differently than just electronically. Examples of this initial coding can be found in Appendix XVIII. Transcripts were also revisited over time, and additional codes added or refined. Given as a deductive approach was taken, segments of data that were relevant to the research questions and quantitative findings were focused on and coded. For example, extracts that focused on language learning, the CS context, and associated factors such as identity were highlighted. This included how children learnt their languages at school and at home, and how parents engaged with this learning. With that said, I was still careful to re-read areas of sparse coding to ensure they were not neglected.

After initial coding, transcripts were inputted into the qualitative analytic software NVivo (version 12 Pro; QSR International Pty Ltd., 2020) to organize and compare the data in a more systematic way and help with theme development. During this input, I was also able to begin developing my codes through standardization and consolidation (Fryer, 2022), asking myself if the code accurately describes the data and if some codes can be combined. Developed codes were entered as "nodes" in the software, and then reviewed to form initial themes. I sought to go beyond just describing the data, and avoid a theme being a topic summary, rather that it be a its

own distinct central organizing concept that shares meaning (Braun, Clarke, & Rance, 2014), and importantly with a critical realist approach, that it offers some causal explanation to the research question (Fryer, 2022). Themes were refined with this in mind, with some renamed or combined, as I worked through the data corpus.

I found it easier to focus on each setting separately at first (CS and non-CS) and its themes, before finally comparing and refining to create a more coherent narrative. As themes were identified on a semantic level, they were categorised and discussed in relation to previous findings and the project's research questions. For example, I separated themes that focused on language proficiency and exposure, to themes that focused more on the context in which languages were being learnt, to better understand how bilinguals were developing and the differences between each context. Themes surrounding parental engagement, for example, were also identified for CS and non-CS settings and separated to help explain CS and non-CS differences. These will be explored for each setting, with links made between the data sets.

6.5 Themes Developed from Complementary School Sample

To reiterate, all five CSs share the objective of preserving their heritage language and culture, of largely second-generation children, meeting once a week on Saturday or Sunday for two to four hours, alongside yearly community events. All are based in East London, primarily around Newham, and have been operating for at least ten years with founding ties to the heritage country. While they differed in funding sources and fees paid by families, with the exception of the Russian School they primarily rely on volunteers and community engagement. Alongside the narrative descriptions of each theme, the role of each interviewee in each school has also been italicized for emphasis.

152

Four themes emerged from the CS interviews that help explain how CS attendees showed higher HL proficiency, alongside significant links between their identities and associated proficiencies, by providing further context into CSs ethos and how language learning occurs in these spaces. The first theme, "Learning a heritage language is important but can be challenging", outlines how CSs see learning a heritage language as important while also being aware of the challenges this entails in a largely monolinguistic environment. This dedication to language learning is explored and why interviewees found it valuable. The second theme, "A language is linked to its culture", highlights how languages are taught in the CSs of this project, as interlinked with one's culture, and the way children engage with this. The third theme, "Parental engagement is central to language learning", explores the role of parents in this learning, and how CSs place an emphasis on parental engagement to succeed. The final theme, "Complementary schools as community centres", was more inductively driven as it includes much of the challenges CSs faced during the pandemic, and how they view themselves as more than just educational spaces, particularly in times of struggle. This was still significant to highlight, as it details the relationships between parents and CSs and how CSs operate as whole. The themes will be detailed and discussed in turn, alongside relevant research:

6.5.1 Learning a heritage language is important but can be challenging

All interviewees from this dataset acknowledged the important role of CSs in building language proficiency and believed there were benefits in doing so. A *teacher from the Albanian school* shared:

"Personally, I've been working with (withdrawn) for too many years, you know, I have seen the benefits. I have seen kids now that they have start(ed) with me five years ago and now, they can speak Albanian very, very well, and you know, that is the result"

This was often reflected on quite personally, and a positive ethos towards language learning was shared across interviews. Both parents and teachers referred to a variety of different benefits, but most notably being able to communicate with family members and maintain ties in the community, linking it to identity. As the *teacher from the Russian school* describes:

"When your kid talks to you in Russian, you feel more connected to him/her. You feel like there is something big that unites, yeah, but whenever they respond you in your second language, like English, you obviously love your kid, but it still feels a little bit foreign"

While many reflected on this personal connection with their heritage language, there was also mention of multilingualism in general and the pride they associated with it. A *Tamil teacher* did so while sharing her own beliefs on language learning, when reflecting on how she came to work in a CS:

"I am a strong believer in people knowing different languages, that's one thing I really really want everybody to know. Because that's the only sort of way you can make people love each other, respect each other, understand each other"

She linked this to further benefits of learning a language, also alluding to better employability:

> "I always tell my children we are living with the multicultural society and then it's not everybody speaks English, especially our parents or grandparents (…) but when you are also sort of becoming professionals, and it doesn't matter where you work, you will be seeing a lot of people coming there for help without knowing the English language. So, if you know a different language, one or two or more, then you will be able to help those people"

Similarly, a *Tamil headteacher* alluded to potential cognitive benefits of bilingualism by saying:

> "So, what's happening, in this process of learning, they, you know, the mind is getting tuned to that also (…) your mind always think in your mother tongue and slowly it's transferring together, without knowingly, it's, it's transfer into the language which you want to speak. So that happened so quickly, you know, and then it's, it's really added advantage for them. So, that's why I think the children, these children are really, really gifted, you know"

Indeed, interviewees seemed very aware and happy to share on the importance of language learning, and in turn why they were choosing to be involved in a CS. This echoes previous research that has demonstrated the strengths of CSs as sites for language acquisition (Lytra & Martin, 2010), and corroborates to some of the project's quantitative findings as CS children were shown to have enhanced heritage language proficiency through literacy and peer interactions.

In acknowledging this importance, interviewees also stressed that children themselves need to see the value of it for language learning to be successful. As the *Tamil teacher* described:

> "Some of them, the parents (are) desperate to teach their children the language, but not the children though. So, we have a job of, especially the beginning of the, you know, language teaching, we need to sort of get them to like the language and make them slowly understand, introduce (to) them why it's important"

The *Russian school operations manager* did also stress the need for children to be agents of their own learning, and to want to come to the CS out of their own interest:

> "But it's […] the whole point is that we want it to be enjoyable as well. We don't want the kids to feel forced to be doing, you know, weekend school and things, you know, we want to have a good image; that they('re) coming here and they have their friends and it's fun and it's enjoyable and stuff like that"

CSs tried to maintain this interest and motivation to learn languages in different ways but did also share some similar strategies such as the use of differentiation with learners of different proficiencies, use of feedback and reflection, integration of extracurriculars, and the use of bilingual resources with some even developing their own. Interviewees did nonetheless express that despite their efforts, it was

challenging, particularly in a monolinguistic environment to maintain one's heritage language especially as children get older. As one *Albanian parent* explains:

> The problem is like this: even for me as a parent, our children stay a lot of hours in the English school normally, you know, and time after time they find it easy to speak in English […] then (it's) more (the) everyday language"

Similarly, a *Gujarati vice principal* echoed this same challenge, and how it becomes increasingly harder to prioritize further language learning:

> "There's a lot of enthusiasm when they join the school. So when, so let's just say at age of seven, the parents have a lot of enthusiasm, yes, I want our kids to learn the culture, the language you know. But then as soon as they, you know, soon as they hit second, third class, even the 4th class, the numbers start to decline. They got other commitments so it could be their putting the mainstream schooling subjects, whether it's Math, English, Science, those sort of subjects become more of a priority over this, the language"

Research with immigrant families has reflected these common difficulties, particularly in a dominant Anglophone country, and that heritage language proficiency does still decline with age (Nesteruk, 2010). This is even more challenging for second and third generation children, who are the majority of this project's sample. Some of the interviewees themselves, despite holding largely

positive perceptions of bilingualism, did express challenges in their own bilingual experience, particularly as new arrivals in the UK, and their fears in integrating while speaking a different language and sharing a different culture. As an *Albanian teacher and parent* shares:

> "It's quite hard, it's quite hard. To be honest, I speak four languages. Yeah, I grew up in Italy and I know Spanish. I understand Portuguese, but I can't speak it. You know, Albanian and English as well, but still with English it was a challenge for me because it's quite hard sometimes having too many language(s) behind in (the) background you never know if the pronunciation is correct"

> "Personally, I (was) stressed firstly when I start, you know, I thought that they will, they will not go, they will approach me not in the right way that I was expecting. Because, you know, I thought or I fear now something would go bad because they will listen that my accent is not right"

We can contextualize such fears when looking at government policy, UK's recent exit from the European Union ("Brexit"), and England's lack of a national language strategy. Brexit, in particular, has had social consequences, indicating a rise in populism and English nationalism and underpinning deep societal divisions (Corbett, 2016). As for promoting languages other than English, while the government in England does recognize the use of minority languages, enabling pupils to study community languages for GCSEs in their final few years at secondary school,

alternative accreditation for languages has been in decline as well as effective transition from primary to secondary schools in relation to languages to ensure uptake (Collen, 2020). In such a context, there is more pressure to conform to speaking English making it more difficult to embrace or successfully maintain other languages (Mehmedbegović, 2017).

Finally, interviewees also mentioned recent unique challenges for language learning linked to the pandemic, with the sudden need to adapt and move classes online. At this stage, all schools were able to have classes online and only one (the Gujarati school) had returned to face-to-face classes by using their own premises. All the CSs saw this shift as a challenge and were keen to go back to usual operations but were limited up until even September 2022 in accessing mainstream school premises, with the pandemic only exacerbating enduring issues. This change meant children were not being exposed to their heritage language in the same way, as *a Russian teacher* describes:

> "But when, um, we started doing online sessions there was a, a downgrade. So, even the students who were reading very well, like a few weeks ago, suddenly they were barely connecting with the letter, the sounds. And I was like, wow, this just – and it was very difficult to, um, to make them do it."

Emerging research on the effects of the pandemic on the CS sector have mirrored this (Young & White, 2022), with particular challenges in retaining students. Furthermore, a recent from the

Global Future think tank (Davis, 2021) highlighted that the teaching of heritage and community languages was overlooked throughout the pandemic, as a result of enforced closures and limited support. This project's follow-up findings (the next Chapter 7) will discuss the circumstances of the pandemic even further, and how they reflected on the bilingual children sample.

6.5.2 A language is linked to its culture

A clear theme that emerged from the interviews was that CSs perceived what they were doing as much more than just language learning, with many references to teaching children about their culture and heritage and allowing them to be a part of a larger linguistic community. This was tied to interviewees own beliefs of language and these perceptions can be seen in how the CSs are run, with culture embedded into the curriculum and seen as intertwined with learning. As the *vice principle from the Gujarati school* explains:

> "The thing is with me it's the language is always going to be linked to your culture. Now what, the reason why I do volunteer here and the reason why I encourage a lot of people is if you start losing your language or what is linked to that is a lot of things in the background."

> "So, what we do, part of the syllabus, it is all packaged up to deliver to students of, you know, it could be religion, culture, festivals, everything; it is all packaged up, so we are delivering everything"

The *operations manager of the Russian school* shared the same emphasis on what the school stands for, and how the CSs include culture in their teachings:

> "We place such an emphasis on the cultural side of things and learning through different methods. For us, that's incredibly important. We, you know, we integrate a lot of cultural events and that's part of the learning process for them."
> "Parents, not only do they get to understand the educational side of it, they know the school is a lot more than just like, you know, just a Russian school. Like this is culture, this is, you know, we're, we're teaching these kids to be bilingual and culturally bilingual as well."

The *Russian teacher* gave examples of this in her interview, referencing activities she thought helped foster language learning:

> "The school always, um, has different celebrations related to Russian culture. Maslenitsa in Spring, it's when you say goodbye to winter, say hello to Spring. Um, and so the kids usually are very engaged. They have, they try to do performances or learn poems, or sing songs."

Similarly, the *Tamil teacher* shared:

> "We do, you know, it's not only teaching the language (...) We have this yearly concert in the school. People have Drama, and then when they do Drama we do a lot of our history, like literature, you know? (…) And also, they do the dances, Bharatnatyam, that's our Tamil culture dances, and also sort of the folk dances and everything by farmers, the harvesting (Pongal celebration), and then we do have special dances."

The interviews added to many of my own observations of how CSs teach a heritage language, with each of the settings being incredibly welcoming to me and allowing me to engage in their celebrations. This helped me during the time of the interviews as I understood the references and context being given.

Essentially, this qualitative perspective corroborates some of the project's quantitative findings on identity by giving context to how children explore their different cultures; in the first time-point, CS attendees rated their identities more closely and felt more positively about them. It also adds to previous research that has highlighted CSs as dynamic spaces, allowing children to develop biculturally and bilingually (Creese, et al,, 2006), and to reflect on their overlapping cultures and make use of opportunities to develop as bilinguals (Gaiser & Hughes, 2015). As Lam et al., (2019) clearly describe, CSs facilitate bicultural adaptation and strong ethnic identification through "culture learning", as was observed and shared through all the CSs of this project.

6.5.3 Parental engagement is central to language learning

All the CSs shared an emphasis on parent communication and this communication tended to be personal and supportive. Involving parents in their child's learning was seen as important, and the CSs incorporated similar opportunities for this through weekly assemblies, parent evenings, email, newsletters, and mobile applications like WhatsApp. There was a recognition by all CSs that parental engagement is essential for the school and the children's success. As the *Tamil Headteacher* put quite simply:

"The entire school is, you know, driven by the parents more than us. So that's what I will say that, because without their support the school won't exist."

The *Gujarati vice principal* similarly emphasized this, describing the school as a partnership with the parents, who also need to input towards their child's learning:

"One of our rules is we have to have a partnership with the parents. So if we're teaching them, um ninety minutes, which, you know, is not enough, but it's up to the parents, that we say you need to match that time or, or do more at home"

This relationship with parents could be seen across the different ways interviewees communicated with parents. The *Russian school's operation manager*, for example, detailed her important role with parents:

"I try and be as, like, personable as I can with parents (…) for me, it's really important for the parents to know exactly what they're getting themselves into and what the student is. And basically, for me to just ensure that the student is like the parents, prepared and knows what to expect, or also can feel open to come to talk to us if they do have questions. You know, they, they have my phone number, is always on my emails, you know, parents call me 24/7 but like, I love that (…) I speak to each parent individually."

Interviews with CS teachers accentuated this further, as one *Albanian teacher* explained:

> "We […] always support each other with parents; at the end of the day we're used to talk(ing)with these parents and ask them to, to give some homework or maybe to have a phone call home […] It's up to the parents to kind of push him (the student) as well. Once we've given him the feedback."

She even described the steps she took during the pandemic, to maintain this connection and ensure support was still being given:

> "Just at the moment, with parents, uh we have offered to the parents our support. For example, I had two, three parents that they didn't have books, I went by myself to these parents - I went driving, I dropped off some books for them you know just to make that connection between teachers and parents, you know? To make sure that they know that we will be there always, or being available at the moment that they need anything, at the moment that they will call"

Her colleague, who worked as the *Albanian school's coordinator and a parent* herself, also further acknowledged the important role parents need to play within CSs, and reflected on her own experience raising her child bilingual:

"Our children stay a lot of hours in the English school normally, you know, and time after time they find it easy to speak in English language. So, one of the best, you know, methods is that parents keep talking the Albanian language at home. Even with my children speaking English, I respond in Albanian, because I'm afraid that they are going to – it's not just being part of Albanian classes, going to help them, once a week or twice a week is not enough."

This supports research that has shown the role of active parental involvement in successful language learning and maintenance (Pauwels, 2008; Hall, Özerk, Zulfiqar, & Tan, 2002), and how CSs help to enable greater parental engagement and positively impact student motivation (Maylor et al., 2013). It also adds important reflections on this project's data, as children that attended CSs were found to not necessarily have more exposure to the language at home, suggesting that these schools are providing the necessary support to maintain a HL. With that said, schools did express a challenge of maintaining exposure to the heritage language at home, as well as varying levels of commitment amongst parents, as one Russian teacher explains:

"It mostly depends on the parents because some of them prefer just to pick up the [child] and don't even talk to you much. Like "is everything good? Goodbye!" like that's the sort [..] But then others are interested"

Similarly, the *Gujarati head teacher* expressed this the key challenge to the school, as they try to retain more students and keep the engaged:

> "We can do a lot more. But sometimes we don't get the commitments from parents [..] what it tends to be with our community is: Yeah, we're sending our students to the school, that's more than enough, and that's they kind of draw a line at that point where their involvement so we see that a lot as well"

Indeed, convincing parents of their important role in language learning was something all CSs were actively trying to do, through their community events but also by encouraging different ways they can support this at home, namely reading of heritage language or biliterate books together and initiating conversations. The Russian school even used this project to engage parents, with us arranging an event for them with a range of talks on potential benefits of language learning, bringing a mix of practitioners and academics to engage discussion. This event then went on to be recognized by the university for its effective public engagement. The *operation manager of the Russian school* reflected on this and how she found it useful, but how she was also surprised that among parents themselves there is still some stigma or fear surrounding multilingualism. She described instances of parents approaching her hesitant to have their children join classes and said:

> "There's a lot of misconception about young children learning multiple languages and that, you know, people seem to think that children will struggle with it, or that there's a certain way to do it (…) I think it's really important, you know, that the parents

166

understand that like their kids can cope and they can handle, you know. They, it is, and it's how much of a benefit it is, it's not just a chore, you know, it does actually benefit them like mentally as well as like, just in their personal lives."

This was interesting to discover during the interviews, as I held a belief that as parents were sending their children to a CS then they might be more committed to language learning and might show more engagement in helping them maintain HL proficiency. These interviews revealed the decision is far more nuanced, as not all parents necessarily wanted to or felt confident enough to support their children in their HL, and therefore looked to CSs to assist. Previous research on parent's own perceptions of bilingualism and how it affects their parenting and family language policy suggest that parents do often rely on their own personal experiences and draw selectively from advice and literature, and that their efforts could be better supported (King & Fogle, 2006). Moreover, research on CSs have found that many parents expect the school to provide their children with what they could not provide at home (Kajee, 2011), and this mismatch in expectations could be because of the different understandings of what CSs are for, and what role parents and teacher's play in the child's education (Cavusoglu, 2014).

6.5.4 Complementary schools as community centres

Finally, there were many examples of the different strategies and collaborations being used within CSs, as well as experiences shared on what the settings meant to each of the interviewees. Participants did also express a range of challenges, namely lack of time as they are largely run by volunteers, as well as

167

struggles to find premises (particularly in the time of the pandemic) and funding. Across the interviews, namely from volunteers, there was a sense of perseverance through these challenges. As the *Tamil Headteacher* explained:

> "We have a very limited resources available and also we got only the weekend classes happening, so most of us who are part of the school are normal working people during the weekdays (…) but that doesn't stop us, you know, put our focus or put our, you know, support during the weekdays as well, as much as we can especially in the evening times."

A *Tamil teacher* reflected on this further, sharing that it was her need to help the community that keeps her motivated and determined, and that she shares this with others in the sector:

> "They must come to this job with a good heart, with an open mind and they must accept, first, yes, this a good way of, you know, helping the community and helping the children."

This collective sense of responsibility and identity was similarly seen when speaking to the *Albanian parent and coordinator*, when she began comparing her experiences at a CS to her son's primary school, and what she hoped they could implement:

> "It's good for even, for the (mainstream) school to be a community centre as well because the people, - you can, um - it's like people are near to you, so if

you are near to people you can hear them, to understand them, and to make

the things better. I think, you know? You understand that our sector is, uh kind

of work, that we work with people - children and parents. And if you want to

work in the best way you need to understand, so both parts need to understand

themselves"

This emphasis on the community was further demonstrated during the pandemic, as CSs adapted

to meet the different needs of their attendees, going beyond their usual provision. Said simply by

the *Albanian teacher* when referring to the lockdown: "We try to find what they need, what they

are interested, and we bring information to them." This willingness to help also extended to those

beyond their own community, as noted by the *Tamil headteacher*:

"We are happy to, you know, provide whatever support we can and we are also open to

connect with, you know, the local schools or maybe the other communities. It's not only

the community, even what, what we are, we are also happy to share our own, you know,

community spirit and everything. We're trying to help, even during the Covid, we had

helped a lot of people in providing free food and everything."

This adds to current research that has shown how CSs offer a context to promote both

positive personal and community identities (Szczepek Reed et al., 2020), and how

they importantly allow for the surrounding community to have a positive perception

and respect for community languages and bilingualism (Arnot et al., 2014).

While the interviews largely focused on the language learning taking place in CSs, participants did still express benefits of the schools to themselves. For school staff, this included increasing employability and building their confidence, while parents valued the wider support network and connections they fostered, some of which was unfortunately lost with the pandemic As the *Tamil headteacher and parent* explains:

> "We used to share a lot of things (during community activities). Either it could be language related, or children education related, or community related, or someone wants to know, know to make their children which course is best or someone want them to get some help, you know, for example, someone want some job. And a lot of things come up in that community chatting so we make sure that we connect them or maybe at least direct them to the right people (…) But still I miss, tremendously I miss it, I can see a very great difference."

The two Albanian interviewees were the clearest examples of how the CS had helped them personally, as both of them were encouraged to get further training and were able to develop their English and better integrate into the country by being a part of the community. As the *Albanian teacher* explains, "(The schools) has opened her doors, you know, just to help me with training, with reference, you know, it's useful for me." Similarly, the *Albanian parent and coordinator* shared:

> "They encouraged me, saying yes you can do it! Yes, your English is good, you can do it, go for it, go for that. It's not easy where you are, you know, in

another country and you have this, and you are not confident. You can feel

confident here with (school name withdrawn)."

Hearing of these experiences demonstrated a lot more of what CSs really do, which

is something that could not be captured from the other data alone. Positively, all CSs

also expressed a willingness to further collaborate and connect, importantly, with the

mainstream sector as has been called for in previous research (Li, 2006). As the

Albanian teacher shared, that she would like mainstream schools to know:

> "I know the kids are clever, kids can achieve, can gain all the information
>
> very, very quickly. But one way is to make a bridge between their own
>
> language and English language and have more support."

Other interviewees also expressed the hope for further recognition and support from

the government or mainstream sector, if not for their settings, but for their language.

6.6 Themes Taken from Mainstream School Sample

The remaining interviews from the MS sector allowed for alternative and

comparative perspectives and experiences to be considered, in order to help

understand key differences between the project's samples. Interviews within this

dataset were more varied in the discussions that took place, with schools having

different approaches and specific challenges. Nonetheless, four common themes

stood out that helped explain differences between the CS and non-CS samples. The

first theme "*Language development needs to be supported and better understood",*

highlights the common ways schools viewed their bilingual learners and outlines their common approaches to help with children's overall language development, while largely focusing on their English. It also summarizes the related challenges they faced in supporting language development, notably in assessment and understanding children's diverse backgrounds. The second theme "*Challenges to Parental Engagement*", explains the different ways the schools try to communicate with parents, but how they all still expressed common barriers in engaging parents with bilingual children's language learning. The third theme "*A desire to be inclusive of languages",* describes the positive beliefs and attitudes interviewees had towards multilingualism, and how this extended to an openness to collaborate and embrace HLs within their schools. Finally, the fourth theme *"Shortcomings of the system",* detailed the common wider barriers schools perceived as preventing them from supporting bilingual learners further.

It should be noted that even though the EAL label was not used in the questions of the interviews, the three school staff members that were interviewed all defaulted to this terminology when talking about bilingual or multilingual learners. The themes will be discussed in turn alongside relevant research:

6.6.1 Language development needs to be supported and better understood

The school staff that were interviewed all had important roles in supporting EAL learners, and as such, talked about the many ways they were trying to support their English language development and the need to do so. Schools referred to some common resources, namely the use of the Bell Foundation's assessment framework,

and each made use of online resources or apps. There was a particular focus on English assessment, the use of speech and language therapists, and differentiation, however none of the schools interviewed mentioned assessing children in their language other than English. While the EAL label is very broad and encompasses many types of learners, the staff focused a lot of their role on giving support to those who have very little English. As one *EAL coordinator* describes:

> "We've got a lot of children who start, especially now that we have the very young children under two provision, a lot of children that start with very little language coming from homes where they don't speak English. So, we have to do, we have to be aware of, of how to support them from that very, very young age and be aware of the difference in children (…) It's just being mindful of those gaps or the difference, but also mindful of when intervention is needed."

This need to have support for language learning can be seen when interviewees reflected on their own language learning experiences, as a trust wide leader describes how she found it challenging:

> "In terms of thinking about kind of my own experiences as a student learning language, I always found it very difficult (…) It's so difficult to learn a foreign language as well, as an English-speaking person. Some people might find it a lot more easier, I remember from my experience it's quite difficult."

While an *EAL lead* at another school also reflected on his own experience as a young EAL student, and that while he was able to learn English quickly, he did need the support from his family and school to succeed:

"I started Year eight in secondary school and so I came from Bangladesh. So I, I didn't speak a word of English (…) I lived in a big family where I had my cousins, older younger cousins, and obviously they were born here, they were bilingual but they, you know, they spoke fluently. Then I kind of spent a lot of time with them so I kind of picked up English very quickly. So, I, I had that support from my cousins and the people that I loved with and, and especially in school as well. I was part of a learning group support."

However, despite seeing it as a challenge, there was also a good understanding of language development and reassurances that children to ultimately progress. As the same *EAL lead* shares:

"But then with English it's the fact that, you know, we are trying our best in school and, and just giving them, they just need the time. Just because they have this barrier in the language, that doesn't mean that they're not attaining or they're not achieving (…) So, it's like a language shouldn't be a barrier, um, for, for a child to achieve better thing."

An *EAL coordinator* at another primary school also echoed some of this by sharing:

"The children are starting now often with much lower levels then we used to see, so the baseline when the children come into school is quite low, but then with the input from school and probably the exposure to English language, they do, they do then make the progress."

Indeed, when interviewing a *parent of a first-generation bilingual child* at a primary school, the mother shared that English had no longer become of concern to them, particularly during the pandemic, and she felt her children were getting enough support:

"English is not a challenge, because of this pandemic and my husband is at home. He is having meetings and calls so he's conversing in it. So basically, more or less at home the language, speaking language, is English. It has now become English. Doesn't speak too much Hindi but we try."

There was therefore clear willingness from these educators to better support EAL children, but they recognized that there were limitations in what they could and wanted to do, due to a lack of information on pupil backgrounds and lack of effective assessment, with a focus only on English and what they saw in the classroom. As the *trust wide leader* admits: "Each and every school's kind of assessing their pupils in different ways (…) there hasn't been a kind of rigorous or concrete assessment tool." She goes on to also share that they struggle to get accurate and enough background information to support children:

"I definitely think there is a lack of that type of information, especially since the DfE decided that they no longer needed that, the census data from schools. I think schools now are thinking, oh because DfE don't want that type of information we don't necessarily have to make it a priority. When I believe that actually regardless whether the DfE wants that information, it's something that we need to know and that will kind of support us moving forward when we're thinking about supporting those children's provision."

The other staff members also recognized the many factors that go into language development, and how these also needed to be considered:

"There's lots of other things to consider as the children, their, their cultural background, their, their experiences from home which plays a massive role. The impact of lockdown, how that's still affecting the children. The mental wellbeing of the children, you know, so there's a lot of things to consider."

"It's the understanding of kind of their background. You know, like the schooling, the schooling system that you know they were, they've previously experienced, uh, but that's something I think we, I think we need to work as a school to kind of know a lot more about those EAL learners and the circumstances.

Previous reports have highlighted the challenges schools face as circumstances of EAL children can largely vary (Flynn & Curdt-Christiansen, 2018), as shared by the staff in these interviews. The emphasis on English proficiency is also understandable, as research has shown that proficiency in English is central to understanding achievement and levels of need among EAL students, and that those bilingual pupils that reach competency in English show better attainment than their monolingual peers (Strand & Hessel, 2018). Getting these perspectives from staff was important as it highlights how bilinguals in this project's sample are varied themselves, and while all had proficiency in English, nonetheless shared the broad EAL label at school.

6.6.2 Challenges to parental engagement

School staff discussed the ways they have tried to engage parents in their child's learning, as well as to try and get a better understanding of the home environment. All three saw this as particularly challenging, with the largest barrier they referenced being language. As the *trust wide leader* explains:

> "I definitely think that in terms of parental engagement, it's a key challenge, where you do have parents who have come in their traditional language as well. It's very difficult to communicate, especially if you don't speak the mother tongue of the parent"

The schools have tried to overcome this in different ways, often referencing the use of staff in the school who do speak the language, the use of a translation service, or even offering parent workshops to teach English. However, interviewees did admit

that they still felt there were many obstacles beyond this for parents to engage with and access information from the school. The *EAL lead* details further:

"And I think another thing is like, they (parents), they're not very clear on how to best support their children's language progression"

A lack of knowledge and experience was also referenced by another interviewee:

"It's also the academic, um, kind of knowledge that some parents hold. Maybe their own kind of schooling that they had in the past, which differs very much to pedagogy now. That's also a barrier."

One of the *EAL coordinator*s highlighted how they have tried to tackle this as well, by offering parent workshops particularly focusing on early language development, for example, and what they can expect, and allowing opportunities to share information. However, she admits:

"It's a shame, we do struggle to engage our parents. Although we offer the workshops, we might only have two or three parents turn up at some of them. So that's not always easy, but we also have a growing number of parents that work."

This lack of engagement is seen further when schools have tried to get accurate information of a child's languages or background, and the same *EAL coordinator* suggested this might be due to stigma:

"We've had to do a little bit of thinking about home language and first language because there was confusion in this, still is a little bit of confusion there, when doing our admission interviews. Just to be clear on what that means and what, you know, not very often, but sometimes parents are a little but reluctant to give the information because they think that it would be of a, maybe not negative, but it would be more of an advantage to say that their children are English rather than to say their home language, that, that doesn't happen often."

The need to avoid this social stigma of support in schools has been noted in previous research, and that perhaps the terminology of EAL itself is limiting (Wardman, 2012). When interviewing a parent, she expressed how she did try to stay engaged with her children's education:

"I'm very much into it, and I just keep an eye on what they are learning, what they're doing (…) I very much, you know, want to keep an eye what they are doing in the classroom."

But this was usually her doing so personally at home, with her not mentioning any further engagement with the school other than meeting other parents that share the same mother tongue or speak similar languages. While in the past, the role of schools and families has sometimes been seen as separate, there is a growing awareness and need for mutual and meaningful interaction between parents and schools which can be challenging (Campbell, 2011; Bojuwoye, 2009). The experiences of primary

schools in this regard are quite different to the CSs in our project and helps further understand key differences between the samples.

6.6.3 A desire to be inclusive of languages

Despite the issues raised by school staff, it is important to note that they had positive perceptions of multilingualism and believed it was beneficial to their schools. Even more so, all school staff expressed the desire to be more inclusive towards the different languages of their students. The *trust wide leader* was passionate about this, saying:

> "The research I've done, um, around kind of multilingualism and um leading EAL, I think it's a really great thing, I think it's a really positive thing. I think what we need to do probably a little more in English schools is try and incorporate children's home language or mother tongue and just for those initial kind of steps, especially when you get those children who come in with no English at all. I think embracing their, their mother tongue is something we need to do more in the classroom, um, because that shows inclusivity (…) I think it's a great thing, I do think it needs to be incorporated more into the curriculum."

The other two staff similarly reflected positively about their own bilingualism, and how they think that's translated into their role and approach. When asked how he viewed bilingualism, the *EAL lead* responded:

"I think it's like it's, it's more to do with your identity as well. Um, it's, it's something that and we kind of encourage (…) we've had children came in wearing like their, their cultural dresses. We've encouraged parents to bring in, like, items from their households that mean something to them or something that is associated with, with their own culture. So those kinds of things, I think giving the children the message that, you know, no matter where you come from, you know, you are included and learning happens in a diverse school."

Other interviewees shared similar initiatives to be more inclusive, from small but effective changes like the use of visual timetables and visual and concrete learning stimuli, to the use of bilingual dictionaries and a buddy system. This was reassuring to hear in the interviews, as previous research has shown that many teachers show beliefs that suggest little awareness of the benefits of multilingualism and of the usefulness of home language maintenance for students and their families (De Angelis, 2011). Other qualitative research in the UK with teachers also found that while heritage language maintenance is viewed as valuable, there is less agreement about whether this should involve the mainstream school sector, with it being seen as more a parent, family, and community's responsibility (Weekly, 2018). While this question of responsibility was not posed to interviewees in this study, all schools were willing to learn more about CSs or collaborating with them, with one of the schools already hosting a CS on the weekend. As the *trust wide leader* said quite positively:

"I think they're (complementary schools) very important for many different communities (…) I think that if there was that incorporation or partnership between mainstream

schools and complementary or supplementary schools, it would only mean that, you know, children's education would, would thrive further. So, I definitely think it's a great thing."

While such partnerships are still quite rare, it is promising to see that educators understand the importance of these settings, as integration between children's community or home life and their school life has been widely encouraged (British Academy, 2019).

6.6.4 Shortcomings of the system

Lastly, interviewees were all quite clear in that there were limitations within the educational and wider system when it came to supporting language learners. An *EAL coordinator* particularly mentioned limitations of resources and funding:

> "I think that in the past there was more scope and more resources, and I mean funding also in terms of money available, available for EAL kind of strategies as EAL groups, we are very very very limited in terms of that"

As well as time, with her responsibilities being stretched across different roles:

> "You can get quite excited about EAL, obviously there's so much you can do, but then there's also, you know, there's always other things and that's, that's a little bit of a, that is a problem"

While the *trust wide leader* was honest that: "I don't think there's enough attention given to pupils who are bilingual or multilingual", and that the support isn't available for that:

> "Just thinking about my own experience as a class teacher (…) I don't think there's enough though given or enough support given to teachers to enable them to do that."

The *EAL lead* shared the same sentiments, also stressing the need for staff to be trained:

> "The struggle for me is like the, the staff and, and space. I think, I think we need to ensure that our staff are trained (…) and I think with EAL children, you know, I wish we had more um, space and the staff to kind of take away children, work in small groups every day, that's something that I really struggled with."

This reflects research where teachers have expressed a lack of confidence and training for meeting the needs of EAL learners (Foley, Anderson, Conteh, & Hancock, 2018), which may very well be because of inconsistencies in school training, with EAL communities dispersed unevenly across the UK (Strand, Malmberg, & Hall, 2015). Beyond this, when mentioning complementary schools, the *EAL coordinator* also shared her own observations of heritage language loss in students, being in a society that is largely monolingual:

"When I was doing some of my EAL pupil questionnaires last term, um, sadly, and I didn't know this, al lot of the older EAL children do not speak their home language, their first language anymore. So since then, and since they've come to the country, they, they now only speak English, and they're not able to communicate with their relatives anymore. So, where they are getting that exposure over complementary schools, and that, I really highly encourage that because I think that's so important"

This is indeed what the *parent* interviewed has been experiencing with her own child, despite her own attempts at maintaining the language through speaking and reading books at home. As she describes:

"When we moved here, she was totally a Hindi speaking girl. Now she has completely, you know, the vocabulary is very limited now and with the younger one, he doesn't even know what's Hindi. I talked to him, I conversed him in Hindi. I, you know, speak (to) him in Hindi and he replies in English, so he understands. But he is not able to form the sentences."

This ultimately reinforces the reason CSs were established, as the needs of heritage language learners were not being met by mainstream schools alone (Li, 2006). This seems to still be the case, and the interviews clearly reflect the challenges facing UK and language learning today.

6.7 Summary and Conclusions

The qualitative data and analysis presented in this chapter have been essential in providing a better understanding of the roles of family and schools in bilingual language development, and in providing the necessary context for the project's initial quantitative findings in relation to its research questions. A total of eight themes were identified across eleven interviews with school staff and parents, with four themes identified from interviews within CS settings, and another four themes identified from interviews with mainstream primary schools. While the sample had some notable differences, with each school having different approaches and challenges, there were also many commonalties and shared perspectives. These will be explored separately for CS and non-CS settings, before linking the themes identified to the quantitative results from the project's first timepoint of data collection with bilingual children.

6.7.1 Insights from Complementary School Interviews

Despite the five CSs in this project having some differences in their set-ups and communities, the interviews with school staff and parents reflected a lot of the same perspectives as they all shared the same objective of preserving children's HL. The first theme identified outlined how learning a heritage language was viewed as important and beneficial, but also as challenging in UK's current context. Importantly, parents and teachers saw many benefits to learning one's HL, not just to be able to communicate with family members, but also linked it to a wider community identity. They also referenced cognitive and educational benefits, and were passionate to share their beliefs on the positives of language learning with the children attending their CS. All schools stressed that children need to find the classes enjoyable themselves and

must want to attend out of their own conviction. They tried to maintain children's interest to learn one's HL in different ways, such as extracurriculars, use of bilingual resources, and teaching strategies. This adds significant context to the project's finding that CS attending children reported higher perceived HL proficiency, which was also significantly associated with their ethnic identification, and highlights the great effort taken to do so.

Within this theme, teachers and staff also shared their common challenges to retain students as they get older, and that this was only further exacerbated in the pandemic as children were not as exposed to their HL language and larger linguistic community. This reflects the project's own quantitative findings that CS attendees were often not getting much exposure to their HL at home, and therefore might be relying on CSs to have this exposure through peers and teaching, which presents challenges when they're otherwise in a more monolinguistic environment and having to focus on their English. This wider context was also reflected on by parents and teachers in interviews, who expressed their own challenges in their bilingual experience and fears when trying to integrate into the UK. This is important to highlight as CSs may also be providing more of a protective and positive environment to explore one's languages and identities.

Following the exploration of parents and teacher's beliefs on language learning, the second theme identified discussed how languages were commonly taught in the CSs of this project. Each school found it important to embed culture with children's learning of their HL, doing so through community events, dances, poetry, and other extracurriculars. This added to my own observations as I engaged with each CS at the beginning of the project and was welcomed at their events which included cultural celebrations such as Pongal (at the Tamil CSs), Diwali (at the Gujarati CS), Flag or Independence Day (at the Albanian CS), and Rozhdestvo

186

Khristovo (at the Russian CS). It is important that this not be separated from their beliefs of why a language should be learnt and preserved, as these opportunities for cultural learning help explain how bilingual children attending CSs develop their identities and come to see themselves as part of a community, rating their ethnic and British identities positively and closely. Furthermore, CS attendees showed a unique link between HL proficiency and British identification, so rather than separating them from their British identity CSs seem to provide a conducive space to explore one's HL and its associated culture, and how it complements their sense of identity in the UK.

The third theme identified explore the role of parents in CSs, and how they are viewed as central to student's HL learning. All CSs shared this belief and therefore had an emphasis on personal and supportive communication with parents and made efforts to engage them with the school. Indeed, as a vice principle described, CSs need a "partnership" with parents in order to succeed and while each school put great efforts into doing so, they also expressed ongoing challenges to keep parents engaged. Interviewees described how they often had to manage expectations of parents and clarify misconceptions, as children attending a CS alone is not enough to maintain a HL. While many CS interviewees expressed largely positive relationships with parents, they also expressed that further commitment is often still needed and that the extent parents engage with their child's language learning at home can vary. This helps contextualize the ratings of bilingual children regarding their exposure to both their languages, and the variety seen in the project's sample regarding perceived proficiency.

The final theme, "Complementary schools as community centres", further describes the relationships CSs have with their communities, while also providing some additional context of the pandemic and how CSs came to adapt to this to offer support. While more inductively driven,

it was still important to highlight as it provides some prior insight to the challenges seen in the project's final timepoint (the next chapter 7), with attrition in the CS sample and a decrease in perceived HL proficiency. Interviewees detailed how CSs continue to face challenges to operate, which worsened during the pandemic, but that they had a collective sense of community and perseverance through these challenges. Some CSs highlighted how they helped others at this time, through donations of food and resources or through staying in touch online. Teachers linked back to their motivations to work or volunteer at a CS, not just to teach a HL, but to help others and give back to their communities and how this is also returned to them favorably. Interviewees all shared positive reflections of what CSs contributed to them, whether that be improving their employability, a wider support network, or helping them integrate into the country. These perspectives outlined how CSs operate as more than just educational spaces, which is something that could not have been implied from the first timepoint quantitative data alone, and captures the personal connections many feel to these settings.

6.7.2 Insights from Mainstream School Interviews

While interviews with school staff and parents from non-CS settings were more varied in perspectives and experiences, there were still some common themes identified that linked back to the project's research questions. The first theme outlined the approaches the primary schools in this project took towards bilinguals and their language development. Interviewees reflected on their own language experiences and beliefs, and shared a common perspective that with the right support, language should not be a barrier for a child to succeed in mainstream schooling. As school staff were reflecting on their roles supporting EAL students, discussions revolved

largely around supporting children's English development. Despite noting challenges with this, interviewees agreed that with exposure to the language children do make progress, as also reflected on by a parent who didn't see her child learning English as a challenge. School staff expressed wanting to understand more about children's linguistic backgrounds, their circumstances and home environment, and recognized that many factors needed to be considered in supporting bilingual learners, including the impact of the pandemic on their wellbeing and development. This gives further insight into bilingual's experience in mainstream schooling and can help explain why the majority of the project's sample considered English their stronger language. Furthermore, as schools struggle to gather information on children's HL, it could help explain why children who don't attend CSs show less proficiency and focus largely on their English.

The second theme identified outlined the common ways schools tried to communicate and engage with parents, but how they all expressed this as a key challenge in supporting bilingual learners. School staff shared a great number of efforts in trying to engage parents in their child's learning, including the use of translation services, online resources, parent evenings, events, and workshops. Nonetheless, they expressed how many factors still act as obstacles for efficient engagement, notably parents not knowing how to best support their child's progress, a lack of time, or not being given accurate information on a student's background. The parent interviewed did feel she engaged with her child's learning at home, and would speak to other parents, but otherwise did not engage more closely with the school particularly about her children's HL. The stigma behind having a HL, and

having an EAL label, was mentioned in one school staff interview as she described how parents may sometimes believe disclosing a HL puts them at a disadvantage. These perspectives are important context to this project's findings, as while CSs did still express challenges in parental engagement, they are able to have close and supportive relationships within the same larger linguistic community. It highlights the challenge primary schools face when trying to support a diverse student body, and why collaboration between CS and non-CS settings could be worthwhile.

Despite these challenges, the third theme identified described the positive beliefs interviewees had on bilingualism, and how each school showed a desire to be inclusive of the many different languages of their students. Some schools already had some initiatives in place, such as having days to celebrate different cultures, the use of bilingual dictionaries, and a buddy system, but all expressed the need to integrate and embrace children's HL more into school life. This was further reflected in their willingness to learn more about CSs, and seeing them as something positive when asked about them in interviews. This helps explain how children who didn't attend CSs still felt positive about their ethnic identities, rating them closely to their national identity, but also highlights how there is opportunity to do more with schools and bridge their home and school life further.

Finally, the fourth theme explains the common limitations interviewees found when it came to supporting language learners. Some of what the school staff emphasized included a lack of time, funding, resources, support, and training. Interviewees clearly did want to support bilingual learners more but felt restricted at times in doing so. This was also linked to experiences shared by school staff and the

parent, of children ultimately losing much of proficiency in their HL as they got older. This aligns with previous research, particularly on second generation children, and gives wider context to the barriers bilinguals face in maintaining their HL, and therefore the need for settings like CSs.

6.7.3 Linking Themes to Quantitative Results

Following the summary of the themes identified in CS and non-CS settings, Table 21 below consolidates some of the quantitative results from the project's first timepoint with bilingual children, and how it links to the themes in this chapter.

Table 21. *Summary of complementarity between qualitative and quantitative findings*

Quantitative Results	Qualitative Interviews	How Qualitative Findings Helped to Explain Quantitative Results
• CS-attendees reported higher perceived HL proficiency compared to non-attendees, despite not showing more overall perceived exposure to their HL	• CSs placed importance on maintaining a HL, while recognizing it is challenging to do so • CSs placed an emphasis on parental engagement • Mainstream schools face challenges in parental engagement	• CS school staff and teachers relay the benefits of learning a language to students and encourage them • CSs engagement with parents helps bolster exposure to HL • CSs relay to parents the importance of support for language learning at home • Non-CS attendees may be getting more exposure to

	and shortcomings in the wider educational system	HL at home that schools are not aware of or engaging with, and there are limitations to how much this can be supported
• CS attendance was found to uniquely contribute to ethnic identification in regression model	• CSs emphasize that a language is linked to its culture • CSs act as community centres, not just educational spaces	• CSs embed culture into their curriculum and bilinguals have more opportunities to explore their ethnic identity • Bilinguals in CSs become part of a wider linguistic community, with positive and supportive relationships
• CS attendees showed unique positive associations between ethnic and British	• CSs emphasize that a language is linked to its culture	• CS attendees are given opportunities to explore

- identities, and between HL and British identity

- CS-attendees and non-attendees did not significantly differ in their identities, both showing positive associations between each language's proficiency and its respective identity

- CSs act as community centres, not just educational spaces

- Mainstream school staff showed a desire to be inclusive of languages

- their identities amongst similar peers

- The wider community of a CS may be conducive towards bicultural adaptation

- Primary schools in this project, in a multicultural borough, allow for students to explore both their identities and encourage students to embrace them

- English proficiency positively and significantly associated with competences, particularly for non-attendees

- Mainstream schools saw understanding of and support for language development, as important

- Mainstream schools put great effort into helping bilinguals obtain a proficient level of English and assess them on this

6.7.4 Limitations and Implications for Future Research

The interviews conducted have allowed for a deeper understanding of this project's initial quantitative findings and settings, but there are some limitations. While the roles of parents and teachers were not so easily separated for some interviewees, which allowed for important perspectives to emerge, it would have nonetheless been beneficial to have more parent interviews to draw from, particularly from the primary school sample. It's also important to emphasize that the interviews took place during the pandemic, which was an uncertain and disruptive period for many and this would have undoubtedly affected interviewees attitudes and perceptions. Themes therefore also revolved around the many challenges schools and families were facing, not necessarily unique to the pandemic, but reflecting a period of instability. It would be worthwhile to conduct further interviews within these settings now that some of these uncertainties have dissipated, and certainly focus groups if parents do show more interest.

As the bilingual children of this project get older, it would also be beneficial to add to this qualitative work with their own perspectives and experiences. While this has been done in previous research (Lam et al., 2019; Archer, Francis, & Mau, 2010), the longitudinal nature of this project and its variety of communities and languages means that it would allow for an extensive and unique capture of bilingualism and CSs in Newham. Some of the topics raised in this qualitative study do provide scope to be explored further and have implications for improving educational practice and support for language learning. The implications of this will be discussed further in the final chapter of this thesis.

Chapter 7: Final Timepoint Quantitative Findings on Developmental Outcomes

This chapter will present and discuss the findings from the final quantitative time-point of this project, as bilingual children were revisited after schools resumed fully from lockdowns. This will begin with an exploration of the sample demographics and trends at this time-point, followed by analyses of cognitive and social developmental outcomes, concluding with predicting change across time-points. The final time-point also included some additional measures, highlighted in the methodology chapter (Chapter 3), to try and gauge the impact of the pandemic on those measures as well as the additional educational measure as another outcome.

7.1 Study's Sample Demographics Revisited Across CS/Non-CS groups

A total of 90 (52 male, 38 female), out of the original 153, bilinguals were revisited, with this drop being due to many of the CS pupils not returning to language classes while the settings struggled to reopen and kept students attending classes online since the pandemic. A total of 19 (13 male, 6 female) children across four complementary schools were revisited, 8 of whom were seen at online sessions. This was a significant decrease from the initial 73 CS children, as only two (Russian and Gujarati) of the initial five CSs were able to return to face-to-face classes as they had their own premises or reached an agreement with a school. The other three CSs planned to go back into face-to-face sessions from school premises in September 2022 or later, as permissions to return to schools had been challenging and delayed. The schools were able to successfully set up online sessions and obtain parental cooperation. However, online data collection could only include the social measures in the form of the Qualtrics questionnaire, as well as the naming task, while the remainder of the cognitive measures could not be adapted for online data collection. This means that any CS/non-CS comparisons on the performance in the cognitive tasks were limited at this time-point, which will be discussed later on in this chapter.

In contrast, most (71; 39 males, 32 females) of the children across the four mainstream primary schools, out of the initial 80, were revisited in-person following the necessary ethical approval and adhering to Covid-19 guidelines. These sessions could be completed following the same procedure as that used before the pandemic, and all measures could be administered. The summary of the final time-point CS and non-CS sample is also displayed in the Methodology Chapter (see Table 6), alongside the languages spoken amongst the groups (Table 7,8, & 9). As explored in the previous Chapter 6, the drop of participants in the CS sample only further exemplifies the struggles CS settings faced during the pandemic to resume classes and keep their communities engaged.

Due to the unequal sample numbers, particularly for the cognitive measures, detailed comparisons between groups on all measures will not be the sole focus of this chapter, rather analyses will also focus on revisiting sample trends and predicting timepoint changes. Some initial comparisons were still made, however, to give an idea of sample differences at this time-point and maintain consistency, and in consideration of recent research that has shown that the use of ANOVA is still valid on non-normal data and unequal sample sizes (Blanca et al., 2017).

The sample's characteristics mentioned here in more detail, are also summarized in the Methodology chapter indicating any significant differences (Table 10 and discussed below). At this timepoint, the children were aged between 6 and 12 years (M_{non-CS} = 9.53, SD = 1.58; M_{CS} = 8.59, SD = 1.31), and unlike in the first time-point, age was found to significantly differ between the groups, with the CS group being older [$F(1,89)$ = 7.03, p=.009]. The CS sample were initially more affluent but were not in this timepoint (M_{non-CS} = 5.49, SD = 1.61; M_{CS} = 5.42, SD = 2.48) with a smaller sample, and the overall average Family Affluence Score was subsequently slightly lower than the first time-point (M^{T1}= 6.04, M^{T2}= 5.47). Note that one question from the scale was omitted in the FAS as it asked how many holidays were taken in the past year, which could not be applicable due to the lockdowns that resulted from the pandemic and the disruptions that were still occurring

during data collection. When this same question was taken out from the first timepoint family affluence scores, adjusted in Table 22 on the next page, no significant difference was found in family affluence between the groups [$F(1,88) = .02$, $p=.891$]. Table 22 below also displays the demographics, self-rated language proficiency and exposure ratings for both time-points to further indicate any changes to the sample. ANOVA group comparisons for all measures included age and family affluence as covariates, in line with previous analyses, and as shown on the table with associated F values.

Table 22. *Sample demographics & mean English and HL self-rated proficiency and exposure ratings of CS-attendees and non-attendees across both time-points (standard deviations in brackets)*

		Timepoint 1		Timepoint 2		F
		CS(N=73)	Non-CS(N=80)	CS(N=19)	Non-CS(N=71)	
	Age	6.77 (1.45)	6.79 (1.21)	9.53(1.58)	8.59(1.31)	**7.03***
	Family Affluence (Adjusted)	5.73 (1.94)	4.33 (1.67)	5.42(2.48)	5.49(1.61)	.02
	School Adjustment	/	/	17.36(2.20)	17.33(2.45)	.001
	Overall English Proficiency	4.46(0.47)	4.26(0.62)	4.58(0.46)	4.31(0.62)	1.37
Proficiency	Speaking	4.56 (0.60)	4.40(0.85)	4.58(0.61)	4.41(0.73)	.86
	Understanding	4.49 (0.75)	4.25(0.88)	4.68(0.48)	4.39(0.71)	1.37
	Reading	4.44 (0.87)	4.34(1.03)	4.63(0.76)	4.39(0.77)	.86
	Writing	4.34 (0.80)	4.03(0.99)	4.42(0.69)	4.20(0.77)	.36
	Overall English Exposure	4.06(0.56)	3.99(0.49)	3.95(0.35)	3.95(0.61)	.09
Exposure	Friends	4.52 (0.78)	4.80(0 .46)	4.58(0.61)	4.68(0.69)	1.14
	Family	3.14 (1.22)	2.85(1.34)	3.16(0.96)	3.13(0.93)	.02
	TV/Radio	4.14 (1.05)	3.89(1.21)	4.05(0.71)	3.92(1.025)	.01
	Reading	4.45 (0.67)	4.43(0.78)	4.00(0.67)	4.20(0.87)	.34
Proficiency	**Overall HL Proficiency**	3.81(0.70)	3.41(0.82)	**3.62(0.80)**	**2.91(0.82)**	**10.97****
	Speaking	4.05(0.93)	4.03(1.08)	3.79(0.79)	3.59(0.98)	.05

Understanding	4.14(0.86)	4.11(0.97)	4.21(0.92)	3.89(1.05)	.01
Reading	3.36(1.20)	2.76(1.50)	**3.16(1.17)**	**2.24(1.30)**	**8.08***
Writing	3.70(1.12)	2.75(1.43)	**3.32(1.06)**	**2.04(1.28)**	**13.61***
Overall HL Exposure	3.31(0.76)	3.33(0.70)	**3.21(0.54)**	**2.77(0.65)**	**7.11***
Friends	3.01(1.33)	2.69(1.49)	**2.42(0.96)**	**1.77(0.93)**	**7.50***
Family	4.40(0.94)	4.60(0.63)	4.37(0.68)	4.35(0.96)	.03
TV/Radio	2.77(1.39)	3.31(1.40)	3.00(0.94)	2.94(1.19)	.09
Reading	3.07(1.16)	2.74(1.34)	**3.05(0.91)**	**2.13(1.19)**	**12.56***

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

At this timepoint 60 were born in the UK, and the other 30 moved to the UK at a young age (CS UK born % = 73.7, N = 14, non-CS UK born % = 64.8, N = 46). This sample, still mostly second-generation speakers, largely considered English as their stronger language (English mean proficiency$_{non-CS}$ = 4.31 ; English mean proficiency$_{CS}$ = 4.58), with the average overall self-rated English proficiency staying largely the same as the first timepoint (M^{T1}= 4.35, M^{T2}= 4.36), as well as group and average exposure scores (English mean exposure$_{non-CS}$ = 3.95; English mean exposure$_{CS}$ = 3.95; M^{T1}= 3.99, M^{T2}= 3.93). Like in the first timepoint, no significant differences are seen in English proficiency or overall exposure between the groups. Almost all of this sample at this timepoint also rated their English proficiency higher than their HL (N = 86), with just four participants rating their HL proficiency slightly higher than their English. Age and FA were not found to significantly affect overall perceived English proficiency or exposure, although more specifically, age was found to have a significant effect on the amount of English exposure with friends [$F(1,85)$=4.16, p=.044], and FA was found to have a significant effect on the amount of English exposure with family [$F(1,85)$=6.94, p=.010]. Post hoc analyses revealed that older children

reported more exposure to English from friends, and more affluent children reported less exposure to English from family.

More change was seen with perceived heritage language (HL) proficiency (HL mean proficiency$_{non-CS}$ = 2.91; HL mean proficiency$_{CS}$ = 3.62; M^{T1}= 3.60, M^{T2}= 2.97), with children rating themselves less proficient at this timepoint, but CS attendees still showing significantly higher perceived HL proficiency compared to non-attendees. This difference, like in the first timepoint, was driven by differences in literacy, as a significant difference was found between the groups when comparing perceived proficiency in HL reading and writing. This is despite the decrease from timepoint in HL proficiency within the CS group. Both groups also reported less exposure to the language (HL mean exposure$_{non-CS}$ = 2.77; HL mean exposure$_{CS}$ = 3.21) (M^{T1}= 3.32, M^{T2}= 2.76) compared to the first timepoint. However, CS attendees at this timepoint reported higher HL exposure compared to non-attendees, particularly getting more exposure to their HL from friends and reading. Unlike the first timepoint, non-attendees did not report more exposure to their HL than non-attendees, only showing similar ratings in their family HL exposure and TV/radio HL exposure. While age did not have any significant effects on any HL measures, FA was found to have a significant effect on perceived HL proficiency [$F(1,85)$=11.20, p=.001] across all aspects, and HL exposure [$F(1,85)$=7.78, p=.007], particularly exposure to the HL from family, friends, and reading. Post hoc analyses revealed that those whose families were more affluent, reported more exposure to and proficiency in their HL.

Table 22 also presents the average school adjustment scores for both groups, which were based on individual teacher ratings on the short Secondary Transition Adjustment Research Questionnaire (STAR; Rice et al., 2015). While Key Stage Results could not be collected due to the exams not taking place because of the pandemic, these ratings still gave a good indication of how teachers felt the child would do in the next academic year, with a rating for how they would settle socially with peers and teachers and perform academically in relation to the new routine. These ratings also

allowed CS teachers' judgements to be considered and for more data to be collected across the sample on their education. No significant difference was found between the groups in these scores. Age and FA were also not found to affect these scores.

7.2 Complementary School Context and Effects of the Covid-19 Pandemic

As part of the final timepoint, a few additional questions were added to understand the effect of complementary schools on language learning and to further complement the interviews with staff and parents at these settings. A few questions were also added to understand the effect of the pandemic and any differences in schooling between participants.

When asked how much attending a CS helped them learn their heritage language, on a scale of 1 (not at all) to 5 (a lot), CS attendees averaged close to "A good amount" (M = 4.58, SD= 0.96). In terms of CS attendance, from 1 (rarely) to 4 (every week), the sample averaged at around the mid-point of the scale (M = 2.94, SD= 1.03), attending "most weeks", during the pandemic.

All children, including CS and non-CS attendees, were also asked to estimate how many hours they had been spending to study their heritage language which varied across the sample. This question was added at this timepoint due to the concurrent pandemic, and to get further information as to how language and home practices might have differed between the groups at that time. The CS sample reported an average of 2.68 hours studying the language (SD=1.90), while the non-CS sample reported an average of 1.03 hours (SD=1.95), and this difference between the groups was found to be significant (F(1,84) = 12.30, p=.001).

Data was also collected on the different activities children took part in. Regardless of setting, most children across the sample were involved in many afterschool or weekend activities largely revolving around sports, religious practices, music, or tutoring (CS %=57.9, N =11; non-CS %=63.4, N = 45). Only a small subsection of each sample said they took part in no other activities after school

hours (CS N = 8, Non-CS N = 26). This question was added following the first time-point, and alongside the parent and teacher interviews, to further explore the contexts of the two groups and following feedback from one of the project's stakeholders (NRCSE). In preliminary analyses, no differences were found between the groups (Some activities N = 56, No activities N = 34) across the measures, so this was not included as a factor in further correlational or regression analyses.

During lockdown most of the sample attended schooling online (N= 79), with a minority still attending school in-person as their parents were considered keyworkers (N = 11; CS%=10.5, N=2, non-CS%=12.7, N= 9) albeit not following the regular schedule and routine of classes. From those that did attend schooling online, most students reported receiving help at home from parents or other family members (e.g., older siblings) or extra tuition (CS%=57.9, N = 11, non-CS%=53.5, N = 38), but many also did express being largely left alone to complete schoolwork, not receiving any additional help (CS=8; non-CS=33). When comparing these groups (No help N= 42, Family help N= 48) preliminarily across the measures in this timepoint, no significant differences were found. Mode of school attendance (Online schooling N= 79, In-person schooling N=11), was also not found to have a significant effect on the measures in this timepoint.

7.3 Results: Cognitive Development – Final time-point Outcomes

Average scores across the cognitive measures at this timepoint, alongside the last timepoint, are displayed in Table 23 below. This includes F values, as CS-attending and non-attending groups were compared across all measures through a multiple ANCOVA, entering age and family affluence as covariates.

Table 23. *Mean scores across cognitive measures of CS-attendees and non-attendees for final timepoint, in comparison to first timepoint (standard deviation in brackets)*

	Timepoint 1		Timepoint 2		
Scale	**CS(N=73)**	**Non-CS(N=80)**	**CS(N=19)**	**Non-CS(N=71)**	**F**
Flanker Score	102.14(10.98)	103.54(14.53)	96.13(19.54)	98.13(13.29)	.36
DCCS Score	100.11(13.27)	95.94(14.47)	93.13(18.05)	96.60(13.25)	.56
Verb Naming Accuracy (%)	66.19(15.92)	64.00(12.38)	74.19(10.05)	66.49(10.22)	3.59
Noun Naming Accuracy (%)	87.24(10.41)	85.99(8.56)	89.22(6.17)	85.78(7.99)	2.53
Verb Naming Reaction Time (ss.00)	00:01.14(00:00.01)	00:01.12(00:00.02)	00:03.59(00:00.85)	00:03.41(00:00.75)	.16
Noun Naming Reaction Time (ss.00)	00:01.18(00:00.01)	00:01.17(00:00.01)	00:02.50(00:00.48)	00:02.31(00:00.51)	.01
Verb Naming Total Time (mm:ss.00)	03:10.79(01:28.11)	02:50.44(00:33.20)	02:30.74(00:35.68)	02:23.86(00:31.46)	.15
Noun Naming Total Time (mm:ss.00)	02:12.36(00:30.76)	02.12.97(00:23.11)	01:44.95(00:20.35)	01:39.32(00:24.68)	.17

No significant differences were found between the groups across all the measures, including reaction time in the naming task, which CS attendees were significantly slower at in the first time-point. While CS attendees are still showing longer mean reaction times, these were not found to be significantly different to non-attendees and should nonetheless be interpreted with caution because of the lower numbers of the CS sample at this final timepoint as well as the change in reaction time measurement. Similar to the first-timepoint, the CS participants scored higher in both the noun and

verb naming tasks, but not significantly higher than their non-CS counterparts. It should be noted that the average age of this smaller CS group is slightly higher (M_{CS} = 9.53, M_{nonCS} = 8.59) which certainly needs to be considered, even with age added as a covariate in these comparisons.

Similar to the first timepoint, age was understandably found to significantly affect scores for nouns and verbs [$F(1,66)$=15.04, p<.001; $F(1,66)$=20.73, p<.001], as well as reaction time for noun and verb recall [$F(1,66)$=7.86, p=.007; $F(1,66)$=4.41, p=.040], and the duration for noun recall [$F(1,66)$=4.81, p=.032], with older children performing better. Unlike the first timepoint, FA was not found to affect performance on the flanker or card sort task, but it did affect reaction time and duration for verb recall [$F(1,66)$=4.22, p=.044; $F(1,66)$=5.08, p=.028], with those who were more affluent being quicker in the task.

7.3.1 Comparing Bilinguals Based on Proficiency

As in the first time-point of quantitative data collection (Chapter 4), participants were also grouped based on their proficiencies. The same procedure was followed to obtain an indicative score of "balanced bilingualism", or essentially the degree to which participants were bilingual, by subtracting the perceived proficiency scores for English and HL from one another for each participant. As such, a smaller difference between the scores would mean participants viewed themselves as similarly proficient in both their languages. To further ascertain the role of proficiency on the cognitive scales, participants were grouped based on this difference, with a difference between proficiencies below 1 being considered as more balanced (N= 28), while a difference of 1 or above was considered less balanced (N= 62). Unlike in the first time-point, participants were not as equally split, with bilinguals rating their English as higher in proficiency and their HL as lower in proficiency in this final time-point, and therefore being more dominant in English.

Table 24 below details the proficiency scores and measures for both proficiency groups. There was a higher percentage of CS attendees that considered themselves more closely proficient in their languages, but this of course is amongst a smaller subsample at this timepoint (More balanced CS attendees N = 9, % = 47%; More balanced non-CS attendees N = 19, % = 27%). This is a bigger difference than in the first time-point and reflects the bigger drop in HL amongst non-attendees as they got older and went through the pandemic. The groups were not found to significantly differ in age or FA in an independent samples T-test, but these factors were stilled added as covariates for comparisons for consistency, as discussed below.

Table 24. *Mean perceived English and heritage language proficiency scores and scores across cognitive outcomes for more and less balanced bilinguals for final timepoint (St. dev.)*

		More Balanced Group (N=28)	Less Balanced Group (N=62)
Age		8.79(1.40)	8.79(1.43)
FAS		5.89(1.89)	5.28(1.76)
Overall English LEAP Score		**45.25(7.83)**	**48.48(4.72)**
Proficiency	Speaking	4.11(0.83)	4.60(0.59)
	Understanding	4.29(0.60)	4.53(0.70)
	Reading	4.14(0.97)	4.58(0.62)
	Writing	4.04(0.79)	4.34(0.72)
Exposure	Friends	4.61(0.69)	4.68(0.67)
	Family	2.71(0.85)	3.32(0.90)
	TV/Radio	3.68(1.09)	4.06(0.89)
	Reading	4.00(0.72)	4.23(0.88)
Overall HL LEAP Score		**41.57(8.80)**	**32.35(6.71)**
Proficiency	Speaking	4.07(0.78)	3.44(0.95)
	Understanding	4.43(0.69)	3.74(1.09)
	Reading	3.57(1.17)	1.92(1.05)
	Writing	3.50(1.29)	1.77(1.00)
Exposure	Friends	2.39(1.20)	1.69(0.76)
	Family	4.61(0.74)	4.24(0.95)
	TV/Radio	3.00(1.19)	2.94(1.13)
	Reading	3.21(1.20)	1.92(0.96)

Flanker Score (Attentional Control)	95.91(10.97)	98.76(14.98)
Card Sort Score (Executive Functioning)	94.83(13.70)	96.84(13.80)
Verb Naming Accuracy (%)	68.34(11.00)	68.07(10.54)
Noun Naming Accuracy (%)	86.77(8.92)	86.42(7.23)
Verb Naming Reaction Time (ss.00)	00:03.56(00:00.74)	00:03.40(00:00.78)
Noun Naming Reaction Time (ss.00)	00:02.48(00:00.47)	00:02.30(00:00.52)
Verb Naming Total Time (mm:ss.00)	02:29.72(00:31.26)	2:23.58(00:32.97)
Noun Naming Total Time (mm:ss.00)	01:44.36(00:19.65)	1:38.98(00:25.32)

The "more balanced" and "less balanced" proficiency groups were compared across all main variables using a multivariate ANOVA, controlling for age, FA, and whether they attend complementary schooling. As was found in the first time-point, significant differences were also found in this time-point on measures of heritage language proficiency, with more "balanced" bilinguals showing significantly higher HL LEAP scores ($F(1,84) = 21.94$, $p < .001$), alongside having higher perceived proficiency scores across all aspects of the scale ($F(1,84) = 38.89$, $p < .001$), and reporting being more exposed to their heritage language ($F(1,84) = 9.71$, $p = .003$), particularly through reading and friends. However, unlike the first timepoint the groups were also found to significantly differ in the English measures, with the less "balanced" bilinguals showing significantly higher English LEAP scores ($F(1,84) = 8.52$, $p = .004$), rating their English proficiency higher ($F(1,84) = 18.54$, $p < .001$), particularly in speaking, reading, and writing, and reporting more exposure to the language ($F(1,84) = 9.24$, $p = .003$), particularly through family and media.

Also, unlike the first timepoint, no significant difference was found between these proficiency groups in the card-sort scores, or any of the other cognitive measures. The more "balanced" group in this time-point actually had slightly slower scores than the less "balanced" group, and overall bilinguals at this stage showed slightly poorer performance on the tasks compared

to their age (scores from the app are standardized by age; a score of 100 indicates performance that was at the average for the participant's age).

7.3.2 Correlations: Language Proficiency and Exposure and Cognitive Outcomes

To further explore trends within the data, two-tailed partial correlations, controlling for age and FA, were conducted to examine the associations between language proficiency and exposure and cognitive outcomes across the sample at this timepoint (see Table 25 below). Split correlations were not included in this analysis due to only some of the CS sample being able to complete the flanker and DCCS task in-person (N=11, 61% of the CS sample), as online sessions could only include the naming task.

Table 25. *Two-tailed partial correlations, controlling for age and FA, between English and heritage language proficiencies and exposure, performance across cognitive measures, and teacher ratings, for whole sample*

	English Proficiency	English Exposure	HL Proficiency	HL Exposure	Flanker Task	DCCS Task	Verb Naming Accuracy(%)	Noun Naming Accuracy(%)	Verb Naming RT	Noun Naming RT	Verb Total Time	Noun Total Time
EP	1.00	**.679***	**.301***	**.340***	-.008	-.047	.289*	.149	-.187	**-.287***	-.178	-.181
EE		1.00	.055	.010	-.010	-.089	.070	-.083	-.229	-.110	-.224	.001
HLP			1.00	**.635***	-.104	-.065	.061	.244	.275	-.073	.267	-.096
HLE				1.00	.015	-.071	.031	.215	.141	-.109	.144	-.223
FT					1.00	.020	-.002	-.105	-.127	-.064	-.136	-.073
DCCS						1.00	-.206	.065	-.060	-.159	-.042	-060
VNA							1.00	**.499***	-.286*	**-.429***	**-.283***	-.265
NNA								1.00	.195	**-.391***	.202	**-.284***
VNRT									1.00	**.455***	**.979***	**.318***
NNRT										1.00	**.460***	**.698***
VTT											1.00	**.321***
NTT												1.00
TS												

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

Across the sample, language proficiency was positively correlated with the respective exposure (English proficiency with English exposure and HL proficiency with HL exposure). Unlike in the project's first time-point, HL proficiency and exposure did not significantly correlate with any of the naming task measures at this time-point, while English proficiency was negatively correlated with reaction times (those with higher English proficiency are quicker in the naming task).

For the cognitive tasks, flanker and DCCS performance did not show any significant correlations with other factors or measures. As for the naming task, accuracy and reaction time measures for nouns and verbs correlated with one another accordingly similar to the first time-point results. Noun naming reaction time was found to negatively correlate, and noun naming accuracy to positively correlate, with transition scores (teacher ratings). This suggests students who were performing better in the English naming task, an indicative measure of vocabulary, also got better ratings from their teachers which considered academic and social behavior. It should be noted that eight participants (from the CS sample) did the naming task online, and although the same procedure was followed in timing the task, it is nonetheless a limitation in interpreting the findings.

7.3.3 Predicting Cognitive Outcomes

Based on the correlational relationships observed hierarchical regressions were conducted to better examine and predict the contribution of language proficiency and exposure and background factors of age and FA towards verb and noun task performance at this final timepoint. The models will be discussed in turn, and the values for each model have also been summarized in Table 26 at the end of this subheading.

To predict noun reaction time, a three-stage hierarchical multiple regression was conducted, with age and FA in the first block, HL and English proficiencies and exposure in the second, and CS (attendance/non-attendance) in the third. As the collinearity statistics (tolerance=.45-.98, VIF=1.02-2.20) were within accepted limits, multicollinearity was not deemed to be an issue. Age and FA explained 12% of the variance in reaction time, which was significant (R^2=.124; F(2,78)= 5.52, p=.006). Introducing language proficiencies and exposure to the model explained a further 10% of the variance, but this change was not significant. Introducing CS attendance to the model explain a further 6% of the variance, and this change was significant (F change (1,73)= 6.17, p=.015). The strongest significant unique predictor in the model was English proficiency, followed by family

affluence, age, and CS attendance (values summarized in Table 26 at the end of this subheading). The final multiple regression model with all predictors explained 29% of the variance in noun reaction time, R^2=.285, F(7,73) = 4.17, p=.001.

The same procedure was followed to predict verb reaction time through a three-stage hierarchical multiple regression. Age and FA explained similarly explained 12% of the variance in reaction time, which was significant (R^2=.120; F(2,78)= 5.34, p=.007). Introducing language proficiencies and exposure to the model explained a further 5% of the variance, but this change was not significant. Introducing CS attendance to the model explained just 2% of the variance, which was not deemed significant. The strongest unique predictors of verb reaction time in the final model were family affluence and age. The final multiple regression model with all predictors explained 19% of the variance in verb reaction time, R^2=.187, F(7,73) = 2.40, p=.029.

To predict performance in noun naming accuracy (%), the three-stage regression model contained the same first three blocks as above. Age and FA explained 18% of the variance in scores, which was highly significant (R^2=.179; F(2,84)= 9.17, p<.001). Introducing language proficiencies and exposure to the model explained an additional 9% of the variance, but this change was not significant. Adding CS attendance to the model did not explain any further variance. The strongest unique predictors in the final model were age and English proficiency. The final multiple regression model with all predictors explained 27% of the variance in noun naming accuracy, R^2=.268, F(7,79) = 4.13, p<.01.

To predict performance in verb naming (accuracy %), the two-stage regression model contained the same blocks as above. Age and FA explained 29% of the variance in scores, which was highly significant (R^2=.287; F(2,84)= 16.91, p<.001). Introducing language proficiencies and exposure to the model explained an additional 7% of the variance, but this change was not significant. Adding CS attendance to the model explained a further 2% of the variance, but this was

not found to be significant. The strongest unique predictors of verb naming accuracy in the final model were age and English proficiency. The final multiple regression model with all predictors explained 38% of the variance in verb naming accuracy, R^2=.378, F(7,79) = 6.86, p<.01.

Table 26. *Summary table of regression models predicting cognitive outcomes in final timepoint*

Measure	Noun Reaction Time				Verb Reaction Time				Noun Accuracy				Verb Accuracy			
Block	B	SE	β	t	B	SE	β	t	B	SE	β	t	B	SE	β	t
Demographic	**R²Δ=.12**		**FΔ=5.52****		**R²Δ=.12**		**FΔ=5.34****		**R²Δ=.18**		**FΔ=9.17*****		**R²Δ=.29**		**FΔ=16.91*****	
Age	**-.10**	**.04**	**-.27**	**-2.61***	**-.15**	**.06**	**-.29**	**-2.55***	**2.04**	**.57**	**.37**	**3.56****	**3.59**	**.72**	**.47**	**4.96*****
FA	**-.08**	**.03**	**-.28**	**-2.58***	**-.14**	**.05**	**-.33**	**-2.88****	-.37	.44	-.09	-.83	-.18	.56	-.03	-.31
Language	R²Δ=.10		FΔ=2.41		R²Δ=.05		FΔ=1.09		R²Δ=.10		FΔ=2.43		**R²Δ=.07**		**FΔ=2.26**	
English proficiency	**-.35**	**.11**	**-.43**	**-3.31****	-.21	.17	-.17	-1.20	**3.91**	**1.60**	**.31**	**2.45***	**5.29**	**2.01**	**.30**	**2.63***
HL proficiency	-.01	.08	-.02	-.14	.17	.14	.19	1.25	1.05	1.27	.12	.83	1.32	1.60	.11	.83
English exposure	.18	.11	.20	1.67	.05	.18	.04	.28	-1.78	1.64	-.13	-1.07	-2.50	2.06	-.13	-1.21
HL exposure	.07	.12	.09	.59	-.03	.19	-.03	-.18	-.23	1.71	-.02	-.14	-3.74	2.16	-.23	-1.73
Group	**R²Δ=.06**		**FΔ=6.17***		R²Δ=.02		FΔ=1.57		R²Δ=.00		FΔ=.00		R²Δ=.01		FΔ=2.34	
CS attending or non-attending	**-.33**	**.13**	**-.28**	**-2.49***	-.27	.21	-.15	-1.25	.03	2.00	.00	.01	-3.86	2.52	-.15	-1.53
Model total	**R²=.29, F(7,73)=4.17****				**R²=.19, F(7,73)=2.40***				**R²=.27, F(7,79)=4.13****				**R²=.38, F(7,79)=6.86*****			

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

7.4 Results: Social Developmental Final Time-point Outcomes

Similar trends can be observed at this time-point when looking at identification scores, with CS-attendees and non-attendees rating their British and ethnic identities at similar levels (Table 27 in the following page). As before, CS-attending and non-attending groups were compared across all measures through a multiple ANCOVA, entering age and family affluence as covariates. Age and FA, however, was not found to effect scores in these social scales.

Like the first time-point, no significant group differences were found in these identity ratings. Scores for both identities increased from the first time-point, and participants still scored their ethnic identity higher across the subscales. The CS sample at this time-point scored higher across all competencies compared to their non-CS counterparts, despite a general drop across competencies in the overall sample. CS attendees were found to score significantly higher than non-attendees on cognitive competence in this timepoint [$F(1,85)=4.21$, $p=.043$].

Table 27. *Mean scores across social measures of CS-attendees and non-attendees for final timepoint (standard deviation in brackets)*

		Timepoint 1		Timepoint 2		
Scale		CS(N=73)	Non-CS(N=80)	CS(N=19)	Non-CS(N=71)	F
Overall British Identity Score		**3.53(0.60)**	**3.48(0.63)**	**4.02(0.56)**	**3.96(0.61)**	**.66**
British	Degree of Identification	2.89(0.99)	2.96(1.02)	3.72(0.83)	3.78(1.12)	.01
	Pride	3.34(0.90)	3.15(0.97)	4.30(0.82)	3.98(1.05)	1.21
	Importance	3.11(0.89)	2.93(1.05)	3.66(1.09)	3.74(1.25)	.00
	Feeling	4.03(1.03)	4.05(1.03)	4.16(0.69)	4.07(0.80)	1.33
	Internalization	4.30(0.86)	4.33(0.86)	4.24(0.65)	4.23(0.57)	.29
Overall Ethnic Identity Score		**3.87(0.48)**	**3.98(0.42)**	**4.37(0.83)**	**4.44(0.49)**	**.34**
Ethnic	Degree of Identification	3.34(0.84)	3.41(0.81)	3.94(1.05)	3.93(1.07)	.01
	Pride	3.64(0.56)	3.61(0.70)	4.44(1.03)	4.62(0.79)	1.56

Importance	3.55(0.88)	3.60(0.78)	4.51(1.09)	4.45(0.95)	.01
Feeling	4.56(0.65)	4.70(0.58)	4.47(1.02)	4.59(0.67)	.133
Internalization	4.26(1.00)	4.58(0.74)	4.58(0.74)	4.58(0.41)	.54
Athletic Competence	18.16(3.48)	18.15(3.47)	17.95(3.92)	16.52(4.60)	1.17
Cognitive Competence	21.01(2.84)	20.11(3.39)	**19.74(4.84)**	**17.34(5.17)**	**4.21***
Social Competence & Acceptance	17.33(4.40)	17.56(3.73)	18.74(5.40)	16.18(4.73)	2.77

p<.05

7.4.1 Correlations: Language Proficiency and Exposure and Social Outcomes

To further explore trends within the data, one-tailed partial correlations, controlling for age and FA, were conducted to examine the associations between language proficiency and exposure and social outcomes across the sample at this timepoint (see Table 28 below), as well as between groups through split correlations (Table 29) to further understand any CS/non-CS differences.

Table 28. *One-tailed partial correlations, controlling for FA and age, between English and heritage language proficiencies and exposure, ethnic and British identities, perceived competencies, and teacher ratings*

	English Proficiency	English Exposure	HL Proficiency	HL Exposure	Ethnic Identity	British Identity	Athletic Competence	Cognitive Competence	Social Competence	Transition Score
EP	1.00	**.617*****	**.315***	**.332***	.128	**.318***	.174	**.323***	**.329***	.054
EE		1.00	.018	-.002	.117	.168	-.058	.084	.173	-.077
HLP		.	1.00	**.661****	**.427*****	.061	.172	**.279***	**.296***	..060
HLE				1.00	**.288****	.082	.054	-.041	.053	.095
EI					1.00	.028	-.144	.117	.266	.105
BI						1.00	.188	**.217***	.176	.069
AC							1.00	**.545*****	**.452*****	.079
CC								1.00	**.607*****	.178
SC									1.00	.095
TS										1.00

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

In terms of proficiency and exposure measures, English proficiency is seen again to be positively and moderately correlated with British identity, as well as HL proficiency with ethnic identity. Most competencies also showed positive correlations with both English and HL proficiencies.

Similar to the first time-point, British identity was found to positively correlate with perceived cognitive competences and all competencies once again correlated with one another.

When looking at group trends (CS/non-CS) through split correlations (Table 27 below), there are some key differences. For non-attendees, perceived English proficiency was found to significantly correlate with more measures, notably British identification, perceived social and

cognitive competences, as well as heritage language measures. For CS attendees, perceived English proficiency was only significantly correlated with perceived cognitive competence. Correspondingly, for CS attendees only, perceived HL proficiency was found to significantly correlate with perceived social competence, and HL exposure with teacher ratings on school adjustment and transition.

The groups also showed some differences in identity correlations, such that CS attendees uniquely showed a significant correlation between their ethnic identification and perceived social competence, while non-attendees uniquely showed a significant correlation between their British identification and perceived cognitive competence. While HL measures significantly correlated with ethnic identification for both groups, only non-attendees showed a signification correlation between perceived English proficiency and British identification. This is unlike the first timepoint, and CS attendees are also no longer showing a significant positive correlation between both their identities. These differences seem to reflect the changes in language use at the timepoint, and how these relates to identification as children got older.

Table 29. *One-tailed partial correlations, controlling for FA and age, between English and heritage language proficiencies and exposure, ethnic and British identities, perceived competencies, and teacher ratings split by CS attendees and non-attendees (CS-attending participants above the diagonal, non-attendees below the diagonal)*

	English Proficiency	English Exposure	HL Proficiency	HL Exposure	Ethnic Identity	British Identity	Athletic Competence	Cognitive Competence	Social Competence	Transition Score
EP		.282	.320	.201	.541	.371	-.017	.692*	.452	.213
EE	.648***		-.406	-.452	-.028	-.041	-229	.001	-.187	.249
HLP	.295*	.077		.651*	.696*	.149	-415	.507	.880**	.100
HLE	.323**	.049	.643***		.439	.370	-.592	.249	.470	.642*
EI	.126	.160	.451***	.358**		.038	-.332	.363	.903***	.299
BI	.328**	.191	.055	.052	.041		-.348	-.104	-.076	.235
AC	.187	-.035	.224	.085	-.102	.270		.581***	.539***	.173
CC	.292*	.107	.217	-.114	.090	.281*	.581***		.605***	.229
SC	.320**	.219	.185	-.023	.096	.229	.539***	.605***		.096
TS	.053	-.113	.055	.070	-.033	.066	.173	.229	.110	

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

7.4.2 Predicting Social Outcomes

Based on the correlations observed, hierarchical regressions were conducted to examine the contribution of language proficiency and exposure, and background factors of age and FA towards ethnic identity, British identity, and cognitive competence. The models will be detailed in turn, as well as the values of each regression summarized in Table 30.

For ethnic identity as the dependent variable, a three-stage hierarchical multiple regression was conducted, with age and FA in the first block, and HL proficiency and exposure in the second, and CS attendance (attending or non-attending) in the third. As the collinearity statistics

(tolerance=.49-.97, VIF=1.03-2.06) were within accepted limits, multicollinearity was not deemed to be an issue. Age and FA explained just 3% of the variance in ethnic identification, and this was not significant (R^2=.034; F(2,86)= 1.50, p=.230). Introducing HL proficiency and exposure explained an additional 14% of variance and this change was also significant (F change (2,84)= 8.21, p<.001). CS attendance explained a further 4% of the variance and this change was also deemed significant (F change (1,83)= 4.81, p=.031). The strongest unique predictor emerged as HL proficiency, followed by CS attendance. The final multiple regression model with all predictors accounted for 24% of ethnic identity's variance, R^2=.236, F(5,83)= 5.13, p<.001.

For British identity, a four-stage model contained age and FA in the first block, English proficiency and exposure in the second, CS attendance in the third, and the final block consisted of athletic and cognitive competences. Age and FA explained 4% of the variance in British identification but this change was not significant. The addition of English proficiency and exposure was significant, explaining an additional 7% of variance (F change(2,84)= 3.17, p=.047). Adding CS attendance did not significantly explain any further variance in the model. Adding athletic and cognitive competencies to the model only explained another 2% of the variance, and the change was not significant. The strongest unique predictor of British identity was age. The final multiple regression model with all predictors accounted for 12% of British identity's variance, R^2=.121, F(7,81)= 1.60, p=.149.

Finally, for cognitive competence, a five-stage model contained age and FA in the first block, English and HL proficiency in the second block, CS attendance in the third block, British identity in the fourth block, and athletic and social competences in the final block. Age and FA did not significantly explain any variance in cognitive competence, but introducing English and HL proficiency to the model explained 11% of the variance, and this change was significant (F change (2,84)= 5.29, p=.007). Adding CS attendance to the model explained a further 3% of the variance but this was not deemed significant. Adding British identity did not significantly explain any further

217

variance in the model. The final addition of athletic and cognitive competences explained 27% of the variance, which was highly significant (F change(2,80)= 18.16, $p<.001$). The strongest unique predictors of cognitive competence were therefore found to be social competence, athletic competence, and age. English proficiency was also an initial significant predictor when first entered into the model. The final multiple regression model with all predictors explained 41% of cognitive competence's variance, $R^2=.414$, F(8,80) = 7.06, $p<.01$.

Table 30. *Summary table of regression models predicting social outcomes in final timepoint*

Measure	Ethnic Identity				British Identity				Cognitive Competence			
Block	B	SE	β	t	B	SE	β	t	B	SE	β	t
Demographic	R²Δ=.03		FΔ=1.50		R²Δ=.04		FΔ=1.58		**R²Δ=.01**		**FΔ=.23**	
Age	.02	.04	.06	.57	**-.10**	**.05**	**-.24**	**-2.14***	**-.71**	**.34**	**-.20**	**-2.10***
FA	.01	.03	.02	.18	-.05	.04	-.14	-1.28	.02	.25	.01	.09
Language	**R²Δ=.16**		**FΔ=8.21****		**R²Δ=.07**		**FΔ=3.17***		**R²Δ=.11**		**FΔ=5.29****	
English proficiency					.17	.13	.17	1.31	1.47	.92	.17	1.60
HL proficiency	**.32**	**.09**	**.47**	**3.37****								
English exposure					.10	.13	.09	.75	-.27	.95	-.02	-.28
HL exposure	.04	.12	.04	.31								
Group	**R²Δ=.04**		**FΔ=4.81***		R²Δ=.00		FΔ=.33		R²Δ=.03		FΔ=2.63	
CS attending or non-attending	.33	.15	.23	2.19*	-.07	.16	-.05	-.42	-1.22	1.13	-.10	-1.08
Identity									R²Δ=.00		FΔ=.40	
British Identity									-.01	.78	-.00	-.01
Competencies					R²Δ=.02		FΔ=.67		**R²Δ=.27**		**FΔ=18.16*****	
Athletic					.01	.02	.08	.69	**.31**	**.11**	**.27**	**2.67****
Social					.01	.02	.07	.54	**.42**	**.11**	**.38**	**3.74*****
Model total	**R²=.24, F(5,83)=5.13*****				**R²=.12, F(7,81)=1.60**				**R²=.41, F(8,80)=7.06*****			

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

7.5 Predicting Timepoint 1 to Timepoint 2 Changes

To further understand changes in the cognitive and social outcomes over the two timepoints, language proficiency and exposure, and social and cognitive measures from timepoint 1 were subtracted from timepoint 2 (T2 – T1). These values, showing any positive or negative change between timepoints, were then averaged and are displayed below in Table 29 for language, social, and cognitive measures. This was done for the whole sample, as well as the CS and non-CS groups, to get an overall understanding of change in outcomes. CS-attending and non-attending groups were compared across all change measures through a multiple ANCOVA, entering age and family affluence (from the first time point, as a longitudinal sample) as covariates, with the F values and p value significance indicated in Table 29. Change in the measures was also analyzed across the sample using a repeated measures ANCOVA, with first timepoint age and family affluence as covariates, with the associated F values and p value significance similarly indicated below in Table 31. Change in reaction time and duration measures for the naming task were not included in these analyses due to the change in measurements between both timepoints.

Table 31. *Mean change across language, social, and cognitive measures between timepoint 2 and timepoint 1, for sample as a whole and CS attending and non-attending groups (standard deviation in brackets)*

Mean Difference in Measure Between T2 & T1 (T2-T1)

Change in Linguistic & Social Measures	CS	Non-CS	F	Overall Sample	F
Language Measures English Proficiency	0.17(0.58)	0.11(0.82)	.01	0.12 (0.77)	1.28
English Exposure	-0.18(0.68)	-0.03(0.78)	.07	-0.07 (0.76)	1.66
HL Proficiency	-0.39(0.78)	-0.51(0.97)	.56	-0.48 (0.93)	3.18
HL Exposure	-0.66(0.62)	-0.57(0.85)	1.50	-0.46 (0.82)	.97
British Identity Score	0.31(0.66)	0.55(0.73)	.04	0.50 (0.72)	2.11
Social Measures Ethnic Identity Score	0.47(0.82)	0.48(0.55)	.29	0.47 (0.62)	**5.07***
Athletic Competence	-0.84(4.45)	-1.59(4.98)	.02	-1.43 (4.86)	**8.18****
Cognitive Competence	-0.16(4.30)	-2.57(4.92)	.14	-2.05 (4.87)	**3.90***
Social Competence & Acceptance	0.26(3.86)	-1.43(5.08)	.19	-1.06(4.87)	**8.72****
Cognitive Measures Flanker Score (Attentional Control)	-5.38(17.75)	-5.13(16.70)	.03	-5.16 (16.69)	1.38
DCCS Score (Executive Functioning)	-6.13(9.83)	1.30(16.02)	3.16	0.51 (15.60)	.74
Verb Naming Accuracy (%)	6.75(12.13)	0.90(10.20)	**6.79***	2.19 (10.85)	**24.07*****
Noun Naming Accuracy (%)	3.54(9,36)	-0.63(7.52)	2.75	0.29 (8.10)	1.23

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

As can be seen in Table 31 above, the sample as a whole showed a decrease in their HL proficiency, and slight increase in their English proficiency from T1 to T2. They also reported a decrease in exposure to their HL, and a very slight decrease in exposure to English which could be attributed to disruptions of the pandemic. Ratings of both British and ethnic identification increased over time, but it was ethnic identification that showed a significant increase across timepoints as children got older. Perceived competencies were found to significantly decrease over time, most notably cognitive competence. Age was expectedly found to significantly interact with this effect $F(1,84) = 7.28$, $p=.008$. CS attendees did, however, uniquely, show an increase in their social competence, however, no significant differences were found between the groups in the change in social measures.

Conversely, for the cognitive measures, participants performed less well in the flanker task at the second timepoint but did slightly improve at the card-sort task. Accuracy in the naming task did increase slightly, despite the task at the second timepoint having additional words with higher age of acquisition, indicating some English vocabulary growth. CS attendees showed significantly more improvement in the accuracy scores in the naming tasks but were still slower than non-attendees. When comparing CS-attending and non-attending groups on these changes, only change in verb accuracy was seen as significantly different, with CS attendees showing a larger increase, and the sample as a whole doing significantly better on the verb naming task. While the naming task was included in these initial analyses, it won't be included in further regression analyses to predict performance due to the concerns of comparability between the two timepoints. However, performance on the flanker task and the DCCS task is far more comparable, following the same procedure and resulting in age standardized scores. Non-attendees showed more improvement in the card-sort task, improving from the first timepoint relative to their age, while CS attendees did not show improvement on the task, however this difference did not reach significance when comparing the groups. Both groups also showed less improvement in their performance on the flanker task,

relative to their age, but no significant differences were found between the timepoints on performance in these tasks.

7.5.1 Correlations between change variables

To understand trends within the data before further analyses, one-tailed partial correlations, controlling for age and FA, were conducted to examine the associations between these change variables at this timepoint. These are presented separately for social and cognitive outcomes below (Table 32 & 33). Trends from both sets of correlations will also be outlined.

Table 32. *One-tailed partial correlations, controlling for FA and age (first timepoint values),*
between change in language proficiencies and exposure, identities, and perceived competencies for
whole sample

Change in	English Exposure	HL Proficiency	HL Exposure	Ethnic Identity	British Identity	Athletic Competence	Cognitive Competence	Social Competence
EP	.463**	.051	.340**	.029	.439**	.301**	.304**	.225*
EE	1.00	-.225*	.148	-.069	.245*	.103	.120	.165
HLP		1.00	.442**	.388**	-.111	.060	.113	.095
HLE			1.00	.208*	.095	.082	.063	.064
EI				1.00	-.031	-.133	.159	.025
BI					1.00	.082	.106	.073
AC					.	1.00	.522**	.411**
CC							1.00	.522**
SC								1.00

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

Correlations between the language change variables and social measures change variables
further reaffirm the trends observed throughout this project. This includes the positive link between
change in reported language proficiencies and respective exposure, as well as positive correlations
between change in proficiencies and exposure and associated identities (e.g.., higher HL proficiency
and exposure change correlated with higher ethnic identity change). Interestingly, a significant
positive correlation was also found between change in English proficiency and change in HL
exposure, while a negative correlation was found between change in HL proficiency and change in

English exposure. Finally, a positive trend is still consistently seen with change in competencies and English proficiency.

As for the cognitive measures (correlations shown in Table 33 below), change in performance in the flanker and card sort task were not found to significantly correlate with change in any of the language measures. Change in verb and noun accuracy were found to correlate with one another.

Table 33. *Two-tailed partial correlations, controlling for FA and age (first timepoint values), between change in English and heritage language proficiencies and exposure, and change in cognitive tasks performance*

Change in	Flanker Task	DCCS Task	Noun Accuracy	Verb Accuracy
EP	-.095	-.097	.196	-.124
EE	-.191	-.124	-.023	.039
HLP	-.092	.035	.047	.000
HLE	-.147	-.076	.093	.063
FL	1.00	.048	.027	.019
DCCS		1.00	-.131	-.140
NA			1.00	**.314****
VA				1.00

**p<.01

7.5.2 Predicting Change Using Regression

Based on the correlations observed, hierarchical regressions were conducted to predict changes in social and cognitive measures. CS attendance (as a dummy variable) was only considered as a predictor in naming task performance, as no other differences were found between the the two

participant groups (CS/non-CS). Details of the relevant models are also summarized in Table 34 and 35 at the end of the subsection.

7.5.2.1 Predicting Change in Social Measures

Starting with the social measures, with change in ethnic identity as the dependent variable, a two-stage hierarchical multiple regression was conducted, with age and FA (taken from the first time-point) in the first block and change in HL proficiency and exposure in the second. Age and FA explained just 2% of the variance in ethnic identification change, and this was not found as significant (R^2=.022; F(2,83)= .94, p=.394). Introducing HL proficiency and exposure explained an additional 20% of variance and this change was significant (Fchange(2,81)= 10.22, p<.001). The strongest unique predictor emerged as change in HL proficiency. The final multiple regression model with all predictors accounted for 22% of the change in ethnic identification's variance, R^2=.219, F(4,81)= 5.69, p<.001.

For change in British identity as the dependent variable, a two-stage hierarchical multiple regression was conducted with the same variables as above, but with change in English proficiency and exposure in the second block. Age and FA explained just 1% of the variance in British identification change, and this was not significant (R^2=.009; F(2,83)= .396, p=.674). Introducing English proficiency and exposure explained an additional 18% of variance and this change was significant (Fchange(2,81)= 8.74, p<.001). The strongest unique predictor in the final model was change in English proficiency. The final multiple regression model with all predictors accounted for 19% of the change in British identity's variance, R^2=.185, F(4,81)= 4.60, p=.002.

Finally, for change in social competence as the dependent variable, a three-stage hierarchical multiple regression was similarly conducted, with Age and FA in the first block, change in English proficiency and exposure in the second block, and change in cognitive and athletic competencies in the third block. Age and FA explained 11% of the variance in social competence change, which was

significant (R^2=.105; F(2,83)= 4.88, p=.010). Introducing English proficiency and exposure explained an additional 6% of variance but this change was not found to be significant (Fchange(2,81)= 2.99, p=.056). The addition of cognitive and athletic competencies to the model, explained an additional 17% of the variance in social competence change, which was significant (Fchange(2,79)= 9.74, p<.001). The strongest unique predictor in the final model was change in cognitive competence, followed by age and change in English proficiency, which were significant predictors when initially added to the model. The final multiple regression model with all predictors accounted for 33% of the change in social competence variance, R^2=.331, F(6,79)= 6.53, p<.001.

Regression models predicting change in this project's social measures are summarized in table 34 below, indicating the strength of each factor and each block within the model. Of note, is the significance of the change in language block across the models.

Table 34. *Summary table of regression models predicting change in social measures across timepoints*

Change in	Ethnic Identity				British Identity				Social Competence			
Block	B	SE	β	t	B	SE	β	t	B	SE	β	t
Demographic	R²Δ=.02		FΔ=.94		R²Δ=.01		FΔ=.396		**R²Δ=.11**		**FΔ=4.88***	
Age	-.06	.05	-.13	-1.19	-.03	.06	-.06	-.51	**1.24**	**.40**	**.32**	**3.10****
FA	-.03	.04	-.07	-.66	-.03	.04	-.08	-.72	-.12	.29	-.04	-.40
Change in Language	R²Δ=.20		FΔ=10.22***		R²Δ=.17		FΔ=8.74***		R²Δ=.06		FΔ=2.99	
English proficiency					**.38**	**.11**	**.39**	**3.49****	**1.66**	**.74**	**.26**	**2.24***
HL proficiency	**.30**	**.08**	**.43**	**3.91****								
English exposure					.04	.11	.05	.40	-.13	.75	-.02	-.17
HL exposure	.03	.08	.04	.39								
Change in Competencies									**R²Δ=.17**		**FΔ=9.74***	
Athletic									.12	.11	.12	1.05
Cognitive									**.37**	**.11**	**.38**	**3.42****
Social												
Model total	**R²=.22, F(4,81)=5.69*****				**R²=.19, F(4,81)=4.60****				**R²=.33, F(6,79)=6.53*****			

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

7.5.2.2 Predicting Change in Cognitive Measures

Due to changes in the measuring reaction time in the naming task between both time points, regression analyses focused on performance in the flanker and DCCS tasks, and accuracy in the naming tasks. To predict change in flanker task performance, a two-stage hierarchical multiple regression was conducted with age and FA (from the first timepoint) entered as variables for the first block, and change in HL and English proficiencies and exposure in the second. Initial age and FA explained just 1% of the variance which was not deemed significant (Fchange(2,71) = .29, p = .747). Introducing change in language proficiencies and exposure to the model explained a further 7% of

the variance, but this change was also not significant (Fchange(4,67) = 1.25 , p = .300). The final multiple regression model with all predictors did not significantly explain variance in change in flanker task performance, R^2=.08, F(6,67) = .93, p=.480.

The same procedure was followed to predict change in card-sort task performance through a two-stage hierarchical multiple regression. Age and FA explained similarly explained 6% of the variance in performance, but this was not significant (Fchange(2,71) = 2.28, p = .109). Introducing language proficiencies and exposure to the model explained another 6% of the variance, but this change was also not significant (Fchange(4,67) = .38, p = .825). The final multiple regression model with all predictors did not significantly explain variance in change in card-sort task performance, R^2=.08, F(6,67) = 1.00, p=.366.

To predict change in noun naming accuracy performance, a three-stage regression model contained the same two blocks as above, with the third block including CS attendance as a dummy variable (CS/non-CS). Age and FA explained 5% of the variance in scores, but this was not significant. Introducing language proficiencies and exposure to the model explained an additional 6% of the variance, but this change was also not significant. Adding CS attendance to the model explained a final 4% of the variance but this change did not reach significance. The strongest unique predictors of noun naming accuracy in the final model were age and change in English proficiency, and the final multiple regression model with all predictors explained 15% of the variance in change in noun naming accuracy, R^2=.15, F(7,77) = 1.89, p=.083.

Finally, to predict change in verb naming accuracy performance, the three-stage regression model contained the same three blocks as above. Age and FA explained 24% of the variance in scores, which was highly significant (R^2=.235; F(2,82)= 12.57, p<.001). Introducing language proficiencies and exposure to the model explained an additional 1% of the variance, and this change was not significant. Adding CS attendance to the model explained an additional 8% of the variance

and this was a significant change (Fchange (1,77) = 9.65, p = .003). The strongest unique predictors of change in verb naming accuracy in the final model were therefore age and group (CS attendance). The final multiple regression model with all predictors explained 33% of the variance in verb naming accuracy, R^2=.331, F(7,77) = 5.45, p<.01.

The significant regression models predicting change in this project's naming task are summarized in table 35 below, indicating the strength of each factor and each block within the model. Of note, is the significance of the change in language block across the models.

Table 35. *Summary table of regression models predicting change in cognitive measures across timepoints*

Change in	Noun Accuracy				Verb Accuracy			
Block	B	SE	β	t	B	SE	β	t
Demographic	$R^2\Delta$=.05		FΔ=2.12		**$R^2\Delta$=.24**		**FΔ=12.57*****	
Age	-1.21	.69	-.19	-1.74	**-4.16**	**.83**	**-.48**	**-4.99*****
FA	.56	.50	.12	1.11	-.26	.60	-.04	-.44
Change in Language	$R^2\Delta$=.06		FΔ=1.32		$R^2\Delta$=.01		FΔ=.33	
English proficiency	**3.10**	**1.40**	**.29**	**2.21***	-1.81	1.73	-.13	-1.05
HL proficiency	-.47	1.15	-.05	-.41	.12	1.42	.01	.08
English exposure	-1.97	1.39	-.18	-1.41	.84	1.71	.06	.49
HL exposure	-.15	1.27	-.02	-.12	1.05	1.56	.08	.67
Group	$R^2\Delta$=.04		FΔ=3.33		**$R^2\Delta$=.08**		**FΔ=9.65****	
CS attending or non-attending	-4.05	2.22	-.21	-1.83	**-8.16**	**2.63**	**-.31**	**-3.11****
Model total	R^2=.15, F(7,77)=1.89				**R^2=.33, F(7,77)=5.45*****			

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

7.6 Discussion and Summary of Results

This project is the first of its kind to track bilingual complementary school attendees and non-attendees longitudinally. While analysis at this time-point has had to adapt due to changes in the sample, there are still some key 'takeaway' points we can see regarding bilingual development. A total of ninety children were revisited (CS = 19, non-CS = 71), at an unprecedented time of uncertainty, when life was far from the norm. This allowed for a unique 'snapshot' of language learning at the time, as well as a vital comparison in development as children were significantly older (now aged 6-12 years) since their first visit (aged 4-9).

Unlike in the first time-point, age was found to significantly differ here between the groups, with the CS group being older. However, at this timepoint they are not more affluent, being a smaller sample, and no significant different in FA was found between the groups. Sample trends in language, social, and cognitive outcomes at this timepoint will be summarized, followed by the changes observed between the timepoints, and the implications of these findings.

7.6.1 Timepoint 2: Language outcomes

Across the sample, language proficiency was positively correlated with the respective exposure (English proficiency with English exposure and HL proficiency with HL exposure), as was the case in the project's first timepoint. This study's sample did reveal lower exposure to both languages at this timepoint, but nonetheless still showed slight increases in their perceived English proficiency. Almost all of the sample also viewed their English as stronger than their HL (N = 84, 96%), as the children got older. While the groups still did not significantly differ in their perceived English proficiency or exposure, older children significantly reported more exposure to English from friends, and more affluent families had less exposure to English at home.

231

Despite both groups showing a decrease in their HL proficiencies, while being a smaller sample, the CS attendees did still significantly self-rate their HL proficiency higher than the non-attendees. This was also still attributable to significantly higher ratings in HL literacy, consistent with the first timepoint. CS attendees at this timepoint also showed significant differences in their reported HL exposure compared to non-attendees, particularly getting more exposure to their HL from friends and reading. This is different to the first timepoint, where non-attendees actually reported significantly more exposure to their HL through media, and it seemed that CSs were providing the extra exposure needed for largely second-generation speakers. The decrease in HL exposure and proficiency for both groups, but particularly non-attendees, in this timepoint reflects how language attrition is common in bilingual students who learn a target language in a new country and learn to prioritize this to become accepted into mainstream society (Baker, 2001). It's also important to note that FA was found to have a significant effect on perceived HL proficiency and exposure, while in the first timepoint this was only found on English proficiency. Previous research on the relation between SES and HL maintenance efforts are mixed, with some suggesting that higher SES families invest more time and resources into HL maintenance (Chen Zhou, & Uchikoshi, 2018) while other studies have shown that both higher and lower SES families may favor the acquisition of the host language (in this case, English) for success (Hollebeke et al., 2022; Lambert & Taylor, 1996). As the first timepoint's CS group also had significantly higher family affluence ratings, this finding seems to suggest that parents with higher SES are investing more time and opportunity towards HL learning, including for example, sending their children to a CS.

This challenge of language learning was possibly further exacerbated with the pandemic, as also discussed in the previous qualitative chapter. The CS sample at this timepoint reported that they were still attending HL classes most weeks, even if online, which is perhaps why they were able to maintain similar exposure and proficiencies to the first timepoint and saw less of a drop in these ratings. This further reflects the emerging research that is highlighting how the Covid-19 pandemic

has permeated every aspect of language education in the country, with the most disadvantaged students being the most negatively impacted (Collen, 2021).

7.6.2 Timepoint 2: Cognitive outcomes

When looking at the cognitive measures at this time-point, the sample improved in the overall scores for the naming task. No significant differences were found in performance between the groups across the measures, including reaction time in the naming task. While CS attendees were significantly slower at the first time-point, at this timepoint they are still showing slightly longer mean reaction times, but this is no longer significantly different to non-attendees. CS attendance, however, was still found to significantly predict noun reaction time at this timepoint. Being older as a subsample, they also showed higher accuracy scores in both noun and verb naming compared to non-attendees and the first time-point. This finding is greatly limited however because of the much smaller sample at this timepoint. The naming task was also administered and timed slightly differently, through PowerPoint, and included ten additional words of higher age of acquisition (see Chapter 3 for further details in Methodology), and a small subset of participants (N=8) also did the task online, due to lockdown restrictions at the time.

Nonetheless, the naming task at this timepoint still indicated that there was good English vocabulary growth across both groups. As in the first timepoint, perceived English proficiency was found to negatively correlate with reaction time performance (i.e., those with higher perceived English proficiency were quicker on the task), and when sorted by proficiency groups, there are still not differences in naming task performance. Additionally, unlike the first timepoint, perceived HL proficiency and exposure were not found to correlate with poorer naming task performance. This therefore may support findings that bilinguals do catch up to their monolingual peers in English tasks after continuing and effortful exposure to the language (Paradis & Jia, 2017). Although, having more

233

proficiency data on children's languages would have allowed for this to be explored more in depth. Age was still found to expectedly impact performance on the task, but in this timepoint, FA was also found to effect reaction time performance, with more affluent children being quicker in the task.

Further regression analyses also confirmed that English proficiency is a significant predictor for performance in the naming task (accuracy and reaction time), alongside age and family affluence which emerged as the most significant predictors across the models. This corresponds with the first time-point, where family affluence was also a key predictor of English proficiency, and further exemplifies the importance of considering such factors when examining language development. This adds to a great amount of research that has detailed how socioeconomic status impacts language development, and that there is a complex interaction between child language learning and environmental/home support (Pace et al., 2017; Hoff & Tian, 2005).

Similarly, noun naming reaction time was found to negatively correlate, and noun naming accuracy to positively correlate, with teacher ratings on school adjustment. This suggests students who were performing better in the English naming task, an indicative measure of vocabulary, also got better ratings from their teachers which considered academic and social behavior. Previous research has emphasized the relationship between English proficiency and academic attainment, particularly for EAL learners or bilinguals in the UK (DfE, 2020; Strand & Hessel, 2018).

Finally, unlike the first timepoint, when the sample was grouped on perceived proficiency no significant difference was found in the card-sort scores, or any of the other cognitive measures. As children's English became much more dominant at this timepoint, there was a smaller group of bilinguals that showed more equal perceived proficiencies in both their languages. FA was also not found to influence flanker task performance in this timepoint. Overall, bilinguals on average at this stage showed slightly poorer performance on the tasks compared to their age, as scores from the app are standardized by age. However, the drop in sample size needs to be consider and that both tasks

are limited in their measurement of executive functioning and attentional control. Ideally more tasks would have been administered, while limited in the scope of this project, and with more CS attendees, to provide a better understanding of performance.

7.6.3 Timepoint 2 Social outcomes

As for the social measures at this time-point, a general drop was also seen across competencies for both groups. CS-attendees, however, scored higher across all competencies compared to non-attendees and this difference was significant for cognitive competence, unique to this timepoint. While age was added as a covariate in analyses, this might still be attributed to the older age of the subsample or could also be reflecting the effects of the pandemic, which are still not completely understood. What research is available has outlined how the school disruptions and imposed social isolations of the pandemic has severely impacted wellbeing, but that the effects of this on children's social skills are largely mediated by race and ethnicity due to inequalities stemming from the pandemic (Hernández & Jabbari, 2022). The most recent research report by the Department for Education on children and young people's wellbeing also suggests an inconsistent recovery, as while happiness and life satisfaction are back to pre-pandemic levels, some measures such as anxiousness and loneliness may have worsened further among pupils (DfE, 2023). The extra community that CSs provide might have sheltered attendees more from the effects of the pandemic, even if only meeting online for much of this period, by maintaining some element of normalcy in their peer interactions and providing more opportunities for them in their language development. This is further demonstrated in the finding that while English continues to be significantly correlated with competences for both groups, only CS attendees in this timepoint showed a significant correlation between perceived HL proficiency and perceived social competence. This is unlike the first timepoint where non-attendees showed significant correlations between their HL proficiency and all competencies. Previous research has emphasized how complementary schools are important

sites for the acquisition of linguistic, cultural, and literacy knowledge, and that these skills and learning experiences are transferable to other contexts and academic achievement (Creese, 2009). This is also indicated in this study, while with a smaller sample, as HL exposure was also found to significantly correlate with teacher ratings on school adjustment and transition only for CS attendees. The benefits of CS attendance are therefore still maintained in this timepoint and further exemplified.

When looking at identification scores, both groups rated their British and ethnic identities similarly and showed no significant differences between them in comparisons. Both identities increased from the first time-point, and participants still scored their ethnic identity higher across the subscales. While both groups should a significant correlation between their HL proficiency and ethnic identity, indicating the robustness of this finding, only non-attendees showed a significant correlation with English proficiency and their British identification. Unlike in the first timepoint, there was also no significant correlation between both identities, and no significant correlation between ethnic identification and perceived English proficiency for CS attendees. Ethnic and national identifies having more of an independence from one another, now that the bilinguals are older, and as largely second-generation bilinguals, adds to previous research that shows how the relationship between these identities can range and be viewed as non-overlapping (Gong, 2007; Phinney, 1990). This is not to say that ethnic identity doesn't contribute to national identity, as the bilinguals in this sample are evidently bicultural and view both identities positively, but rather that ethnic and national identities at this stage weren't as directly supportive of one another.

Finally, regression models at this timepoint showed similar findings to the first timepoint, such that respective proficiencies and exposure significantly predicted British and ethnic identification. CS attendance was also again found to significantly predict ethnic identification, and language measures were found to significantly predict perceived competence. Despite the changes in this project's sample, this reaffirms the impact of the relevant HL on ethnic identity formation (Mu, 2015; Oh & Fuligni, 2010) and the integral role CSs can play in this (Creese et al., 2008).

7.6.4 Changes from timepoint 1 to timepoint 2

To gain a more comprehensive understanding of how bilinguals changed throughout this project, sample-level differences were considered for all measures between the first and second timepoint. The sample as a whole showed a decrease in their HL proficiency and slight increase in their English proficiency, alongside reporting less exposure to their HL and slightly less exposure to English. Ratings of both identities similarly increased across timepoints, and across both CS and non-CS groups. Perceived competencies were also shown to decrease across timepoints and with age, as would be expected based on past research (Nagai et al., 2018). However, CS attendees did show an increase in their social competence across timepoints.

Conversely, for the cognitive measures, both groups preformed poorer in the flanker task in between timepoints, but only non-attendees showed some improvement, albeit not significantly different, in performance on the card-sort task. CS attendees showed more increases in accuracy in the naming task, more notably showing a significant change in verb naming accuracy compared to non-attendees. The caveat however must be considered that the naming task was modified between timepoints, and while age was entered as a covariate in analyses, the CS sample was significantly older at this timepoint.

While timepoint comparisons of the cognitive measures are limited due to the challenges faced in the sample, some trends were still observed. Change in verb naming accuracy significantly correlated with change in noun naming accuracy, as children got older and did better in the task. While FA and age have been found in both timepoints to effect performance in the project's cognitive measures, regression models on change in flanker task and card-sort performance did not reveal any significant predictors. The decrease in HL language in this timepoint should certainly be considered, so the contributions of bilingualism to children's cognitive development might have been limited with the measures explored here. In follow up regression models, CS attendance was found to significantly predict change in verb naming accuracy, alongside age, and change in English

proficiency was found to significantly predict change in noun naming accuracy. CS attendees showing more progress in verb naming therefore seems to corroborate linguistic research and theories that demonstrate that a good foundation in one's HL contributes to greater proficiency in the host language (Chen, Geva, & Schwartz, 2012; Cummins, 2007), as they may be benefiting in linguistic transfer after achieving greater proficiency in their HL (as has also been shown in other school contexts: Goodrich & Lonigan, 2017; Cummins 2005).

Correlations of these change variables in social measures further reaffirmed the findings observed throughout this project, most notably the positive link between change in perceived proficiencies and exposures and associated identities, and the positive link between change in competencies and perceived English proficiency. A significant negative correlation was also found between change in HL proficiency and change in English exposure, reflecting how as children got older and were more exposed to the dominant language, they were less likely to maintain proficiency in their HL. This in contrast to the finding of a positive correlation between change in perceived English proficiency and HL exposure. These findings may further reflect the challenges of maintaining a HL in a largely monolingual environment (Curdt-Christiansen & Morgia, 2018), while also supporting theories on how both languages support the acquisition of knowledge of one another as maintaining a first language has been found to accelerate the process of learning a second language (Cummins, 2017; August & Shanahan, 2006).

In subsequent regression models on social outcomes, while CS attendance did not emerge as a significant predictor, changes in language measures were clearly of importance. Change in English proficiency was found to predict change in social competence, such that higher perceived English proficiency related to higher reported social competence. This finding should be considered alongside the lowering of HL proficiency and exposure across the sample, and that much of this sample is dominant in English. The use of English as the host language therefore cannot be undermined, with previous research also showing the role of English in developing social

238

competence amongst bilingual children (Ren et al., 2016). This reaffirms the link between perceived English proficiency and exposure and perceived competences that has also found consistently in both timepoints.

Also of note, is that change in HL proficiency was found to significantly predict change in ethnic identification, while change in English proficiency was found to significantly predict change in British identification. Thus, higher proficiency and exposure to each language contributed uniquely to stronger relevant identification across both timepoints. This is line with the relationships found throughout this project, as well as previous research that has linked HL maintenance with positive ethnic identities (Li & Wen, 2015), and the role of both languages in building multiple identities, particularly in the UK context (Mills, 2001). This also further reaffirms the positive role of both languages in bilinguals' social development across this project, and as such highlights the potential social benefits of bilingualism as children maintain their HL.

7.6.5 Further Considerations & Implications

The smaller CS sample, while unfortunate, accurately reflects the challenges the sector continues to face in the light of the pandemic. As many of these schools rely on renting premises, this became an issue during lockdown as the Department of Education classified CSs under non-educational establishments, preventing them from operating normally. This only further highlights how these settings struggle to be seen as legitimate and that this lack of ownership sends a problematic message that they 'don't belong' (Zielińska, Kowzan, & Ragnarsdóttir, 2014). Unlike mainstream schools, CSs struggled to retain students (Young & White, 2022), adapting to move classes online but missing the depth of community that allows them to thrive. This was seen with the project's sample, with each school being quick to adapt, but nonetheless all of them reported a significant drop in student numbers, and only two of the five CSs were able to return to face-to-face

classes during the project's final data collection. As highlighted in the previous qualitative chapter, interviews with CS teachers and parents gave some unexpected prior context to this, and while the final quantitative findings are limited because of these challenges they nonetheless still add some insights into how these settings still managed to maintain children's HL and offer some protective factors from the pandemic.

This chapter's findings have provided further basis for the encouragement of HL maintenance and bilingualism and have further captured the effect of both languages across several measures. The decrease in perceived HL proficiency, despite the sample being situated in one of the most diverse areas in the UK, maintains the challenges for children growing up bilingual even with an additional context of a CS. The final next chapter will consolidate and summarize findings from this project's quantitative and qualitative studies and how it has allowed for a better understanding of bilingual development across the different CS/non-CS contexts.

Chapter 8: General Discussion and Conclusions

This thesis sought to understand specific social, cognitive, and educational outcomes associated with bilingual development, and to compare these outcomes in children who attended complementary language schooling and those that did not. In doing so, it sought to better understand the contributions of bilingualism and additional HL teaching on different outcomes, across a naturally heterogenous sample, considering confounding variables such as age and FA. Furthermore, as complementary schools are still fairly underrecognized, this research sought to understand any differences between CS-attendees and non-attendees and identify how these settings might be facilitating bilingual development.

More specifically, the project had the first objective of ascertaining specific cognitive, social, and educational outcomes associated with bilingualism development, and this was done by collecting data on perceived language proficiencies and exposure to both languages, administering a card-sort, flanker, and picture naming task, and collecting data on identity and perceived social competences. The second objective was to examine if children with the extra context of CSs differ than their bilingual counterparts without such schooling in these outcomes, which was done through comparative analyses longitudinally across time-points. The third objective was to examine specific features across in CSs, based on the findings, and how they may facilitate bilingual/bicultural development, which was done through semi-structured interviews with parents and school staff, exploring the CS context, but also helping explain initial differences between the participant groups. The project's objectives and corresponding research actions are further demonstrated in Figure 9 (Chapter 6).

This final chapter will summarize the key findings of this research, with some additional discussion of each phase. All three phases of the research will each be summarized: initial quantitative data collection with bilingual children, qualitative data collection with school staff and

parents, and quantitative data collection revisits with the children. Limitations of this research will also be discussed, as well as the potential implications of the findings on future research, education, and policy.

8.1 Summary of Findings

This research followed a longitudinal mixed-methods explanatory approach, such that quantitative data was collected across two timepoints with bilingual children, and subsequent qualitative data from a sample of their school staff and parents to help explain some of the initial findings (Figure 2, Chapter 3). The use of both data-methods, across different samples, contexts, and agents of bilingualism allowed for a rich exploration of experiences and an integrated understanding of associated cognitive, social, and educational outcomes. These will be discussed in the sequence the research was conducted.

8.1.1 Summary of First Quantitative Timepoint

At the project's first timepoint (January – November 2019), initial analyses revealed different patterns of English and HL learning amongst the sample, as well as different patterns of social identification. Effects of proficiency were also discerned on card sort and picture naming tasks, as well as family affluence, an indicative measure of SES, on the flanker task.

The sample consisted of 153 bilinguals, recruited across five complementary schools (N = 73) and four mainstream primary schools (N = 80), who were between the ages of 4-9 years old. The majority of the sample were born in the UK (N = 107), and those that were not had moved to the UK at a very young age. More than half of the sample were second generation immigrants (both parents not born in the UK) (N = 76), with some also being third generation immigrants. As such, both groups rated their English proficiency and exposure as higher than their HL and showed no significant differences in perceived English proficiency. Non-attendees, however, did report

significantly more English exposure with friends. This difference could likely be due to the peer interactions at CSs, as spaces where flexible bilingualism often occurs and English would not exclusively be used (Creese & Blackledge, 2011; Lytra et al., 2008).

Importantly, CS attendees reported higher overall HL proficiency and particularly for reading and writing. This was a particularly salient finding, as it showed the importance of these contexts in maintaining HL, and particularly in facilitating literacy. While this has been indicated in past research that has investigated these contexts (Lam et al., 2019, Otcu, 2018, Oriyama, 2010), most studies have been exclusively qualitative (Li & Wi, 2010; Lytra et al., 2010), and having non-attendees as a comparison group in this project elucidates this finding.

Also of note is that CS-attendees did not significantly report more exposure to their HL from family and friends, with non-attendees even reporting significantly more HL exposure through media (e.g., Television/radio). As much of the project's sample are second generation speakers, which is typically also seen in the communities of other CSs (Mau, Francis, & Archer, 2009; Martin et al., 2006), it suggests that attending a CS, with its additional linguistic community and resources, allows these children to get the necessary exposure to their HL they would not necessarily get at home, and therefore allowing them to foster their bilingualism. Age was also found to affect language ratings, with older children reporting lower HL speaking proficiency, further suggesting the challenges of HL maintenance across generations, and the risks of HL loss as children focus on the majority language in order to easily assimilate into the host society (Park, 2013; Lao & Lee, 2009). As participants were also found to significantly differ in family affluence, with the CS-attending sample being more affluent, this is an important consideration as it suggests these families have more resources to give their children extra opportunities for language learning. Indeed, FA was found to have a significant effect on perceived English proficiency in this timepoint, particularly for reading, and the role of SES in language development cannot be understated (Pace, Luo, Hirsh-Pasek, & Golinkoff, 2017; Pungello et al., 2009; Ginsborg, 2006).

While CS attendees and non-attendees did not differ in social developmental outcomes at the first timepoint, some notable patterns and differences were nonetheless observed. Both groups showed positive associations between English proficiency and British identification and HL proficiency and ethnic identification. This adds to previous research that has emphasized the role of language in identity formation (Mu, 2015; Clots-Figueras & Masella, 2013; Kang & Kim, 2012). Furthermore, perceived HL proficiency and CS attendance were both found to individually contribute to strength of ethnic identification, and English proficiency individually contributed to strength of British identification, in subsequent regression models. While both groups reported their ethnic identity as stronger than their British identity, and rated both their identities positively (see below), the role of CS in HL learning and promoting positive ethnic identification was implicated.

An additional important finding of this timepoint, was that CS-attendees showed unique positive correlations of British identification with their ethnic identification, HL proficiency with British identification, and English proficiency with ethnic identification. This provides a representation of CS attendees bicultural development as potentially more "blended", as they intermix between their identities and languages (Huynh, Nguyen & Benet-Martínez, 2011). Biculturalism has been shown to be facilitated by specific environmental conditions, particularly when an individual is embedded in a community where integration of both cultures is the norm (Schwartz & Unger, 2010; Flannery, Reise, & Yu, 2001), and has been associated with many social benefits, most notably better psychological adjustment, better social strategies, and more adaptive acculturation to the host society (Mistry & Wu, 2010; Tadmor, Tetlock, & Peng, 2009; Chen, Benet-Martínez, & Bond, 2008). This research therefore emphasizes CSs as sites not just for language learning, but also spaces where bicultural identities can be explored and assimilated.

When considering perceived competences (i.e., indications of self-concept), while the groups did not differ in any of the domains, competences were found to be positively associated with perceived English proficiency and exposure, and English exposure was found to independently

predict social competence. The extent to which language mediates social competence has been discussed in research, but early language skills are often used as predictors for later social competence (Monopoli & Kingston, 2012; Hebert-Myers et al., 2010; Longoria et al., 2009). While non-attendees' HL proficiency and competences were also associated, the associations with English were stronger as the mainstream language. Research on older samples have also confirmed the importance of English, as better English led to better social skills and the more social support from nationals (Yashima & Tanaka, 2001). In schools, English is also ultimately the language of instruction and assessment, with a monolingual curriculum emphasizing proficiency in English (Crisfield, 2020), which may account for its association with competences in this project. This research therefore highlights that alongside their HL, functionality in English is also important for bilinguals' adjustment to the country and their social development.

Where cognitive outcomes are concerned, differences were also observed in the picture naming task, which asks children to name different nouns and verbs in English. Perceived HL proficiency and exposure were found to be negatively associated with reaction time performance on the task, and CS attendees were found to be slower with longer reaction times than non-attendees. This is despite CS attendees scoring slightly higher on the task (being more accurate in their responses) and adds to the growing research that proficient bilinguals show poorer performance in lexical retrieval tasks. This has been argued as a result of the lexical competition between their two languages (Abutalebi & Green, 2007), or because of a "frequency-lag" such that words from each language are used less frequently than monolinguals and therefore have less automatic connections (Gollan et al., 2008). When comparing bilinguals by reported proficiency (grouped as more or less balanced bilinguals), no significant differences were observed in the naming task, but objective assessment on children's HL proficiency would have allowed for this to be more conclusive. The final timepoint of this project allowed for performance on the naming task to be explored longitudinally, to get an indication of if this difference persists as children get older.

245

Finally, while the two groups did not significantly differ in their scores for both the flanker and DCCS tasks, family affluence was found to have a significant effect on flanker task scores, and more balanced bilinguals, who rated the proficiency between their languages more closely, also performed better on the DCCS task. This finding is further supported by perceived HL proficiency predicting performance on the card sort task, in the regression model. In this sense, more balanced bilinguals would have more experience controlling and switching between their languages, and therefore show more executive functioning benefits. This adds important considerations to the debate of potential cognitive benefits in bilingualism, as within a sample of heterogenous bilinguals, factors of proficiency and FA determined any advantage in the tasks. While more equal proficiency in both languages has been shown to influence executive functioning tasks (Weber et al., 2016; Carlson & Meltzoff, 2008; Rosselli et al., 2016), including in card-sort tasks (Vega & Fernandez, 2011), there is still a need in research to consider differences in the bilingual experience, with most studies comparing monolinguals to a diverse combined group of bilinguals (Yang, Hartanto, & Yang, 2017; Qu et al., 2015). This diversity also applied to this project. Similarly, SES has been found to be an important factor in flanker task performance (Duñabeitia et al, 2014; Mezzacappa, 2004), with those with higher SES possibly having more opportunities to develop these skills (Xie & Pisano, 2019; Valian, 2015). This research therefore adds to findings that have suggested any potential cognitive bilingual advantage is likely sample and task specific (Ware, Kirkovski, & Lum 2020; Ross & Melinger, 2016; Paap, Johnson, & Sawi, 2014).

8.1.2 Summary of Qualitative Study

Following an explanatory design, the second phase of this research took place throughout the pandemic (September 2020 – March 2022), and eleven semi-structured interviews were conducted with parents and school staff online, across this project's nine schools (five CSs, four primary schools). This was necessary to help explain some of the project's initial quantitative findings, and

ultimately address the project's research questions, by getting a deeper perspective into the school and home backgrounds of the bilinguals being studied. More specifically, interviews explored different contributors to bilingualism, including factors identified in the quantitative analyses, and discussed language beliefs and practices at home and in school to help understand differences between CS attendees and non-attendees. Thematic analysis was chosen to identity overarching patterns of meaning within and across the different samples (CS/non-CS), and eight themes emerged (four from the CS sample and four from the non-CS sample).

Of the themes examined, "Learning a heritage language is important but can be challenging", outlined how CSs see learning a heritage language as important while also being aware of the challenges this entails in a largely monolinguistic environment. A positive ethos towards language learning was shared across interviews, with both parents and teachers referring to a variety of different benefits. Interviewees also linked this back to one's identity, recognizing the importance of maintaining a HL to communicate with family members and be a part of a community. Importantly, CS interviewees emphasized that children themselves need to see the value of language learning, and the benefits of doing so are shared with them, alongside different strategies to try and maintain interest. However, this becomes more difficult as children get older, as interviewees showed it gets more challenging to prioritize the HL as mainstream school demands become more prominent (as shown in previous research (Park, 2013; Nesteruk, 2010)), and classes moving online during the pandemic added to these challenges. This adds to previous qualitative research with CSs (Archer, Francis, & Mau, 2010; Lytra et al., 2008) that have exemplified their role in language learning, and helped explain why CS attendees in this project reported higher HL proficiency despite not reporting more exposure to the language at home.

The importance of the HL is linked to the second theme identified in the CS sample, "A language is linked to its culture", highlighted how all five CSs of this project taught HLs alongside an emphasis on culture. This included embedding cultural celebrations into the curriculum, as well as

a teaching of history or customs where appropriate. This helped explain why CS attendees rated their ethnic identities highly, but also still closely and positively compared to their national identity, possibly allowing for them to develop and adapt biculturally. It also helped explain how CS attendance uniquely contributed to ethnic identification in first timepoint regression models. This adds to previous research that has highlighted these active learning spaces amongst their communities (Lam et al. 2019; Gaiser & Hughes, 2015; Creese, et al,, 2006). As some of this was lost in the pandemic, with communities no longer being able to meet in-person, this also helped explain changes in social measures in the next timepoint, and illustrated the challenges these sectors faced at that time

Comparatively, interviews with mainstream schools highlighted the common ways schools viewed their bilingual learners and how "Language development needs to be supported and better understood". There was an emphasis on helping to build children's proficiency in English, and interviewees shared the challenges they faced in supporting and understanding children from diverse backgrounds because of a lack of information provided and a lack of shared or agreed upon assessment practices. School staff recognized the broadness of the EAL label, and how their focus is often in helping students with limited English proficiency but that these students do ultimately progress with more exposure to the language. In an interview with a mainstream parent of first-generation bilinguals, she expressed how she was not worried about their English, which was actually becoming the more dominant language at home, which highlighted the risks of HL loss in such an environment. This adds to recent research on the use of the EAL term in UK schools, and criticism of more of a "monolingual mindset" and focus on only English in assessment (Bradbury, 2020; Conteh, 2019). It also adds to concerns that language learning needs involve active bilingualism (Cummins, 2017), such that English is added to children's linguistic repertoires while still encouraging and supporting the development of the home or HL.

Linked to this, interviews with mainstream schools also largely highlighted "challenges to

248

parental engagement", with a 'language barrier' often being referenced as one of the biggest

obstacles. Schools expressed that this is despite the efforts they took to engage parents, whether that

be through workshops or the use of translation services. Correspondingly, the parent interviewed

explained how she did maintain interest in her child's learning at school but did this on her own at

home and did not engage to a great extent with the school. The need for meaningful parental

involvement has been called for in research and continues to be a challenge for mainstream schools

(Kent, Du Boulay, & Cukurova 2022; Campbell, 2011). This was in contrast to what was shared in

CS interviews, as these contexts emphasized that "parental engagement is central to language

learning". All interviewees referred to the important role of parents in maintaining a HL, and that

parental involvement is needed for a CS to succeed, whether that be for volunteers or for children to

progress. Another emerging theme for the CS sample was "complementary schools as community

centres", which was more inductively driven, and highlighted the unique challenges CSs faced

during the pandemic, and how they came to support one another during this unprecedented time.

This therefore offers opportunities between the sectors to collaborate (Kenner & Ruby, 2012), and

make use of each other's strengths, by CSs helping with engaging parents and relevant communities,

and the mainstream sector supporting these contexts whether that be through sharing their premises

or promoting CSs. This is also further discussed under the implications subsection of this chapter.

Of the themes identified from the mainstream sample, interviewees described "A

desire to be inclusive of languages", having positive beliefs and attitudes towards

multilingualism and being open to collaborate and embrace HLs within their schools. This

could help explain why non-attendees still rated their ethnic identities positively, and showed

no significant differences on this compared to non-attendees. With that said, they also noted

"shortcomings of the system", and how they are limited in what they can provide as support,

particularly referencing a lack of time, resources funding, and training. Similar concerns have

been referenced in recent reports, with a particular call for more guidance (British Council,

2020) and for more research into the effects of funding cuts on EAL provision (Wardman, 2012). This juxtaposition between seeing HLs as valuable, but also lacking to support their maintenance has also been highlighted (Weekly, 2018) and emerging research with schools in the UK has called for a need for more reflection on ideas of inclusion (Welply, 2023).

8.1.3 Summary of Links Between Qualitative & Quantitative Findings

The themes that emerged from the CS interviews helped explain initial findings, how CS attendees reported higher HL proficiency, alongside significant links between their identities and associated proficiencies. The interviews also provided further context into the CSs and how language learning occurs in these spaces. How these qualitative findings complemented the project's initial qualitative findings are also summarized in Table 21 (Chapter 6).

Through qualitative interviews, it became evident that CSs placed an emphasis on maintaining an HL and doing so through parental engagement, which contrasted with mainstream schools who shared that engaging parents in their child's learning was a significant challenge. This helped explain why CS-attendees reported higher perceived HL proficiency compared to non-attendees, despite not showing more overall perceived exposure to their HL. Correspondingly, it helped explain non CS-attendees in this project were more exposure to their HL at home that schools are not aware of or engaging with, and there are limitations to how much this can be supported.

The qualitative data also gave important insight into the CS context, helping to explain why CS attendance was found to uniquely contribute to ethnic identification in the regression models. The interviews highlighted how CSs act as more than just educational spaces, bringing the community together, and how they embed culture into their curriculum therefore giving bilinguals more opportunities to explore their HL and ethnic identity. Interviews illustrated how

bilinguals in CSs become part of a wider linguistic community with positive and supportive relationships. This also helped explain how CS attendees showed positive associations between both their identities, by detailing how the wider community of a CS may be conducive towards bicultural adaptation.

With that said, the qualitative data also helped explain how the CS attendees and non-attendees didn't differ, particularly in their identities as both groups showed positive associations between each language's proficiency and its respective identities. Mainstream school staff explained their desire to be inclusive of languages and celebrated the multilingualism in the borough, and saw the importance of support for language development. They also detailed the efforts taken to help bilinguals obtain a proficient level of English, which could help explain why English proficiency was positively and significantly associated with competences for non-attendees.

Finally, the qualitative data also gave some preliminary insight into the challenges faced during the pandemic across both sectors. This was instrumental in planning follow-up sessions at schools, whereby questions were added to better separate the effects of the pandemic on any of the quantitative outcomes. The interviews at this time provided a unique snapshot into what was happening in different communities during a time of uncertainty, and how this will undoubtedly shape the experience of bilinguals in this project.

8.1.4 Summary of Second Quantitative Timepoint

The final phase of this research took place after the Covid-19 lockdowns (March 2021- January 2022), whereby children could be revisited in schools. A total of 90, out of the original sample of 153, were revisited, but this was largely from the mainstream school sample (N =71), as CSs struggled with the retention of students and the majority were still only doing classes online (N = 19). All of the mainstream school sample therefore had usual face-to-face sessions, including all of

the cognitive and social measures, while only some of the CS could be seen face-to-face (N = 11). The remainder of the CS sample were seen online (N = 8) and completed only the social measures and the picture naming task. While these made group comparisons across timepoints more tentative and cautious (also discussed further under the next subsection of limitations), sample trends were still observed and bilingualism development across the project.

As the sample were still largely second-generation speakers, they still considered English as their stronger language and only showed a slight increase in English proficiency ratings compared to the first timepoint. However, both groups showed a decrease in their perceived HL proficiency and exposure. Despite this, CS attendees still reported higher HL proficiency compared to non-attendees, largely due to differences in literacy as was the case in the first timepoint, and more exposure to their HL from friends and reading. It should be noted that at the individual differences level, exposure was related to FA, as more affluence was linked to more exposure to the HL, from family, friends, and reading, and higher HL proficiency. This timepoint importantly highlighted how CSs continued to help children maintain their HL during the pandemic, despite the challenges faced, but that it was also more affluent families that could continue to give these opportunities to their children and prioritize more time towards their HL. This adds to growing recognition of how inequalities influence education and access to opportunities, particularly during the pandemic where this effect was salient (Koehler, Psacharopoulos, Graaf, 2022).

In this timepoint, HL proficiency and CS attendance were also still found to independently contribute to the strength of ethnic identification. However, English proficiency was not found to predict strength of British identification, and CS attendees no longer showed significant correlations between both their identities. CS attendees also uniquely showed a significant correlation between their ethnic identification and perceived social competence, while non-attendees uniquely showed a significant correlation between their British identification and perceived cognitive competence. These changes seem to reflect that as children with CS got older, with relatively (compared to non-

attendees) higher HL proficiency, which was in turn associated with their ethnic identity, these are borne out in their spheres of peer and community relationships. In comparison, for non-attendees English might be facilitatory to British identification and academic achievement. This, alongside the drop in HL amongst non-attendees, could be reflecting a prioritization for English, and further emphasizes the role of CSs in bicultural adaptation, allowing bilinguals to maintain a connection to their HL and associated identity.

Apart from the general drop across competencies for both groups between timepoints, it is noteworthy that CS-attendees scored higher across all competencies compared to non-attendees and significantly for cognitive competence at this timepoint. This, together with their higher HL proficiency, further suggests that CS attendees may have been getting additional benefits from these settings at this challenging time period, whether that be through more dedicated time to language learning (even if online) and a maintain connection to a community. This adds to previous research that relating HL maintenance with benefits to social development (Brown, 2009; Cummins, 2001), and the importance of therefore preventing HL loss.

In terms of the cognitive outcomes at this timepoint, unlike the first timepoint, perceived HL proficiency and exposure were not associated with slower picture naming task performance. Although CS attendance still individually predicted reaction time performance in the task, the differences between the groups at the stage were no longer significant. While caution should be exercised when interpreting differences between unequal subsamples (including one that was particularly small), and that there were no monolinguals in this project, but two bilingual groups with one having extra language support, this may be seen as in line with findings that bilinguals do catch up to their monolingual peers in English tasks after continuing and effortful exposure to the language (Paradis & Jia, 2017). Similarly, previous research with bilinguals have shown that those who have more proficiency in their heritage language show transfer benefits to their host language, showing growth in both English and their heritage language (Goldenberg, Hicks, & Lit, 2013; Chen, Geva, & Schwartz, 2012; Cummins, 2007).

253

Apart from perceived English proficiency and age, as at the first timepoint, FA also predicted performance in the picture naming task, reiterating the role of SES on language development (Hoff 2013; Pungello et al., 2009; Hoff & Tian, 2005). No significant differences were also found on the other cognitive measures (DCCS and flanker task), even when examining the role of proficiency in both languages, unlike at the first timepoint. This adds to the research that suggests a lack of a clear bilingual cognitive advantage in inhibition and task-switching, or any early advantage might not develop in a linear manner, with this likely changing throughout bilingual cognitive development (Poarch & Krott, 2019). It also speaks to the many different underpinnings of bilingual development (Barac et al., 2014; Marian & Shook, 2012), some of which could not be included in the scope of this project (as further explored in the limitations subsection).

Finally, timepoint comparisons were also conducted to gain a better understanding of how bilinguals changed longitudinally throughout this project, and further reaffirmed trends seen in this research. When examining cognitive outcomes, significant predictors were only found in models for accuracy in the naming task, as participants showed little to no change in their performance in the flanker and card-sort tasks. As the sample showed a drop in their HL, this may help explain why the contributions of bilingualism at this stage in these tasks may have been minimal. However, CS attendees did show more increases in accuracy in the naming task, with CS attendance also predicting changes in verb naming accuracy, alongside age and perceived English proficiency predicting changes in noun naming accuracy. While this finding is limited by the changes in sample, it nonetheless does demonstrate that children who maintain their HL are able to maintain good proficiency in the host language (English) and show positive vocabulary development. Furthermore, a significant positive correlation was shown between change in perceived English proficiency and HL exposure, in contrast to a negative correlation between change in HL proficiency and change in English exposure. This further reflects the challenges of maintaining a HL as children were more exposed to the dominant language, but that HL exposure showed potential benefits in learning the dominant language (Curdt-Christiansen & Morgia, 2018; Cummins, 2017; August & Shanahan,

2006).

While the sample showed a significant decrease with perceived competencies with age, CS attendees uniquely showed an increase in their social competence across timepoints. In subsequent regression models change in English proficiency was found to be a significant predictor in change in social competence, further reaffirming the importance of the host language, often being associated with social and peer relationships and prosocial behaviors (Ren et al., 2016; Goldfeld et al., 2014; Chen & Tse, 2010). Alongside this, change in HL proficiency was found to significantly predict change in ethnic identification, while change in English proficiency was found to significantly predict change in British identification. The role of both languages in identity formation is therefore highlighted, and the robustness of this finding across both timepoints. This adds to previous research that has advocated for the maintenance of HL for positive identity formation, and how this links to wider integration into a host society (Park 2013; Chen, Benet-Martínez, & Bond, 2008).

8.2 Limitations and Suggestions for Further Research

There are some clear limitations to this research, the key ones of which will be highlighted here. The project faced many of the usual challenges of longitudinal research, including attrition, complexity and variation in its sample. The advent of the COVID-19 pandemic was significant in these challenges and meant that follow-up visits at the second timepoint occurred after a lapse far longer than originally planned. This also greatly contributed towards having a limited follow-up sample size, as CSs struggled to reopen and retain students, and schools navigated through several lockdowns, changes in guidance, and reduced operations. The project therefore had to be adapted quickly, and the findings considered within these unique circumstances. This led to this research also adding to emerging understandings of the challenges of language learning during the pandemic (Koehler, Psacharopoulos, Graaf, 2022; Hernández & Jabbari, 2022; Ford, Kwon, & Tsotsoros, 2021), and offers a snapshot into some of children's bilingual development at this time. However, it

would be worthwhile to continue to follow this sample or have a more in-depth and focused study specifically into the effects of the pandemic, to discern this more effectively.

The project's focus in Newham, while it offered important insight and aligned with the project's objectives, also is another key limitation to consider as the findings may not be as generalizable to the wider context in the UK and particularly, England. In more deprived areas and regions with certain bilingual communities, attainment gaps are persistent and not necessarily overcome (Hollingworth & Mansaray, 2012). This may be linked to the density of the EAL population in these regions, as areas where EAL numbers are lower seem to have more negative associations with attainment, but also could be because schools in cities like London may be more better equipped to support students with specialized coordinators, access to more funding and more training (Demie & Mclean, 2015; Burgess, 2014). Interviews in this project certainly highlighted this, with primary school teachers and EAL coordinators who were positive towards fostering multilingualism and dedicated time and support towards it, but also demonstrated how even in a diverse area like Newham challenges persist. The reasons for these regional gaps are still not entirely clear and under researched, and the heterogeneous EAL label is not supportive towards teasing out these differences (Demie, 2018). This warrants further investigation into bilingual experiences in other areas of the country and to also allow for further comparisons to be made, especially as CS settings in these regions are becoming more prominent (e.g., Sheffield; Ferguson, 2013). While many of the findings of this research may be useful to other regions in the UK, as was shared in some of the public engagement events of this project which involved practitioners and academics across England, it is also quite likely that other factors will also come into play and will need to be considered contextually.

Another key limitation concerns measurement. Although the language proficiency and exposure measures were shown to be reliable, in line with previous research (Castilla-Earls, Ronderos & Fitton, 2022), self-reporting among children is prone to suggestibility issues and is an important

consideration in the interpretation of the findings. While self-report questionnaires are used very regularly in bilingual research (Bialystok, Craik, & Ryan, 2006; Lee & Chan, 2000), having more parental and objective data to validate these ratings would have been useful. The use of the English naming task was a good indicative measure of English vocabulary and helped minimize some of these limitations. While the picture naming task was also appropriate for this project's objectives, future and more specific research could also include recordings, or the use of experimental software, to allow for a more detailed and reliable measure of reaction time (e.g. Łuniewska et al., 2022; Gollan et al., 2005). Importantly, the same naming measures could not be used for children's HL due to the great variety in the sample. Cross-linguistic tasks (the British English version of which was used in this task (Haman et al., 2017)) are being increasingly constructed for each language separately, now including over thirty languages, and future research can focus on subsamples within the languages available to provide a comprehensive understanding of children's vocabulary development (e.g., Van Wonderen & Unsworth, 2020).

When considering the cognitive measures of this project, having two measures that relied on different aspects (inhibition and shifting) was important and encouraged in previous research, and this project also showed the different outcomes in each. As this project's data collection was already quite labor intensive, involving two thirty-minute sessions with each child at each timepoint, only two tasks could be used alongside other measures. However, other significant components, such as working memory (Warmington et al., 2018; Blom et al., 2014; Morales, Calvo, & Bialystok, 2013) and updating tasks (Park, Weismer, & Kaushanskaya, 2018), should be considered in further research. As this project only looked at two components of executive control, it would be valuable to use a broader range of tasks to better understand the potential cognitive advantages associated with bilingualism, and particularly how it may relate to vocabulary and literacy development (Miyake & Friedman, 2012). This is particularly of interest in this study's sample, where significant differences were found between reported HL literacy, and important to explore further as these under researched

components are increasingly being shown to affect different aspects of the bilingual experience (Fyndanis et al., 2022; Grundy & Timmer, 2017).

Apart from the obvious attrition, sampling issues included the lack of a monolingual group, which is often used as a "control" group in studies examining potential cognitive benefits in bilingualism. Outcomes from children that 'grow up' with one language, or without a heritage language, would enable more detailed comparisons and conclusions as to the potential effects of bilingualism. While this was not possible due to the inherent diversity of the geographical areas of the present sample, any monolingual control would also have to be matched in other ways (e.g., ethnicity SES) to enable fair comparisons, this would have been also practically insurmountable considering the diversity of the bilingual sample. Furthermore, the need to have such a group is being largely debated in recent research (Rothman et al., 2022; DeLuca, Rothman, Bialystok, & Pliatsikas, 2019), and rather considering the variety within the bilingual experience is of use and aligned more to this project's objectives.

While the interviews offered some important insight into the project's findings, it would have been of interest to also get some further information on children's home environment. Particularly, different family language practices could have been considered (Curdt-Christiansen & Morgia, 2018), as well as the potential effect of siblings (Tsinivits & Unsworth, 2020; Keller, Troesch, & Grob, 2015; Bridges & Hoff, 2014). Similarly, while this was not in the scope of this project, individual differences could have been more considered, including the effect of language interactions (Baker & Trofimovich, 2005), mixed-heritage (Catto & Lam, 2021; Park, 2019; Shin, 2010), or age of acquisition (Kalia, Wilbourn, & Ghio, 2014), as most of our sample were also early bilinguals. Differences between the CSs could also be explored in future research, as well as case studies to enhance these project's findings.

Having a sample across multiple settings meant that parents and staff (even if mostly bilingual) had differing backgrounds and motivations for language education, and recruitment, and the adult

sample in self-report or interviews reflected that. While this diversity of sampling was planned and seen as a strength, the background differences could also mean that there were different levels of barriers to educational engagement, including language education. The group and individual variations in children's FA similarly reflected this and could be more closely defined and controlled in future research. With that said, research has also exemplified that bilingual experiences will always be dynamic, and should therefore not be considered as categorical or well defined (Luk & Bialystok, 2013), and factors within this project's heterogeneous sample have been closely examined. Despite this, future research could focus on certain demographics within this sample, to allow for better replicability and more comparable findings.

Finally, it is also important to highlight that many different communities engaged with this research that were not part of my own as a researcher. While rapport was built throughout the project, and many successful engagement activities were planned alongside the project's collaborator NPCE, being an outsider to these communities undeniably presents a different perspective to this research. As reflected on in the project's methodology (Chapter 3, 3.2), and qualitative study (Chapter 6, 6.4.1), being a mixed-heritage bilingual who has previously worked in education meant that I could resonate with much of what was being shared, and was further committed to this research through my own interest and curiosity in what was being studied. Having this shared interest was a strength when engaging with communities and facilitating research, particularly during interviews (Gough & Madill, 2012), but also could be challenging as I had to continually reflect on my perspective and challenge some of my preexisting knowledge. In this way I acted sometimes as a "partial insider", having some similarities with the participants but still being aware of the limitations in comprehending their lives (Haarlammert et al., 2017).

The nature of communities in CSs meant that many of their activities were regarded as personal (Çavusoglu, 2014), and welcoming the research also carried it with a responsibility to ethically mediate this relationship. Being aware that I was coming into these settings from certain positions of

privilege, as a researcher, I spent a considerable amount of time with each school (including primary schools) both before and during fieldwork to better understand each setting but also to understand their interest in the research project. This opened opportunities for sustained dialogue and dissemination of research, and while this research is limited in the extent of collaborative work that could be undertaken, future research could engage with stakeholders further and work more closely with specific communities to better represent their experiences and challenges.

8.3 Implications of Findings

This research has implications on the further study of childhood bilingualism, and aspects of education and policy. The changes observed in the cognitive outcomes of this project, and the contributory roles of background factors such as family affluence on these measures, are an important consideration and call for more longitudinal studies with bilingual children, to get a better understanding of how the effects of bilingualism change with other areas of development (as recently discussed in Filippi, D'Souza, & Bright, 2018). Furthermore, the social benefits demonstrated here for children who are bilingual, particularly in identity formation and certain social competences, further emphasizes the need for educators to consider children's HLs in classrooms and try to incorporate such diversity more into their learning. This can be enacted through making HLs visible in school, promoting students' bilingual skills in play and learning, routinely celebrating and encouraging multilingualism, and fostering partnerships with parents and the school community (O'Farrell, Anderson, & Holmes, 2022). While the primary schools in this project all expressed the desire to be more inclusive to children's HLs, this was not prioritized and calls for further support to schools in tis regard, whether that be through training, funding, or action research projects.

Through examining a diverse group of bilinguals longitudinally, this project has demonstrated how CSs play a pivotal role in HL maintenance and ethnic identity formation. As the community that CSs provide also offered some buffering to children's language and social

development during the pandemic, this should therefore not be understated. Importantly, there is scope to connect them further to mainstream sectors, with all the primary schools within this project being open to engage more with these settings. One of the most emerging themes from the project's interviews was also the importance of parental engagement, and with the largely monolingual environment in UK classrooms and everyday life, CS attendance is not enough in itself. Interviews with CS staff and parents further emphasized that language learning does require active parental involvement and cooperation. This gives an opportunity for both complementary and mainstream school educators to consider how they are able to engage with parents and their learners. Previous research has shown the benefits of connecting mainstream schools with CSs (Sneddon, 2014; Kenner & Ruby, 2012; Kenner, Ruby & Gregory, 2010), and this research further indicates that through highlighting some CS strengths and how that can complement challenges faced in mainstream education. There have been a few initiatives to try and connect these settings (Sneddon, 2011), but this is still limited and more needs to be done to share best practice and foster collaboration. Such initiatives could include mutual visits and staff development training opportunities, emphasizing inclusion of linguistic diversity, but need to also have tangible outcomes. The proposition of toolkits, to be addressed at the end of this PhD, would be an important development in this as it would make research accessible to parents, families, and schools, and encourage partnerships.

Despite highlighting certain benefits to CS attendees, this project has also indicated that this sector still faces great challenges, which have only been exacerbated by the pandemic (recent research corroborates this: Young & White, 2022; Paulovicova, McCabe, & Peskova, 2022). The CS sample of this project still showed a drop in their HLs during the pandemic and as they got older, and elsewhere largely being in a monolinguistic environment at school and in the wider community (as has been shown in other research in on HL maintenance in the UK: Othman, 2022; Weekly, 2018). Furthermore, as family affluence affected children's perceived English and HL proficiencies at both phases of this research, more needs to be done to foster language learning in the UK, with particular

attention to providing more opportunities for poorer children to maintain their heritage languages. This work therefore adds to calls for better guidance on language learning in the UK, including a potential national policy on language learning or coordinated programme for bilingual learning (Nuffield Foundation, 2000). As the UK continues becoming more linguistically diverse, there is even more of a need to recognize the language learning already occurring within communities, and for these currently largely 'hidden' assets to be considered in mainstream classrooms (Brazil, 2022). Any national language policy would therefore need to be enabling and flexible, responding to the local responses and needs in the UK, encompassing different languages and the contexts in which they are learnt, such as CSs (Lamb, 2001).

This PhD has a provided a unique contribution on bilingualism and the contexts of complementary schools in the UK. Underrecognized as a sector, this is one of very few studies that have applied a mixed methods approach to study CSs, and the first to compare CS attendees to non-attendees longitudinally. In doing so, it's provided important insights into how bilingualism impacts specific outcomes in childhood development, the contributions of CSs towards these outcomes, as well as the challenges of maintaining a HL even in a diverse environment. It also gives some important insights into language learning during the pandemic, the effects of which are only just being understood, and the need to better recognize and support bilingual children in maintaining their home languages.

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Appendix I: Information Sheet

<u>**University of East London**</u>
School of Psychology, Stratford Campus, Water Lane, London E15 4LZ

Research Integrity
The University adheres to its responsibility to promote and support the highest standard of rigor and integrity in all aspects of research; observing the appropriate ethical, legal and professional frameworks.
The University is committed to preserving your dignity, rights, safety and wellbeing and as such it is a mandatory requirement of the University that formal ethical approval, from the appropriate Research Ethics Committee, is granted before research with human participants or human data commences.

Doctoral researcher
Layal Husain
School of Psychology, Stratford Campus, London E15 4LZ

This research is in collaboration with the Newham Partnership for Complementary Education, and is funded by the Economic and Social Research Council, via the UBEL Doctoral Training Partnership.

Consent to Participate in a Research Study
The purpose of this letter is to provide you with the information that you need to consider in deciding whether to participate in this study.

Project Title
Growing Up Bilingual: Understanding specific benefits across the mainstream and complementary education sectors

Project Description
This three-year project aims to understand cognitive, social, and educational effects of growing up bilingual across mainstream and complementary schools. Its objectives are to ascertain potential benefits of bilingual development, and then more closely examine if children who develop bilingually with the extra context of complementary schools benefit more than bilingual and monolingual children without such schooling. Based on the findings, specific features across the complementary schools studied will also be examined and how they may especially facilitate a child's bilingual and bicultural development. The project will conclude with the development of toolkits, for participating schools and families, to promote and inform on bilingual development and language learning in children.

Why have you been asked to participate?

We are welcoming complementary and mainstream schools, within Newham and nearby boroughs, to get involved in the research. Participants include monolingual and bilingual students aged 4-9 years old, parents, teachers, and school staff.

What will your participation involve?

Children will take part in a series of cognitive tasks, examining executive functioning, attentional control, and object naming. They will also be asked some questions relating to self-perceptions, ethnic/cultural national identification, their family environment, and to self-rate their language use, in English, and in their mother-tongue language if they are bilingual. These tasks will first be piloted, or trailed, with a few children, before school visits begin in the three-year project. Visits with children will be up to only twice a year, with a session not exceeding 25 minutes, using a secure laptop and iPad tablet. All researchers in this project have passed appropriate disclosure and barring service checks.

Parents will be invited to participate by filling out a short form on household information and their thoughts on family language and culture, and will be invited for an interview or focus group if they would like to discuss this further.

Similarly, teachers will be invited to participate by filling out a short form reporting on participating children's school adjustment, and will be invited for an interview or focus group if they would like to discuss their experiences and potential challenges in teaching linguistically/ culturally diverse classes, or teaching a mother-tongue language. Participating children's basic profiles and mainstream attainment will be requested from schools by the final year of the research.

Details of these processes can be further described to you prior to your participation.

Confidentiality of the Data

Any data taken from schools, children, or families will be anonymized, and where possible, participants' confidentiality will be maintained. All data generated in the course of this research will be retained in accordance with the University's Data Protection Policy. Anonymized data will only be shared within the research team and any personal information held by the research team on the project, such as consent forms, will be separately and securely stored at the University, accessible on-site only by the researcher and kept strictly confidential. If interested, schools could also be informed of school-level trends, and be given brief reports of findings throughout the project, but this will not include any raw data. After the data has been entered anonymously, any hard copies of the data will be destroyed. All data will be destroyed within five years of the study's completion. Once the research is completed, by September 2021, you will be able to request written feedback about the findings of the study.

Disclaimer

Your school's participation in this study is entirely voluntary, as well as each child and parent's invitation to participate. Should any school, child, or parent choose to withdraw during participation they may do so without disadvantage and any obligation to give a reason. Please note that your data can be withdrawn up to the point of data analysis - after this point it is not possible to withdraw anonymised data.

University Research Ethics Committee

If you have any concerns regarding the conduct of the research in which you are being asked to participate,

please cc   - --   · --

Universi

research

Appendix II: Consent Forms (Parents & School Staff)

UNIVERSITY OF EAST LONDON

School of Psychology, Stratford Campus, London E15 4LZ

Consent to participate in a research study

Growing Up Bilingual: Understanding specific benefits across the mainstream and complementary education sectors

Doctoral researcher Layal Husain, supervised by Dr. Virginia Lam & in collaboration with the Newham Partnership for Complementary Education

Please tick as appropriate:

	YES	NO
I have read the information leaflet relating to the above programme of research in which I have been asked to participate and have been given a copy to keep. The nature and purposes of the research have been explained to me, and I have had the opportunity to discuss the details and ask questions about this information. I understand what is being proposed and the procedures in which I will be involved have been explained to me.		
I understand that mine and my child's involvement in this study, and particular data from this research, will remain strictly confidential as far as possible. I understand that any data collected from schools, children, or families, will be anonymized. Only the researchers involved in the study will have access to the data, and anonymized data will be made available to the the school my child attends.		
I understand that strict confidentiality will be maintained unless a disclosure is made that indicates that the participant or someone else is at serious risk of harm. Such disclosures may be reported to the relevant authority.		
I understand that should I wish to be a part of an interview or focus group, anonymized quotes will be used in publications.		
I understand that once the research is complete, by September 2021, I can request written feedback about the findings of the study. I understand that resources will be created based on the research findings, and will be shared with participating schools and families.		
It has been explained to me what will happen once the programme has been completed.		
I understand that my participation in this study is entirely voluntary, and I am free to withdraw at any time during the research without disadvantage to myself and without being obliged to give any reason. I understand that my data can be withdrawn up to the point of data analysis and that after this point it may not be possible.		

I permit to potential use of the data collected in this study in future research by this research team.		
I permit to be contacted in regards to this study, or for future research studies by this research team.		
I hereby freely and fully consent to participate in the study which has been fully explained to me and for the information obtained to be used in relevant research publications.		
I hereby freely and fully consent my child to participate in the same study which has been fully explained to me. Having given this consent I understand that I still retain the right to withdraw him/her from the study at any without being obliged to give any reason.		

Parent's Name (BLOCK CAPITALS) ……………………………………….

Child's Name (BLOCK CAPITALS) ……………………………………….

Does your child attend a complementary school (on Saturday/Sunday) or additional language classes?

……………………………………………….

Parent's Signature

………………………………………………………………………………….

Investigator's Name …LAYAL HUSAIN……………………………………..

Date: …………………………

UNIVERSITY OF EAST LONDON

School of psychology, Stratford Campus, London E15 4LZ

Consent to participate in a research study

Growing Up Bilingual: Understanding specific benefits across the mainstream and

complementaryeducation sectors

Doctoral researcher Layal Husain, supervised by Dr. Virginia Lam & in collaboration with the National Partnership for Complementary Education

Please tick as appropriate:

	YES	NO
I have read the infonnation leaflet relating to the above programme of research in which I have been asked to participate and have been given a copy to keep. The nature and purposes of the research have been explained to me, and I have had the opportunity to discuss the details and ask questions about this information. I understand what is being proposed and the procedures in which I will be involved have been explained to me.		
I understand that my involvement in this study, and particular data from this research, will remain strictly confidential as far as possible. Only the researchers involved in the study will have access to the data, or if requested, the school I work in, and all data will be anonymized.		
I understand that strict confidentiality will be maintained unless a disclosure is made that indicates that the participant or someone else is at serious risk of harm. Such disclosures may be reported to the relevant authority.		
I understand that should I wish to be a part of an interview or focus group, anonymized quotes will be used in publications.		
I understand that once the research is complete, by September 2021, I can request written feedback about the findings of the study. I understand that resources will be created based on the research findings, and will be shared with participating schools and families.		
It has been explained to me what will happen once the programme has been completed.		
I understand that my participation in this study is entirely voluntary, and I am free to withdraw at any time during the research without disadvantage to myself and without		

being obliged to give any reason. I understand that my data can be withdrawn up to the point of data analysis and that after this point it may not be possible.		
I permit to potential use of the data collected in this study in future research by this research team.		
I permit to be contacted in regards to this study, or for future research studies by this research team.		
I hereby freely and fully consent to participate in the study which has been fully explained to me and for the information obtained to be used in relevant research publications.		

Participant's Name (BLOCK CAPITALS)

……………………………………………………………………………………

Participant's Signature

……………………………………………………………………………………..

Affiliated Mainstream or Complementary School ………………………………………………

Investigator's Name …LAYAL HUSAIN……………………………………..

Investigator's Signature

……………………………………………………………………………………

Date: …………………………..

Appendix III: Answer Naming Sheets for CLT Naming Task

Ewa Haman, Uniwersytet Warszawski Magdalena Łuniewska, Uniwersytet Warszawski Kamila Polisenska, University of Manchester Karolina Mieszkowska, Uniwersytet Warszawski Shula Chiat, City University of London

CLT BRITISH ENGLISH: ANSWER SHEET FOR NAMING NOUNS

ORDER OF TESTING THIS TASK GOES AS:	1	2	3	4		CHILD CODE	
DATE OF BIRTH			DATE OF TESTING				
STARTING TIME:			END TIME:				
			TASK DURATION:				

No	Target word	question	answer	remarks
01	doll	What is this?		
02	bed	What is this?		
03	bird	What is this?		
04	snowman	What is this?		
05	pencil	What is this?		
06	chain	What is this?		
07	watermelon	What is this?		
08	barrel	What is this?		
09	scarf	What is this?		
10	feather	What is this?		
11	paintbrush	What is this?		
12	helicopter	What is this?		
13	penguin	What is this?		
14	orange	What is this?		
15	rainbow	What is this?		
16	frog	What is this?		
17	needle	What is this?		
18	dog	What is this?		
19	bear	What is this?		
20	swing	What is this?		
21	basket	What is this?		
22	roof	What is this?		
23	button	What is this?		
24	belt	What is this?		
25	boot	What is this?		
26	toothbrush	What is this?		
27	tie	What is this?		
28	heart	What is this?		

29	telephone	What is this?		
30	guitar	What is this?		
31	flag	What is this?		
32	elephant	What is this?		

ORDER OF TESTING	1	2	3	4	CHILD CODE	
THIS TASK GOES AS:						
DATE OF BIRTH			DATE OF TESTING			
STARTING TIME:			END TIME:			
			TASK DURATION:			

No	Target word	question	answer	remarks
01	laugh	What is she doing?		
02	read	What is she doing?		
03	plant	What is he doing?		
04	fight	What are they doing?		
05	drip	What is happening here?		
06	hammer	What is he doing?		
07	ski	What is he doing?		
08	roast	What is happening here?		
09	throw	What is she doing?		
10	sweat	What is happening with him?		
11	water	What is she doing?		
12	brush [teeth]	What is he doing?		
13	peel	What is he doing?		
14	hatch	What is happening here?		
15	massage	What is she doing?		
16	conduct	What is he doing?		
17	swim	What is he doing?		
18	build	What is he doing?		
19	marry	What is happening here?		
20	row	What is he doing?		
21	cook	What is she doing?		
22	mix	What is she doing?		
23	boil	What is happening here?		
24	hug	What are they doing?		
25	sit	What is he doing?		
26	light	What is he doing?		
27	shave	What is he doing?		
28	drink	What is she doing?		
29	clap	What is he doing?		
30	sail	What is he doing?		
31	paint	What is he doing?		

32	iron	What is she doing?		

Appendix IV: Guidelines for Scoring CLT Naming Task

Types of answers in the production tasks			
If you are not sure how the word should be classified, remember that you should always put it in the most left-situated category you hesitate about.			
Answer type	Definition	Examples	
Correct		English	
correct answer	expected form of the target word	target: *to whisper*	response: *he whispers*
mispronounciation		target: *to whisper*	response: *whipshers*
unexpected inflection	e.g. plural, feminine/masculine	target: *mouse*	response: *mice*
incorrect inflection	e.g. incorrect form of plural, gender	target: *mouse*	response: *mices*
derivation within word class	all **derivations** formed with **target word as a base** e.g. diminutives for nouns or prefixed verbs for verbal targets [for verbs ignore different aspectual forms, tense, reflexive marker - these should be coded as inflection] with <u>no change</u> of word class	target: *to whisper / mouse*	response: *whispered /mousy*
derivation across word class	all **derivations** formed with **target word as a base** e.g. diminutives for nouns or prefixed verbs for verbal targets [for verbs ignore different aspectual forms, tense, reflexive marker - these should be coded as inflection] with <u>change</u> of word class		
innovation	word coined by the child WITH the **ROOT of TARGET WORD**, with <u>no change</u> of word class, i.e. noun coined from noun, verb coined from verb		
innovation - wrong word class	word coined by the child WITH the **ROOT of TARGET WORD**, with <u>CHANGE of word class</u>, i.e. noun coined from verb, verb coined from noun		
Correct Plus			
regional variant	synonym of the target word that is used only in some regions	target: *trousers*	response: *britches*
synonym	acceptable synonym of the target word	target: *to whisper*	response: *tells*
Incorrect answers		English	

definition	response without target word, description of the picture; <u>it has to define the target word</u>	target: *tie*	response: *man wears it around his neck*
hyperonim	higher level synonym	target: *apple*	response: *fruit*
hyponym	a word whose semantic field is included within that of the target word	target: *bird*	response: *sparrow*
semantic confusion	different word from the same semantic category	target: *apple*	response: *pear*
associative confusion	words associated thematically to the target word	target: *bone*	response: *dog*
perceptual confusion	name of an object/activity that is perceptually similar to the target	target: *button*	reponse: *plate*
phonological confusion	existing name of an object/activity, <u>pronounced correctly</u>, **close in pronounciation** to the target word	target: *mouse*	reponse: *mouth*
wrong word class	verbs instead of noun and vice versa and <u>target word ROOT NOT included</u>	target: *to dance*	reponse: *ballerina*
innovation	not based on the target word		
onomathopeia	description of the target word without any target	target: *to bath*	response: *splash, splash!*
gesture only	response without use of words	target: *to iron*	reponse: *gesture (ironing)*
other		target: *apple*	reponse: *truck*
no answer	If a child does not response, write "na" in the sheet.	target: *to whisper*	response: *na*
Language mixing			
correct	*full list of options defined above*		
incorrect	*full list of options defined above*		
blending: L1 root + L2	correct L1 root + L2 inflection/derivation etc.		
blending: L2 root + L1	correct L2 root + L1 inflection/derivation etc.		
blending: incorrect			

Appendix V: School Transition and Adjustment Questionnaire

School Teacher Form

Please complete the following form for the pupils in your class.

Do you expect this child to <u>settle in well</u> in the next academic year?
(e.g. Year 5, Year 6, Secondary School)

1 = Strongly disagree; 2 = Disagree; 3 = Not sure; 4 = Agree; 5 = Strongly agree

Current Year & Class	Next Academic Year	Example: John Smith	Academically	Socially, with peers	Socially, with teachers	To the new routine
			4	5	4	3
		1.				
		2.				

Thank you very much for your time in completing this questionnaire, and for your participation in this research project, which aims to investigate potential benefits of growing up bilingual across mainstream and complementary schools.

If you have questions regarding this questionnaire, or the research project, or want to take part in a short interview to

Appendix VI: Project's Data Management Plan

UEL Data Management Plan: Lite

Research data is defined as information or material captured or created during the course of research, and which underpins, tests, or validates the content of the final research output. The nature of it can vary greatly according to discipline. It is often empirical or statistical, but also includes material such as drafts, prototypes, and multimedia objects that underpin creative or 'non-traditional' outputs. Research data is often digital, but includes a wide range of paper-based and other physical objects.

Administrative Data	
PI/Researcher	Layal Husain
PVResearcher ID (e.g. ORCiD)	0000-0002-5833-7111
PVResearcher email	
Research Title	Growing up Bilingual: Understanding Specific Benefits across the Mainstream and Complementary Education Sectors
Project ID	*ETH1819-0017; ETH1920-0274 (amendment)*
Research Duration	December 2018 - September 2021
Research Description	This project aims to understand the potential cognitive, social, and educational benefits of growing up bilingual across mainstream and complementary schools. The project is longitudinal and cross- disciplinary, and is proposed in collaboration with the Newham Partnership for Complementary Education (NPCE). The project's objectives are to firstly ascertain specific cognitive, social, and educational benefits often associated with bilingual development, and to then more closely examine if children who develop bilingually with the extra context of complementary schools benefit more than their bilingual and

	monolingual counterparts without such schooling. Based on the findings, specific features across the complementary schools studied will be examined and how they may especially facilitate a child's bilingual/bicultural development. The project will conclude with the development of resources for schools and families to promote bilingual development and language learning in children. The project addresses gaps in research by following an integrated mixed-methods approach, with the consideration that there are several factors behind successful bilingualism, and will incorporate data from schools, staff, parents, and students, at three time-points. Participants will include children from the ages of 4-11 in primary school, to observe clearer year-to-year changes in development. The experimental participant groups (complementary school attending and non-attending bilinguals) and the control group (monolinguals) will be compared across three developmental domains (cognitive, social, and educational).
Funder	Economic and Social Research Council via the UCL, Bloomsbury and East London (UBEL) Doctoral Training Partnership
Grant Reference Number (Post-award)	ES/P000592/1
Does this research follow on from previous research? If so, provide details	*NIA*
Data collection	
What data will be created and how?	All measures and tasks will be piloted before data collection, and modified accordingly to ensure they will be suitable for the target participant sample, with the consideration of the time spent with each child, and their age group. **Cognitive development measures** will be taken from student participants (starting at the age of 4-9 years), using the National Institute of Health Toolbox App on a password-protected iPad. The toolbox was developed by team of more than 300 scientists from

| | nearly 100 academic institutions in the United States, as part of the NIH Blueprint for Neuroscience Research. The researcher was given access based on evidence of appropriate qualifications in Psychology.

Two tests from the app's cognitive battery will be used: The Flanker Inhibitory Control and Attention Test, and The Dimensional Card Sort Test. No personal or sensitive data is collected. Both record accuracy and reaction time data, and the application is password protected with 256-bit key encryption. Students are inputted into the app as a pseudo anonymised code, alongside their date of birth and gender. This data is stored securely on the app, before it can be exported onto the researcher's computer in the UEL Research Suite, via the iCloud Drive and iTunes. Data is exported as a .csv file, into Microsoft Excel, before it is transferred onto SPSS.

Social development measures will be administered through a UEL provided password-protected laptop, via questionnaires on Qualtrics. Standardised questionnaires previously used in research will be used electronically, to ask students questions on their ethnic/cultural and national identification, social competences, language proficiency, and family affluence. The researcher, or research assistant, will record child responses on the laptop. Psuedoanonymized data is stored securely on Qualtrics before it is directly exported onto SPSS using the researcher's designated computer at UEL. In the unusual instance that Qualtrics doesn't work (e.g. connectivity issues), manual versions of the questionnaires will be used, and stored in a designated locked cabinet in the UEL research suite, before it is digitised (transferred into Qualtrics) and hardcopies are destroyed.

Parents will be given a short questionnaire with questions regarding parental education, socioeconomic status, and language/cultural backgrounds and attitudes. Similarly, teachers will be asked to report on school adjustment using a short form. These will be available electronically through Qualtrics, and manually, for parents' and teachers' convenience. These questionnaires will similarly be psuedoanonymized, and digitised as soon as possible, before any hardcopies are destroyed. Basic profiles of students will be requested from schools and be kept strictly confidential. While codes will be |

	used to anonymize information collected, any forms with names (e.g. consent forms), and school files or contact information will be stored securely in the UEL research suite cabinet, accessible only by the researcher. A password-protected excel workbook that details the names corresponding to the assigned codes will be kept for reference with schools and to arrange field work visits. This information will be kept strictly confidential, with a copy of the document on a hard-drive, and kept separate from any of the data.
	Qualitative Data
	Parents and teachers/school staff will be invited to an optional interview or focus group, focusing on linguistic/cultural knowledge and attitudes.
	Due to the Covid-19 pandemic, some of the originally planned focus groups and interviews will need to take place online. In order to comply with GDPR and for secure data collection, MS teams will be used. At the start of any online focus groups and interviews, participants will be reminded that the session is being recorded for transcription purposes and that any quotes will be anonymized. Verbal consent will, therefore, be obtained additional to the consent forms signed at the start of the project which included consent to voluntary focus groups and interviews.
	A link can be provided to participants once they have agreed to take part, via the project's main contact at the school or directly via email. As some interviews and focus groups may require an interpreter, from the same community being studied, a consent form has been created for this purpose, treating them as a participant and ensuring they are aware of the purposes of the research and confidentiality of information.
	Any in-person focus groups and interviews will be conducted in a secure quiet place and will be recorded using a "JiGMO" recorder device, with additional verbal consent obtained. This will allow for recordings to be immediately inputted and saved onto the researcher's password-protected hard drive after a focus group/interview is over and there is access to the secure and designated laptop/computer. Once inputted, they will be deleted off the device.
	Data analysis will include the comparison of participant groups in developmental measures through multivariate analyses (multiple regression, structural equational modelling) using SPSS, and the

	examination of qualitative data from any interviews through thematic analysis using Nvivo. As a longitudinal project, new data will have to be generated, and this is to fill in the gaps in research in regards to potential benefits of bilingualism (often not studied reliably, across several factors, and without the consideration of complementary schools). However, existing data sources will be consulted from the UK Data Service, specifically from the Millennium Cohort Study.

Ethics and Intellectual Property	
What ethical and intellectual property issues will be considered?	As the main target participants of the research are legal minors under the age of 16, the design and research procedures of the project have been appropriately considered under the British Psychological Society's ethics guidelines. This includes obtaining informed consent from parents, for their children and themselves, with an information sheet detailing the purpose of the project, what participation will involve, what data will be collected, how long it will be kept for, how it will be kept confidential, and their rights as participants which includes the right to withdraw at any time. Teachers and school staff will also have to sign consent forms before taking part in any procedure or supplying data. Parents, teachers and school staff, will have the option in the consent form to permit the potential use of the data collected in this study in future research by this research team, and to be contacted in regards to future studies. Even with parents' prior consent, each child will still have to assent to take part, which involves the researcher using a form of words that can be easily understood to explain what participation will involve. The researcher will also remain observant to all verbal and nonverbal cues from the child and be sensitive to his/her needs, or any signs of fatigue during the procedure. Any interpreters will also have to give informed consent, alongside an information sheet on the research, agreeing additionally to confidentiality of what is shared in the focus group/interview and to act impartially. Any data taken from schools, children, or families will be de-identified by using unique codes. Each school will be given a code of two initials (e.g. ZN),

342

	and each corresponding participant a number (e.g. ZN-1), to be associated with their parent (e.g. ZN-1P). Associated teachers will be coded as a letter, unrelated to their names, along with the anonymous school code (e.g. ZN-A). Consent forms with names or any contact details will be separately locked in a cabinet in the UEL Psychology Research Suite, accessible only to the researcher. Any data that gets transferred electronically will be saved only in password- protected devices. The workbook used to store corresponding details to codes, as well as any other identifying data, will be stored separately from the research data itself.
	Sample or group-level patterns can be presented to participants at the completion of each stage of the project, via the project's blog, school's newsletters, or dissemination events. At the end of the project, participants will be appropriately debriefed, and school's given reports on the findings using anonymized data.
	As the research is collaborative, a contract agreement was created with the National Partnership for Complementary Education (NPCE), which details the nature of the collaboration, expected contributions, and rights to use arising intellectual property for the sole purpose of internal research and development, or non-commercial activities such as teaching. As a set of resources, or toolkits, will be created at the end of the research, these will first be piloted, manually and electronically, and distributed by the NPCE and the University, and will not infringe any patent, copyright, or other proprietary rights. Should the toolkits become commercially available, the University and the Organisation will make additional mutual agreements before the toolkits are marketed, for proceeds to be shared between the parties and to be primarily reinvested in the complementary languages sector.

Storage and Backup	
Where will you be storing your active data, and how will it be made secure?	Data collected electronically will be initially stored via the NIH app and Qualtrics, using a password protected IPad and laptop. Data will be exported and analysed on the researcher's designated and password- protected computer at the UEL research suite or password-protected laptop. Data from the NIH app will be exported as .csv files via Itunes on the researcher's UEL computer, while data from Qualtrics will be exported into SPSS directly in the same UEL computer. Qualtrics data is held on their servers within the EU, and will be pseudo anonymized at input, therefore not holding any personal or sensitive data. Once exported, data will be saved and password protected on the UEL researcher's computer at the research suite, as well as be backed up on an encrypted and external/portable hard drive. At times of field-work and data collection, back-ups will take place at least once a week, while during less active periods this will take place at least once a month.

Online focus groups and interviews will be recorded through MS teams, and as such the recording is saved on the Microsoft Stream portal and is only accessible by the researcher. Recordings will be downloaded onto an encrypted and external/portable hard drive to be inputted into Nvivo for transcription and coding. No names or personal information will be included in the transcription, and data files will be saved with a pseudo anonymized code, kept separate from the password-protected participant workbook. Recordings done in person will be downloaded from the recorded onto the hard drive, before being deleted from the recorder device.

Consent forms or school files/information given that have names and contact details will be separately stored and locked in a cabinet, held in the UEL Psychology Research Suite, and accessible on-site only by the researcher. When the raw data is transferred electronically for further analyses, the data files will be saved only on password protected devices, which will be accessible only to the research team (myself, my research assistant, and my director of studies). The research assistant will not have the password to any of the documents, but will be handling some of the data analysis, being aware of confidentiality and research integrity practices. Hard copies of data will be transferred/digitised, as soon as possible, by being inputted onto Qualtrics or SPSS directly. |

Data sharing	
Who will be interested in reusing your data and how will you share it with them? Are there any reasons not to share this data?	As the research involves a collaborative partner and participating schools, anonymized data will be shared with identified gatekeepers. Each school will have access to their own anonymized data, if requested. Research outputs will be shared with the NPCE and participating schools in the form of a report as well as toolkits, which will be developed at the final stage of the project. The toolkits will be resources for parents and schools, to assist in language learning and will be created in collaboration with stakeholders and gatekeepers (NPCE, NRCSE, participating schools). Parents, within the consent form, will have to consent to the researcher being given their child's data by schools, and that they understand that anonymized data will be made available to the school their child attends. They can also consent to the potential use of the data collected in this study in future research. As this project will create longitudinal and comparative datasets of child cohorts, the resulting data will be considered to be deposited for sharing via the UK Data Services.
Selection and Preservation	
How will you decide what data should be kept for long term preservation, and where will this be?	Paper trails from the research will be securely stored at the UEL research suite for the duration of the project, before they are securely destroyed and shredded. At the end of the project, projected to be October 2021, all electronic files from the research with anonymized data will be organized and transferred to Arkivum, UEL's secure data preservation system, and copies on the researcher's UEL computer and hard drive will be permanently deleted. Copies of files held on the NIH App through ICloud and Itunes, as well as in Qualtrics, will also be permanently deleted, with both having a set feature to delete all data. Recordings on MS teams will also be permanently deleted from the Stream portal at the end of the project.
Review	
Updated Date: 10/07/2020	Updated Researcl

Appendix VII: Assent Form

UNIVERSITY OF EAST LONDON

School of psychology, Stratford Campus, London E15 4LZ

Assent form to participate in a research study

Growing Up Bilingual: Understanding specific benefits across the mainstream and complementary education sectors

Doctoral researcher Layal Husain, supervised by Dr. Virginia Lam & in collaboration with the National Partnership for Complementary Education

---

Hello, I'm Layal. Your name is?

{write number on register}

We are going to do some short tasks on an iPad and laptop, each one will take less than 5 minutes, and you will have a break in between each task.

I'll also ask you some questions about you, your language, and your country.

If you don't understand anything just tell me. Or if you want to stop, let me know. OK?

{CONSENT}

Do you understand what you need to do?

(if so) **Can you write your name here?**

Name: _____

Date (can fill later):

Are you ready to start?

Appendix VIII: NIH Toolbox Flanker Inhibitory Control and Attention Test (Ages 3-7)

Instructions from the NIH Toolbox Administrator's Manual v1.32 (2021)

	IPad screen written content	Examiner (E) Actions
Title Screen	NIH Toolbox DCCS 3-7	E touches and holds button to continue.
Practice Intro	We're going to play a matching game with colors and shapes.	E reads screen, then touches and holds button to continue.
SHAPE Intro	We'll play the SHAPE game first. In the SHAPE game, choose the picture that's the same SHAPE as the picture in the middle of the screen. If it's a BOAT, choose this picture. If it's a RABBIT, choose that picture.	E points to BOAT, then demonstrates use of button. E demonstrates use of button
Transition	Now you try. Keep your eyes on the star in the middle of the screen.	E reads screen, then touches and holds button to continue.
Shape Practice set 1	4 items sorted by shape	
More practice, if less than 3 out of 4 correct on set 1	Let's practice that some more. In the SHAPE game, choose the picture that's the same SHAPE as the picture in the middle of the screen. If it's a BOAT, choose this picture.	E reads screen, then chooses BOAT.
	If it's a RABBIT, choose that picture.	E reads screen, then chooses RABBIT.
Transition	Now you try. Keep your eyes on the star in the middle of the screen.	E reads screen, then touches and holds button to continue.
Shape Practice set 2	4 items sorted by shape	
More practice, if less than 3 out of 4 correct on set 2	Let's practice that some more. In the SHAPE game, choose the picture that's the same SHAPE as the picture in the middle of the screen. If it's a BOAT, choose this picture.	E chooses BOAT.
	If it's a RABBIT, choose that picture.	E chooses RABBIT.
Transition	Now you try. Keep your eyes on the star in the middle of the screen.	E reads screen, then touches and holds button to continue.
Shape Practice set 3	4 items sorted by shape	
Test ends, if less than 3 out of 4 correct on set 3		
COLOR intro	We can also match by COLOR. In the COLOR game, choose the picture that's the same COLOR as the picture in the middle of the screen. If it's BROWN, choose this picture.	E points to, then chooses, BROWN picture.
	If it's WHITE, choose that picture.	E points to, then chooses, WHITE picture.
Transition	Now you try. Keep your eyes on the star in the middle of the screen.	E reads screen, then touches and holds button to continue.
Color Practice set 1	4 items sorted by color	
More practice, if less than 3 out of 4 correct on set 1	Let's practice some more. In the COLOR game, choose the picture that's the same COLOR as the picture in the middle of the screen. If it's WHITE, choose this picture.	E chooses WHITE picture.

	iPad screen written content		Examiner (E) Actions
	If it's BROWN, choose that picture.		E chooses BROWN picture.
Transition	Now you try. Keep your eyes on the star screen.	in the middle of the	E reads screen, then touches and holds button to continue.
Color Practice set 2	4 items sorted by color		
More practice, if lessthan 3 out of 4 correct on set 2	Let's practice some more. In the COLOR game, choose the picture that is the same COLOR as thepicture in the middle of the screen. If it's WHITE, choose this picture.		E chooses WHITE picture.
	If it's BROWN, choose that picture.		E chooses BROWN picture.
Transition	Now you try. Keep your eyes on the star screen.	in the middle of the	E reads screen, then touches and holds button to continue.
Color Practice set 3	4 items sorted by color		

	Test ends, if less than 3 out of 4 correct on set 3	

COLOR and SHAPE intro	Now, we're going to play with some different shapesand colors. This time we'll use BALLS and TRUCKSthat are YELLOW and BLUE.	E reads screen, then touches and holds button to continue.
Pre-switch intro	Let's start with the COLOR game. Remember the COLOR game? In the COLOR game, choose the picture that's the same COLOR as the picture in themiddle of the screen. If it's a BLUE one, choose this picture.	E chooses BLUE picture.
	And if it's a YELLOW one, choose that picture.	E chooses YELLOW picture.
Transition	Now you try. Keep your eyes on the star screen. in the middle of the	E reads screen, then touches and holds button to continue.
Color items	5 items sorted by color (if child does not get 4 of 5correct, test terminates)	

	Test ends, if less than 4 of 5 correct	

Post-switch intro	Now we're going to play the SHAPE game. Remember the SHAPE game? In the SHAPE game,choose the picture that's the same SHAPE as the picture in the middle of the screen. If it's a TRUCK,choose this picture.	E chooses TRUCK.
	And if it's a BALL, choose that picture.	E chooses BALL.
Transition	Now you try. Keep your eyes on the star screen. in the middle of the	E reads screen, then touches and holds button to continue.
Shape items	5 items sorted by shape	

	Test ends, if less than 4 of 5 correct	

Home Base beforeMixed Items	We can also play both games together. But first weare going to learn about Home Base. This is your Home Base. Put your finger on the Home Base andwait for the next picture.	E reads screen and points to the home base; then touches and holds button to continue.

iPad screen written content	Examiner (E) Actions
In this new game put your finger back on Home Base after each answer.	

Transition to Mixed Trials	Now we are ready to play both games together. Remember, when you hear the word SHAPE, choose the picture that's the same SHAPE as the picture in the middle of the screen. If it's a TRUCK,choose this picture.	E chooses TRUCK.
	And if it's a BALL, choose that picture.	E chooses BALL.
	When you hear the word COLOR, choose the picture that's the same COLOR as the picture in the middle of the screen. If it's a BLUE one, choose thispicture.	E chooses BLUE picture.
	And if it's a YELLOW one, choose that picture.	E chooses YELLOW picture.
Transition	Now you try. Keep your eyes on the star in the middle of thescreen. Remember: Put your finger back on Home Baseafter you answer.	E reads screen, then touches and holds button to continue.
Test items	30 mixed items	

Appendix IX: NIH Toolbox Flanker Inhibitory Control and Attention Test (Ages 8-11)

Instructions from the NIH Toolbox Administrator's Manual v1.32 (2021)

	iPad screen written content	Examiner (E) Action
Title Screen	NIH Toolbox FL 8-11	E touchesand holds button to continue.
Home Base Introductions	In this task, you will see a row of arrows pointing different ways.But first, we are going to learn about Home Base. This is your Home Base. Put your finger on Home Base and wait for the nextpicture.	E reads screen and points to the home base; then touchesand holds button to continue.
Practice Introduction	You will see a row of arrows. You should choose the button thatmatches the way the MIDDLE arrow is pointing.	E points to left arrow and demonstrates touching the correct arrow.
	If the MIDDLE arrow is pointing this way, choose this button.	E demonstrates touching arrow button.
	If the MIDDLE arrow is pointing this way, choose this button.	E demonstrates touching arrow button.
	Sometimes all the arrows will point the same way. Sometimes the middle arrow will point a different way, like this [picture of incongruent arrows]. You should always choose the button that matches the way the MIDDLE arrow is pointing.	E reads screen, points to the arrows, and demonstrates touching arrow button.
Transition to practice items	Now you try. Keep your eyes on the star. Answer as fast as you can without making mistakes. If you make a mistake, just keep going! Remember, put your finger back on Home Base after you answer.	E reads screen; then touches and holds button to continue.
Practice Itemsset 1	4 practice items	
More practice, if less than 3 out of 4 correct on set 1	Let's practice some more. If the MIDDLE arrow is pointing this way, choose this button.	E reads screen and demonstrates touching arrow button.
	If the MIDDLE arrow is pointing this way, choose that button.	E demonstrates touching arrow button.
Transition to more practice items	Now you try. Keep your eyes on the star. Answer as fast as you can without making mistakes. If you make a mistake, just keep going!	E reads screen; then touches and holds button

Practice Itemsset 2	Remember, put your finger back on Home Base after you answer. 4 practice items	to continue.
More practice, if less than 3 out of 4 correct on set 2	Let's practice some more. If the MIDDLE arrow is pointing this way, choose this button.	E reads screen and demonstrates touching arrow button.
	If the MIDDLE arrow is pointing this way, choose that button.	E demonstrates touching arrow button.
Transition to more practice items	Now you try. Keep your eyes on the star. Answer as fast as you can without making mistakes. If you make a mistake, just keep going! Remember, put your finger back on Home Base after you answer.	E reads screen; then touches and holds button to continue.

iPad screen written content	Examiner (E) Action
Practice Itemsset 3 4 practice items	
Test ends, if less than 3 out of 4 correct on set 3	
Test Items Introduction Now you're ready to do this without me. Keep your eyes on the star. Answer as fast as you can without making mistakes. If you make a mistake, just keep going! Remember, put your finger back on Home Base after you answer.	E reads screen; then touches and holds button to continue.
Test items 20 items (arrows)	

Appendix X: NIH Toolbox Dimensional Change Card Sort Test (Ages 3-7) Instructions from the NIH Toolbox Administrator's Manual v1.32 (2021)

	iPad screen written content	Examiner (E) Actions
Title Screen	NIH Toolbox DCCS 3-7	E touches and holds button to continue.
Practice Intro	We're going to play a matching game with colorsand shapes.	E reads screen, then touches and holds button to continue.
SHAPE Intro	We'll play the SHAPE game first. In the SHAPE game, choose the picture that's the same SHAPEas the picture in the middle of the screen. If it's a BOAT, choose this picture.	E points to BOAT, then demonstrates use of button.
	If it's a RABBIT, choose that picture.	E demonstrates use of button
Transition	Now you try. Keep your eyes on the star in the middle of the screen.	E reads screen, then touches and holds button to continue.
Shape Practice set 1	4 items sorted by shape	
More practice, if lessthan 3 out of 4 correct on set 1	Let's practice that some more. In the SHAPE game,choose the picture that's the same SHAPE as the picture in the middle of the screen. If it's a BOAT,choose this picture.	E reads screen, then chooses BOAT.
	If it's a RABBIT, choose that picture.	E reads screen, then chooses RABBIT.
Transition	Now you try. Keep your eyes on the star in the middle of the screen.	E reads screen, then touches and holds button to continue.
Shape Practice set 2	4 items sorted by shape	
More practice, if lessthan 3 out of 4 correct on set 2	Let's practice that some more. In the SHAPE game,choose the picture that's the same SHAPE as the picture in the middle of the screen. If it's a BOAT, choose this picture.	E chooses BOAT.
	If it's a RABBIT, choose that picture.	E chooses RABBIT.
Transition	Now you try. Keep your eyes on the star in the middle of the screen.	E reads screen, then touches and holds button to continue.
Shape Practice set 3	4 items sorted by shape	
Test ends, if less than 3 out of 4 correct on set 3		
COLOR intro	We can also match by COLOR. In the COLOR game, choose the picture that's the same COLOR as the picture in the middle of the screen. If it'sBROWN, choose this picture.	E points to, then chooses, BROWN picture.
	If it's WHITE, choose that picture.	E points to, then chooses, WHITE picture.
Transition	Now you try. Keep your eyes on the star in the middle of the screen.	E reads screen, then touches and holds button to continue.
Color Practice set 1	4 items sorted by color	
More practice, if lessthan 3 out of 4 correct on set 1	Let's practice some more. In the COLOR game, choose the picture that's the same COLOR as the picture in the middle of the screen. If it's WHITE,choose this picture.	E chooses WHITE picture.

	iPad screen written content	Examiner (E) Actions
	If it's BROWN, choose that picture.	E chooses BROWN picture.
Transition	Now you try. Keep your eyes on the starscreen. in the middle of the	E reads screen, then touches and holds button to continue.
Color Practice set 2	4 items sorted by color	
More practice, if lessthan 3 out of 4 correct on set 2	Let's practice some more. In the COLOR game, choose the picture that is the same COLOR as thepicture in the middle of the screen. If it's WHITE, choose this picture.	E chooses WHITE picture.
	If it's BROWN, choose that picture.	E chooses BROWN picture.
Transition	Now you try. Keep your eyes on the starscreen. in the middle of the	E reads screen, then touches and holds button to continue.
Color Practice set 3	4 items sorted by color	
	Test ends, if less than 3 out of 4 correct on set 3	
COLOR and SHAPE intro	Now, we're going to play with some different shapesand colors. This time we'll use BALLS and TRUCKSthat are YELLOW and BLUE.	E reads screen, then touches and holds button to continue.
Pre-switch intro	Let's start with the COLOR game. Remember the COLOR game? In the COLOR game, choose the picture that's the same COLOR as the picture in themiddle of the screen. If it's a BLUE one, choose this picture.	E chooses BLUE picture.
	And if it's a YELLOW one, choose that picture.	E chooses YELLOW picture.
Transition	Now you try. Keep your eyes on the starscreen. in the middle of the	E reads screen, then touches and holds button to continue.
Color items	5 items sorted by color (if child does not get 4 of 5correct, test terminates)	
	Test ends, if less than 4 of 5 correct	
Post-switch intro	Now we're going to play the SHAPE game. Remember the SHAPE game? In the SHAPE game,choose the picture that's the same SHAPE as the picture in the middle of the screen. If it's a TRUCK,choose this picture.	E chooses TRUCK.
	And if it's a BALL, choose that picture.	E chooses BALL.
Transition	Now you try. Keep your eyes on the starscreen. in the middle of the	E reads screen, then touches and holds button to continue.
Shape items	5 items sorted by shape	
	Test ends, if less than 4 of 5 correct	
Home Base beforeMixed Items	We can also play both games together. But first weare going to learn about Home Base. This is your Home Base. Put your finger on the Home Base andwait for the next picture.	E reads screen and points to the home base; then touches and holds button to continue.

	iPad screen written content	Examiner (E) Actions
Transition to Mixed Trials	In this new game put your finger back on Home Base after each answer. Now we are ready to play both games together. Remember, when you hear the word SHAPE, choose the picture that's the same SHAPE as the picture in the middle of the screen. If it's a TRUCK,choose this picture.	E chooses TRUCK.
	And if it's a BALL, choose that picture. When you hear the word COLOR, choose the picture that's the same COLOR as the picture in the middle of the screen. If it's a BLUE one, choose thispicture.	E chooses BALL. E chooses BLUE picture.
	And if it's a YELLOW one, choose that picture.	E chooses YELLOW picture.
Transition	Now you try. Keep your eyes on the star in the middle of thescreen. Remember: Put your finger back on Home Baseafter you answer.	E reads screen, then touches and holds button to continue.
Test items	30 mixed items	

Appendix XI: NIH Toolbox Dimensional Change Card Sort Test (Ages 8-11) Instructions from the NIH Toolbox Administrator's Manual v1.32 (2021)

	iPad screen written content	Examiner (E) Actions
Title Screen	NIH Toolbox DCCS 8-11	E touches and holds button to continue
Home Base Intro	We're going to play a matching game with colors and shapes. But first we are going to learn about Home Base.This is your Home Base. Put your finger on the Home Base and wait for the next picture.	Reads screen and points to Home Base;then touches and holds button to continue.
SHAPE intro	We'll play the SHAPE game first. In the SHAPE game, choose the picture that's the same SHAPE as the picture in the middle of the screen. If it's a BOAT, choose thispicture.	E points to BOAT, then demonstrates use of button.
	If it's a RABBIT, choose that picture.	E points to RABBIT, then touches and holds button to continue.

Transition	Now you try.
	  Keep your eyes on the star. Answer as fast as you canwithout making mistakes.
	  If you make a mistake, just keep going!
	Put your finger back on Home Base after you answer.
		E reads screen, then touches and holds button to continue.

Shape PracticeSet 1	4 items sorted by shape	
More practice, if less than 3 out of 4 correct on Set1	Let's practice that some more. In the SHAPE game, choose the picture that's the same SHAPE as the picture in the middle of the screen. If it's a BOAT, choose thispicture.	E chooses BOAT.

Transition	If it's a RABBIT, choose that picture.
	Now you try.
	  Keep your eyes on the star. Answer as fast as you canwithout making mistakes.
	  If you make a mistake, just keep going!
	Put your finger back on Home Base after you answer.
		E chooses RABBIT.
		E reads screen, then touches and holds button to continue.

Shape PracticeSet 2	4 items sorted by shape	
More practice, if less than 3 out of4 correct on Set 2	Let's practice that some more. In the SHAPE game, choose the picture that's the same SHAPE as the picturein the middle of the screen. If it's a BOAT, choose this picture.	E chooses BOAT.

Transition	If it's a RABBIT, choose that picture.
	Now you try.
	  Keep your eyes on the star. Answer as fast as you canwithout making mistakes.
	  If you make a mistake, just keep going!
	Put your finger back on Home Base after you answer.
		E chooses RABBIT.
		E reads screen, then touches and holds button to continue.

Shape PracticeSet 3	4 items sorted by shape	

Test ends, if less than 3 out of 4 correct on Set 3

	iPad screen written content	Examiner (E)Actions

COLOR intro	We can also match by COLOR. In the COLOR game, choose the picture that's the same COLOR as the picture in the middle of the screen. If it's BROWN, choose this picture.	E points to, then chooses, BROWN picture.
	If it's WHITE, choose that picture.	E points to, then chooses, WHITE picture.

Transition	Now you try.
	  Keep your eyes on the star. Answer as fast as you can without making mistakes.
	  If you make a mistake, just keep going!
	Put your finger back on Home Base after you answer.
		E reads screen, then touches and holds button to continue.

Color Practice Set 1	4 items sorted by color	
More practice, if less than 3 out of 4 correct on Set 1	Let's practice some more. In the COLOR game, choose the picture that's the same COLOR as the picture in the middle of the screen. If it's WHITE, choose this picture.	E chooses WHITE picture.
	If it's BROWN, choose that picture.	E chooses BROWN picture.

Transition	Now you try.
	  Keep your eyes on the star. Answer as fast as you can without making mistakes.
	  If you make a mistake, just keep going!
	Put your finger back on Home Base after you answer.
		E reads screen, then touches and holds button to continue.

Color Practice Set 2	4 items sorted by color	
More practice, if less than 3 out of 4 correct on Set 2	Let's practice some more. In the COLOR game, choose the picture that's the same COLOR as the picture in the middle of the screen. If it's WHITE, choose this picture.	E chooses WHITE picture.
	If it's BROWN, choose that picture.	E chooses BROWN picture.

Transition	Now you try.
	  Keep your eyes on the star. Answer as fast as you can without making mistakes.
	  If you make a mistake, just keep going!
	Put your finger back on Home Base after you answer.
		E reads screen, then touches and holds button to continue.

Color Practice Set 3	4 items sorted by color	

Test ends, if less than 3 out of 4 correct on Set 3		
Test item intro	Now we're going to play both games together. Remember, if you see and hear the word SHAPE, you choose the picture that's the same SHAPE as the picture in the middle of the screen. If you see and hear the word COLOR, you choose the picture that's the same COLOR as the picture in the middle of the screen. Remember, put your finger back on Home Base after you answer.	E reads screen, then touches and holds button to continue.

	iPad screen written content	**Examiner (E) Actions**

Transition	Now you try.
	  Keep your eyes on the star. Answer as fast as you can without making mistakes.
	  If you make a mistake, just keep going!
	Put your finger back on Home Base after you answer.
		E reads screen, then touches and holds button to continue.

Test items	30 mixed items	

Appendix XII: Qualtrics Questionnaire for Researcher Use Including All Social Scale

Measures in First Data Collection Timepoint

Social Development Scales

Timepoint 1

Q1 Participant's ID #

_____

Q2 Date of Birth

_____

Q3 Age

_____

Q4 Grade or Class

_____

Q5 Gender

○ Male (1)

○ Female (2)

Q6 Ethnicity
(*For young students: Some people say they are British, others say they are Russian, others say they are Tamil. What would you call yourself?)

_____

Brit_SoIS1 Which one of these do you think best describes you? *For young students: What would you say you are?*

○ Not at all British (1)

○ A little bit British (2)

○ Quite British (3)

○ Very British (4)

- -

Brit_SoIS2 How proud are you of being British?

○ Not at all proud (1)

○ A little bit proud (2)

○ Quite proud (3)

○ Very proud (4)

- -

Brit_SoIS3
How important is it to you that you are British?

○ Not important at all (1)

○ Not very important (2)

○ Quite important (3)

○ Very important (4)

Brit_SoIS4 How do you feel about being British?

○ Very sad (1)

○ Quite sad (2)

○ Not happy or sad (3)

○ Quite happy (4)

○ Very happy (5)

Brit_SoIS5 How would you feel if someone said something bad about British people?

○ Very sad (1)

○ Quite sad (2)

○ Not happy or sad (3)

○ Quite happy (4)

○ Very happy (5)

Brit_SoIS6 How would you feel if someone said something good about British people?

◯ Very sad (1)

◯ Quite sad (2)

◯ Not happy or sad (3)

◯ Quite happy (4)

◯ Very happy (5)

End of Block: Barrett's (2007) The Strength of Identification Scale (SoIS) - British

Start of Block: Barrett's (2007) The Strength of Identification Scale (SoIS) - Second Language

sec_SoIS1 Which one of these do you think best describes you? (* = e.g.: Tamil, Gujarati, Albanian, Russian)*For young students: What would you say you are?*

◯ Not at all * (1)

◯ A little bit * (2)

◯ Quite * (3)

◯ Very * (4)

sec_SoIS2 How proud are you of being *?

◯ Not at all proud (1)

◯ A little bit proud (2)

◯ Quite proud (3)

◯ Very proud (4)

sec_SoIS3 How important is it to you that you are *?

○ Not important at all (1)

○ Not very important (2)

○ Quite important (3)

○ Very important (4)

---

sec_SoIS4 How do you feel about being *?

○ Very sad (1)

○ Quite sad (2)

○ Not happy or sad (3)

○ Quite happy (4)

○ Very happy (5)

---

sec_SoIS5 How would you feel if someone said something bad about * people?

○ Very sad (1)

○ Quite sad (2)

○ Not happy or sad (3)

○ Quite happy (4)

○ Very happy (5)

---

sec_SoIS6
How would you feel if someone said something good about * people?

○ Very sad (1)

○ Quite sad (2)

○ Not happy or sad (3)

○ Quite happy (4)

○ Very happy (5)

LEAP_languse1 Please tell me all the languages you know in order of how well you know them:
Administer: What languages can you speak? Which is the one you know best? & Which one do you know next best? etc.

○ 1 (1) _____

○ 2 (2) _____

○ 3 (3) _____

○ 4 (4) _____

LEAP_languse2 Please tell me all the languages you know in order of when you first learnt them (your native language first):
Administer: Which one of these languages did you learn first? Which one did you learn next? etc.

○ 1 (1) _____

○ 2 (2) _____

○ 3 (3) _____

○ 4 (4) _____

LEAP_languse3 Were you born in the UK?

○ Yes (2)

○ No (3)

LEAP_languse4 Where were you born?

_____

LEAP_languse5 When did you move to the UK?

_____

LEAP_languse6 Was your mother born in the UK?

○ Yes (5)

○ No (6)

LEAP_languse7 Where was your mother born?

_____

LEAP_languse8 Was your father born in the UK?

○ Yes (5)

○ No (6)

LEAP_languse9 Where was your father born?

_____

LEAP_languse10 How long have you been at this school? (or if not understood: When did you start at this school?) (CS or MS)

_____

End of Block: Language Experience and Proficiency Questionnaire (LEAP-Q) - Language Use

Start of Block: Language Experience and Proficiency Questionnaire (LEAP-Q) - Language 1

LEAP_eng1 English is my:

○ First Language (1)

○ Second Language (2)

LEAP_eng2
Compared to other children your age in the UK, how good would you say your **speaking** in English is:

○ Very poor (1)

○ Poor (2)

○ Okay (3)

○ Good (4)

○ Very good (5)

LEAP_eng3 Compared to other children your age in the UK, how good would you say your **understanding** in this English is:

○ Very poor (1)

○ Poor (2)

○ Okay (3)

○ Good (4)

○ Very good (5)

LEAP_eng4 Compared to other children your age in the UK, how good would you say your **reading**in English is:

○ Very poor (1)

○ Poor (2)

○ Okay (3)

○ Good (4)

○ Very good (5)

LEAP_eng5 Compared to other children your age in the UK, how good would you say your **writing**in English is:

○ Very poor (1)

○ Poor (2)

○ Okay (3)

○ Good (4)

○ Very good (5)

LEAP_eng6
How much did these things help you to **learn** English:
Your friends (*How much did your friends help you to learn English*)

○ Not at all (1)

○ A bit (2)

○ A fair amount (3)

○ A good amount (4)

○ A lot (5)

LEAP_eng7 Your family (*How much did your family help you to learn English*)

○ Not at all (1)

○ A bit (2)

○ A fair amount (3)

○ A good amount (4)

○ A lot (5)

LEAP_eng8 Watching TV / Listening to the Radio (*How much did watching TV/ Listening to the radio help you to learn English*)

○ Not at all (1)

○ A bit (2)

○ A fair amount (3)

○ A good amount (4)

○ A lot (5)

LEAP_eng9 Reading (*How much did reading help you to learn English*)

○ Not at all (1)

○ A bit (2)

○ A fair amount (3)

○ A good amount (4)

○ A lot (5)

LEAP_eng10
How much do you **hear** English when:

With your friends

○ Never (1)

○ Almost never (2)

○ Half the time (3)

○ Most of the time (4)

○ All the time (5)

LEAP_eng11 How much do you hear English when with your family?

○ Never (1)

○ Almost never (2)

○ Half the time (3)

○ Most of the time (4)

○ All the time (5)

LEAP_eng12 How much do you hear English when watching TV / listening to the Radio?

○ Never (1)

○ Almost never (2)

○ Half the time (3)

○ Most of the time (4)

○ All the time (5)

LEAP_eng13 How much do you read in English?

○ Never (1)

○ Almost never (2)

○ Half the time (3)

○ Most of the time (4)

○ All the time (5)

LEAP_sec1 Language used other than English

_____

LEAP_sec2 Other than English, * is my
* = language stated above

○ First Language (1)

○ Second Language (2)

LEAP_sec3
Compared to other children your age in the UK, how good would you say your **speaking** in * is:

○ Very poor (1)

○ Poor (2)

○ Okay (3)

○ Good (4)

○ Very good (5)

LEAP_sec4 Compared to other children your age in the UK, how good would you say your **understanding** in * is:

○ Very poor (1)

○ Poor (2)

○ Okay (3)

○ Good (4)

○ Very good (5)

LEAP_sec5 Compared to other children your age in the UK, how good would you say your **reading** in * is:

○ Very poor (1)

○ Poor (2)

○ Okay (3)

○ Good (4)

○ Very good (5)

LEAP_sec6 Compared to other children your age in the UK, how good would you say your **writing** in * is:

○ Very poor (1)

○ Poor (2)

○ Okay (3)

○ Good (4)

○ Very good (5)

LEAP_sec7 How much do these things help you to **learn** *: Your friends (*How much did your friends help you to learn *)

○ Not at all (1)

○ A bit (2)

○ A fair amount (3)

○ A good amount (4)

○ A lot (5)

LEAP_sec8 Your family (*How much did your family help you to learn*)

○ Not at all (1)

○ A bit (2)

○ A fair amount (3)

○ A good amount (4)

○ A lot (5)

LEAP_sec9 Watching TV / Listening to the Radio (*How much did watching TV/ Listening to the radio help you to learn*)

○ Not at all (1)

○ A bit (2)

○ A fair amount (3)

○ A good amount (4)

○ A lot (5)

LEAP_sec10 Reading (*How much did reading help you to learn*)

○ Not at all (1)

○ A bit (2)

○ A fair amount (3)

○ A good amount (4)

○ A lot (5)

LEAP_sec11 How much do you **hear** * when: With friends

○ Never (1)

○ Almost never (2)

○ Half the time (3)

○ Most of the time (4)

○ All the time (5)

LEAP_sec12 How much do you hear * when with family?

○ Never (1)

○ Almost never (2)

○ Half the time (3)

○ Most of the time (4)

○ All the time (5)

LEAP_sec13 How much do you hear * when watching TV/ listening to the Radio?

○ Never (1)

○ Almost never (2)

○ Half the time (3)

○ Most of the time (4)

○ All the time (5)

LEAP_sec14 How much do you read in *?

○ Never (1)

○ Almost never (2)

○ Half the time (3)

○ Most of the time (4)

○ All the time (5)

End of Block: Language Experience and Proficiency Questionnaire (LEAP-Q) - Language 2

Start of Block: The Pictorial Scale of Perceived Competence & Social Acceptance (Ages 4-7)

To use with Pictorial Manual, for children aged 4-7

PCPCA_1 This child is pretty good at puzzles / numbers. Are you:

○ Not very good (1)

○ Sort of good (2)

○ Pretty good (3)

○ Really good (4)

PCPCA_2 This child has a lot of friends. Do you have:

○ Hardly any friends (1)

○ A few (2)

○ Pretty many (3)

○ A whole lot of friends (4)

PCPCA_3 This child is not very good at swinging. Are you:

○ Not too good (1)

○ Sort of good (2)

○ Pretty good (3)

○ Really good (4)

PCPCA_5 This child usually gets stars on her papers/knows a lot in school. How often do you get stars:

○ Never (1)

○ Sometimes (2)

○ Most of the time (3)

○ Always (4)

PCPCA_6 This child does not stay overnight at her friends/others share:

○ Never (1)

○ Hardly ever (2)

○ Pretty much (3)

○ A whole lot (4)

PCPCA_7 This child is good at climbing. Are you:

○ Not very good (1)

○ Sort of good (5)

○ Pretty good (2)

○ Really good (3)

PCPCA_9 This child does not know the name of very many colors/read alone. Do you know the names of:

◯ Hardly any (1)

◯ A few (2)

◯ Pretty many (3)

◯ A whole lot (4)

PCPCA_10 This child has pretty many friends to play with. Do you have:

◯ Hardly any (1)

◯ A few (2)

◯ Pretty many (3)

◯ A lot (4)

PCPCA_11 This child is not very good at tying her shoes/bouncing a ball. Are you:

◯ Not able to (1)

◯ Not too good (2)

◯ Pretty good (3)

◯ Really good (4)

PCPCA_13 This child is not very good at counting/writing words. Are you:

○ Not too good (1)

○ Sort of good (2)

○ Pretty good (3)

○ Really good (4)

PCPCA_14 This child does not have many friends to play with in the playground. Do you have:

○ Hardly any (1)

○ A few (2)

○ Pretty many (3)

○ A whole lot (4)

PCPCA_15 This child is pretty good at skipping. Are you:

○ Not too good (1)

○ Sort of good (2)

○ Pretty good (3)

○ Really good (4)

PCPCA_17 This child is not very good at saying the alphabet/spelling. Are you:

○ Not too good (1)

○ Sort of good (2)

○ Pretty good (3)

○ Really good (4)

PCPCA_18 This child usually gets asked to play with the other kids. Do you get asked:

○ Hardly ever (1)

○ Sometimes (2)

○ Usually (3)

○ Always (4)

PCPCA_19 This child can not run very fast. Can you run:

○ Not very fast (1)

○ Sort of fast (2)

○ Pretty fast (3)

○ Really fast (4)

PCPCA_21 This child knows the first letter of her name/how to add. Do you know:

○ Not at all (1)

○ Not very well (2)

○ Pretty well (3)

○ Really well (4)

PCPCA_22 This child usually does not get to eat dinner at her friends houses/sit next to others. Do you get to do this:

○ Never (1)

○ Sometimes (2)

○ Pretty much (3)

○ A whole lot (4)

PCPCA_23 This child is pretty good at hopping on one foot/jumping rope. Are you:

○ Not at all (1)

○ Not too good (2)

○ Pretty good (3)

○ Really good (4)

End of Block: The Pictorial Scale of Perceived Competence & Social Acceptance (Ages 4-7)

Start of Block: Self - Perception Profile (Ages 8+)

Read questions to child, for children aged 8+

SPP_S Sample Question

	Sort of true for me (1)	Really true for me (4)
Some kids would rather play outdoors in their spare time (1)	☐	☐
Other kids would rather watch T.V. (3)	☐	☐

SPP_1 1

	Sort of true for me (1)	Really true for me (2)
Some kids feel that they are very good at their school work (1)	○	○
Other kids worry about whether they can do the school work assigned to them (2)	○	○

SPP_2 2

	Sort of true for me (1)	Really true for me (2)
Some kids find it hard to make friends (1)	○	○
Other kids find it pretty easy to make friends (2)	○	○

SPP_3 3

	Sort of true for me (1)	Really true for me (2)
Some kids do very well at all kinds of sport (1)	○	○
Other kids don't feel that they are very good when it comes to sports (2)	○	○

SPP_7 4

	Sort of true for me (1)	Really true for me (2)
Some kids feel that they are just as smart as other kids their age (1)	○	○
Other kids aren't so sure and wonder if they are as smart (2)	○	○

SPP_8 5

	Sort of true for me (1)	Really true for me (2)
Some kids know how to make classmates like them (1)	○	○
Other kids don't know how to make other kids like them (2)	○	○

SPP_9 6

	Sort of true for me (1)	Really true for me (2)
Some kids wish they could be a lot better at sports (1)	○	○
Other kids feel they are good enough at sports (2)	○	○

SPP_13 7

	Sort of true for me (1)	Really true for me (2)
Some kids are pretty slow at finishing their school work (1)	○	○
Other kids can do their school work quickly (2)	○	○

SPP_14 8

	Sort of true for me (1)	Really true for me (2)
Some kids don't have the social skills to make friends (1)	○	○
Other kids do have the social skills to make friends (2)	○	○

SPP_15 9

	Sort of true for me (1)	Really true for me (2)
Some kids think they could do well at just about any new sport activity they haven't tried before (1)	○	○
Other kids are afraid they might not do well at sports they haven't ever tried (2)	○	○

SPP_19 10

	Sort of true for me (1)	Really true for me (2)
Some kids often forget what they learn (1)	○	○
Other kids can remember things easily (2)	○	○

SPP_20 11

	Sort of true for me (1)	Really true for me (2)
Some kids understand how to get peers to accept them (1)	○	○
Other kids don't understand how to get peers to accept them (2)	○	○

SPP_21 12

	Sort of true for me (1)	Really true for me (2)
Some kids feel that they are better than others their age at sports (1)	○	○
others kids don't feel they can play as well (2)	○	○

SPP_25 13

	Sort of true for me (1)	Really true for me (2)
Some kids do very well at their class work (1)	○	○
Other kids don't do very well at their class work (2)	○	○

SPP_26 14

	Sort of true for me (1)	Really true for me (2)
Some kids wish they knew how to make more friends (1)	○	○
Other kids know how to make as many friends as they want (2)	○	○

SPP_27 15

	Sort of true for me (1)	Really true for me (2)
In games and sports some kids usually watch instead of play (1)	◯	◯
Other kids usually play rather than just watch (2)	◯	◯

SPP_32 17

	Sort of true for me (1)	Really true for me (3)
Some kids know how to become popular (1)	◯	◯
Other kids do not know how to become popular (2)	◯	◯

SPP_31 16

	Sort of true for me (1)	Really true for me (2)
Some kids usually have trouble figuring out the answers in school (1)	◯	◯
Other kids almost always figure out the answers (2)	◯	◯

SPP_33 18

	Sort of true for me (1)	Really true for me (2)
Some kids don't do well at new outdoor games (1)	○	○
Other kids are good at new games right away (2)	○	○

FAS_1 How many times did you and your family travel out of the UK (England), for a holiday last year?

_____

FAS_2 Does your family have a dishwasher?

○ Yes (1)

○ No (0)

FAS_3 Does your family have a washing machine?

○ Yes (1)

○ No (0)

FAS_4 Does your family have a tumble dryer?

○ Yes (1)

○ No (0)

FAS_5 Do you have fast (high-speed) internet access at home?

○ Yes (1)

○ No (0)

FAS_6 Do your parents pay people from outside the family to work at your home on a regular (that is, on a daily or weekly) basis?

_____

FAS_7 Do you receive pocket money?

_____

FAS_8 Do you wear clothes that belonged to others before you (secondhand clothes) or share clothes with your siblings?

_____

FAS_9 How many bathrooms (room with a bath or shower) are in your home?

_____

FAS_10 Do you have your own bedroom for yourself?

_____

FAS_11 How many computers (PCs, Macs or laptops) does your family own?

_____

FAS_12 How many cars does you family own?

_____

End of Block: Family Affluence Scale - FAS III

Appendix XIII: Qualtrics Questionnaire for Researcher Use Including All Social Scale Measures in Final Data Collection Timepoint

Social Development Scales - Final Timepoint

Q1 Participant's ID #

_____

Q2 Date of Birth

_____

Q3 Age

_____

Q4 Grade or Class (For CS)

_____

Q5 Gender

◯ Male (1)

◯ Female (2)

Q6 Ethnicity/Identity

(*For young students: Some people say they are British, others say they are Russian, others say they are Tamil. What would you call yourself?)

_____

Brit_SoIS1 Which one of these do you think best describes you?*For young students: What would you say you are?*

○ Not at all British (1)

○ A little bit British (2)

○ Quite British (3)

○ Very British (4)

Brit_SoIS2 How proud are you of being British?

○ Not at all proud (1)

○ A little bit proud (2)

○ Quite proud (3)

○ Very proud (4)

Brit_SoIS3
How important is it to you that you are British?

○ Not important at all (1)

○ Not very important (2)

○ Quite important (3)

○ Very important (4)

Brit_SoIS4 How do you feel about being British?

○ Very sad (1)

○ Quite sad (2)

○ Not happy or sad (3)

○ Quite happy (4)

○ Very happy (5)

Brit_SoIS5 How would you feel if someone said something bad about British people?

○ Very sad (1)

○ Quite sad (2)

○ Not happy or sad (3)

○ Quite happy (4)

○ Very happy (5)

Brit_SoIS6 How would you feel if someone said something good about British people?

○ Very sad (1)

○ Quite sad (2)

○ Not happy or sad (3)

○ Quite happy (4)

○ Very happy (5)

End of Block: Barrett's (2007) The Strength of Identification Scale (SoIS) - British

Start of Block: Barrett's (2007) The Strength of Identification Scale (SoIS) - Second Language

sec_SoIS1 Which one of these do you think best describes you? (* = e.g.: Tamil, Gujarati, Albanian, Russian)*For young students: What would you say you are?*

◯ Not at all * (1)

◯ A little bit * (2)

◯ Quite * (3)

◯ Very * (4)

----

sec_SoIS2 How proud are you of being *?

◯ Not at all proud (1)

◯ A little bit proud (2)

◯ Quite proud (3)

◯ Very proud (4)

----

sec_SoIS3 How important is it to you that you are *?

◯ Not important at all (1)

◯ Not very important (2)

◯ Quite important (3)

◯ Very important (4)

----

sec_SoIS4 How do you feel about being *?

○ Very sad (1)

○ Quite sad (2)

○ Not happy or sad (3)

○ Quite happy (4)

○ Very happy (5)

----

sec_SoIS5 How would you feel if someone said something bad about * people?

○ Very sad (1)

○ Quite sad (2)

○ Not happy or sad (3)

○ Quite happy (4)

○ Very happy (5)

----

sec_SoIS6
How would you feel if someone said something good about * people?

○ Very sad (1)

○ Quite sad (2)

○ Not happy or sad (3)

○ Quite happy (4)

○ Very happy (5)

End of Block: Barrett's (2007) The Strength of Identification Scale (SoIS) - Second Language

Start of Block: Language Experience and Proficiency Questionnaire (LEAP-Q) - Language Use

LEAP_languse1 Please tell me all the languages you know in order of how well you know them:
Administer: What languages can you speak? Which is the one you know best? & Which one do you know next best? etc.

○ 1 (1) _____

○ 2 (2) _____

○ 3 (3) _____

○ 4 (4) _____

LEAP_languse2 Please tell me all the languages you know in order of when you first learnt them (your native language first):
Administer: Which one of these languages did you learn first? Which one did you learn next? etc.

○ 1 (1) _____

○ 2 (2) _____

○ 3 (3) _____

○ 4 (4) _____

LEAP_languse3 Were you born in the UK?

○ Yes (2)

○ No (3)

Display This Question:
   If Were you born in the UK? = No

LEAP_languse4 Where were you born?

_____

Display This Question:
   If Were you born in the UK? = No

LEAP_languse5 When did you move to the UK?

_____

LEAP_languse6 Was your mother born in the UK?

◯ Yes (5)

◯ No (6)

LEAP_languse7 Where was your mother born?

_____

LEAP_languse8 Was your father born in the UK?

◯ Yes (5)

◯ No (6)

LEAP_languse9 Where was your father born?

_____

LEAP_languse10 How long have you been at this school? (or if not understood: When did you start at this school?)
(CS or MS)

_____

Covid_1 In the last term and the term before summer holidays (autumn and summer term) , how have you been attending school? (e.g. online, in person if vulnerable)

_____

Q154 If you were learning from home, have your parents been involved in your schoolwork?

_____

Covid_2 Do you take any language classes outside of "normal" school on the weekends? (e.g. complementary school)

○ Yes (1)

○ No (2)

Covid_3 How often do you attend a complementary (language) school:

○ Rarely (1)

○ Some weeks (2)

○ Most weeks (3)

○ Every week (4)

Covid_4 How have you been attending complementary school? (e.g. online)

_____

Covid_5 How many hours do you spend per week studying that * language?

_____

End of Block: Language Experience and Proficiency Questionnaire (LEAP-Q) - Language Use

LEAP_eng1 English is my:

○ First Language (1)

○ Second Language (2)

LEAP_eng2
Compared to other children your age in the UK, how good would you say your   **speaking** in English is:

○ Very poor (1)

○ Poor (2)

○ Okay (3)

○ Good (4)

○ Very good (5)

LEAP_eng3 Compared to other children your age in the UK, how good would you say your **understanding** in this English is:

○ Very poor (1)

○ Poor (2)

○ Okay (3)

○ Good (4)

○ Very good (5)

LEAP_eng4 Compared to other children your age in the UK, how good would you say your **reading**in English is:

○ Very poor (1)

○ Poor (2)

○ Okay (3)

○ Good (4)

○ Very good (5)

LEAP_eng5 Compared to other children your age in the UK, how good would you say your **writing**in English is:

○ Very poor (1)

○ Poor (2)

○ Okay (3)

○ Good (4)

○ Very good (5)

LEAP_eng6
How much did these things help you to **learn** English:
Your friends (*How much did your friends help you to learn English*)

○ Not at all (1)

○ A bit (2)

○ A fair amount (3)

○ A good amount (4)

○ A lot (5)

LEAP_eng7 Your family (*How much did your family help you to learn English*)

◯ Not at all (1)

◯ A bit (2)

◯ A fair amount (3)

◯ A good amount (4)

◯ A lot (5)

LEAP_eng8 Watching TV / Listening to the Radio (*How much did watching TV/ Listening to the radio help you to learn English*)

◯ Not at all (1)

◯ A bit (2)

◯ A fair amount (3)

◯ A good amount (4)

◯ A lot (5)

LEAP_eng9 Reading (*How much did reading help you to learn English*)

◯ Not at all (1)

◯ A bit (2)

◯ A fair amount (3)

◯ A good amount (4)

◯ A lot (5)

LEAP_eng10
How much do you **hear** English when:

With your friends

○ Never (1)

○ Almost never (2)

○ Half the time (3)

○ Most of the time (4)

○ All the time (5)

LEAP_eng11 How much do you hear English when with your family?

○ Never (1)

○ Almost never (2)

○ Half the time (3)

○ Most of the time (4)

○ All the time (5)

LEAP_eng12 How much do you hear English when watching TV / listening to the Radio?

○ Never (1)

○ Almost never (2)

○ Half the time (3)

○ Most of the time (4)

○ All the time (5)

LEAP_eng13 How much do you read in English?

○ Never (1)

○ Almost never (2)

○ Half the time (3)

○ Most of the time (4)

○ All the time (5)

LEAP_sec1 Language used other than English

_____

LEAP_sec2 Other than English, * is my
* = language stated above

○ First Language (1)

○ Second Language (2)

LEAP_sec3
Compared to other children your age in the UK, how good would you say your **speaking** in * is:

○ Very poor (1)

○ Poor (2)

○ Okay (3)

○ Good (4)

○ Very good (5)

LEAP_sec4 Compared to other children your age in the UK, how good would you say your **understanding** in * is:

○ Very poor (1)

○ Poor (2)

○ Okay (3)

○ Good (4)

○ Very good (5)

LEAP_sec5 Compared to other children your age in the UK, how good would you say your **reading** in * is:

○ Very poor (1)

○ Poor (2)

○ Okay (3)

○ Good (4)

○ Very good (5)

LEAP_sec6 Compared to other children your age in the UK, how good would you say your **writing** in * is:

○ Very poor (1)

○ Poor (2)

○ Okay (3)

○ Good (4)

○ Very good (5)

LEAP_sec7 How much do these things help you to **learn** *:Your friends (*How much did your friends help you to learn *)

○ Not at all (1)

○ A bit (2)

○ A fair amount (3)

○ A good amount (4)

○ A lot (5)

LEAP_sec8 Your family (*How much did your family help you to learn*)

○ Not at all (1)

○ A bit (2)

○ A fair amount (3)

○ A good amount (4)

○ A lot (5)

LEAP_sec9 Watching TV / Listening to the Radio (*How much did watching TV/ Listening to the radio help you to learn*)

○ Not at all (1)

○ A bit (2)

○ A fair amount (3)

○ A good amount (4)

○ A lot (5)

LEAP_sec10 Reading (*How much did reading help you to learn*)

◯ Not at all (1)

◯ A bit (2)

◯ A fair amount (3)

◯ A good amount (4)

◯ A lot (5)

Q147 Complementary Schools / Heritage language classes in MS (*How much did attending.. help you to learn*)

◯ Not at all (1)

◯ A bit (2)

◯ A fair amount (3)

◯ A good amount (4)

◯ A lot (5)

LEAP_sec11 How much do you **hear** * when:With friends

◯ Never (1)

◯ Almost never (2)

◯ Half the time (3)

◯ Most of the time (4)

◯ All the time (5)

LEAP_sec12 How much do you hear * when with family?

○ Never (1)

○ Almost never (2)

○ Half the time (3)

○ Most of the time (4)

○ All the time (5)

LEAP_sec13 How much do you hear * when watching TV/ listening to the Radio?

○ Never (1)

○ Almost never (2)

○ Half the time (3)

○ Most of the time (4)

○ All the time (5)

LEAP_sec14 How much do you read in *?

○ Never (1)

○ Almost never (2)

○ Half the time (3)

○ Most of the time (4)

○ All the time (5)

Q150 Do you do any other activities? e.g. apart from attending a CS

_____

PCPCA_1 This child is pretty good at puzzles / numbers. Are you:

○ Not very good (1)

○ Sort of good (2)

○ Pretty good (3)

○ Really good (4)

PCPCA_2 This child has a lot of friends. Do you have:

○ Hardly any friends (1)

○ A few (2)

○ Pretty many (3)

○ A whole lot of friends (4)

PCPCA_3 This child is not very good at swinging. Are you:

○ Not too good (1)

○ Sort of good (2)

○ Pretty good (3)

○ Really good (4)

PCPCA_5 This child usually gets stars on her papers/knows a lot in school. How often do you get stars:

○ Never (1)

○ Sometimes (2)

○ Most of the time (3)

○ Always (4)

PCPCA_6 This child does not stay overnight at her friends/others share:

○ Never (1)

○ Hardly ever (2)

○ Pretty much (3)

○ A whole lot (4)

PCPCA_7 This child is good at climbing. Are you:

○ Not very good (1)

○ Sort of good (5)

○ Pretty good (2)

○ Really good (3)

PCPCA_9 This child does not know the name of very many colors/read alone. Do you know the names of:

○ Hardly any (1)

○ A few (2)

○ Pretty many (3)

○ A whole lot (4)

PCPCA_10 This child has pretty many friends to play with. Do you have:

○ Hardly any (1)

○ A few (2)

○ Pretty many (3)

○ A lot (4)

PCPCA_11 This child is not very good at tying her shoes/bouncing a ball. Are you:

○ Not able to (1)

○ Not too good (2)

○ Pretty good (3)

○ Really good (4)

PCPCA_13 This child is not very good at counting/writing words. Are you:

○ Not too good (1)

○ Sort of good (2)

○ Pretty good (3)

○ Really good (4)

PCPCA_14 This child does not have many friends to play with in the playground. Do you have:

○ Hardly any (1)

○ A few (2)

○ Pretty many (3)

○ A whole lot (4)

PCPCA_15 This child is pretty good at skipping. Are you:

○ Not too good (1)

○ Sort of good (2)

○ Pretty good (3)

○ Really good (4)

PCPCA_17 This child is not very good at saying the alphabet/spelling. Are you:

○ Not too good (1)

○ Sort of good (2)

○ Pretty good (3)

○ Really good (4)

PCPCA_18 This child usually gets asked to play with the other kids. Do you get asked:

○ Hardly ever (1)

○ Sometimes (2)

○ Usually (3)

○ Always (4)

PCPCA_19 This child can not run very fast. Can you run:

○ Not very fast (1)

○ Sort of fast (2)

○ Pretty fast (3)

○ Really fast (4)

PCPCA_21 This child knows the first letter of her name/how to add. Do you know:

○ Not at all (1)

○ Not very well (2)

○ Pretty well (3)

○ Really well (4)

PCPCA_22 This child usually does not get to eat dinner at her friends houses/sit next to others. Do you get to do this:

○ Never (1)

○ Sometimes (2)

○ Pretty much (3)

○ A whole lot (4)

PCPCA_23 This child is pretty good at hopping on one foot/jumping rope. Are you:

○ Not at all (1)

○ Not too good (2)

○ Pretty good (3)

○ Really good (4)

End of Block: The Pictorial Scale of Perceived Competence & Social Acceptance (Ages 4-7)

Start of Block: Self - Perception Profile (Ages 8+)

SPP_S Sample Question

	Sort of true for me (1)	Really true for me (4)
Some kids would rather play outdoors in their spare time (1)	☐	☐
Other kids would rather watch T.V. (3)	☐	☐

SPP_1 1

	Sort of true for me (1)	Really true for me (2)
Some kids feel that they are very good at their school work (1)	○	○
Other kids worry about whether they can do the school work assigned to them (2)	○	○

SPP_2 2

	Sort of true for me (1)	Really true for me (2)
Some kids find it hard to make friends (1)	○	○
Other kids find it pretty easy to make friends (2)	○	○

SPP_3 3

	Sort of true for me (1)	Really true for me (2)
Some kids do very well at all kinds of sport (1)	○	○
Other kids don't feel that they are very good when it comes to sports (2)	○	○

SPP_7 4

	Sort of true for me (1)	Really true for me (2)
Some kids feel that they are just as smart as other kids their age (1)	○	○
Other kids aren't so sure and wonder if they are as smart (2)	○	○

SPP_8 5

	Sort of true for me (1)	Really true for me (2)
Some kids know how to make classmates like them (1)	○	○
Other kids don't know how to make other kids like them (2)	○	○

SPP_9 6

	Sort of true for me (1)	Really true for me (2)
Some kids wish they could be a lot better at sports (1)	○	○
Other kids feel they are good enough at sports (2)	○	○

SPP_13 7

	Sort of true for me (1)	Really true for me (2)
Some kids are pretty slow at finishing their school work (1)	○	○
Other kids can do their school work quickly (2)	○	○

SPP_14 8

	Sort of true for me (1)	Really true for me (2)
Some kids don't have the social skills to make friends (1)	○	○
Other kids do have the social skills to make friends (2)	○	○

413

SPP_15 9

	Sort of true for me (1)	Really true for me (2)
Some kids think they could do well at just about any new sport activity they haven't tried before (1)	○	○
Other kids are afraid they might not do well at sports they haven't ever tried (2)	○	○

SPP_19 10

	Sort of true for me (1)	Really true for me (2)
Some kids often forget what they learn (1)	○	○
Other kids can remember things easily (2)	○	○

SPP_20 11

	Sort of true for me (1)	Really true for me (2)
Some kids understand how to get peers to accept them (1)	○	○
Other kids don't understand how to get peers to accept them (2)	○	○

SPP_21 12

	Sort of true for me (1)	Really true for me (2)
Some kids feel that they are better than others their age at sports (1)	○	○
others kids don't feel they can play as well (2)	○	○

SPP_25 13

	Sort of true for me (1)	Really true for me (2)
Some kids do very well at their class work (1)	○	○
Other kids don't do very well at their class work (2)	○	○

SPP_26 14

	Sort of true for me (1)	Really true for me (2)
Some kids wish they knew how to make more friends (1)	○	○
Other kids know how to make as many friends as they want (2)	○	○

SPP_27 15

	Sort of true for me (1)	Really true for me (2)
In games and sports some kids usually watch instead of play (1)	○	○
Other kids usually play rather than just watch (2)	○	○

SPP_31 16

	Sort of true for me (1)	Really true for me (2)
Some kids usually have trouble figuring out the answers in school (1)	○	○
Other kids almost always figure out the answers (2)	○	○

SPP_32 17

	Sort of true for me (1)	Really true for me (3)
Some kids know how to become popular (1)	○	○
Other kids do not know how to become popular (2)	○	○

SPP_33 18

	Sort of true for me (1)	Really true for me (2)
Some kids don't do well at new outdoor games (1)	○	○
Other kids are good at new games right away (2)	○	○

Q158 Does your family have a dishwasher?

○ Yes (4)

○ No (5)

Q160 Does your family have a washing machine?

◯ Yes (4)

◯ No (5)

Q162 Does your family have a tumble dryer?

◯ Yes (4)

◯ No (5)

Q164 Do you have fast (high-speed) internet access at home?

◯ Yes (4)

◯ No (5)

Q166 Do your parents pay people from outside the family to work at your home on a regular (that is, on a daily or weekly) basis?

_____

Q168 Do you receive pocket money?

_____

Q170 Do you wear clothes that belonged to others before you (secondhand clothes) or share clothes with your siblings?

_____

Q172 How many bathrooms (room with a bath or shower) are in your home?

_____

Q174 Do you have your own bedroom for yourself?

_____

Q176 How many computers (PCs, Macs or laptops) does your family own?

_____

Q178 How many cars does you family own?

_____

End of Block: FAS

Appendix XIV: Ethical Approval Letters

University of East London

Pioneering Futures Since 1898

Dear Layal

Application ID: ETH1819-0017

Project title: Growing up Bilingual: Understanding Specific Benefits across the Mainstream and Complementary Education Sectors

Researcher: Miss Layal Husain

Principal Investigator: Dr Virginia Lam & Dr Rachel George

Your application to University Research Ethics Committee was considered on the 7th of November 2018.

The decision on 22nd of November is: **Approved**

The Committee's response is based on the protocol described in the application form and supporting documentation.

Your project has received ethical approval for 2 years from the approval date.

If you have any questions regarding this application please contact your supervisor or the secretary for the University Research Ethics Committee.

Approval has been given for the submitted application only and the research must be conducted accordingly.

Should you wish to make any changes in connection with this research project you must complete 'An application for approval of an amendment to an existing application'.

The approval of the proposed research applies to the following research site.

Research site: Complementary schools and Primary schools (mainstream) primarily in Newham, or greater East London

Principal Investigator / Local Collaborator: Miss Layal Husain

Approval is given on the understanding that the UEL Code of Practice for Research and the Code of Practice for Research Ethics is adhered to.□□

Any adverse events or reactions that occur in connection with this research project should be reported using the University's form for Reporting an Adverse/Serious Adverse Event/Reaction.

The University will periodically audit a random sample of approved applications for ethical approval, to ensure that the research projects are conducted in compliance with the consent given by the Research Ethics Committee and to the highest standards of rigour and integrity.

Please note, it is your responsibility to retain this letter for your records.

With the Committee's best wishes for the success of the project

Yours

Fernanda Silva

Dear Layal

Application ID: ETH1920-0083

Original application ID: ETH1819-0017

Project title: Growing Up Bilingual: Understanding specific benefits across the mainstream and complementary education sectors

Lead researcher: Miss Layal Husain

Your application to University Research Ethics Sub-Committee was considered on the 27th of January 2020.

The decision is: **Approved**

The Committee's response is based on the protocol described in the application form and supporting documentation.

Your project has received ethical approval for 2 years from the approval date.

If you have any questions regarding this application please contact your supervisor or the secretary for the University Research Ethics Sub-Committee.

Approval has been given for the submitted application only and the research must be conducted accordingly.

Should you wish to make any changes in connection with this research project you must complete 'An application for approval of an amendment to an existing application'.

The approval of the proposed research applies to the following research site.

Research site: Complementary schools and Primary schools (mainstream) primarily in Newham, or greater East London

Principal Investigator / Local Collaborator: Miss Layal Husain

Approval is given on the understanding that the UEL Code of Practice for Research and the Code of Practice for Research Ethics is adhered to.□□

Any adverse events or reactions that occur in connection with this research project should be reported using the University's form for Reporting an Adverse/Serious Adverse Event/Reaction.

The University will periodically audit a random sample of approved applications for ethical approval, to ensure that the research projects are conducted in compliance with the consent given by the Research Ethics Committee and to the highest standards of rigour and integrity.

Please note, it is your responsibility to retain this letter for your records.

With the Committee's best wishes for the success of the project

Yours sincerely

Fernanda Silva

Docklands Campus   Stratford Campus   University Square Stratford   +44 (0)20 8223 3000
University Way   Water Lane   Galway Road   enm@uel.ac.uk
London E16 2RD   London E15 4LZ   London E15 1NF   uel.co.uk

420

Dear Layal

Application ID: ETH1920-0274

Original application ID: ETH1920-0083

Project title: Growing Up Bilingual: Understanding specific benefits across the mainstream and complementary education sectors

Lead researcher: Miss Layal Husain

Your application to University Research Ethics Sub-Committee was considered on the 14th of July 2020.

The decision is: **Approved**

In view of the COVID-19 pandemic, the University Research Ethics Sub-Committee (URES) has taken the decision that all postgraduate research student and staff research projects that include face-to-face participant interactions, should cease to use this method of data collection, for example, in person participant interviews or focus groups. Researchers must consider if they can adapt their research project to conduct participant interactions remotely. The University supports Microsoft Teams for remote work. New research projects and continuing research projects must not recruit participants using face-to-face interactions and all data collection should occur remotely. These regulations should be followed on your research until national restrictions regarding Covid-19 are lifted. For further information please visit the Public Health website page https://www.gov.uk/government/organisations/public-health-england

The Committee's response is based on the protocol described in the application form and supporting documentation.

Your project has received ethical approval for 2 years from the approval date.

If you have any questions regarding this application please contact your supervisor or the secretary for the University Research Ethics Sub-Committee.

Approval has been given for the submitted application only and the research must be conducted accordingly.

Should you wish to make any changes in connection with this research project you must complete 'An application for approval of an amendment to an existing application'.

The approval of the proposed research applies to the following research site.

Research site: Complementary schools and Primary schools (mainstream) primarily in Newham, or greater East London via Microsoft Teams.

Principal Investigator / Local Collaborator: Miss Layal Husain

Approval is given on the understanding that the UEL Code of Practice for Research and the Code of Practice for Research Ethics is adhered to.☐☐

Any adverse events or reactions that occur in connection with this research project should be reported using the University's form for Reporting an Adverse/Serious Adverse Event/Reaction.

Dear Layal

Application ID: ETH2021-0044

Original application ID: ETH1819-0017

Project title: Growing Up Bilingual: Understanding specific benefits across the mainstream and complementary education sectors

Lead researcher: Miss Layal Husain

Your application to University Research Ethics Sub-Committee was considered on the 26th of November 2020.

The decision is: **Approved**

The Committee's response is based on the protocol described in the application form and supporting documentation.

Your project has received ethical approval for 2 years from the approval date.

If you have any questions regarding this application please contact your supervisor or the secretary for the University Research Ethics Sub-Committee.

Approval has been given for the submitted application only and the research must be conducted accordingly.

Should you wish to make any changes in connection with this research project you must complete 'An application for approval of an amendment to an existing application'.

Approval is given on the understanding that the UEL Code of Practice for Research and the Code of Practice for Research Ethics is adhered to.□□

Any adverse events or reactions that occur in connection with this research project should be reported using the University's form for Reporting an Adverse/Serious Adverse Event/Reaction.

The University will periodically audit a random sample of approved applications for ethical approval, to ensure that the research projects are conducted in compliance with the consent given by the Research Ethics Committee and to the highest standards of rigour and integrity.

Please note, it is your responsibility to retain this letter for your records.

With the Committee's best wishes for the success of the project

Yours sincerely

Fernanda Silva

Administrative Officer for Research Governance

Docklands Campus
University Way
London E16 2RD

Stratford Campus
Water Lane
London E15 4LZ

University Square Stratford
Salway Road
London E15 1NF

44 (0)20 8223 3000
vprm@uel.ac.uk
uel.co.uk

Dear Layal

Application ID: ETH2021-0075

Original application ID: ETH1920-0274

Project title: Growing Up Bilingual: Understanding specific benefits across the mainstream and complementary education sectors

Lead researcher: Miss Layal Husain

Your application to University Research Ethics Sub-Committee was considered on the 7th of January 2021.

The decision is: **Approved**

The Committee's response is based on the protocol described in the application form and supporting documentation.

Your project has received ethical approval for 4 years from the approval date.

If you have any questions regarding this application please contact your supervisor or the secretary for the University Research Ethics Sub-Committee.

Approval has been given for the submitted application only and the research must be conducted accordingly.

Should you wish to make any changes in connection with this research project you must complete 'An application for approval of an amendment to an existing application'.

The approval of the proposed research applies to the following research site.

Research site: Complementary schools and Primary schools (mainstream) primarily in Newham, or greater East London

Principal Investigator / Local Collaborator: Miss Layal Husain

Approval is given on the understanding that the UEL Code of Practice for Research and the Code of Practice for Research Ethics is adhered to.□□

Any adverse events or reactions that occur in connection with this research project should be reported using the University's form for Reporting an Adverse/Serious Adverse Event/Reaction.

The University will periodically audit a random sample of approved applications for ethical approval, to ensure that the research projects are conducted in compliance with the consent given by the Research Ethics Committee and to the highest standards of rigour and integrity.

Please note, it is your responsibility to retain this letter for your records.

With the Committee's best wishes for the success of the project

Yours sincerely

Fernanda Silva

Docklands Campus
University Way
London E16 2RD

Stratford Campus
Water Lane
London E15 4LZ

University Square Stratford
Salway Road
London E15 1NF

+44 (0)20 8223 3000
uelinfo@uel.ac.uk
uel.co.uk

Appendix XV: Semi-Structured Interview Questions for Parents

Some questions adapted from Lam, Chaudry, Pinder and Sura (2020) for the complementary school context.

Opening: Briefing, explain focus group purpose, confidentiality, data protection and rights, consent to record. If interpreter is present explain roles and enable introductions.

<u>**Language Exposure – Addressing RQ1 & 2**</u>

- How old are your children? (How long have they been attending a complementary school?)
- How long have you and your children lived in the UK? (first, second, or third generation?)
- Do you speak the heritage language/mother tongue yourselves? Do you speak the heritage language/mother tongue with your children? Are there other family members or friends that speak the heritage language/mother tongue whom your children see regularly?

<u>**The Bilingual Experience & Identity – Addressing RQ1 & 2**</u>

- What does being bilingual mean to you? What does your child growing up bilingual mean to you?
- How important is it that your children are bilingual? And bicultural? Why is that?
- How would you describe your children's sense of belonging to their ethnic culture? Do you feel this relates to their heritage/mother tongue language use?

<u>**Parental Engagement & Home Environment – Addressing RQ2 & 3**</u>

- What do you do (aside from CS) to enable/keep your children to be bilingual/bicultural?
- Do you involve your children in any other activities after school hours? Any to do with their heritage language/mother tongue?
- Do you or your children socialize with other members of the school outside of its hours?
- How involved are you in their schooling? (both CS & MS) especially in language learning?
- Have you faced any challenges in the language learning of your child? In your experience raising them bilingually and bi-culturally?

For CS Participants Only On Context – Addressing RQ2 + 3

- Why have you chosen to bring your children to a complementary school? Did you go to a complementary school as a child?
- Are you involved with this CS in any way (e.g. helping in classes, attending cultural activities)?
- What aspects of the complementary school do you find valuable in your child's learning and development? Has complementary schooling served the aims that you had for your children? If so, in what ways?

For Toolkit Development (after submission of thesis)

- What support or information would you find useful in further facilitating your child's bilingual development? What have you previously find useful?
- As part of our project we are developing toolkits for mainstream and complementary schools and families to share our research findings. Is there anything you think we should include or consider?

Closing: Thank participants for taking part. Note confidentiality of responses. Allow for any questions on the research and share project contact information.

Appendix XVI: Semi-Structured Interview Questions for School Teachers & Staff

Opening: Briefing, explain interview or focus group purpose, confidentiality, data protection and rights, consent to record. If interpreter or translator is present explain roles and enable introductions.

Language Exposure & Proficiency – Addressing RQ1 & 2

- What role do you have at this school? How long have you been working in this role?
- How do you normally plan your (language) teaching – is there anything you have to consider? How do you assess student progress (overall and language development)?
- What do you feel you, or the wider school, have done to foster language learning? Do you think this has been successful?

The Bilingual Experience & Identity – Addressing RQ1 & 2

- Do you feel you have enough information on your pupils' linguistic and cultural backgrounds? Is this information integrated into your teaching?
- Have you faced any key challenges teaching children from different linguistic and cultural backgrounds? How have you tried to overcome these challenges?
- What are your own experiences with language learning? Do these bear out on your teaching?
- What does being bilingual mean to you? What does bilingualism mean for your classroom or school environment?

Parental Engagement & Home Environment – Addressing RQ2 & 3

- How do you normally communicate with parents?
- Do you try to engage them in their child's learning? If so, how often and in what ways?
- Have you faced any challenges engaging the parents? Especially in their language learning?

For CS Participants Only On Context – Addressing RQ2 + 3

- Did you teach at other language schools before? How did you get involved with this CS and what were your reasons in doing so?
- Has working at the complementary setting helped in your own development (professionally or personally)?
- Have you faced any challenges working at a complementary school?

For Toolkit Development (after submission of thesis)

- Is there anything you feel the school can do differently or things it needs to address to facilitate language learning?

- What support or information would you find useful addressing language learning in schools? What have you previously found useful?

- As part of our project we are developing toolkits for mainstream and complementary schools and families to share our research findings. Is there anything you think we should include or consider?

- If at a MS: have you heard of complementary/supplementary schools? Does your school have any partnership or connections with a complementary school, or are aware of students that attend them? If you do, can you elaborate on any involvement with CSs / If not, is this something the school would find interesting or useful (explain what CSs are to participant).

- If at a CS: Do you engage with the MS sector? If so, in what ways (e.g. teaching, running of CS)? If not, have you thought about doing so?

Closing: Thank participants for taking part. Note confidentiality of responses. Allow for any questions on the research and share project contact information.

Appendix XVII: Invitations for Interview and Focus Groups Participation

Dear Parent,

Thank you very much for agreeing to take part in the EAL project, which you singed up to last year, looking at how children grow up bilingual and how language learning can be better supported.

After our brief school visits with the children, **we are now inviting you as a parent to take part in a voluntary focus group or interview online.** This will be informal, will take just 30 minutes of your time, and will explore your experiences and any opportunities or challenges you have faced with language learning and raising your child bilingual. Anything shared will be used anonymously and will not be identifiable to you or your child. If you would prefer to speak in a language other than English, an interpreter can also be arranged. During this session we are also happy to share resources and organizations linked with our project and answer any questions on our findings so far.

If you would be interested in sharing your experiences with us, please contact me by emailing k, or by using the telephone number below, to arrange a session. I am also happy to answer any of your questions or concerns and provide you with more information.

Sincerely,

Layal Husain
PhD Researcher, ESRC Studentship via the UBEL-DTP
https://growingupbilingualproject.wordpress.com/
University of East London
School of Psychology, Stratford Campus
Water Lane, London E154LZ +44 (0)7

- **Calling all parents and teachers!**
- Do you speak more than one language at home? Or have bilingual/EAL students?
- We are concluding our funded project **"Growing up Bilingual"**, based in schools across Newham, and would love to hear from you

→ This research will allow us to develop and share resources for schools and families to facilitate language learning in children

What is involved?

- Interviews or focus groups will be informal, online, and will not exceed thirty minutes. Questions will explore your experiences and any opportunities or challenges you have faced with language learning/teaching/raising your child bilingual
- Anything shared will be used anonymously and will not be identifiable to you or your child
- If you would prefer to speak in a language other than English, an interpreter can also be arranged
- We are also happy to share on resources and organizations linked with our project and answer any questions on our findings so far

What's happens next?

- If you'd like to get involved please email the doctoral researcher, Layal Husain, at u1819500@uel.ac.uk

University of East London

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Appendix XVIII: Example of Initial Hand-Written Coding of Interviews

DW-T1: I definitely think there is a lack of that type of information, especially since the DfE decided that they no longer needed that, the census data from schools. I think schools now are thinking, oh because DfE don't want that type of information we don't necessarily have to make it a priority. When I believe that actually regardless whether the DfE wants that information, it's something that we need to know and that will kind of support us moving forward when we're thinking about supporting those children's provision.

a lack of background info on child's language

sees value in having cultural/linguistic information for children

Uhm, so going back to your question, I, I don't think there's enough of that type of information. Sometimes as well, what you will find is with parents when they admit their children into English school, they will essentially say that children don't have English as an additional language when they do. So a lot of the information that we're given from their parents as well is inaccurate. So I think, so I think what happens then is the teachers or the practitioners around then kind of pick up actually there might be a bit of a language barrier here, even though they assume that the child speaks English fluently. Um, but yeah, I think the, the data is a little bit screwed to be fair with you. It's not accurate, it's not reliable, I would say.

language barrier with parents

lack of information on children's linguistic background

concealing info. from parents ↑ stigma? or lack of info / communication

LH: Yeah, we hear that from other schools as well. I think it ties into a bit of, obviously, the stigma and fear around people, possibly, but that ties in sort of well to the next section, which is basically just on any key challenges you faced, maybe with dealing with you know, different linguistic backgrounds and things like that and, um, have you overcome any of these challenges or is there anything else you think is quite a key challenge?

DW-T1: I definitely think that in terms of parental engagement, um, where you do have parents who have, um, in traditional language as well, it's very difficult to communicate, especially if you don't speak the mother tongue of the parent. Um, what I did find leading EAL which was really, really useful was creating kind of a database of staff and the different languages that they speak. Um so, there were many occasions last year at ▨▨▨ I was able to kind of draw on that information when I needed a particular speaking member of staff to help me out with a parent.

language barrier with parents and communication difficulties

using internal resources to communicate

I found that to be really useful, and that's actually one of the recommendations that I'm gonna put in place for ▨▨▨▨▨▨ because funny enough, just yesterday, I had a parent who speaks Bengali, um, complaining about a member of staff in our administration team and because of his kind of broken English, I kind of got the gist of what he was saying. But luckily, he was able to tell me which member of staff spoke his language, so I was able to find that member of staff and get him to be the translator. But I think if there was some type of information that enabled me to find that myself, that would be even better because luckily the parent knew which member of staff I needed to contact, but it also demonstrated that that type of information is needed in school.

use of internal resources / use of mother tongue to communicate with parents

Um, but yeah, I've always kind of found it a challenge. Luckily, from leading EAL at ▨▨▨ last year I was able to get in contact with, kind of, the Language Shop which is a part of a Newham Council. So they offer a translation service, virtual and via telephone as well. So, I was able to give my staff that information for parents evening so if they knew there were specific parents, they could actually arrange virtual meetings and telephone meetings in advance. So that's a really good resource that Newham has.

use of external resources to engage with parents / efforts to make info. accessible

LH: Definitely, that's really interesting, thank you. Okay, there's just a couple of few questions. Actually we've zoomed through these, Uh, it's very interesting. Thank you.

Now, it's just more I guess about your own experience. So, what were your own experiences with language learning? If you have any? And do you think this has sort of influenced your role, or, or your job in any way?

DW-T1: In terms of thinking about kind of my own experiences as a student and learning languages, I always found it very difficult and, actually, I think it's actually a really good question that you've asked because it's actually made me think about how our pupils feel when they're learning English. It's so difficult to learn a foreign language as well, as an English-speaking person. Some people might find it a lot more easier, I remember from my experience it's quite difficult, so I think that's actually quite an interesting question to pose to teachers that I work with as well to really think about how their experiences were, because actually it may make them put a little bit more effort in when they're thinking about the provisions they provide for non-English speaking peoples or with limited English. Um, but yeah, I would say that I found it difficult, I would say as a student learning a foreign language.

challenges in own language learning / reflections on own experience

LH: Yeah and OK, perfect and do you- What do you think bilingualism or multilingualism really means to you, or more so in the classroom or school environment?

DW-T1: To me, and especially the, the research I've done, um, around kind of multilingualism and um leading EAL, I think it's a really great thing, I think it's a really positive thing. I think what we need to do probably a little more in English schools is try and incorporate children's home language or mother tongue and just for those initial kind of steps, especially when you get those children who come in with no English at all.

positive view of multilingualism

I think embracing their, their mother tongue is something we need to do more in the classroom, um, because that shows inclusivity and also enables the child to feel a lot more comfortable when they first enter that English classroom with children who mainly speak English fluently. Um, the frustration they must feel actually, when they first encounter that environment. So I, I definitely think that it's something that needs to be embraced. One of the recommendations that I'm also providing for ~~Sheringham~~ for kind of everyday use is teachers just doing the register, for example, in one of the children's home language, getting the children to introduce what hello sounds like and how to say it in a different language because not only are you making that child feel more comfortable and proud of where they're from, but also teaching the rest of the children as well. Uhm, I, I think it's a great thing. I do think though it needs to be incorporated more into the curriculum.

need to recognise home language

recognising experience of EAL learners

examples of inclusion / recognising home language

LH: No, that's excellent. That's really, again, insightful. Other than that, do you feel the school can do any other things differently to facilitate language learning or anything you think needs to be addressed?

You talked about a couple of things, is there anything else you think?