

Secondary school French learners' musical aptitude and listening comprehension of non-standard French accents

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MSc Applied Linguistics and Second Language Acquisition, 2023

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List of abbreviations

L1 – first language

L2 – second language

GCSE – General Certificate of Secondary Education

MFL – Modern Foreign Language

TL – target language

TOEFL – Test Of English as a Foreign Language

RQ – research question

SPSS – Statistical Package for Social Science

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Abstract

This study seeks to uncover how GCSE French pupils' listening comprehension is affected when they encounter non-standard, unfamiliar French accents. Informed by substantial research suggesting that musical aptitude can be a predictor for successful linguistic development the study also seeks to explore whether higher musical aptitude is a facilitating factor for successfully understanding non-standard French accents.

79 French learners in year 10 completed a musical aptitude test and a French listening comprehension paper; which comprised four passages read by speakers of four different varieties of French: Parisian; Senegalese; Guadeloupean; and Canadian.

Findings showed that Parisian French was the variety which learners found the easiest to understand, however Senegalese and Guadeloupean French accents were not significantly different to the Parisian scores. A series of paired t-tests revealed that the Canadian French variety was the hardest for the secondary school French learners to comprehend. Results also revealed a weak positive correlation between musical aptitude and overall French listening ability. A linear regression analysis indicated that musical aptitude predicted 6.8% of learners' listening comprehension ability.

The study concludes by suggesting that Canadian French is harder for year 10 French learners to understand due to the phonetic properties of the variety and the features' divergence from Parisian French. Moreover, musical aptitude can improve learners' comprehension, even with regards to unfamiliar accents and so engagement with musical activities should be promoted for its facilitative effect on cognition within the language classroom and, as other research suggests, in other cognitive domains too. The study also suggests that non-standard French accents (Senegalese and Guadeloupean) be incorporated into the MFL curriculum since French learners at GCSE level do not exhibit difficulty in comprehending these varieties.

1 Introduction

The study of a foreign language entails a multitude of factors which a learner must engage with. Not only must the individual commit to memory sufficient words in that language to communicate experiences or thoughts (and thus form a lexicon), but they must also grasp the intricacies of the target language's grammatical system in order to express those thoughts. Language skills can be broadly divided into productive and receptive skills: the former referring to speaking and writing; the latter reading and listening. These four components might develop at different rates for individual learners, and some learners may find certain components easier to develop than others (Spada & Lightbrown, 2020). For example, learning to produce necessary phonemes in Italian might be easier for the L1 Spanish speaker compared to the L1 Vietnamese speaker as the phonetic proximity between Romance languages Spanish and Italian is closer than that of Italian and Vietnamese, which means the Spanish learner's speech organs are more adapted to produce the Italian phonemes.

Language learning takes place in various contexts. Non-immersion learning, which takes place in a classroom, is often guided by a formalised curriculum usually designed with the aim of comprehensively covering the different components of second language acquisition. However, sometimes this curriculum presents a rather narrow view of native speakers of the language, projecting a highly standardised form of that language and, often giving emphasis to the variety of the language that has higher social prestige. This is highlighted in the MFL subject content report published by the Department for Education where GCSE learners' listening skills target includes the ability to "follow and understand clear standard speech" (Department for Education, 2022 p.5). Learning standardised vocabulary and grammar is important so that learners can use their target language in contexts of varying formality and with a broad range of speakers. However, this standard form of the language is produced in a variety of accents in

the real world and these accents might differentially evoke positive or negative ideas about the speaker, ideas or generalisations which tend to be linked to ethnicity, socioeconomic status, and nationality. These social labels mean often a single standardised accent of prestige is favoured in the curriculum.

French is consistently the most popular foreign language taught in schools in the UK and studied at GCSE (Churchward, 2019). It is also the second most popular second language learnt globally after English (*Organisation Internationale de La Francophonie – Langue Française et Diversité Linguistique*, n.d.). French is also a richly diverse language both within Metropolitan France and overseas, largely due to France's dark history of colonialism and the linguistic reaches the French language made into large swathes of Africa, North and Central America and Oceania. In fact, French is an official language in 29 countries, and is spoken unofficially in many more, with number of speakers estimated at over 300 million worldwide (*Organisation Internationale de La Francophonie – Langue Française et Diversité Linguistique*, n.d.). There are also French pidgins, some of which have become creolised meaning the pidgin is spoken as a first language. In many cases, distinctive French dialects with vocabulary and grammatical constructions unique to a region or nation have emerged over time. Accents also develop with different phonetic qualities, and accents can be used without any dialectal vocabulary (i.e., many speakers may speak 'standard' Metropolitan France French but with a 'non-standard' accent). As previously mentioned, non-standard accents often do not possess as much social prestige.

The Foreign Language curriculum resources adopted in British classrooms use an idealised and highly standardised form of the French accent, which not only is not representative of the population of speakers of the language and therefore of real-world language use, but also does not expose learners to phonetic variation they are likely to encounter when using their language outside of the classroom setting. The listening component of language learning can be

particularly intimidating for some learners, as they find it difficult to understand what they hear (Lynch & Mendelsohn, 2020; Ofsted, 2021). Perhaps only presenting a narrow version of a language in the classroom can facilitate learning. However, this narrow representation could also be due to underlying discrimination. With a decline in MFL uptake at GCSE level, some sort of action needs to take place to increase learner engagement and prospective MFL GCSE candidates (Long & Danechi, 2022; Ludlow, 2022). Declining numbers of MFL study in the UK is due to a plethora of reasons, and this study seeks to address how we can better support French learners with their listening comprehension, especially when encountering unfamiliar French regional or 'non-standard' accents.

There is some literature pointing to a link between music and language whereby individuals with higher musical aptitude find it easier to develop linguistic skills. In the language classroom therefore, to better support learners and identify those who may need more support, music testing could prove useful. Therefore, the substantive aims of this project are:

- To investigate how listening comprehension is affected when learners encounter non-standard, unfamiliar French accents.
- To explore whether higher musical aptitude is a facilitating factor for successfully understanding non-standard French accents.

This project aims to contribute to better understand how learners perform when encountering various French varieties, and seeks to inform pedagogical strategies and approaches and better support learners in the French language classroom.

This study is also motivated by the problematic Eurocentricity of the UK MFL curriculum and aims to contribute to a body of work trying to render language teaching theory and practices

less centred around social ideals of prestige (and more reflective of real-life interaction and preparing learners to interact with people in the richly diverse Francophone world).

To explore this topic, an exploratory approach was taken using a quasi-experimental methodology testing Year 10 French GCSE pupils' listening comprehension skills with a listening test modelled off the Pearson Edexcel GCSE foundation paper. Participants' musical ability was also tested with a receptive music test assessing melodic and rhythmic perception. This dissertation will first present the current literature addressing listening comprehension and musical aptitude, before detailing the methodological procedure of data collection and analysis. Results are then presented in a brief analysis chapter after which the findings are discussed, assigned meaning and contextualised within the field of language pedagogy, music and French classroom learning.

2 Literature Review

This chapter explores the topics raised in the introduction and draws the reader's attention to key issues in the field. It guides the reader through the concept and content of Francophonie before examining French classroom learning in the UK educational setting. The chapter then presents a critical review of the literature on musical aptitude and linguistic skills before stipulating this study's research aims.

2.1 French

2.1.1 Diversity in the Francophone world

French, a member of the romance language branch of the Indo-European tree, is spoken across the world in many nations. Some countries use French in an official capacity and others informally. Francophonie is defined as the collection of countries which use French as an official language or for whom French carries significant cultural meaning (Jeanjean, 2006).

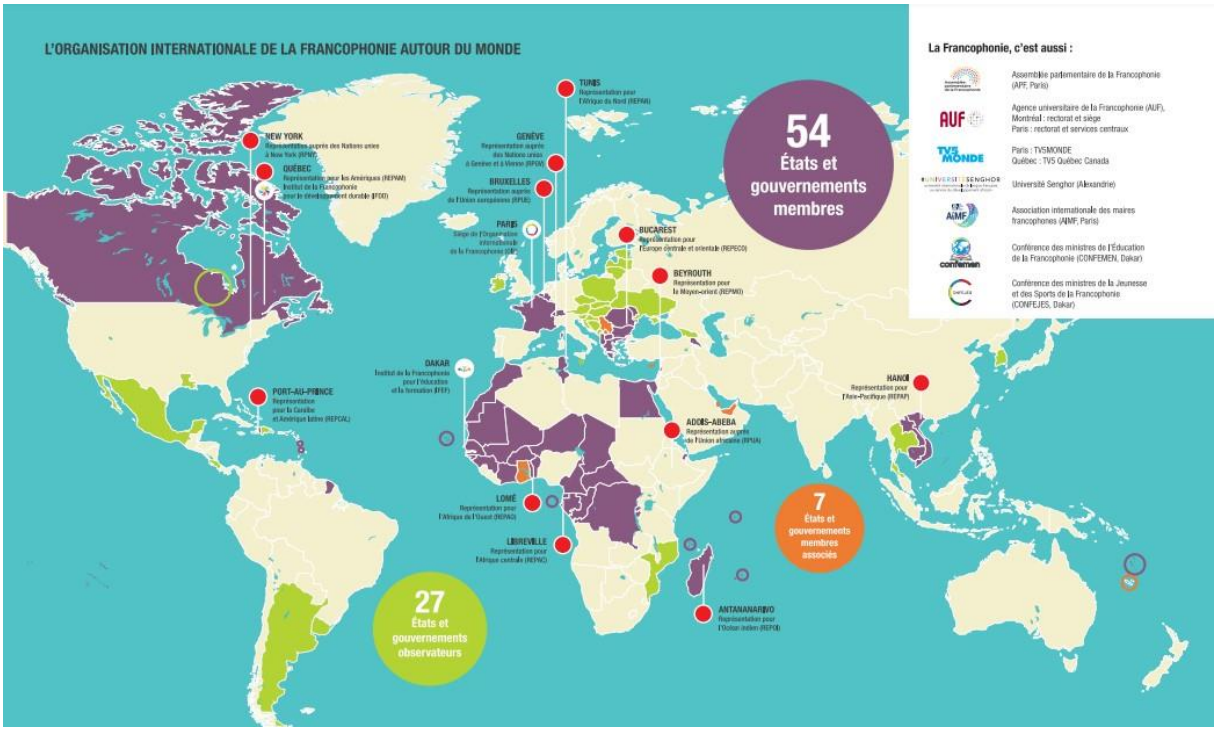

*Figure 1 The Francophone world (*Organisation Internationale de La Francophonie*)*

Due to the geographical far reaches of the French language, variation is inevitable, and the French language has indeed grown and developed with time. An immense richness exists in the francophone world, with different regions, nations and cultures carving out their own French variety in accent and/ or dialect with lexis specific to their population's usage moulding the language to serve its users in the most relevant way.

Now is a good moment to define what is meant by accent and distinguish this term from dialect. Accents refer to the way a language is spoken, that is, the phonological realisation of words, whereas dialects refer to a system of lexis, syntax and grammatical nuances of a language which develop to mark a variety of a language which diverges from what is considered a standard form (Chambers & Trudgill, 2009). A dialect also encompasses an accent, and dialect users can keep their accent whilst using the standard language form. Whilst acknowledging the existence of many French dialects[1], such as Breton[2], Alsatian[3], and Basque, this study is concerned only with accents and the perception of those speech sounds typically associated with a particular group of people. Dialect-specific lexis is often used in conjunction with standard French and the regional accent, however this study concerns itself with standard French variety of lexis and grammar spoken with regional accents. This is because standard French (grammar, lexis

[1] These dialects are also referred to as 'langues régionales', regional languages, but commonly labelled as dialects of French, despite sharing very little linguistic features with the modern-day French language. The distinction between language and dialect is often politicised with some 'dialects' being more like distinct languages, and some 'languages' being more like a dialect but not classified so (Chambers & Trudgill, 1998).

[2] Breton is spoken in Brittany, Western France. The Breton language is distinctive from French as not even being of Romance origins, instead being of Celtic origins. In Brittany, most Breton speakers are L1 French speakers, few Breton users speak Breton as their L1 (Hornsby, 2008). The Breton accent, which is often more guttural than standard French, therefore is a marker of a standard French speakers' residence or origin in Brittany.

[3] Spoken in Alsace, Eastern France. This 'langue régionale' is linguistically closer to German than French, yet since it is spoken in a French department it is classified as one of Frane regional languages (Vassberg, 1993).

etc) is taught in the curriculum giving L2 French learners a basis off which to develop their language later.

Unfortunately, negative associations of social prestige to certain varieties diverging from the 'standard' variety of prestige means that speakers of French can be attributed identity labels of negative characteristic such as lower intelligence or law-breaking (Carlson & McHenry, 2006). Social prestige is very often linked to (former, or present) colonial ties. For example, in New Zealand, English spoken with an RP accent is considered the most socially prestigious variety which speaks to the notion of varieties traditionally associated with power and prestige being considered in some way better (Huygens et al, 1983). Glottophobia, which is discrimination based on someone's accent, has knock-on effects as users of these varieties often receive discrimination in the job market and other contexts (e.g., Kozlowski, 2015).

In the context of French, the variety of prestige, Parisian French, is often projected onto learners of the language. However, non-standard speakers, as we can call them here, are not going to cease to exist, nor should they. The problem with French classroom learners being exposed to a narrow view of French speakers, therefore arises. French learners should be able to comfortably, and successfully interpret other French speakers' utterances. Shielding the classroom learners from the immense mosaic of diversity and instead presenting a narrow view of French accents might make L2 French learners ill-prepared for extra-classroom communication. It must be remembered that each learner faces their own difficulties and adaptation to new accents might not pose a problem to some learners. Of course, it might also depend on the accent itself; perhaps some non-standard accents are easier to understand than others. The issue, however, lies in that not exposing learners to variation is propagating language ideals which could be imparted onto the language learners. The four French varieties presented in this study are by no means representative of all French forms, but they do offer

some variation, both phonetically and geographically. Indeed, variation is rich even within countries and communities, and within metropolitan France too as highlighted earlier.

Figure 2 is a map representing the four French accents examined in this study: Parisian; Senegalese; Guadeloupean; and Canadian. The standard French variety, Parisian, was included as a baseline off which to compare participants' performance in the three non-standard varieties. These three non-standard varieties were chosen for their geographical distribution (that is, outside of Europe and all on different continents). The map shows where these varieties are primarily used.

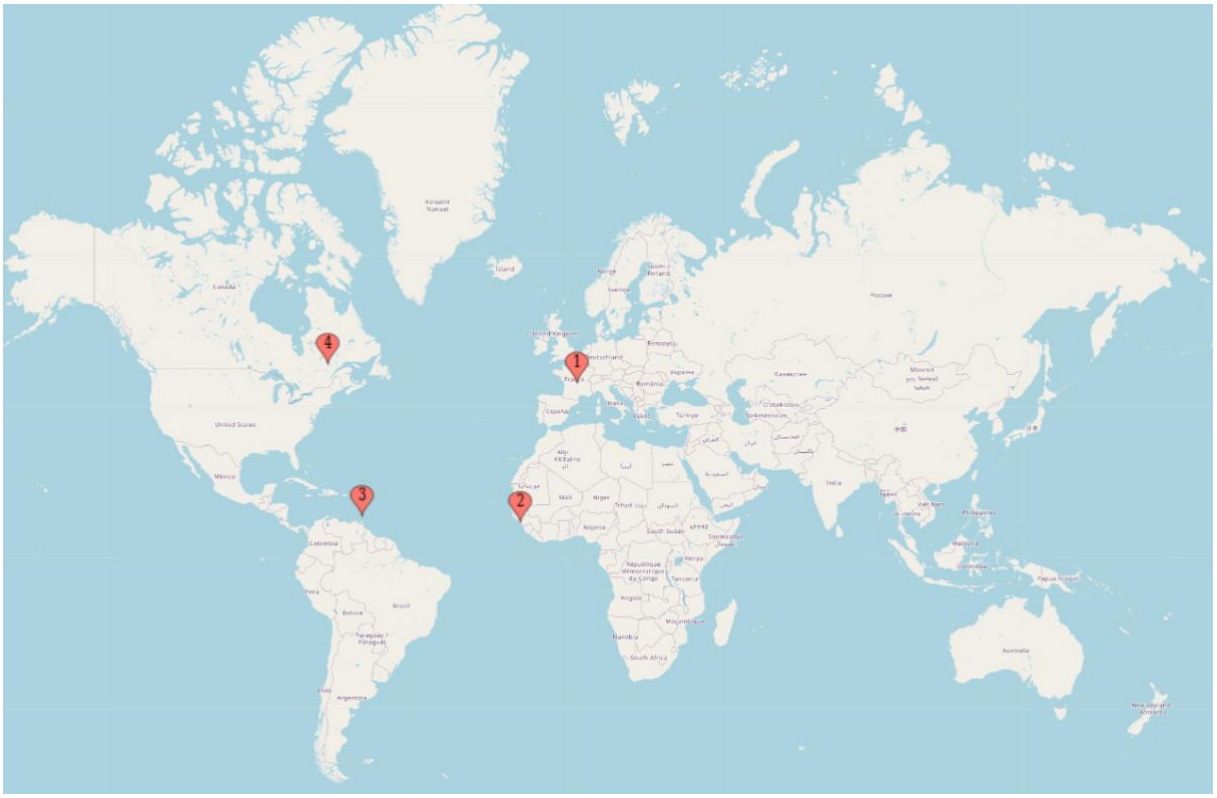

Figure 2 Map of the four varieties selected for this study (Mapcustomizer.com, 2018)

1 = Metropolitan France (Paris)

2 = Senegal (Thièn)

3 = Guadeloupe (Petit-Bourg)

4 = Canada (Québec)

The phonological features of the varieties are listed below. Each variety is distinguishable from the other, and a key feature in French variation is the production of the consonant <r>, typically realised as [ʁ] in standard Parisian French. Divergence from this production in terms of place and manner of articulation change, is indicative of non-standard language use. Vowel divergence is also often a distinguishing feature in combination with other realisations which mark a dialect.

Parisian French, or the standard

As the capital of France, Paris is a highly multicultural city boasting rich diversity both in languages spoken and intra-language variation exhibited. Possibly due to the social, political, and cultural capital associated with the city, what is often referred to as Parisian French is considered the standard, neutral[4] variety. However, as with all other cities, counties and regions of France, immense variation means no one variety exists but we can attribute characteristics to the accent typically used in that place. Paris is an interesting case, however, since the city's varieties of French range from the elitist high social prestige accents, to accents strongly labelled with negative associations such as unemployment (Stewart, 2012). This speaks to the points previously mentioned regarding accent discrimination. Whilst therefore acknowledging the contradiction in the term 'Parisian French' we will nonetheless accept this term as

[4] The notion of a neutral accent is often used along with the idea of a population who speak the standard form of a language 'lacking' an accent, which is linguistically and physiologically impossible. The term 'neutral' merely plays into the notion of a base form off which the non-standard forms diverge, with 'accentness' referring to this divergence. Perhaps the framing of varieties in this paper reinforces this thinking, but seeks to do so without labelling the non-standard forms as negative or in some way worse.

synonymous with 'standard' and higher prestige in this dissertation. Parisian French can be characterised by its intonation pattern which, compared to Caribbean French varieties is more monotone, however metrical stress is often placed on the final syllable (DiCristo, 1998; Managan, 2016; Stuart, 2012).

- Vowels enunciated distinctly
- Non-flunctuating intonation
- little emphasis on the /r/
- word-final stress

Senegalese French, or the non-standard

Located in Western Africa, Senegal is a francophone country due to its former colonial ties to Metropolitan France. Despite French being the official language of Senegal, it only understood by a mere quarter of the country's population, and usually as a second language after Wolof (Boutin et al., 2012). Of the West African French varieties, Senegalese is one of the most distinguishable from standard French (Boula de Mareüil et al., 2011) Characteristics of the Senegalese French accent include:

- Word initial stress (like in Wolof)
- All the vowels used in Wolof and Senegalese French are also used in Standard French, with the exception of [y] (Boutin et al., 2012).
- Consonant deletion
  - E.g. not pronouncing the word initial [p] in *psychologie* (psychology) as in Standard Frenhc, instead starting the word with [s]. (Boutin et al., 2012).
- Standard French uvular trill [ʀ] is often replaced with the alveolar trill (or 'rolling' an /r/)
  - E.g. in the speech sample used in this study: *travail* normally pronounced /tʀeəvaɪ/ in standard French is produces as /tɾeəvaɪ/ in Senegalese French.

Canadian French, or the non-standard

Both French and English are official languages in Canada (Kircher, 2016). L1 English speakers are the majority linguistic group in Canada at 75.5%, with French L1 speakers as the second largest linguistic population at 21.4% (Government of Canada, 2022). With Quèbec at the heart of Francophone Canada, French is the official language in three Canadian territories: the Yukon; the Northwest; and the Nunavut. Despite the generalised term, Canadian French is used in this study to refer to Laurentian, or the Quebecois French accent (Côté, 2012).

Key features of the Canadian French accent which distinguish it from 'standard' metropolitan French include (but are not limited to):

- Vowels - [æ] becomes like the diphthong [əʊ]

- e.g. the negative particle 'pas' which is normally pronounced /pæ/ becomes /pəʊ/

- Shorter vowels in standard French become lengthened so diphthongs become triphthongs.

- e.g. 'ma maison et au bord de la mer' /meəɹ/ → /meɪər/

- Uvular trill /r/ [ʀ] becomes rhoticised (example in the recording 'on commence à huit heure')

- Heure transforms /œʀ/ → /œr/

- The uvular trill becomes rhotacised.

Guadeloupean French, or the non-standard

Guadeloupe is an overseas French territory made up of a series of islands, six of which are inhabited, located in the Eastern Caribbean. As one of France's 101 'départements[5]',

[5] France has 12 overseas territories which they divide into 'departments and regions', and 'communities and territories'. Guadeloupe is classified as a 'department' meaning it follows the same laws as Metropolitan France (République Française *Settling in France's overseas Departments and Regions, 2020*).

Guadeloupe is administratively part of France, French is the official language and is spoken by the majority of the population (*République Française,* 2020; Managan, 2003). Alongside French, Krèyol is spoken throughout the archipelago, a French based creole which developed from the pidgin which emerged from contact between local Guadeloupeans and French colonisers in the 17th century onwards (Meyjes, 1995). In diglossic communities one language is often attributed more social prestige, in Guadeloupe French is the language of prestige whilst Krèyol is considered lower in status (Managan, 2016). Speakers in Guadeloupe may produce French with a standard accent likened to that of Paris but they can also speak with a Guadeloupean accent characterised by phonetic realisations different to standard French[6].

Characteristics of Guadeloupean French include:

- Speech is produced with variable intonation (more fluctuation than in the relatively more monotone Parisian French). This varied intonation is a direct influence from Krèyol.
- Standard French uvular trill [ʀ] is replaced with the velar fricative [ɣ]

As Managan (2016) explains, the predominant factor separating Guadeloupean French from Metropolitan French is the incorporation of lexis from Krèyol. The interaction of the two languages in Guadeloupe is a fascinating case of diglossia, however this study is concerned only with the phonetic properties of Guadeloupean accented French and not the dialect.

2.1.2 French language classroom learning in the UK

This chapter now steers the focus towards learners of French as a second language in the UK education system All secondary school pupils in the UK are required to sit GCSEs (General Certificate of Secondary Education) typically in Year 11, when pupils are aged 15-16.

[6] The Guadeloupean speaker used in this study spoke both Kréyol and French, and when speaking standard French was able to speak in two distinct accents. She was able to use these different French forms in the context where it was most relevant, or even linguistically advantageous to do so.

Pupils usually choose 5 subjects to study at GCSE level in addition to maths, English and science.

French is the most common MFL studied at GCSE[7], with 124,665 GCSE pupils learning French in 2021 (compared to 109,665 for Spanish, 37,035 German and 25,225 other languages) (Long & Danechi, 2022). French is a language which in the UK traditionally carries more social prestige than other foreign languages such as German and Spanish which are also commonly offered as GCSEs. French is often associated with more elevated social ideals when compared to languages such as Arabic, Polish and Urdu which are actually more commonly spoken in the UK than French.

The UK French MFL curriculum favours a Eurocentric version of the language, that is, metropolitan French within which the 'neutral' Parisian French is considered the standard variety and therefore the most appropriate variety for students to learn. This preference for the standard form is reflected by curriculum makers and teachers as being the variety that learners are exposed to in the resources provided to them in language courses. Phonetic variation that pupils hear will more likely be as a result of the speakers' gender[8] or age[9] than regional variation. Learners in the MFL classroom therefore receive very limited exposure to accents other than what is considered the standard one of prestige. Therefore, it is questionable how these learners might feel or perform when they (hopefully) take their linguistic skills beyond the classroom, and inevitably encounter speakers who do not produce language in this standard accent. Indeed, Trude et al (2013) found that although learners did manage to adapt to understanding unfamiliar accented English, they had substantial difficulty doing so and comprehension varied for the five accents tested. This brings to the fore the possibility that

[7] Although number of students studying French at GCSE has seen a downward trend in the UK over the last decade whilst Spanish GCSE candidates has observed the opposite trend. (Long & Danechi, 2022).

[8] Cisgender male voices typically have a pitch range of 100 – 120Hz with cisgender female voices usually produced within the 200–220Hz range (Simpson, 2009).

[9] As humans age, their voices typically lower in pitch and they also might exhibit other phonetic features such as increased vocal fry as their vocal folds become tougher, less adducted and restrict airflow slightly (Gibson, 2017).

better understanding the way GCSE learners comprehend novel accents might help inform pedagogical practices to optimise learner's listening comprehension success.

In the Department for Education GCSE MFL report of 2022, they write that GCSE MFL students should be able to understand "short narratives and authentic material addressing a wide range of relevant contemporary and cultural themes" (Department for Education, 2022, p.5). This wording brings into question the degree to which the material is indeed authentic, since it does not widely reflect demographic and phonetic variation in the francophone world. The irony of the education governors' words and the real outcome in the curriculum and test papers is highlighted by a question entitled "New Caledonia" in the higher GCSE listening paper of 2019. The female speaker in the GCSE test shares her experience of growing up in New Caledonia (French territory[10]), enunciating the whole excerpt in standardised Parisian French. This example is not to argue that so-called standard accent speakers do not live outside of Paris, but more to highlight the discord existing between the supposed goals set out by education and the actual manifestation of them in the GCSE UK curriculum- missing at times the perfect opportunity to incorporate variety in an 'authentic' way, just as they had outlined in their report.

2.1.3 Listening comprehension

Before going any further into exploring an L2 French learner's journey, we will first define the term comprehensibility, which is at the heart of this study. Comprehensibility refers to how well a listener understands their interlocutor's speech (Derwing, Munro & Thompson, 2007). The concept of intelligibility often occurs in discussions about comprehensibility, but we can distinguish the two concepts: comprehensibility

[10] French overseas territory in the Pacific Ocean, East of Australia (*New Caledonia | the United Nations and Decolonization*, 2022)

considers the ease at which the listener is able to arrive at the most relevant interpretation of what the speaker said; intelligibility shifts that focus towards the components of speech, measuring how successfully the listener interprets the speech. Intelligibility can be understood to refer to the true amount someone understands, whilst comprehensibility is about perceived understanding (Munro et al., 2006). By this definition, intelligibility is therefore relevant to our discussion, however the two concepts are inextricably interwoven and interpreting sometimes variable definitions assigned to them throughout the literature should be done so mindfully (Saito & Shintani, 2016).

In some cases, the degree of comprehensibility might even be influenced by a person's attitude towards another speaker, that is, the speech is in itself intelligible, but the listener's perception of the speech or accent impedes their understanding. By that same token, unintelligible speech might be assigned an alternative meaning by the listener thus rendering it comprehensible. In this study, the term comprehensibility shall be used to refer to how successfully the listener understands the meaning of an utterance.

Attitudinal factors in fact can massively impact how an interaction might play out, how willing individuals are at trying to understand (Holzknecht & Brunfaut, 2022). Attitudes are an important consideration to keep in mind however explicit attitudes toward a speaker is not an issue this study examines. This study instead explores how speakers react to those accents not knowing the identity of the speaker more than what they can hear in their voice alone. This means that some underlying attitudes could emerge and manifest in the participants actions but as will be outlined in chapter 3 explicit attitudinal factors are not controlled for. In the literature, various factors have been found to impact listening comprehension such as the listener's proficiency in the target language, how familiar the listener is with an accent, but also the

multilingual background of a speaker (Crowther et al, 2015; Kang, 2010; Miao et al, 2022; Saito & Shintani, 2016).

Speech processing is a useful concept to further explore how listeners interact with different or unfamiliar accents. Floccia et al (2006) explain that adapting to understand a new foreign accent occurs in two stages: firstly, lack of comprehension occurs; secondly the listener adapts after the failed communication making comprehension easier next time. However, Floccia et al identified a lack of understanding on how listeners adapted to regional accents. As such, they examined the impact of French regional accents on L1 French listeners' speech processing to gaining a better understanding of how humans adapt to novel accents. Evaluating the results of six lexical decision latency tasks which measured participants' performance with different regional accents, they found that listeners undergo an adjustment process when encountering regional accents. Successful comprehension of a new accent is referred to as normalising and causes a momentary disruption in processing the speech. Although the cognitive mechanism/adaptation process discussed in the Floccia et al's (2006) study is discussed in the context of L1 French listeners, it is nonetheless relevant when considering L2 adaptation to novel French accents, since it brings into question how quickly learners might be able to 'normalise' a novel accent. Adank et al (2009) also conceptualise listeners' comprehension of unfamiliar accents as requiring a processing cost and reducing that processing cost allows for faster comprehension of new varieties of a language.

In a similar vein, Maye et al (2018) tested how well learners could understand accented English likened to one American dialect. Participants listened to a 20-minute extract of the Wizard of Oz either the experimental version, where fronted vowels had been adapted, or the unchanged version. During a word judgement test after watching, participants in the experimental group not only exhibited an adjustment to understanding the words, but also to understanding the

vowels in new words which had not appeared in the film. Maye et al (2018) took this as evidence for a speech processing mechanism relating specifically to vowels and argued that listeners can adapt their understanding of an accent in specific contexts to increase comprehension of their interlocutor's accent. This account is very interesting in the context of the L2 classroom. Not only are vowels commonly a distinguishing feature of a particular accent[11] (and of those explored in section 2.1.1), but context-specific adjustment to different accents by way of exposure and receptive input is a feasible approach to classroom learning, or even self-directed language study.

Major et al (2005) examined how L1 and L2 speakers might engage differently with various categories of accents. Conducting their research in the context of the USA, the researchers categorised dialects as 'ethnic', 'regional', or 'international' in relation to Standard American English. Participants were TOEFL students (L2 English speakers) and L1 English college students and completed a listening test. Findings revealed that both L2 and L1 English students' comprehension was significantly affected by dialectal variation, with L2 participants' comprehension most impacted by 'ethnic' (the researchers chose African American English speakers as the population to represent this category) and 'international' (Australian and Indian English speakers) accents. Their key outcome was that there was no significant difference in L2 participants' performance when hearing the regional American accent (Southern US) as well as the standard American English. Major et al (2005) interpreted this result as a validation for regional dialects to be incorporated into ESL curriculums. Kang et al (2023) considered the fairness of using a variety of English accents in listening tests and found that the learners' own accent was influential in their understanding of the non-standard English accent.

[11] As highlighted by Wells creation of the Wells lexical set in 1982: a set of words used to comprehensively account for vowel production in English. Researchers in dialectology often use the lexical set to describe how vowels are impacted by regional variation, and how these vowels are realised differently, diverging from the standard (Wells, 1982).

2.2 Music

There is substantial literature addressing the idea of musical aptitude being in some way linked to linguistic abilities, indeed the correlation is oftentimes assumed for seeming 'logical' or 'intuitive' as reflected in various grey literature sources (e.g., Henriksson-Macaulay, 2014; Richards, 2022). It is worth saying that when discussing literature on music and language, this study does not consider music-based language pedagogy. Instead, we are interested in musical ability, skill or what we will refer to as aptitude.

Musical aptitude as a phenomenon has been widely researched in many different fields and defined in varying ways. Even within the field of applied linguistics and education musical aptitude can refer to some innate ability, and other times refers to how much musical training an individual receives or engages with. For example, Marie et al's (2011) study analysed musicians' perception of metric structure in words and included musicians as participants who had on average 17 years of musical training (they compared the data to previous research looking at non-musicians). Alternatively, Dolman and Spring's (2014) study tested participants 'innate' musical ability with the Seashore Musical Aptitude test. Aumen (2023) combines multiple approaches by testing musical aptitude in addition to rating participants home environment for musicality, focussing both on participants' musical ability *and* the musical input they receive. This variation in methodological approaches repeats itself throughout the literature examining music and language through various fields of study including linguistics, neuroscience, psychology, and education. In fact, Dolman and Spring (2014) criticise previous studies for not making the distinction between innate musicality and external input clear enough. Some researchers have tried to bring clarity to musicality however there are not many firm conclusions on how much musical aptitude is, or can be, learned. It might seem logical that someone who has a natural inclination for music and finds it easier may be more likely to pursue extra music classes or activities, however the direction of this relationship is unclear.

Aptitude testing in itself has come under criticism in recent years for being too one-dimensional and not accounting for other manifestations of intelligence or cognitive processes, as well as the ethical and practical consideration of the influence of test taker anxiety impacting performance and not accurately representing their ability (Dörnyei & Ryan, 2015; Doughty & Mackey, 2021). Popular aptitude tests used in the field of Second Language Acquisition include MLAT (Modern Language Aptitude Test) (Carroll & Sapon, 1959); PLAB (Pimsleur's Language Aptitude Battery) (Pimsleur, 1966); and LLAMA (more modernised language aptitude test done online) (Meara & Rogers, 2019). Older models of aptitude testing, such as the MLAT, have been criticised for not accounting for various components of aptitude and the concept of aptitude has undergone change as trends in the literature focus on proficiency, or other aspects of learning (Dörnyei & Ryan, 2015). More recently, working memory is the buzzword which has been popularly associated with aptitude and research is now going down that route (Wen et al., 2017). Despite these critical considerations surrounding aptitude as a construct, it is nonetheless useful to use in research, and will be defined as a learner's cognitive ability in this study and used as a basis to measure participant's musical judgement/ perception abilities (Dörnyei & Ryan, 2015; Doughty, 2013).

The literature examining musical aptitude is broad and many different components have been examined. There is a large swathe of literature looking at musical aptitude and reading proficiency (e.g., Fougerousse Aumen, 2023; Foncubierta et al., 2020; Fonseca-Mora et al., 2021; Gomez-Dominguez et al., 2018; Gordon, 2015; Gromko, 2005; Janurik et al., 2022). Other researchers have found positive correlation between musical aptitude and phonological awareness and argue that increased phonological awareness improves language performance (e.g., Christiner et al., 2023; Coumel et al., 2023; Culp, 2017; Pei et al., 2016; Roncaglia-Denissen et al., 2016). This rest of this chapter seeks to organise key themes in the literature on music and language aptitude.

2.2.1 Music and language in the brain

The research examining music and language focuses on neural processing. Many studies find that language and music are in similar brain areas or perform functions in overlapping regions (e.g., Gromko, 2005; Milovanov & Tervaniemi, 2011). However, it is not just musical aptitude and linguistic aptitude processes taking place in these brain regions, but an immense number of functions. Indeed, we might question to what extent the supposed neural link between music and language is distinct from other cognitive domains (Jackendoff, 2009). This query touches upon a wider debate considering how domain-specific language processing actually is, or whether linguistic ability is more domain-general and linked to other capabilities (Zheng et al., 2022). Whilst this debate can inform our understanding of the brain, this paper seeks to understand the outcome of that cognitive processing.

2.2.2 Music and language: Tone

There has been research on music and tonal languages such as Mandarin. Despite not relating precisely to non-tonal French, it is nonetheless worthwhile to briefly review research on this topic as some aspects might be able to inform research on other languages. For example, more advanced pitch perception amongst English L1 students learning Chinese was facilitative in learning Chinese tones (Bowles et al, 2016). Could such findings be transferred to producing more native-like prosody in a romance language, for example? As outlined earlier, some varieties of French exhibit more varied intonation and prosodic features than the standard form, how might more proficient pitch perception influence listeners' comprehension of those varieties?

2.2.3 Production and perception

Research on language acquisition has examined how musical aptitude might facilitate the development of the four skills. Jekiel and Malarski (2021) explored how well L1 Polish speakers (N=50) acquired vowels in their target language of English. They tested participants' musical hearing (and self-reported musical experience) and also their vowel production skills before and after a 90-day (2 semester) accent training course with the goal of increasing the British style of their English accent. Results revealed several indicators that facilitate native-like vowel acquisition: self-reported musical experience, 'pre-existing' rhythmic perception, and the learners' proficiency before the intervention (which was the strongest predictor in listeners success at acquiring a British sounding accent).

This study presents interesting findings revealing that music, both as a practiced skill and specific skills within music, can support language learning. However, the research design compares a receptive skill (musical perception) and a productive skill (vowel production). This study brings to mind the importance of considering learner goals. Whilst speaking clearly and producing phonemes is important to make meaning, speaking English with a British accent is purely stylistic (or for social prestige) and not necessary for successful communication. We can question what it means to produce 'native-like vowels', for much like French, English too has a rich variety of L1 speakers. Idealising the standard prestigious form speaks to out debate about language curriculums prioritising a narrowly spoken variety.

Musical aptitude has also been found to support language learners' silent reading ability. Foncubierta et al (2020) tested 117 L1 adult Italian learners of L2 Spanish for their musical aptitude, phonological awareness and auditory working memory using a contextual word recognition task. The design allowed for the researchers to control for the interaction between the variables, and their findings revealed musical aptitude to be a stronger predictor of silent reading proficiency in the target language than expected - even stronger than learners' phonological awareness and auditory working memory (Foncubierta et al, 2020). The findings

from this study contribute to our understanding of how different cognitive skills support learners in the MFL classroom. These results could suggest that music testing could help identify learners who may be struggling with silent reding, a skill for which, it is less evident how well the learner is doing.

In her study examining the facilitative effect of music on reading ability of grade 1 and 2 pupils, Fougerousse Aumen's study (2023) found that musical aptitude was more statistically significant in predicting L1 test takers success compared to L2 test takers, an interesting finding which speaks to the debate surrounding how first and second language are differentially acquired. There is substantial focus on external input too – she found that pupils who have musical instrument lessons outside of school and have a musical home environment are more likely to score higher in the music and language tests than participants without the extra music engagement. However, the possibility of socioeconomic status impacting these scores seems plausible: children who can afford to have extra music lessons are likely to be from a home where education is valued and prioritised which in turn will increase the likelihood of them scoring higher in tests in school compared to their lower SES peers. This highlights the complexity of trying to account for variables in education research, as there are numerous possible influences on a child's attainment.

It is unclear if music has more of a predictive power for productive or receptive skills. Morgan (2003) examined productive and receptive skills in both music and French L2 learning. The researcher hypothesised that a corelation would exist between both productive skills and both receptive skills, and her results supported the hypothesis. Students with receptive music skills were stronger at successful speech perception, and learners' speech successful production was in part predicted by their music production abilities too. The findings of the study provide an insight into the facilitative effect of music in multiple language domains and the researcher proposes using musical testing to stream language learners into two different groups arguing that each group of learners could receive pedagogical approaches more suitable to their

cognition: learners with weaker music skills follow a phonetic approach to learning; learners with stronger musical skills follow a pedagogical approach involving tasks and activities more centred around music such as writing lyrics in the target language. She recommends groups of learners have 'completely different pronunciation programmes' (Morgan, 2003 p.67). Although the findings in her study are not negligible, proposing a complete divide of language learners based on their musical ability alone seems like a slight over-application of findings into pedagogy. Moreover, the discussion surrounding music-based pedagogy is a separate issue and a correlation between musical aptitude and language learning ability does not imply causation, i.e., the existence of a correlation by no means suggests that one component causes the other and so concluding a study with music-based pedagogy recommendations seems unreliable. Finally, the conclusions touch upon pedagogical issues not related to the study such as phonetic teaching and the discussion surrounding efficacy of it (e.g., Woore, 2021)

Christiner et al (2023) found novel evidence for how different receptive and productive music and language skills are linked. For example, their study revealed that the melodic nature of a language impacts intelligibility when considering musical aptitude, and also that a learner's singing aptitude correlates to how difficult they find learning material. Conversely, Zheng et al (2022) found only a weak effect of musical perception as predicting language production skills, instead reporting that auditory processing and L2 production. The researchers speculated whether the domain-general auditory processing skills which supported the Chinese L1 speakers produce English might affect non-tonal L1 learners differently. Both studies have robust research frameworks, yet the contradictory outcomes are reflective of the current body of literature regarding musical aptitude (in whatever form that may take) and language acquisition.

2.3 Summary and research questions

Many papers examine how music can facilitates linguistic development (e.g., Moreno et al, 2009; Pei et al, 2016; Gordon et al., 2015), however there is a gap in the literature regarding musical aptitude and the comprehension of non-standard French accents, particularly regarding L2 learners' ability to adapt to novel accents. Therefore, further research into listening comprehension is justified. To help examine the relationship between musical aptitude and listening comprehension in the MFL classroom, and to address the most relevant themes emerging from the literature, this paper is structured around three research questions.

1) Do secondary school French learners have lower listening comprehension when they hear non-standard French accents compared to a standard French accent?

2) Is a learner's musical aptitude an indicator of listening comprehension in French?

3) Do learners with higher musical aptitude perform better than lower-musical aptitude counterparts when hearing non-standard French accents?

For RQ1, we predict that the learners will have lower comprehension in non-standard French accents because of the phonetic divergence from the standard Parisian variety to which they are accustomed. For RQ2, we predict that musical aptitude will be an indicator of listening comprehension in French because the general tendency in the research points to some link between cognitive processes of music and language aptitude. Likewise, for RQ3, we expect that musical aptitude will help learners perform better with non-standard accents because they will have increased phonological awareness which can support language comprehension and is also manifested in musical perception abilities (e.g., Christiner et al., 2023).

This study is not concerned with the relationship between innate musical skill and musical engagement nor does it test the causality between the two considerations in musical aptitude, but this study instead focusses on measuring learners' musical aptitude and its effect on French language abilities. The questionnaire does nonetheless ask participants about their music extracurricular activities and music GCSE but this is not the measure of musical aptitude in this study rather the Musical Ear test is. This study aims to contribute to our understanding of how well learners can engage with non-standard varieties which they may be unfamiliar with. The study also aims to understand to what extent a learner's musical aptitude might be a useful measure to understand the ease with which learners may be able to comprehend novel French accents.

3 Methods

This chapter outlines and justifies the methodological approach taken in this research project to answer the research questions stated at the end of chapter 2. I first discuss the theoretical framework of this project before presenting a brief critical review of methods in the field, examining how other researchers have probed the topic of musical aptitude and linguistic competence, which will help inform and justify this project's methodological approach. I will then present the research design which outlines the methodological approach and contextualises this study within the current school of thought using existing literature to justify my research design decisions. This chapter is wrapped up with a reflection on the strengths and limitations of the design.

3.1 Theoretical framework

As presented in the RQs, this study assumes the aim of better understanding how French learners react to non-standard French accents whilst seeking to render the curriculum less Eurocentric and more reflective of the rich phonetic diversity in the Francophone world. The central question of this study asks how well Secondary School French learners perform when encountering non-standard French accents and to what extent a learner's musical aptitude can predict their French listening comprehension ability in the MFL classroom. The research aims to build on pedagogical understanding seeking to inform teachers and educational practitioners on how to best support pupils in their French language learning journey. Key methodological designs used in this field largely include experiments, to gather data to facilitate inferential statistics to be able to understand the relationships existing between variables influencing second language acquisition (Levon, 2018). However, some studies do not use the best methodology which can lead to unreliable data recording or analysis. These shortcomings

helped inform this study's research design. This study draws on standardised tests where possible and uses (participant) age-appropriate tests to increase internal validity.

3.2 Review of methodologies

As explored in chapter 2, several decades of linguists have been exploring the interaction between music and language, testing various language and music skills alike (e.g., Coumel et al., 2023; Eterno, 1961; Milovanov, & Tervaniemi, 2011; Schwanhäußer & Burnham, 2005). Inevitably a range of methodological approaches have been adopted to elicit the appropriate data for each study. Shortcomings of other studies have helped inform the design of this study and specific tests are needed to measure particular language domains and components of musical aptitude (Culp, 2017). This study is primarily interested in measuring participants' music perception skills, which demands a specialised test designed to gather the appropriate data. However, music experience should not be disregarded, as indicated in the literature musical aptitude might change with input (e.g., Aumen, 2023). So, in addition to testing several components of music perception, this study also invites participants to report engagement with music activities (details in the next subsection), as done by Jekiel and Makarski (2021) in their study examining vowel acquisition in L2 English learners.

A multitude of tests exist which measure musical aptitude. This study adopts the Musical Ear Test for several reasons. Firstly, it was suitable for the target population as the test is appropriate for musicians and non-musicians alike (Wallentin et al., 2010). Secondly, from examining three studies which use the MET, Wallentin et al (2010) found the test to be internally consistent which is ideal for this study which has four class groups of students taking the test. Thirdly, the test was practically accessible to use, and finally the test design does not take long for participants to learn how to do the task.

The MET will be used to gather cross-sectional data, so as to gain a view of participants' musical aptitude. Getting participants to self-report engagement with music is less reliable than a standardised musical aptitude test, hence the justification for using a standardised musical perception instrument. This study also takes a cross-sectional approach by testing learners' ability at one point in time (Rasinger, 2018). Whilst having its limitations such as being unable to show causality, the cross-sectional design was most appropriate for this MSc dissertation, which might help inform wider scale possibly longitudinal studies in the future.

3.3 Research design

This (quasi) experimental study design elicits quantitative data which allows for a larger sample size. The quantitative nature of the data means a correlation can be established. Additional questionnaire data might add more colour to the findings, potentially offering tentative explanations behind data trends. The hypotheses listed below are each linked to the research questions proposed at the end of chapter 2.

RQ1 hypotheses:

> H_1 GCSE French learners will score lower in the listening comprehension test when hearing the non-standard French accents.
>
> H_0 GCSE French learners will not have a lower listening comprehension score when hearing non-standard French accents.

RQ2 hypotheses:

> H_1 Pupils with higher musical aptitude will score higher in the French listening comprehension test than pupils with lower musical aptitude.

H_0 Pupils with higher musical aptitude will score no differently in the French test to pupils with lower musical aptitude.

RQ3 hypotheses:

H_1 GCSE French learners with higher musical aptitude will have better listening comprehension when encountering non-standard French accents than those with lower musical aptitude.

H_0 Musical aptitude will not correlate positively with French listening test scores.

3.3.1 Participants

With a large range of ages learning French in the UK, GCSE learners were selected as the target population for this study. These learners are suitable participants because they take standardised assessments that assess their French, and will all be close in age allowing me to control some other possible variables influencing language attainment (such as: current age; age of exposure to French; external French input, as opposed to adults at an evening class, for example, who may engage in more variable amounts outside of the classroom). Results from this sample will have external validity as they will be generalisable to other GCSE French groups and GCSE language subjects, as well as possibly extending to other MFL classes for example with different aged learners.

Participants were sampled from four Year 10 classes in two state secondary schools in England (Oxfordshire). Convenience sampling was used to recruit participants due to the harder access involved in working with minors. The original target population of Year 11 French learners, for whom the higher GCSE listening paper could have been used, were not available to participate due to sitting their GCSE final exams. Instead, Year 10 pupils, who

were approaching the end of the first year of their French GCSE course, were able to participate. There is no weighted exam at the end of Year 10 and so the research instrument was modelled off the foundation level GCSE listening paper. A power calculation using G*power (Faul et al., 2009) considering previous studies with similar substantive aims revealed an ideal sample size of about 60 participants. 79 valid responses were collected in the present study (42 were boys, 32 were girls and 5 did not declare their gender). Table 1 presents the pupils who participated in each intact class.

School	Class	Number of pupils
A	1	18
	2	23
B	3	18
	4	20
Total participants = 79		

Table 1 participant numbers in classes and schools

In school B French was a compulsory GCSE suggesting a range of abilities will be represented in the sample, and in school A French was optional.

See table 2 for a summary of the participant demographics. Figures are presented as counts and then percentages and number who responded by the title (out of 79 participants).

Gender N = 74		Music GCSE N = 77		Music extra-curricular N = 69	
Male	Female	Yes	No	Yes	No
42 (56.8%)	32 (43.2%)	62 (80.5%)	15 (19.5%)	44 (63.8%)	25 (36.2%)

Table 2 Summary of participant data

3.3.2 Materials

Data collection materials consist of a French listening comprehension test, a musical aptitude test and a questionnaire. The combination of these three instruments provides appropriate data to test for a correlation between music and language. Standardised tests for both the listening comprehension and music tests renders the methodology more robust and increases reliability. Despite the fact the French listening test is not validated, it has been designed following a highly standardised and regulated format that 297,000 (2020/21 figures) children do each year (Long et al, 2022).

3.3.2 Instrument 1 - Listening comprehension test (appendix A)

Four as the number of varieties for the research design to examine were chosen as sufficient amount for an exploratory approach testing secondary school French learners' possible performance variation when hearing the different accents, but also because four varieties is a feasible number to include given the time-constraints of the data collection window (one French class period time slot in the participants' school day).

The first instrument for data collection was the French listening test, which was needed to test L2 French learners' listening comprehension. The instrument was put together by taking extracts from the standardised GCSE Pearson Edexcel foundation listening exam past papers from the years 2014-2017. In order to test learners' listening comprehension with non-standard French varieties, three Francophone accents were selected in addition to the 'standard' (and often used) Parisian accent. The additional varieties selected were: Guadeloupean; Canadian; and Senegalese.

The test was therefore made up of four sections, one for each variety (although there was no division of the sections visible to participants and they were not made aware of any variation). There were three question styles which appeared in each variety in turn: a multiple-choice question; a letter and answer matching task; and a short-written phrase task, all styles were lifted directly from the standard format of the GCSE test (see table 3 below). This totalled 12 questions. The three questions were taken from the foundation listening papers from each year 2014-2017. The questions and answer sheet were pasted into a new test paper to mimic the GCSE exam format, however the audio transcript was rerecorded with one of the four French varieties, meaning there were three questions for each variety. Varieties were randomly assigned using a third-party randomiser to a particular paper, see table 2 for this information. Since there was a GCSE reform in 2017, the question paper style changed a little bit, meaning these students are unlikely to have used these past papers as revision materials.

Past paper year	Questions used	French Variety used for that year
2014	2, 5, and 10	Parisian
2015	2, 5, and 10	Guadeloupean
2016	2, 5, and 10	Canadian
2017	2, 5, and 10	Senegalese

Table 3 Allocation of French varieties to the past paper years and the questions used from each paper

Each question had a similar length extract and I used timings from the original test paper to inform the timing guidance I gave to the speakers. Speech exposure from each past paper ranged from 100 -116 seconds (each question 40-74 seconds) meaning participants were hearing similar lengths of speech for each French variety (see appendix A for the exact timings from the original test paper transcript)

The test paper was compiled see appendix A and distributed to participants as a paper handout. Parisian French appeared first on the paper since this was the variety participants were likely most familiar with and I wanted to ease them into the testing session. The order of the following three varieties were decided by using a 3rd party software list randomiser which ordered the

three varieties as Senegalese, Canadian and Guadeloupean last, and so they were subsequently included in the instrument as such.

The audio recording created for this study mimicked the real GCSE test audio to increase internal validity and efficiency. The transcript of the audio recording is in appendix A. Participants sent audio recordings as voice notes and my commentary/instructions were recorded using a lavalier microphone into Audacity, which is also where I edited the audio to splice it all together adding in my commentary and the beeps signalling question repetition. Each speaker recorded themselves in a sufficiently quiet location (the only other noise was in the Guadeloupean speaker's clip, where there were birds singing), and audio clips were cleaned up using the noise reduction tool which took out any white noise.

3.3.2.1 French speakers for the recordings

The gender-balanced sample of speakers all use French as one of their primary languages and their accent is characteristic of each place, as each speaker had lived in the geographical location where their accent is typical their whole life, only leaving for education and in most recent years. Critically, all speakers grew up in that location and acquired their L1 (French) in situ, and during the critical period meaning the L1 French speakers formulated their French language pronunciation primarily during this time (e.g., Newport, 2003). See below (table 4) for a profile of each French speaker.

Variety	Gender	Age	Grew up in	Lived in country until when	Currently living in / details of what they do	Other primary languages used
Parisian	Female	22	Paris, France	17	UK for a PhD	Since studying in the UK, she now uses English on a daily basis as well as French, but remains an L1 French.

Guadeloupean	Female	21	Petit-Bourg, Guadeloupe	Always	Undergraduate student at the University of the French West Indies, Guadeloupe	She is bilingual French and Krèyol speaker, using her two languages in different contexts.
Senegalese	Male	26	Thiès, Senegal	19	Paris, working as airport security	This speaker said his L1 was Wolof and his L2 French, but this categorisation of languages could be linked into cultural norms (see (Boutin et al., 2012). He now uses French on a daily basis living in France, but maintains his Senegalese accent.
Canadian	Male	27	Joliette, Canada	Always	Montreal	L1 French speaker, L2 English speaker but living in the Francophone area of Canada.

Table 4 French speaker profiles

These French speakers were sampled with convenience sampling and were all the researcher's own contacts or friends of friends. Speakers were told about the study and were fully aware that they were recruited for their regional accent. They were given a transcript to read and record themselves and asked to read as naturalistically as possible without needing to converge to their idea of a standard form of prestige (something the Guadeloupean had asked about.

3.3.3 Instrument 2 - Musical aptitude test

The instrument used to measure musical aptitude was the Musical Ear Test (Wallentin et al, 2010).

The test consists of two subtests: melody and rhythm, both consisting of 50 questions leading to a total of 100 for the whole test. The test has an answer sheet of multiple-choice boxes. The task involves listening to two sequences, either melodic or rhythmic, and deciding whether they

are identical or different. Instructions for the test were in the audio file and preceded the test itself guiding the participant through two examples. Once the test starts, the questions come in quite quick succession, so a change implemented form the pilot test meant I paused the recording every five questions, and this was visualised by a space on the answer sheet (see appendix B).

Unfortunately, due to time constraints the whole test could not be administered: school A did 25 questions per test and school B 20, due to the restricted class time and needing to finish data collection in time so that participants could go on to their next class. Whilst acknowledging the threat to validity this issue poses, it was crucial that the French test not be shortened as this would have reduced exposure to three instead of four varieties.

The MET was standardised by Wallentin et al (2010) and the test designed to be short but targeting two fundamental musical skills: melodic and rhythmic perception. Fields using this test include the cognitive sciences and social sciences.

3.3.2 Instrument 3 - Questionnaire

The questionnaire was developed from a similar survey exploring EAL learners used by Faitaki et al (in preparation). I adapted the questionnaire, which asks participants about demographic info and any home languages to invite participants to self-report on their engagement with music extra-curricular activities (musical instruments, dance etc). I also asked participants about their knowledge of the francophone world by asking them about what countries they knew spoke French etc but did not end up using this data, only the data on gender, music and French attainment level. See appendix C for this questionnaire.

3.3.3 Procedure

Following the university's ethical guidelines, information sheets were sent to participants and their parents/guardians in advance (see appendix F). Since participants were all of assenting age and due to the nature of the data being collected (not identifiable) participation was on an opt-out basis. Participants were also asked on the day of data collection if they were still happy to participate. I also explained that they can change their mind until they hand the paper in.

Data collection took place in the pupils' class time which was limiting, since the MET could not be completed in full but it also meant that all the pupils were happy to participate (it did not involve staying in at lunch or staying behind after school which they might not want to do anyway but even less so in the summer months). Participants were given the opportunity to not participate, either to a different activity or to do the test and not hand it in if they did not want their data included.

The tests were administered in one sitting lasting 45 minutes in length. Pupils were sat in their normal class set up but were observed to avoid any cheating. Pupils first did the French listening comprehension test which lasted 18 minutes, before doing the Musical Ear test which took 15 minutes. Finally, they were given 5-10 minutes to complete the questionnaire. As with the nature of schools and moving around and taking registers etc there was some faffing at the start of the class further limiting the data collection window, however we made it work.

3.4 Pilot test

After receiving ethical approval from the central university research ethics committee (CUREC) (see appendix H) a pilot test was carried out in school A with four volunteers to test

several aspects of the research design: firstly whether there was a ceiling or a floor effect on the French test. Secondly whether participants could do the MET, and whether the inbuilt audio explanation was sufficient for this age group's understanding of the task. Thirdly, that the paper answer sheets that the participants were asked to use were suitable for them to write on and record their answers.

The pilot test consisted of 5 questions, the answer paper was made by compiling selected questions in different styles from the past papers from 2014-2017, see the table 5 below summarising this information. NB past paper 2017 Q1 and 2016 Q10 were also used in the main data collection paper. Participants who did the pilot tests also participated in the main data collection session. Their scores were not significantly different to the other participants in the main session despite having done two questions before (the audio file was different and several weeks had passed since the pilot test session). The audio the participants listened to was the original recording from the GCSE past paper resources, but snipped to only include the relevant questions. See appendix D for the test paper given to participants.

Pilot test question	¨Past paper year and question
1	2017, Q1
2	2014, Q4
3	2015, Q6
4	2016, Q9
5	2016, Q10

Table 5 Pilot test composition

Four year 10 boys volunteered to stay afterschool for 45 minutes to participate in the pilot test. Having conducted this pilot test several changes were implemented in the research design (material and procedure). Firstly, students found the explanation at the start of the MET clear

enough, however the pace of the MET was quite fast to follow. The teacher suggested adding in gaps between certain numbers of questions to make it easier follow. Therefore, I put in spaces every five questions and decided I would pause the recording every five questions, so that if someone missed one item or got lost they could join in again, because the MET was not about penalising participants for missing a question but sought to gain the most accurate measurement of the pupils' musical aptitude.

The second consideration which emerged was ensuring the setting was quiet enough for the participants to concentrate on the listening test. During the rhythmic section of the musical ear test where participants have to listen to two rhythmic sequences and tell if they are the same or different, there was an external noise which was distracting. This issue drew my attention to ensuring a quiet test setting, although I acknowledged that the main data collection sessions would be taking place during the school day in normal class time and so the likelihood of a similar disruption was reduced.

The third consideration was about improving the questionnaire to be neater, that is when the questionnaire from Faitaki et al was borrowed and adapted by adding in the attitudinal questions (which were not eventually used).

The French test was a good level, the questions were neither too hard nor too easy so there was no ceiling or floor effect with the standardised audio. The mean score was 73.5%. According to my predictions, the mean score of the pilot test would be higher than that of the main data test, because no non-standard varieties were included in the pilot test and the audio file used in the pilot test was the original official GCSE recording. Moreover, students volunteering to do the pilot test might be more enthusiastic French learners, and may be stronger in the French classroom. I predicted, with a larger sample the scores would be more broadly distributed.

3.5 Data analysis

After data collection, data were inputted into an excel spreadsheet and cleaned up. This clean-up process involved transforming the letters or any non-numerical data into numbers e.g. gender instead of male/female became 0/1. After this, I checked whether the data was normally distributed by running descriptive statistics and checking the mean scores and distributions. Normally distributed data permitted inferential statistics to be run on the data set with the view of answering the RQs. Paired t-tests were used to analyse data for RQ1, which considered French varieties only (not music), by testing for inter-variety significance in performance. For RQ2 and 3, a Pearsons correlation coefficient test was used to probe the strength of the relationship between French scores and music scores, following which a linear regression was conducted. Whilst the correlation indicated the existence of a relationship, linear regression revealed insight into the nature of that relationship. Results were then examined in context of the literature to apply meaning to the findings.

3.6 Ethics

Two ethical considerations emerged from this study design: (1) working with children; (2) possible anxiety surrounding test taking in school.

Due to the nature of data analysis and what we are seeking, participants do not need to be identifiable. This means that all children could be kept anonymous by assigning participant numbers to their three answer papers and having a pack of the answer sheets handed out to them when they came in. This process allowed for each participant to remain anonymous and just have the same ID number on each worksheet. (in chronological order through the schools and classes).

To address the possible worries or anxiety caused for pupils due to the test mimicking a GCSE exam, it was explained in the information sheet that their mark/individualised grade would not be seen by their teachers nor count towards their GCSE grade. Before the tests commenced, I

welcomed the pupils into the class and explained who I was and why I was taking their class that day. I outlined what tasks they would be doing and stipulated that their mark would not go on their school record or be shown to their teacher. A this point I checked that everyone was willing to participate and if they wanted to do the tests but not submit their data to inform me of their decision. This information was again clearly explained for a third time at the start of the recording (see the transcript in appendix A).

3.7 Limitations

Although designed with the exact population, and substantive aims of the research, in mind, this methodology/ study design is not without its limitations:

1. The 'strength' of the accent and the degree to which it diverges from the standard is not quantified and measured, meaning that the three non-standard varieties might be of varying strengths. This is a limitation because how comprehensible participants find each accent might be therefore influenced by how strong/ marked the accent is, and not necessarily the actual phonetic realisations of the variety itself (e;g. Ockey et al, (2016) considered how strength of accent impacted comprehension but of L2 accent strength on L1 understanding).
2. Accents vary throughout a population, and I only have one speaker for each variety. An improvement to the study design would have been having three speakers for each section from each variety to be slightly more representative of natural inter-speaker variation within one variety, however this was not possible due to limited resources.
3. Speakers recorded their transcripts on their inbuilt smartphone microphone. The quality was sufficiently good, however recording into a better quality microphone would have been optimal to avoid over exposure and monitor the speakers' speech,

ensuring it is within the desirable decibel bandwidth in the recording software to optimise audio quality.

4. The study is limited in terms of the development it shows. For example, we cannot uncover whether pupils behave differently with more exposure to non-standard varieties, or with more engagement in musical activities. The general trend in the literature suggests this would be the case, but the scope of this study does not account for development. This study only measures pupils' musical aptitude and listening comprehension once. However, given that there would not be much development in a small timeframe, the cross-sectional methodology of this study is warranted. Moreover, given the limited resources of this study, a longer term data collection with multiple testing sessions was not possible.
5. This design lacks ecological validity since the French listening test does not use naturalistic speech but a read aloud transcript. However, in the interest of internal validity and ensuring each variety had the same level of vocabulary, grammatical constructions and length this design was chosen. Moreover, the design is very contextually valid since it was specifically targeting/catering to a large population of language learners in the UK (students taking language tests).

The next chapter presents the results of the data collected using this research design. Results and their accompanying statistics tests are presented to address and answer each research question.

4 Results

The substantial aim of this research project was to firstly investigate how listening comprehension is affected when learners encounter non-standard, unfamiliar French accents and secondly explore whether higher musical aptitude is a facilitating factor for successfully understanding non-standard French accents. Underpinning these targets was the theoretical aim to work out how to better support learners in the MFL classroom and ultimately inform pedagogical practises on how to better prepare them for using their target language outside the classroom.

This chapter presents the results of this study which addresses the aforementioned issues. All data analyses were conducted using SPSS and findings are presented in relation to the three research questions. Data from the French listening test and any inter-variety differences are presented first to address RQ1. Subsequently results from the Musical Ear Test are reported and the associated statistical testing run with French test scores to address RQs 2 and 3. Although inter-school or inter-class differences might be interesting to observe/test, this project does not examine teaching and class groups differences. That explains why for the correlations we are treating all participants as one group and putting them all together, not incorporating the different classes. The chapter closes with a summary of the prominent themes which emerged from the data set, before going on to discuss and contextualise these findings whilst seeking to assign meaning to them in chapter 5.

RQ1: Do secondary school French learners have lower listening comprehension when they hear non-standard French accents compared to a standard French accent?

The French test papers were marked according to the mark scheme (see appendix A) and each participant given an overall score as well as a score for each of the four French varieties. The mean overall French score was calculated and participants compared based on different variables of gender and school group.

Variety	Mean mark	Mean percentage	Standard Deviation
French overall	29.9/48	58.1%	7.5
Parisian	7.8/12	65%	2.4
Senegalese	7.4/12	61.7%	2.1
Canadian	5.2/12	43.3%	2.1
Guadeloupean	7.5/12	62.5%	2.3

Table 6 Mean French scores

Since the data were found to be normally distributed (appendix I), they permitted inferential statistics to be run. In order to best address RQ1 we needed to understand whether the differences in achievement scores between varieties were significant. A set of paired samples t-tests were conducted to compare each French variety with one another. With four varieties this amounted to 6 different combinations to test, see diagram below for a visualisation of it.

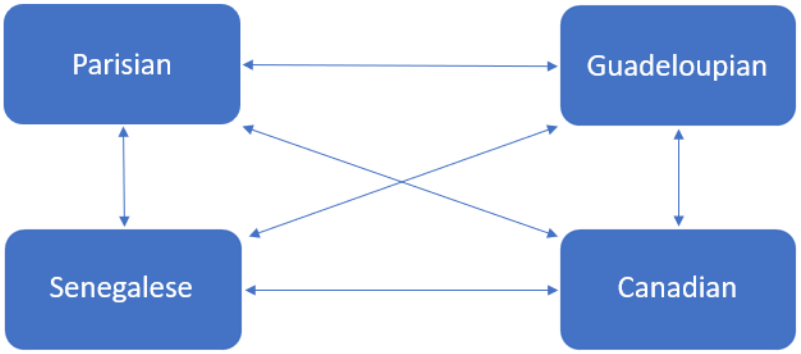

Figure 3 combinations of French varieties for the paired t-tests

I manually applied the Bonferroni Correction, by adjusting the alpha level to 0.008 by dividing the standard 0.05 alpha p-value by the number of t-tests I wanted to run. This correction meant that in order for a pair of French accents to be classified as significantly different the p-value, after conducting the paired t-test, had to be less than 0.008. This correction increases the reliability of the data by safeguarding against type I errors and reducing the likelihood that data incorrectly appears as significant as a result of the multiple comparisons investigated.

The results suggested no statistical significance between the Parisian, Senegalese and Guadeloupean varieties which means that the children performed statistically the same in those varieties. But performance when interacting with Canadian French is statistically significantly different compared to the other three varieties. This means that in part the null hypothesis is accepted (due to the no effect of Guadeloupean and Senegalese) and in part the null hypothesis is rejected (regarding Canadian).

These pairs are all statistically significant to <0.001 (appendix K) and the results from these paired t-tests show how the participants performed with different varieties. It is also useful and important to look at the Cohen's d row point estimate which shows a huge effect size for the Canadian listening questions, (appendix K).

RQ2: Is a learner's musical aptitude an indicator of listening comprehension in French?

In addressing RQ2 and RQ3 participants were calculated all together and not in in gender or class groups (overall for each participant i.e. the sum of all four sections). A Pearsons correlation coefficient test revealed a weak positive and significant correlation between musical aptitude and French comprehension: r=0.261, p=0.021. This means that as one score increases so does the other one. As this is a statistically significant result, we can reject the null hypothesis.

RQ3: Do learners with higher musical aptitude perform better than lower-musical aptitude counterparts when hearing non-standard French accents?

A Pearsons correlation coefficient was then conducted for each French variety in turn with overall MET score. Parisian and Canadian had a weak positive correlation with musical aptitude scores, and the Guadalupian test score was moderately positive where r>0.3. There was no correlation between participants' comprehension of the Senegalese accent and participants' musical aptitude. See table 7 for a summary of these results.

Category	p	r
Overall	0.021	0.261
Parisian	0.045	0.228
Canadian	0.023	0.256
Guadeloupean	0.005	0.315
Senegalese	0.660	0.051

Table 7 Correlation of test scores for each French variety with overall music test scores

Having established that there *is* a relationship between comprehension of three varieties of French and the listeners' musical aptitude, a linear regression was run on the significant varieties to establish the effect size of musical aptitude on French comprehension ability. A regression was not run on the non-significant variety Senegalese to increase the precision of the inferential statistics on the significant variables (Field, 2017).

The linear regression produced the r^2 value for each significant relationship. See the table 8 below for a summary of the r^2 values.

The r^2 figure multiplied by 100 gives the variance figure. This percentage indicates the proportion of variance in the dependent variable, French comprehension, which can be explained by the independent variable, musical aptitude. Each linear regression is significant indicating that the model is a good fit (see Appendix G).

Variety	p	R^2	Variance Explained
Overall (scores for all varieties taken together i.e. whole test score)	0.021	0.068	6.8
Parisian	0.045	0.052	5.2
Guadeloupean	0.005	0.1	10
Canadian	0.023	0.066	6.6

Table 8 Results from the linear regression

As summarised above, musical aptitude is the strongest predictor when French learners hear Guadeloupean French, followed by Canadian and then Parisian French. The remaining variance not predicted by music are made up of other variables influencing comprehension. These figures will be probed and examined in the next chapter and possible influencing factors explored, as we try to make meaning out of these findings in the context of our enquiry.

Summary and key themes

This chapter has presented the results from this study's data collection. Key findings are that participants performed significantly different (worse/ lower) in Canadian compared to Parisian, Guadeloupean and Senegalese. There is a small significant correlation between musical aptitude and French language skills, with a moderate correlation concerning Guadeloupean variety and a weak correlation with Parisian and Canadian. There is no significant correlation between participants' ability to understand the Senegalese variety and their musical aptitude ability. We observed through linear regression that musical aptitude does have a facilitative effect on listening comprehension in the French language classroom. However, despite being statistically significant, the r^2 figure/ variance explained is small and by no means do music skills account entirely for French language aptitude. Key issues which have emerged from these results lead us to ask why Senegalese accent comprehension is, unlike the other three varieties, not predicted by musical aptitude. Another issue brought to light asks why Guadeloupean accent comprehension can be most predicted by a learner's musical aptitude. The findings also bring in to question why the Canadian accent was the hardest for French learners to successfully interpret the meaning of.

In the next chapter these emerging themes and questions will be explored, and questions/ issues will be picked apart, probing the data and attempting to contextualise it in relation to the current body of literature. The chapter will be guided by the three research questions as we examine in depth the data relevant in answering each question and we seek to apply current knowledge, theories and thinking/ philosophy to give meaning to these numbers. We seek to make sense of the data produced from this study in the context of education and draw feasible pedagogical implications.

5 Discussion

This chapter will outline the results reported in chapter 4 and works to contextualise the findings in relation to the research questions proposed. It also seeks to apply the interpretations of results to educational practice with real learners in mind.

RQ1: Do secondary school French learners have lower listening comprehension when they hear non-standard French accents compared to a standard French accent?

Of the four French varieties tested in this paper (Parisian; Senegalese; Canadian and Guadeloupean), only Canadian French was significantly harder for participants to comprehend than the other three varieties, including the two other non-standard varieties. The results of this study therefore suggest that in general, secondary school French learners do not have lower listening comprehension when they encounter non-standard French accents, as two out of three non-standard accents exposed to participants in this study did not impede their comprehension of what was being said. The somewhat narrow range of literature on non-standard accent comprehension limits the extent to which the findings from this study can be contextualised within the field of literature, however, we can nonetheless explore possible explanations for the findings as we examine the results. The principal explanation for Canadian French being harder to understand is attributed to the phonetic properties of Canadian French, but the second half of this subsection examines the possible influence of attitudes on comprehension and the outcome of this study.

There was no previous literature reported which tested exactly L2 learners' listening comprehension of non-standard French accents, making this study in part exploratory. However, from examining the phonetic properties of each of the four French varieties in the

literature, and also the phonetic realisations exhibited in the speech samples used in this study, the most plausible explanation for participants finding the Canadian French accent the hardest is the phonetic features of the accent; the way the words are produced. Although this study did not control for degree of accentness, to what extent the three non-standard accents diverged from the standard Parisian French, it seems reasonable to conclude from listening to the speakers and seeing the results from participants test papers that the Canadian French accent diverged the most from the standard Parisian, and in ways the Guadeloupean and Senegalese accents did not. However, all three non-standard varieties were, in multiple ways, different to the standard Parisian French accent, but the phonetic nuances specific to Senegalese and Guadeloupean French accents did not impact the secondary school French learners' listening comprehension to the same degree as the phonetic nuances of the Canadian accent.

A second possible explanation, or additional explanation, to the Canadian French accent being harder for listeners to comprehend was the rate of speech. In accordance with the standardised GCSE test, each variety had similar length listening passages and therefore speech rate. As outlined in the methods chapter, the four French speakers used in this study were given a target for how long to speak for when reading the transcript. The Parisian, Senegalese and Guadeloupean speakers all managed this okay, but the Canadian speaker had to re-record each extract at least twice in an attempt to slow his speech down. Despite eventually slowing down his speech, he was still slightly under the target length (meaning he spoke marginally faster than the other three French speakers). The Canadian speaker maintained the Canadian specific phonetic realisations as outlined in chapter 2, and produced each word fully not exhibiting any word attrition as is often observable in the Canadian French accent. Nonetheless, whilst maintaining other phonetic realisations typical of the Canadian French accent along with the faster speech rate, participants could have found understanding the Canadian passage more difficult due to the phonetic realisations of the Standard French words.

However, one does ponder at what point phonetic realisations change due to the speaker speaking at a slower rate, that some features of that accent are no longer as typical of the Canadian accent. It would be interesting to replicate this study with higher-level learners who hear faster speech rates and naturalistic speech samples to assess how performance could vary. With the Guadeloupean French accent being characterised by more varied intonation and generally slower rate than Canadian and Parisian it brings into question if those scores would only further diverge at a higher level. Another possible explanation for the Canadian speaker being the hardest to comprehend could be due to other languages used. As detailed in table 4 (Chapter 3) all three other speakers (Parisian, Guadeloupean and Senegalese) use are bilingual French speakers or have moved away from their country. We can tentatively speculate at the possibility that this interaction of French spoken alongside another language or in a different location could influence the way the speakers speak, even whilst maintaining distinguishing phonetic properties of their regional/ national accent.

To further probe possible explanations for the comprehension difficulties surrounding the Canadian accent, we can specifically look at the concept of voice onset time. Voice Onset Time (VOT) is defined as the micro pause between a stop and the subsequent voiced phoneme in an utterance (Boula de Mareüil et al., 2011). VOT in English is typically longer than that in romance languages meaning words sound more segmented, shorter VOTs can make segmenting a speech stream in a target language difficult, and as speech rate decreases, so the VOT typically increases usually facilitating comprehension (Magloire & Green, 1999). VOT analysis was not included in this research design, but tentative speculation regarding speech rate led this discussion (searching for explanations) to ask whether the Canadian VOTs exhibited throughut the speech sample were shorter than that of the other three varieties (Parisian, Senegalese, Guadeloupean). If this were the case, it might explain the significantly lower comprehension rate of Canadian French utterances as participants struggled to decode the Canadian speaker's utterances and

splice the stream of speech into meaningful segments. Whilst Boula de Mareüil et al., (2011) found that the VOT of Senegalese accented French does not differ significantly to the VOT of Parisian French, Fowler et al (2006) also reported that monolingual Canadian French speakers' VOT was no different to Parisian French. Guadeloupean French accent VOT has not been reported in the literature. Whilst these studies do not suggest that VOT varies between three varieties included in this study, it is not a speculative explanation to be disregarded based on these studies alone since inter-speaker variation could mean the Canadian speaker used in this study could exhibit shorter VOTs than the other varieties. Moreover, all French speakers in this study were aged between 21-27 and therefore we must not rule out the possibility of shifting speech styles of young adults since the Fowler et al 2006 paper. This exploration for meaning is but speculative but follows a logical line of inquiry. Further research into this topic could reveal more specific explanations accounting for reduced Canadian accent comprehension.

The findings of RQ1 do in part align with those of Major et al. (2005), although their study was on American English variation. Major et al. found no significant difference between standard American and regional American dialects. Politically, Guadeloupe is a 'département' of France making it French territory, the Guadeloupean accent comprehension test scores were the closest in mean score to the Parisian variety test scores. Although the Senegalese speaker is not French, he has lived in France since 2019 (4 years), working in Alsace and Paris. Although producing phonetic realisations typical of the Senegalese accent, we query whether his speech was also more comprehensible to the L2 French learners due to his time living in Paris, pointing to the possibility that his speech has adopted some features typical of the Parisian French accent. Finally, Major et al found that the ESL learners performed significantly worse when listening to the 'international accents', a result that could also be argued is mirrored in the results of this study, with the Canadian French accent being an international accent belonging to a Francophone nation other than France. Considering the political and administrative

associations with the speakers' nationality (i.e. the Guadeloupean woman technically living on a French governed territory, and the Senegalese man working in Paris, and the Canadian speaker only living in Francophone Canada) the results seem to align with those of Major et al. (2005).

Accounting for the international French accent which still scored highly: Senegalese, we can revisit Boula de Mareüil et al's (2011) paper who reported that of the various realisations of <r> in several West African French accents, the Senegalese French accent corresponds the most to the Metropolitan French accent. This suggests a proximity between Senegalese and Parisian French in a key phonetic feature of French: the various ways that <r> is produced. No between variety analysis was conducted in this study, but we can speculate that Senegalese French was closer to Parisian and therefore this could explain why Senegalese French is not significantly harder for listeners to comprehend. Major et al., (2005) argued for the integration of more varied American regional accents into the ESL curriculum since learners' listening comprehension was not impeded by the regional accent. This pedagogical implication could also be suggested regarding the French curriculum and regional varieties given the findings of this study.

Considering the way listeners can adapt to hearing new accents, it is worthwhile considering Floccia et al's (2006) notion of normalising accents. If this idea rings true, then it seems that listeners in this study might have normalised Guadeloupean and Senegalese accents more quickly than the Canadian accent. The research design limits (to some degree) gathering data on how well listeners adapt as they hear more of the same accent because the three questions for each variety get progressively more difficult. The study could be rerun but keeping the questions the same difficulty for each variety to test whether participants perform higher on later questions than when they first hear the accent. It could also be interesting to do a repeated

exposure test at a later date to examine how hearing a variety the second time round could possibly impact their ability to normalise the accent faster leading to increased comprehension of the utterances.

To wrap up the discussion on the possible phonetic properties influencing comprehension, one final consideration to acknowledge is the possible influence of speaker gender on comprehension. Cisgender female voices have been found to be typically more intelligible to understand than cisgender male voices due to pitch range and voice quality (Bradlow et al., 1996). This observed trend might help account for why the two female speakers, Parisian and Guadeloupean, were the easiest for listeners to understand with mean scores of 65% and 62.5% respectively compared to the average scores of male speakers at 61.7% (Senegalese) and 43.3% (Canadian). However, this speculation cannot progress pass the tentative suggestion stage because based on the findings we cannot be certain that speaker gender was a stronger influence on understanding than regional variation. Future research could include both male and female speakers for each variety to further probe this possibility.

Moving beyond phonetic properties of the speech samples used in this study, we can consider broader attitudinal factors which are often integral to discussions of findings in dialectological research (Watt, 2018). As outlined in chapter 2, as French varies phonetically, so do the social associations attributed to certain varieties and their phonetic realisations, with non-standard accents marked with phonetic nuances particular to a region or nation typically regarded as having lower social prestige than the standard Metropolitan France French: the Parisian variety. Although this study did not explicitly probe attitudes, negative attitudes towards divergence from a standard form, and variation in the French language was the impetus for this study. Negative attitudes are rarely isolated opinions and usually linked in with notions of race, social

status, and power. Guided by these unfortunate trends in society it seemed plausible that Senegalese and Guadeloupean varieties, which typically are spoken by speakers belonging to more marginalised ethnic groups, would give rise to lower scores in the listening comprehension test. However, this was not the case and instead the whiter[12] non-standard French variety of Canadian, spoken in a nation that is typically attributed more social prestige than Senegal and Guadeloupe, scored the lowest. These findings taken together with the results of this study justify the inclusion of a more diverse range of accents in language courses. We query how underlying biases could have been manifested in listening comprehension test scores if participants were made aware of the speakers' identities, and how negative labels for non-standard varieties could potentially vary depending on listener age or other factors. Examining how and when negative associations may set in to language users' repertoire/ mindset is an interesting direction for further study.

We can further probe the possible reasoning into the lower comprehension scores of the Canadian speaker by looking at the test papers. The Canadian section of the listening paper had the most un-attempted questions. Not only from observing data collection and knowing all pupils were present, but also by seeing doodles on the test paper surrounding the questions, it was clear that the pupils were present but chose not to answer. Perhaps the pupils felt overwhelmed by the Canadian accent and did not know how to answer, favouring leaving the question blank to choosing an answer. Due to the randomised order of the three varieties, the Canadian variety appeared after the first non-standard variety and before the final one which suggests that it was not a concentration issue lowering the Canadian score i.e. participants had already heard one non-standard variety (Senegalese) so it wasn't a shock to diverge from the

[12] This is referring to the ethnic majority in Canada and which is relatively more ethnically white than Senegal and Guadeloupe. This discussion of race and power is in no way dismissive of the horrendous treatment that the indigenous people in Canada suffered under the rule of the French colonisers.

standard, and it was also not the end of the test where pupils may be losing concentration. The fact that scores increased again towards the end of the test with the final non-standard variety indicates that it is the very variety itself, Canadian French, which is leading to the lower comprehension rate and not other possible factors like fatigue or distraction.

Having considered the possible reasons *why* Canadian French was harder to comprehend, we must also acknowledge and exclude the possible reasons why *not.* There are two points which we can reasonably safely conclude do not account for participants' lower Canadian French comprehension scores. Firstly, the lower comprehension rate of Canadian French is unlikely to be due to more exposure and familiarity with Senegalese and Guadeloupean French, at least not across the 79 participants. And secondly, harder lexical items for the Canadian questions is not an issue since all the test sections were taken from the same foundation past papers on the same exam board (pre grade reform) so the vocabulary is consistent in terms of difficulty.

The possibility of listeners being ill-prepared for the listening comprehension task by not having engaged with the accents previously did not seem to be the case looking at the data produced in this study, at least regarding Senegalese and Guadeloupean. Drawing on Kang et al's study (2023) which reported that listeners with the same language background found it easier to understand other speakers, we might speculate whether Anglophone Canadians might find it easier to understand Canadian French than British or other English variety users whose phonemic inventory has more distance.

Having explored the possible explanations for why Canadian French poses more issues for L2 French learner listening comprehension than the other three varieties, phonetic properties of the Canadian French accent seems to be the most likely explanation. However, this discussion in tandem with the factors explored in the literature review demonstrates the multifaceted nature of listening comprehension and the process of decoding words in an L2.

Our discussion leads us back to the Department for Education GCSE MFL report of 2022 which stated that GCSE learners should be able to understand authentic speech. In their report, governors also stated that students should be able to "answer questions [and] extract information" (Department for Education, 2022, p.5). The findings from RQ1 lead us to safely conclude that year 10 GCSE French learners did successfully extract information from authentic French speakers of Senegal and Guadeloupe. This finding directly addresses the GCSE MFL learner goals set by the very governing body deciding what content is included in the exams and curriculum. Therefore, even based on this one study, justification *not* to incorporate more diverse range of French accents into the UK GCSE curriculum has no basis instrumentally, since secondary school learners can successfully understand non-standard accents. These findings also give backing to the argument to include more diverse accents representative of reak French speakers on a diversity and inclusion basis and in seeking to render the curriculum less Western Eurocentric.

RQ2: Is a learner's musical aptitude an indicator of listening comprehension in French?

The linear regression revealed that there is 5.2% variance in French listening comprehension is accounted for by musical aptitude. This is a small, but significant figure, which indicates that

there is something in the relationship between musical aptitude and French listening comprehension to pick apart. However, in the field of education, and even social sciences more broadly, there are a multitude of factors influencing ability and performance in school. Whilst acknowledging the cross-sectional design of this study, meaning a one-off off view of each pupils' French and music performance is provided, and whilst bearing in mind the limitations of aptitude testing as outlined earlier, we can nonetheless explore the possible reasoning behind this significant figure of 5.2% variance explained in overall French listening comprehension by musical aptitude.

The weak positive correlation between participants' French listening comprehension score and their musical aptitude is not a surprising finding given the substantial previous research which finds a correlation between musical aptitude and some form of language skills (e.g. Coumel et al., 2023, Pei et al., 2016).

RQ3: Do learners with higher musical aptitude perform better than lower-musical aptitude counterparts when hearing non-standard French accents?

Listening comprehension of Guadeloupean and Canadian French varieties are all significantly and positively correlated with musical aptitude, suggesting that learners with higher musical aptitude do perform better when hearing most non-standard accents. There was also a correlation between musical aptitude and comprehension of Parisian French accent although variance was marginally lower than for Canadian and Guadeloupean varieties. The Senegalese French was the only variety in this data set with which musical aptitude did not have a significant correlation. This subchapter presents possible explanations for why secondary school French learners' listening comprehension of the Senegalese accent cannot be predicted by their musical aptitude, however all other three varieties in this study can be. This subchapter then goes on to search for meaning/ discuss possible explanations behind the elevated figure of Guadeloupean variance.

Firstly, we can consider possible explanations for the lack of correlation between a listener's musical aptitude and their Senegalese accent comprehension ability by looking to the phonetic makeup of the Senegalese French accent for clues. Instead of looking at proximity of the Senegalese accent to the French standard Parisian accent (the comprehension of which was predicted by musical aptitude), it could be insightful to instead consider the proximity of the Senegalese French accent to the participants' L1. In this study, the majority of listeners had English as their L1. Speculating the phonetic overlap of the Senegalese French accent and English phonemic inventory might help explain why participants performed well in Senegalese regardless of their musical aptitude, that is perhaps there are more similarities between Senegalese French and English. In Senegalese French, which is often spoken alongside Wolof (L1 of most Senegalese people), there is a word initial stress exhibited in Senegalese French which can be likened to the prosodic nature of Wolof, unlike in standard French for which stress typically manifests at the end of the word/ phrase (Boula de Mareüil et al., 2011; Gess et al., 2012). Phonetic analysis of speech samples was not conducted in this study, but as a Wolof and French speaker it is probable the Senegalese speaker in this study exhibited some of these features. This prosodic feature of stress patterns could mean that Senegalese accent comprehension is less predicted by music because the prosody of Senegalese accented French is in some ways closer to that of English, which also typically has word/ phrase initial stress patterns (Cutler & Carter, 1987). This speculation does not insinuate that Senegalese French and the English used by year 10 English school children is definitely linked, but certain phonetic nuances of Senegalese accented French (such as the pronunciation of the word *psychology* more like English than French (Boutin et al., 2012)) might indicate a sufficient proximity to the L1 English speakers phonemic inventory that they feel comprehension is easier than with other varieties.

As explored in the RQ1 section at the start of this chapter, Senegalese comprehension was not significantly different to that of the Parisian standard French listening comprehension. Therefore, it is really interesting that participants do not need more proficient musical aptitude in order to successfully understand this variety. We can draw again on the notion of normalising accents as one encounters them, as outlined by Floccia et al (2006), who found that the faster a listener could 'normalise' an accent, the faster they could adapt to a novel accent and increase comprehension. By this logic, the findings in this study possibly suggest that GCSE French learners in the UK can more quickly normalise the Senegalese accent regardless of musical aptitude. Since the year 10s successfully comprehended Senegalese French regardless of their musical aptitude therefore points to the suggestion that Senegalese French is possibly the easiest non-standard French accent to understand since learners performed well whether or not their musical aptitude skills were good.

Next, we go to the other end of the findings as we consider why a secondary school pupil's musical aptitude had the most predictive power for their ability to successfully comprehend the Guadeloupean French accent. The main explanation put forward points to the prosodic features typical of Guadeloupean French and its possible link to musical aptitude: one characteristic of Guadeloupean French is its varied intonation. In fact, of the four French accents included in this study, Guadeloupean has the most varied intonation throughout, distinguishing it the most in terms of intonation from the standard Parisian French accent. This intonation, due to its inevitable contact with Krèyol, might mean that learners who have heightened musical perception are more able to successfully comprehend the Guadeloupean accent. Perhaps listeners' ability to successfully discern melodic and rhythmic phrases is a transferrable skill making them more apt to understanding the Guadeloupean accent. In their study, Christiner et al (2023) found that the degree to which a language appears to be melodic affected learner comprehension whereby those with more advanced musical perception had increased

comprehension. Although the melodic nature of the speech samples used in this study were not controlled for/ measured, certain points do line up. Guadeloupean French is characterised by the more varied intonation of Kreyol, which was reflected in the Guadeloupean speaker used in this study. Although only marginally more, Guadeloupean was also the variety in which successful comprehension was most predicted by musical aptitude, despite Guadeloupean not being the variety which learners scored the highest in (Parisian French).

However, there is a real lack of literature on the Guadeloupean French variety and so we are somewhat limited in the conclusions we can draw as it is hard to contextualise the findings of this study in relation to previous research. So we are limited to proposing speculative explanations for the variation of participants' performance in this data set.

Another interesting avenue to explore is how comprehension of Canadian French, the hardest variety to comprehend, was predicted by musical aptitude. Although the variance explained is not as high as for Canadian as it is for Guadeloupean, this finding that a learner's musical aptitude can help predict comprehension speaks to the debate about firstly what cognitive mechanisms do humans possess which support language acquisition, and secondly what tools or tests might help predict MFL secondary school learners' ability and educational attainment.

As Dolman and Spring (2014) found in their study that musical aptitude can predict some aspects of language aptitude but not others, so the findings of this study show that musical aptitude can preduct comprehension in some varieties and not others. By examining more French varieties, we could possibly uncover what accents can be predicted by musical aptitude and which can't. Perhaps the comprehension of an accent is not restricted to the socially constructed geographical boundaries in which we define an accent or dialect; rather the

combination of a series of phonological features which some varieties possess, and others do not.

The variety of explanations explored in this section reminds us of the intersectionality in aptitude and achievement and learning outcomes, suggesting there are often many other factors contributing to a person's language learning rate and subsequent ability.

Review of the research design

The methodological approach used in this study had a high amount of internal validity as the French test resource was age appropriate for the participants. However, the test could have been improved by including more than one speaker for each variety which would increase the ecological validity by rendering the speech samples used in the test more representative of the wider speaker population.

Another drawback of the study was that only quite general skills were targeted. Although the topic itself was fairly specific looking at French regional accents, the study could be improved by examining learners understanding of specific vowel productions, for example, by examining crucial minimal pars in French rather than an overall listening comprehension test. This suggestion for future research direction emerges from reviewing this research framework with Jekiel and Latieson's design (2021).

Key questions which have emerged from this study are:

- How might other speakers in a speech community be easier or harder to understand based on other characteristics such as: gender; age; urban or rural community; education etc?
- Would listening comprehension of non-standard French varieties change if the listeners were informed of the speakers' identity? How might it change if they saw a photo of the speaker?

Pedagogical implications

Several implications emerged from conducting this study:

- The first implication suggests that non-standard accents could be included in French courses. Given the fact that L2 learners do not perform any worse with two out of three non-standard accents, their inclusion in the curriculum/ French L2 courses is warranted. Senegalese and Guadeloupean accents do not impede understanding and so they can be incorporated into the GCSE curriculum. The Canadian French variety poses comprehension difficulties for the year 10 learner, so could be introduced at a higher level, such as A-level French. More research should be conducted to explore how comprehension varies between additional French accents to further understand what varieties could be included in the curriculum. Inclusion of more French accents could have multiple positive impacts including better preparing French learners to talk with French speakers outside of the classroom; educate learners about the francophone world; render a small aspect of the curriculum less Eurocentric and be more inclusive; and to gradually contribute to efforts in challenging accent discrimination.
- The second implication suggests that school children should be offered more opportunities to engage with music. Findings show that musical aptitude can have a positive effect on a learner's listening comprehension in French, suggesting musical

aptitude and phonemic processing are linked. This study does not show causation, but engagement with music does not seem to have any negative effects on a child's development and in the context of the literature it seems that engagement with music has positive effects on language.

6 Conclusion

This cross-sectional study examined the interplay between musical aptitude and listening comprehension ability, especially regarding the adaptation to non-standard, unfamiliar French accents. It aimed to uncover the extent to which musical aptitude as measured in a standardised test can be used to predict a learners' listening comprehension ability in the MFL classroom. It also sought to better understand how well secondary school learners could engage with varieties of French which diverge form the standard French they are typically used to hearing in the classroom setting.

The UK language curriculum typically presents a narrow representation of the French language, favouring an idealised version which is attributed more social prestige. As such, few French varieties are represented in GCSE language courses, even when the topic in question is on a Francophone nation or region. It is unclear exactly why only a homogenised French form is presented, but it could be attributed to concerns that learners will not understand non-standard varieties as well as underlying (and less covert) biases towards varieties possessing more political power. Music has been largely explored for its apparent facilitative effect on linguistic development in the L2 classroom. However, it had not been examined in relation to L2 learner receptive listening skills of regional/national variation in French, and so interpreting the results of this study involved doing so in relation to studies looking at different languages or different skills.

The two substantive aims of this study were:

To investigate how listening comprehension is affected when learners encounter non-standard, unfamiliar French accents.

To explore whether higher musical aptitude is a facilitating factor for successfully understanding non-standard French accents.

Firstly, results indicated that secondary school French learners' listening comprehension was not significantly different when hearing the non-standard French varieties of Guadeloupe and Senegal alongside the standard Parisian French. Pupils scored the highest on the listening comprehension questions on Parisian French, but only by 2.5% more than the Guadeloupean, and 3.3% more than the Senegalese accent which were not significantly different. However, the Canadian French variety was significantly harder for the school French learners. A paired t-test revealed that Canadian French was consistently more difficult than each of the other three varieties. Possible explanations include the phonetic makeup of Canadian French diverging the furthest from Parisian French. Other possible explanations include the rate of speech, but it is unlikely to be due to difficult lexical items as the questions were taken from the exact same standardised test range as the other three varieties.

Musical aptitude was tested using the musical ear test, correlation coefficient revealed a weak positive effect size between musical aptitude and listening comprehension ability. A linear regression model showed that the variance of music was between 5.2% and 10% meaning that musical aptitude did have a predictive power on listening comprehension. The Senegalese accent was the only variety with no significant effect with music ($p=0.660$). Due to the lack of previous research exploring Senegalese French and various French accents' interaction with music as a possible domain general

process, it was not obviously indicative how to interpret this result. However, speculation about the possible influence of Senegalese prosodic features were explored as a partial explanation for the non-significant effect of musical aptitude on Senegalese. This finding does nonetheless provide an insight into how the phonetic makeup (including prosody) of a variety might influence the extent to which other skills withing a user's cognitive repertoire are useful for engaging with and understanding that variety.

Various studies before have argued for increased incorporation of music opportunities for its positive benefit to children's cognitive and social development in the language classroom and beyond. However as with any research output in the field of Applied Linguistics in Education the target population at the heart of the project must be kept in mind not simply as a participant in an experiment but as an individual human being with their own values, priorities and attitudes. Indeed, Hallam (2010) found not only that engagement with music increased phonological awareness but it also benefited children socially, but that this positive impact was only observable if the child in question enjoyed the process. So, despite the small figure of music predicting 5.2% - 10% variance in French, understanding how we might be able to help learners in some small way more is better than none at all. After all, is education not about the long-term marginal gains?

Findings from this study are robust for multiple reasons. Firstly, it is indicative that the majority of participants took the test seriously from the result that there is a strong positive correlation between current French attainment grade and French test score.

Secondly, the standardised nature of the test gave the findings high internal validity as this learning context is directly relevant to the participants. Moreover, despite the unlikelihood of other classroom settings taking GCSE exams (i.e. adult French evening classes), the findings generalisable to other classroom learning contexts, especially when considering the substantial research showing that adults consistently outperform children in the MFL classroom setting (e.g. Llanes & Muñoz, 2013; Singleton & Pfenninger, 2022).

The findings of this study fit in with the current body of research whilst adding an additional nuance of variation in the Francophone world. However, the scale of this study was small, and it would be interesting to increase the reliability of findings by doing a randomised control trial allocating French learners into two different groups, one which hears the non-standard varieties and another which don't which could provide insight into the extent to which the accent itself impacts comprehension. Further improvement could be made by incorporating more speakers from each variety.

Outcomes of this study regarding music are significant and contribute to our understanding of how musical aptitude is in fact facilitative for language performance, but this amount of facilitation is by no means regular nor consistent across varieties. The findings regard RQ1 are particularly exciting and offer a positive step for development regarding representation of typically marginalised speakers in the curriculum. It was surprising that the non-standard variety possessing the most social prestige, Canadian, was the variety with which learners had the most difficulty. However, that Guadeloupean and Senegalese accents did not prove harder for learners

brings an important consideration in curriculum design to the fore: rather than asking why non-standard varieties should be included in language courses, it now seems more appropriate to ask why *not.* Learners' comprehension was not significantly affected by hearing the varied phonemes of the Guadeloupean and Senegalese varieties, and so the argument not to include these accents in the GCSE curriculum weakens somewhat, without even considering the obvious benefit to diversifying the curriculum and rendering the content less Euro-Centric. Considering the more challenging Canadian variety, why not incorporate Canadian at higher levels such as A-levels, offering students a progression through different French varieties whilst simultaneously broadening their horizons by educating them on the immense variation with which French is blessed.

Guadeloupe, Senegal and Canada are but two Francophone communities outside of Metropolitan France, the possibilities of examining the tens of other locations and their varieties both within and outside of France offers an exciting opportunity to broaden the horizons of French classroom learning in the UK whilst attributing value to these speakers. This study has highlighted that what are, in the Western world at least, often considered incorrect manifestations of the French language are in some cases no less intelligible than standard Parisian French has highlighted humans' ability to adapt to hearing new speakers and accents (even low intermediate learners) and also highlighted the need for a broader acceptance of language variation in the formal education system but also throughout society at large.

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Appendices

Appendix A: French listening test paper, answer sheet and recording transcript, and mark scheme

Listening comprehension test

This test is for university research and will **not** count towards your GCSE grade. Your mark will **not** be seen by your teachers.

Instructions

- Answer **all** questions.
- You may **not** use a dictionary.

Information

- You have 3 minutes to read through the paper before the recording starts.
- You may make notes during these 3 minutes.
- The recording will start after 3 minutes.
- You will hear each extract twice. There will be a pause between each question.
- There are 12 questions in total.

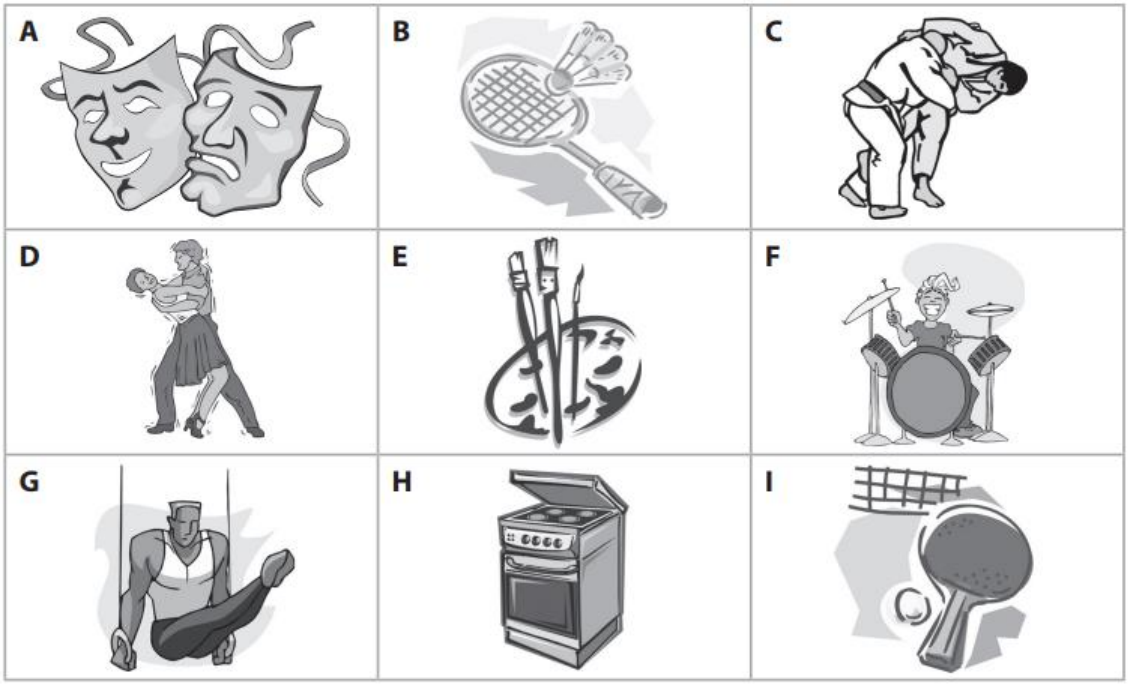
Answer ALL questions.

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

Question 1

At the leisure centre

What club does Marie go to on the different days?



Listen to the recording and write the correct letter in the box.

Example: Monday	*G*
(i) Wednesday	
(ii) Thursday	
(iii) Friday	
(iv) Sunday	

(Total for question 1 = 4 marks)

Question 2

Holiday preferences

What does Maïwenn like?

A	camping
B	surfing
C	~~family holidays~~
D	the seaside
E	the countryside
F	swimming
G	visiting historical sites
H	going abroad
I	shopping

Listen to the recording and write down the **four** correct letters.

Example: *C*

(Total for question 2 = 4 marks)

Question 3

A school trip

What information is given about the trip?

Listen to the recording and write the details **in English**.

Example: Who is going on the trip?	year 7 classes
(a) What are they going to visit in Dieppe?	
(b) What time are they leaving?	
(c) Name one item they have to take with them.	
(d) Where are they going after the visit?	

(Total for question 3 = 4 marks)

Question 4

A restaurant booking

What are the details of the booking?

Listen to the recording and put a cross ☒ in the correct box.

Example: The customer wants a table for…

A	B	C
2 people	3 people	5 people
☒	☐	☐

(i) The booking is for the…

A	B	C
15th June	20th June	25th June
☐	☐	☐

(ii) They want a table…

A	B	C
		
☐	☐	☐

(iii) They do **not** eat…

A	B	C
		
☐	☐	☐

(iv) They are celebrating their ..... wedding anniversary.

A	B	C
4th	14th	40th
☐	☐	☐

(Total for question 4 = 4 marks)

Question 5

Arguments at home

What does Thomas argue about with his parents?

A	the state of his bedroom
B	homework
C	the internet
D	clothes
E	music
F	going out
G	his mobile phone
H	TV programmes
I	what he eats

Listen to the recording and write the **four** correct letters in the boxes below.

Example:	E
(i)	
(ii)	
(iii)	
(iv)	

(Total for question 5 = 4 marks)

Question 6

My future career

Franck is talking about his plans to become a teacher.

Listen to the recording and answer the following questions **in English**.

(a) Give **one** of the qualities he thinks teachers need.

(1)

.....

(b) Give **one** reason why he wants to be a teacher.

(1)

.....

(c) What **one** disadvantage does Franck mention?

(1)

.....

(d) Where would he like to work one day?

(1)

.....

(Total for question 6 = 4 marks)

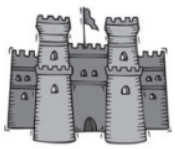
Question 7

In the tourist office

What information is given?

Listen to the recording and put a cross ☒ in the correct box.

Example: They should visit…

A	B	C
		
☐	☒	☐

(i) They should…

A	B	C
		

(ii) It is next to the…

A	B	C
		
☐	☐	☐

(iii) The entrance fee is…

A	B	C
10€	12€	14€
☐	☐	☐

(iv) There is a…

A	B	C
		
☐	☐	☐

(Total for question 7 = 4 marks)

Question 8 **My school**

Jean-Baptiste is talking about his school. What does he mention?

A her favourite teacher
B his favourite teacher
C his favourite subject
D a trip he has been on
E the length of the school day
F a club he goes to
G what he does at break time
H what sport he does
I his opinion on the canteen

Listen to the recording and write down the **four** correct letters.

Example:	**B**
(i)	
(ii)	
(iii)	
(iv)	

(Total for question 8 = 4 marks)

Question 9

Where I live

Hugo is talking about where he lives

Answer the following questions **in English**.

(a) Where **exactly** in France is his town?

(1)

(b) What is near his house?

(1)

(c) Why does he like his town? Give **one** detail.

(1)

(d) What does he say would improve his town?

(1)

(Total for question 9 = 4 marks)

Question 10

A shopping trip

Rochelle's mother is telling her what she needs to do.

Listen to the recording and put a cross ☒ in the correct box.

Example: She needs to go by…

A	B	C
		
☒	☐	☐

(i) First she should go to the…

A	B	C
		
☐	☐	☐

(ii) Then she needs to buy…

A	B	C
		
☐	☐	☐

(iii) For her father she has to buy…

A	B	C
		
☐	☐	☐

(iv) She has to be back at…

A	B	C
12:00	12:15	12:30
☐	☐	☐

(Total for question 10 = 4 marks)

Question 11

Spending money

How does Camille spend her money?

A	going to the cinema
B	going to the café
C	downloading music
D	on shoes
E	on sweets
F	on clothes
G	on video games
H	on magazines
I	on books

Listen to the recording and write down the **four** correct letters.

Example: H

(i) ☐

(ii) ☐

(iii) ☐

(iv) ☐

(Total for question 11 = 4 marks)

Question 12

My best friend

What does Charlotte say about her best friend, Alice?

Answer the following questions **in English**.

(a) How old is Alice?

(1)

(b) Give **one** reason why Charlotte likes her.

(1)

(c) What do they like doing at the weekend?

(1)

(d) What is Alice's only fault?

(1)

(Total for question 12 = 4 marks)

Mark scheme French test

Question 1

i) D
ii) I
iii) F
iv) A

Question 2

D

F

H

I

Question 3

Question	accept	reject
3a	(the) castle	
3b	8.30/8.30 am	8.30 pm
3c	picnic coat jacket ANY ONE X 1	
3d	theme park leisure park fun fair	park (on own)

Question 4

i) C
ii) B
iii) A
iv) C

Question 5

C

G

B

H

Question 6

Question	accept	reject
6a	Patient/patience have lots of patience Creative/creativity have creative ideas Understand children (ANY 1 FROM 3)	Understanding/ understand Like children Passion/ lots of passion passionate patients have lots of patients Creative with children Good with children infants for children ie understand infants get on well with children
6b	(it is) useful The work is varied there is lots of variety (ANY 1 from 2)	He likes to be useful You can do a variety of jobs because good with children/ because he understands children/ because he likes working with children
6c	The hours are long you have to work long hours He doesn't like the long hours	You start early The hours It's long It's too long The work is very long It's so long It takes a long time It takes long School is long It takes long to be a Teacher It's a lot of work
6d	Africa Recognisable spelling	South Africa abroad In a different country In a school In a Nursery/primary/ secondary/private school in a university

Question 7

i) A
ii) C
iii) B

iv) A

Question 8

C

E

F

I

Question 9

Question	accept	reject
9a	In) the north (of France) (In) northern France	France Any other direction Bordeaux Any named town Border of France on the coast/by the sea Answers which negate eg north and/or south
9b	the sea the seaside the beach the coast the ocean	on the beach/sea by the beach/sea the seafront (in the) north the shops a town a village a sports centre any reference to mum's house or town hall (ideas coming from similar sounding French words) additional information which negates Eg seaside/beach/coast as one answer =1 ie nothing negates But sea/river/water = 0
9c	ANY ONE FROM (it is/ it's) pretty/beautiful/picturesque/ looks good OR	happy/jolly small quiet nice lots of fairs lots to see

	lots to do a lot to do lots of activities/things to do	there are shops there is a sports centre there is a beach Additional information which negates eg it is pretty and there are fairs=0
9d	(add/ if there were/ build): a leisure centre a sports centre	a centre a sports ground sports facilities sports activities more sports more sports centres/ more leisure centres a new sports centre somewhere for sport a place to do sport there needs to be more sport improve sports centre

Question 10

i) B
ii) B
iii) A
iv) C

Question 11

B

C

F

I

Question 12

Question	accept	reject
12a	17 seventeen	any other number
12b	EITHER she (Alice) listens (to her) OR they like the same thing	she listens to Alice
12c	go to dancing classes/lessons dance/dancing/go dancing	go to class

	Must have reference to dancing	
12d	(she is too) chatty/talkative (she) talks too much/a lot	Any other adjective

Transcript

This test is for university research and will **not** count towards your GCSE grade. Your mark will **not** be seen by your teachers. Answer **all** questions. You may **not** use a dictionary. You will have 3 minutes to read through the paper before the **recording** starts. You may make notes during these 3 minutes. The recording will start after 3 minutes.

You will hear each extract twice. You will hear one bleep after the first playing * bleep* and two bleeps after the second playing *bleep bleep*

There will be a pause between each question. There are 12 questions in total. You may open the paper.

three minute pause

Section A – Parisian

Narrator: AT THE LEISURE CENTRE ***30 seconds*** question one ***3 seconds*** EXAMPLE ***3 seconds***

Speaker: Lundi je fais de la gymnastique. ***bleep*** ***3 seconds*** Lundi je fais de la gymnastique. ***double bleep***

Narrator*:* Question one, part one ***3 seconds***

Speaker: Mercredi j'ai un cours de danse. ***bleep*** ***3 seconds*** Mercredi j'ai un cours de danse ***double bleep***

Narrator*:* Question one, part two ***3 seconds***

Speaker: Jeudi je joue au ping-pong. ***bleep*** ***3 seconds*** Jeudi je joue au ping-pong. ***double bleep***

Narrator*:* Question one, part three ***3 seconds***

Speaker: Vendredi je joue de la batterie. ***bleep*** ***3 seconds*** Vendredi je joue de la batterie. ***double bleep***

Narrator*:* Question one, part four ***3 seconds***

Speaker : Dimanche je fais du théâtre. ***bleep*** ***3 seconds*** Dimanche je fais du théâtre. ***double bleep***

// ***10 seconds***

Narrator: HOLIDAY PREFERENCES ***30 seconds*** question 2 ***3 seconds***

Speaker: J'adore partir avec ma famille. Quelquefois on va à la campagne, je n'aime pas ça. Je préfère aller chez mes grands-parents au bord de la mer. J'aime aussi aller à l'étranger. Mes

parents aiment faire du camping, moi, j'ai horreur de ça. Mon frère aime faire du surf, moi, je préfère nager. Je n'aime pas visiter des monuments historiques mais j'adore faire les magasins.

// *** 10 seconds***

Narrator: A SCHOOL TRIP ***30 seconds*** question 3 *** 3 seconds***

Les sixièmes vont visiter le château de Dieppe samedi. Départ du car à 8h30. Il faut apporter un pique-nique et un blouson ou un manteau. Après la visite on va visiter le parc d'attractions.

Section B –Senegalese

Narrator: A RESTAURANT BOOKING ***30 seconds*** Question four *** 3 seconds***

Example: M1 : Je voudrais réserver une table pour 2 svp. ***bleep* *3 seconds*** Je voudrais réserver une table pour 2 svp.

Narrator*:* Question four, part one ***3 seconds***

M1 : C'est pour le 25 juin. ***bleep* *3 seconds*** : C'est pour le 25 juin. ***double bleep***

Narrator*:* Question four, part two ***3 seconds***

M1 : On veut une table à la terrasse. ***bleep* *3 seconds*** On veut une table à la terrasse. ***double bleep***

Narrator*:* Question four, part three ***3 seconds***

M1 : On ne mange pas de viande. ***bleep* *3 seconds*** On ne mange pas de viande ***double bleep***

Narrator*:* Question four, part four ***3 seconds***

M1 : C'est pour fêter nos 40 ans de mariage. ***bleep* *3 seconds*** C'est pour fêter nos 40 ans de mariage. ***double bleep***

// *** 10 seconds***

Narrator: ARGUMENTS AT HOME ***30 seconds*** Question five *** 3 seconds***

Je me dispute avec ma mère à cause de la musique, et quand je passe trop de temps sur Internet dans ma chambre. Par contre, elle m'achète souvent des vêtements . Mon père me laisse sortir, mais il se fâche quand j'utilise mon portable pendant qu'on mange, et si je ne fais pas mes devoirs. On se dispute souvent à cause des émissions à la télé !

// * 10 seconds*

Narrator: MY FUTURE CAREER ***30 seconds*** Question six ***** **3 seconds***

À mon avis, pour être professeur il faut être patient, créatif et aussi comprendre les enfants. Le travail est utile et il y a beaucoup de variété. Par contre les heures sont longues. Je voudrais travailler en Afrique un jour.

Section C –Canadian

Narrator: In the Tourist Office ***30 seconds*** Question 7 ***** **3 seconds*** example:

F1: Il faut visiter le musée ***bleep*** ***3 seconds*** Il faut visiter le musée ***double bleep***

Narrator*:* Question seven, Part one ***3 seconds***

F1: Prenez la première à gauche. ***bleep*** ***3 seconds*** Prenez la première à gauche. ***double bleep***

Narrator*:* Question seven, Part two ***3 seconds***

F1: C'est à côté de l'église. ***bleep*** ***3 seconds*** C'est à côté de l'église. ***double bleep***

Narrator*:* Question seven, Part three ***3 seconds***

F1: L'entrée est 12 €. ***bleep*** ***3 seconds*** L'entrée est 12 €. ***double bleep***

Narrator*:* Question seven, Part four ***3 seconds***

F1: il y a un grand parking gratuit ***bleep*** ***3 seconds*** il y a un grand parking gratuit ***double bleep***

// ***** **10 seconds***

Narrator: My School ***30 seconds*** Question 8 ***** **3 seconds***

F1: J'adore l'anglais. L'année dernière je suis allée en Angleterre avec le collège. On commence à 8h et finit vers 17h, c'est long même avec les deux récréations ! Je prends le déjeuner au collège, c'est délicieux ! Les profs sont sympa. Il y a beaucoup de clubs comme le basket mais je n'y vais pas, j'ai trop de travail scolaire à faire le soir.

// ***** **10 seconds***

Narrator: Where I live ***30 seconds*** Question 9 ***** **3 seconds***

F2: J'habite dans le nord de la France. Ma maison est au bord de la mer. J'aime bien ma ville, elle est jolie et il y a beaucoup à faire. Ça serait bien s'il y avait un centre sportif.

Section D –Guadeloupe

Narrator: A SHOPPING TRIP ***30 seconds*** Question ten *** 3 seconds*** Example *** 3 seconds***

F1: Prends le bus. ***bleep* *3 seconds*** Prends le bus. ***double bleep***

Narrator*:* Question ten, part one ***3 seconds***

F1: Va d'abord au marché. ***bleep* *3 seconds*** Va d'abord au marché ***double bleep***

Narrator*:* Question ten, Part two ***3 seconds***

F1: Puis, il faut acheter du dentifrice. ***bleep* *3 seconds*** Puis, il faut acheter du dentifrice. ***double bleep***

Narrator*:* Question ten, Part three ***3 seconds***

F1: N'oublie pas la carte d'anniversaire pour ton père. ***bleep* *3 seconds*** N'oublie pas la carte d'anniversaire pour ton père. ***double bleep***

Narrator*:* Question ten, Part four ***3 seconds***

F1: Tu dois rentrer à midi et demi. ***bleep* *3 seconds*** Tu dois rentrer à midi et demi. ***double bleep***

// *** 10 seconds***

Narrator: **SPENDING MONEY *30 seconds*** Question eleven *** 3 seconds***

F1 : J'achète beaucoup de magazines. Je n'achète pas de bonbons ni de chocolat. Mais le week-end, j'aime aller au café avec mes copines. Aller au cinéma, c'est trop cher. Ma mère m'achète mes chaussures mais je préfère acheter mes vêtements. Je télécharge aussi de la musique mais je n'achète pas de jeux vidéo. J'adore lire donc j'achète des livres.

// *** 10 seconds***

Narrator: **MY BEST FRIEND *30 seconds*** Question twelve *** 3 seconds***

F2: Ma meilleure copine s'appelle Alice, elle a 17 ans. Je l'aime parce qu'elle m'écoute et qu'on aime les mêmes choses. Le samedi, on va à un cours de danse. Le seul problème, c'est qu'elle est trop bavarde, elle parle tout le temps !

Narrator: end of recording. You may continue to answer questions until the time is up.

Timing formula

title intro = **3 seconds** + **20 seconds** waiting

question number announcement = **3 seconds** + **3 seconds** waiting

1st reading = **variable**

pause of **10 seconds**

2nd reading = **variable**

pause of **10 seconds**

speech sample (Qs1 + 2 + 3) + 49 seconds = x

Section A – Parisian

Speech exposure = 255

Total time with pauses = 304 seconds

Question 1

Speech length = **125 seconds** (repeated)

Question 2

Speech length = 42 seconds x 2 = **84 seconds**

Question 3

Speech length: 23s x 2 = **46s**

Section B – Guadeloupean

Speech exposure = 265

Total time with pauses = 336 seconds

Question 4

Speech length = **123 seconds** (repeated)

Question 5

Speech length = 42 seconds x 2 = **84 seconds**

Question 6

Speech length or – 29 seconds x 2 = **58 seconds**

Section C – Canadian

Speech exposure = 246

Total time with pauses = 339 seconds

Question 7

Speech length = **120 seconds** (repeated)

Question 8

Speech length = 41 seconds x 2 = **82 seconds**

Question 9

Speech length or – 22 seconds x 2 = **44 seconds**

Section D – Senegalese

Speech exposure = 276

Total time with pauses = 325

Question 10

Speech length = 158 **seconds** (repeated)

Question 11

Speech length = 32 seconds x 2 = **64 seconds**

Question 12

Speech length = 27 seconds x 2 = **54 second**

Appendix B: MET answer sheet and mark scheme

Musical Ear Test (MET)

Test 1: comparison of melodic phrases

EXAMPLES

	YES	NO
Example A	☐	☐
Example B	☐	☐

THE TEST ITSELF

	YES	NO
1	☐	☐
2	☐	☐
3	☐	☐
4	☐	☐
5	☐	☐
6	☐	☐
7	☐	☐
8	☐	☐
9	☐	☐
10	☐	☐
11	☐	☐
12	☐	☐
13	☐	☐
14	☐	☐
15	☐	☐
16	☐	☐
17	☐	☐
18	☐	☐
19	☐	☐
20	☐	☐
21	☐	☐
22	☐	☐
23	☐	☐
24	☐	☐
25	☐	☐
26	☐	☐
27	☐	☐
28	☐	☐
29	☐	☐
30	☐	☐
31	☐	☐
32	☐	☐
33	☐	☐
34	☐	☐
35	☐	☐
36	☐	☐
37	☐	☐
38	☐	☐
39	☐	☐
40	☐	☐
41	☐	☐
42	☐	☐
43	☐	☐
44	☐	☐
45	☐	☐
46	☐	☐
47	☐	☐
48	☐	☐
49	☐	☐
50	☐	☐
51	☐	☐
52	☐	☐

Musical Ear Test (MET)

Test 2: Comparison of rhythmic phrases

EXAMPLES

	YES	NO
Example A	☐	☐
Example B	☐	☐

THE TEST ITSELF

	YES	NO
1	☐	☐
2	☐	☐
3	☐	☐
4	☐	☐
5	☐	☐
6	☐	☐
7	☐	☐
8	☐	☐
9	☐	☐
10	☐	☐
11	☐	☐
12	☐	☐
13	☐	☐
14	☐	☐
15	☐	☐
16	☐	☐
17	☐	☐
18	☐	☐
19	☐	☐
20	☐	☐
21	☐	☐
22	☐	☐
23	☐	☐
24	☐	☐
25	☐	☐
26	☐	☐
27	☐	☐
28	☐	☐
29	☐	☐
30	☐	☐
31	☐	☐
32	☐	☐
33	☐	☐
34	☐	☐
35	☐	☐
36	☐	☐
37	☐	☐
38	☐	☐
39	☐	☐
40	☐	☐
41	☐	☐
42	☐	☐
43	☐	☐
44	☐	☐
45	☐	☐
46	☐	☐
47	☐	☐
48	☐	☐
49	☐	☐
50	☐	☐
51	☐	☐
52	☐	☐

Musical Ear Test mark scheme

MUSIKALSK KOMPETENCETEST
Test I: Sammenligning af melodiske fraser

MELODISK FACIT

Testpersonens navn: FACIT Dato: _____

EKSEMPLER

	JA	NEJ
Eksempel A	X	
Eksempel B		X

SELVE TESTEN

	JA	NEJ		JA	NEJ		JA	NEJ		JA	NEJ
1		X	14	X		27	X		40	X	
2	X		15	X		28	X		41		X
3	X		16		X	29		X	42	X	
4		X	17	X		30	X		43		X
5		X	18		X	31	X		44	X	
6	X		19	X		32	X		45		X
7	X		20		X	33	X		46		X
8		X	21		X	34		X	47		X
9		X	22		X	35	X		48	X	
10	X		23		X	36		X	49	X	
11	X		24		X	37	X		50		X
12		X	25		X	38	X		51		X
13	X		26		X	39		X	52	X	

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MUSIKALSK KOMPETENCETEST
Test II: Sammenligning af **rytmiske** fraser

RYTMISK FACIT

Testpersonens navn: FACIT Dato: _____

EKSEMPLER

	JA	NEJ
Eksempel A	X	
Eksempel B		X

SELVE TESTEN

	JA	NEJ		JA	NEJ		JA	NEJ		JA	NEJ
1		X	14	X		27	X		40	X	
2		X	15		X	28		X	41		X
3	X		16	X		29		X	42		X
4		X	17		X	30	X		43	X	
5		X	18	X		31		X	44	X	
6	X		19		X	32	X		45	X	
7	X		20		X	33		X	46		X
8	X		21		X	34		X	47	X	
9	X		22		X	35	X		48		X
10		X	23	X		36		X	49	X	
11	X		24	X		37	X		50	X	
12		X	25	X		38	X		51		X
13		X	26	X		39		X	52		X

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Appendix C: Questionnaire

Questionnaire

General Information

1) Age:

2) Gender:

3) What is your ethnic group?

☐ White British ☐White European ☐Asian or Asian British ☐Black African

☐ Black Caribbean ☐Black British ☐Other Ethnic Groups: Please state _____

☐Mixed/ multiple ethnicity (Please state): _____.

4) Were you born in the UK? Circle the relevant response.

- Yes
- No. I have lived here since the age of: _____

5) Who do you live with? _____

6) What are the occupations of the people you live with? _____

_____

7) Current grade in French: 1 2 3 4 5 6 7 8 9

8) Target grade in French: 1 2 3 4 5 6 7 8 9

9) Other Language: Please choose **ONE of the following options:**

- I know a language other than English outside of school and this language is: _____
- I don't know a language other than English outside of school, but I study a language at school. This language is: _____

10) Do you study music at GCSE? yes / no

11) Do you participate in any music extra-curricular activities (can be in school or outside of school)? yes/ no

If yes, please give details _____

_____

12) Of your knowledge, in which countries, or places, is French spoken?

_____

_____

13) Do you have any comments about how you found the French test today?

_____

Please turn the page over

Check the box if you agree or disagree

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I enjoy learning French.	☐	☐	☐	☐	☐
Some French accents are better than others.	☐	☐	☐	☐	☐
French spoken in countries outside of France is less correct.	☐	☐	☐	☐	☐
The accents I heard in the French test today felt familiar to me.	☐	☐	☐	☐	☐

Rank the options according to the statement. Write numbers in the box to the left.

1) Which aspect of French do you find the easiest? 1= easiest 4= hardest

☐ Reading
☐ Speaking
☐ Listening
☐ Writing

2) A French speaker with which accent is the <u>most intelligent</u>? 1= most intelligent, 4=least intelligent

☐ Senegalese (East Africa) French
☐ Parisian French
☐ Canadian French
☐ Guadeloupe (Caribbean) French

3) A French speaker with which accent is the <u>friendliest</u>? 1= most friendly, 4=least friendly

☐ Senegalese (East Africa) French
☐ Parisian French
☐ Canadian French
☐ Guadeloupe (Caribbean) French

4) Which French speaker would you find it <u>easiest to communicate with</u>? 1= easiest, 4=hardest

☐ Senegalese (East Africa) French
☐ Parisian French
☐ Canadian French
☐ Guadeloupe (Caribbean French)

Appendix D: Pilot test paper, mark scheme

Participant F

Listening comprehension test

This test is for university research and will **not** count towards your GCSE grade. Your mark will **not** be seen by your teachers.

Instructions

- Answer **all** questions.
- You may **not** use a dictionary.

Information

- You have 3 minutes to read through the paper before the recording starts.
- You may make notes during these 3 minutes.
- The recording will start after 3 minutes.
- You will hear each extract twice. There will be a pause between each question.
- There are 5 questions in total.

Answer ALL questions.

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

Question 1:

Sport

Which sport do these young people do?

A 	B 	C 
D 	E 	F 

Listen to the recording and put a cross ☒ in the correct box.

	A	B	C	D	E	F
Example:	☐	☐	☒	☐	☐	☐
(i)	☐	☐	☐	☐	☐	☐
(ii)	☐	☐	☐	☐	☐	☐
(iii)	☐	☐	☐	☐	☐	☐
(iv)	☐	☐	☐	☐	☐	☐

(Total for question 1= 4 marks)

Question 2:

A journey

Lionel is describing a recent journey to Marseille. What does he say?

Listen to the recording and put a cross ☒ next to the **four** correct statements.

Example: He travelled by car.	☒
A During the journey he played games.	☐
B He listened to music on his iPod.	☐
C There was not a lot of traffic.	☐
D It took longer than expected.	☐
E They did not stop to eat at the restaurant.	☐
F His brothers argued all the way.	☐
G His sister was sick.	☐
H Next time he plans to travel by train.	☐

(Total for question 2 = 4 marks)

Question 3:

Keeping healthy

These young people are talking about staying healthy. What does each one do?

A doesn't smoke
B does lots of sport
C goes to bed early
D avoids fast food
E eats lots of vegetables
F drinks lots of water

Listen to the recording and put a cross ☒ in the **four** correct boxes.

	A	B	C	D	E	F
Example:	☐	☒	☐	☐	☐	☐
(i)	☐	☐	☐	☐	☐	☐
(ii)	☐	☐	☐	☐	☐	☐
(iii)	☐	☐	☐	☐	☐	☐
(iv)	☐	☐	☐	☐	☐	☐

(Total for question 3 = 4 marks)

Question 4:

School equipment

What have these young people forgotten to bring to school?

Listen to the recording and put a cross ☒ in the correct box.

	A pencil case	**B** calculator	**C** shorts	**D** text book	**E** pen	**F** bag
Example:	☐	☐	☒	☐	☐	☐
(i)	☐	☐	☐	☐	☐	☐
(ii)	☐	☐	☐	☐	☐	☐
(iii)	☐	☐	☐	☐	☐	☐
(iv)	☐	☐	☐	☐	☐	☐

(Total for question 4 = 4 marks)

Question 5:

Where I live

Isabelle is talking about where she lives.

Answer the following questions **in English**.

(a) Where **exactly** in France is her town?

(1)

(b) What is near her house?

(1)

(c) Why does she like her town? Give **one** detail.

(1)

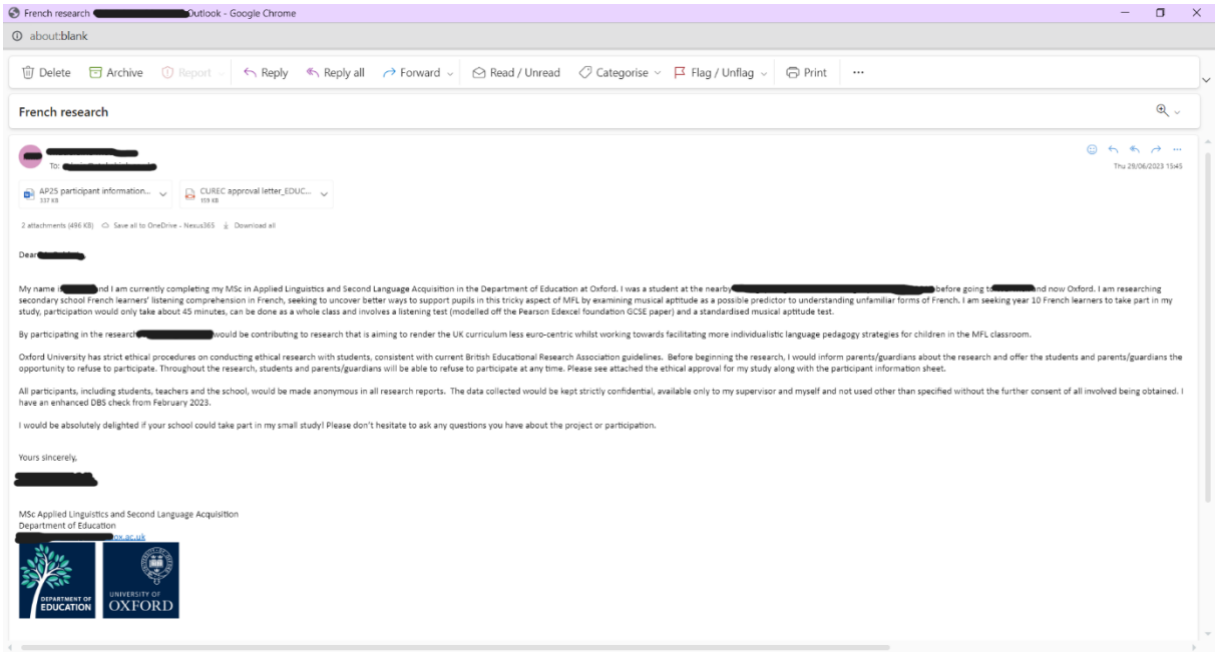
(d) What does she say would improve her town?

(1)

(Total for question 5 = 4 marks)

End of the test 😊

Appendix E: Email to contact the schools for participation



French research [redacted] Outlook - Google Chrome

about:blank

Delete | Archive | Report | Reply | Reply all | Forward | Read / Unread | Categorise | Flag / Unflag | Print | ...

French research

[redacted]

Thu 29/06/2023 15:45

AP25 participant information... 337 KB | CUREC approval letter_EDUC... 159 KB

2 attachments (496 KB) | Save all to OneDrive - Nexus365 | Download all

Dear [redacted]

My name is [redacted] and I am currently completing my MSc in Applied Linguistics and Second Language Acquisition in the Department of Education at Oxford. I was a student at the nearby [redacted] before going to [redacted] and now Oxford. I am researching secondary school French learners' listening comprehension in French, seeking to uncover better ways to support pupils in this tricky aspect of MFL by examining musical aptitude as a possible predictor to understanding unfamiliar forms of French. I am seeking year 10 French learners to take part in my study, participation would only take about 45 minutes, can be done as a whole class and involves a listening test (modelled off the Pearson Edexcel foundation GCSE paper) and a standardised musical aptitude test.

By participating in the research [redacted] would be contributing to research that is aiming to render the UK curriculum less euro-centric whilst working towards facilitating more individualistic language pedagogy strategies for children in the MFL classroom.

Oxford University has strict ethical procedures on conducting ethical research with students, consistent with current British Educational Research Association guidelines. Before beginning the research, I would inform parents/guardians about the research and offer the students and parents/guardians the opportunity to refuse to participate. Throughout the research, students and parents/guardians will be able to refuse to participate at any time. Please see attached the ethical approval for my study along with the participant information sheet.

All participants, including students, teachers and the school, would be made anonymous in all research reports. The data collected would be kept strictly confidential, available only to my supervisor and myself and not used other than specified without the further consent of all involved being obtained. I have an enhanced DBS check from February 2023.

I would be absolutely delighted if your school could take part in my small study! Please don't hesitate to ask any questions you have about the project or participation.

Yours sincerely,

[redacted]

MSc Applied Linguistics and Second Language Acquisition
Department of Education
[redacted]

DEPARTMENT OF EDUCATION | UNIVERSITY OF OXFORD

Appendix F: Information sheets

Information sheet for parents



DEPARTMENT OF EDUCATION

E-Mail: [redacted]
[redacted] (MSc student)
E-Mail: [redacted]

Music skills and French listening: understanding different French accents

INFORMATION SHEET FOR PARENTS / GUARDIANS

Central University Research Ethics Committee Approval Reference [redacted]

In partnership with researchers at the University of Oxford, The Swan School has agreed to take part in a research project. We would like to invite your child, along with the rest of their French class, to be involved in this research. We very much hope you would like your child to be involved, but before you decide, it is important that you understand why the research is being done and what is will involve.

Why is this research being conducted?

This research is being conducted to work out how we can improve pupils' listening skills in French. The project aims to understand whether a person's musical skills (e.g., pitch perception) may help or hinder their listening skills when they hear unfamiliar accents such as a regional French accent.

More information about the research can be obtained by contacting the research team (contact details overleaf).

Why has my child been invited to be involved in this research?

We are inviting your child because they are in year 10 and studying French. All pupils in their class are invited to be involved in this research.

Does my child have to be involved?

No. You can ask questions about the research before deciding whether to allow your child to be involved. If you do not agree to their involvement, you may withdraw your child before they participate, without giving a reason and without any effect on their education, by advising the school or researchers of this decision.

If your child is not involved in the research, they will receive alternative provision of equivalent educational value, or be placed where they cannot be observed or recorded.

What will my child be asked to do?

Your child will complete a French GCSE style listening comprehension test which takes 24 minutes. During the test they will hear different French speakers talking about topics included in the GCSE

AP15 Parent/Guardian Information Sheet v1.2 Page 1 of 3

curriculum e.g., holidays, family, and hobbies. Pupils will answer a multiple choice paper test based on these recordings. They will also take a standardised musical aptitude test which takes 15 minutes. During the music test they will hear varying rhythms, chords, melodies and tones and answer multiple choice questions about these sounds. Finally, your child will complete a small demographic questionnaire to gather data on their age, gender, other language spoken and what their first language is.

The session will take place during your child's normal French class time and will take approximately 45 minutes.

What are the possible disadvantages and risks in taking part?

There are no risks involved with participation I this study. However, the listening comprehension test mimics the GCSE exam paper which could be stressful for some pupils. This test does **NOT** count towards their GCSE grade and their mark will **NOT** be seen by their teacher or anyone from the school.

Are there any benefits in taking part?

Participation in this study offers revision for your child for their GCSE French exam, increasing the French they hear and completing a test which is very close to what they will do in their summer exam.

What information will be collected and why is the collection of this information relevant for achieving the research objectives?

The answer papers which pupils fill in will be digitised at the earliest possible date after data collection. In the meantime, the hard copies will be stored in a locked filing cabinet in a locked room. They will be shredded after digitisation.

Opt-out forms will be stored digitally will be stored in an encrypted file on the researcher's password protected computer. They will be double encrypted when uploaded onto the university protected OneDrive with the Single Sign On security feature also in place. Paper copies will be shredded.

The researchers will retain Consent forms for 3 years after publication of the work of the research.

I will send a brief report on the research to your child's school at the end of the research, and you are welcome to see this. I will not identify the school, teacher or any students in any reports of the research.

Will the research be published? Could my child be identified from any publications or other research outputs?

The findings from the research will be written up for a Masters thesis for academic assessment. Participants will **NOT** be identifiable from this output.

A copy of my thesis will be deposited both in print and online in the Oxford University Research Archive where it will be publicly available to facilitate its use in future research.

AP15 Parent/Guardian Information Sheet v1.2 Page 2 of 3

above. Research is a task that we perform in the public interest.

Further information about your rights with respect to your child's personal data is available from https://compliance.web.ox.ac.uk/individual-rights.

Who has reviewed this research?

This research has received ethics approval from a subcommittee of the University of Oxford Central University Research Ethics Committee. (Ethics reference [redacted])

Who is organising the research?

This research is organised by Masters studen[redacted] and Supervised by D[redacted]

Who do I contact if I have a concern about the research, or I wish to complain?

If you have a concern about any aspect of this research, please contact D[redacted] [redacted]education.ox.ac.uk, and we will do our best to answer your query. We will acknowledge your concern within 10 working days and give you an indication of how it will be dealt with. If you remain unhappy or wish to make a formal complaint, please contact the Chair of the Research Ethics Committee at the University of Oxford who will seek to resolve the matter as soon as possible:

Chair, **Social Sciences & Humanities Inter-Divisional Research Ethics Committee**; Email: ethics@socsci.ox.ac.uk; Address: Research Services, University of Oxford, Boundary Brook House, Churchill Drive, Headington, Oxford OX3 7GB

What should I do next?

If you do NOT want your child to participate, please fill in the enclosed form and return it to your child's class teacher. If you are happy for your child to participate you do not need to fill in a form.

Please remember that you may withdraw your child at any time until they take the test, without affecting their education and without giving a reason, by notifying the researcher.

Further Information and Contact Details

If you would like to discuss the research with someone beforehand (or if you have questions afterwards), please contact:

[redacted]
Department of Education
Postal address: [redacted]
University email: [redacted]

AP15 Parent/Guardian Information Sheet v1.2 Page 3 of 3

Information sheet for participants

Department of Education,
15 Norham Gardens,
Oxford
OX2 6PY

Supervisor: Dr [redacted]
E-Mail: [redacted]
Oxford University telephone number: [redacted]

Primary researcher: [redacted] MSc student
E-Mail: [redacted]ox.ac.uk

Music skills and French listening

INFORMATION SHEET FOR STUDENTS

Central University Research Ethics Committee Approval Reference [redacted]

We are inviting you to join in a research study. My name is Maddy and I work at the University of Oxford in the Department of Education. I am doing some research and would like you, together with the rest of your French class, to join in this research, which is focussed on Music listening skills and French listening comprehension of your whole class. Before you decide if you would like to join in, it is important to understand what the research is about, why we are doing it and what it would involve for you. Please read and think about this leaflet carefully.

I have also written to your parents/guardians to tell them about this research and think about whether you should be included. Please talk to your family, friends, or the researchers about what you would like to do and, if you are unhappy, let me know.



Why are we doing this research?

This research is being conducted to help improve how French is taught in schools in the UK! We understand that French listening can be really tricky, and we are working on how to make that aspect of your French class easier and a bit less scary by working out different ways to identify who is struggling and may need more help.

Why have I been invited to take part?

You are being invited to take part because you have chosen to study French at GCSE level, which is great! We wanted to do this research on learners of French who have studied it for a few years. All the French classes in your year are being asked to participate.

Do I have to take part?

No - It is up to you to decide if you want to take part in this study. You are free to stop taking part at any time during the research without giving a reason by telling your teacher, the researcher or your parent/guardian. You do not have to say why and this will not affect your education. If you decide to stop, no one will be upset with you. If you do not wish to join in, you will complete a different activity during the class and your

worksheet will not be collected.

What will happen if I take part in the research?

The research will take place during your normal French class at school- no coming in during lunch break or after school! It will take approximately 45 minutes, so half of your French lesson.



You will first complete a music test where you will hear a range of sounds and answer a few multiple-choice questions about them.

After that you will complete a French listening quiz which will be quite similar to your GCSE listening test, although these scores will NOT count towards your GCSE grade. Additionally, your teacher won't even see your grade, just me as the researcher and my supervisor at university.

Finally, we will ask you to fill in a short demographic questionnaire to give us an idea of your age, gender and any other languages spoken at home.

Your teacher will also let me know what grade you are currently achieving in class. Don't worry, no-one else will see this grade it's just so that we can account for your level when we look at your test scores later.

What are the possible disadvantages and risks in taking part?

It may feel a little scary to do a French listening quiz but remember that your score will not be shown to the school, we won't even write your name on the answer sheet, just a candidate number. If you feel too anxious to take part, that's completely fine! You can do another activity and join the rest of the class once they have done the music and listening quizzes.

Are there any benefits in taking part?

Participation in the research will act as French revision for your mocks and GCSE exams. You may even learn a few new words! Additionally, by taking part in this research you are helping us researchers better understand how we can support learners in their French language learning journey.

What information will be collected and what happens to the results of the research?

Results are kept strictly confidential, and only the people doing the research, or helping with the research, can look at the data. Only a number will be used to identify you, and all information and results are kept in a password protected folder on my password protected computer and also stored on the University OneDrive. Your paper answer sheet will be digitised at the earliest possible date and safely stored (as above), the paper copies will then shredded.

I will change the name of your school so that no one will know that you have taken part unless you tell them yourself.

The findings from the research will be written up as a dissertation for my Masters degree. You will not be identifiable from this output.

If I want to use the information for anything else, I will ask your permission. At the end of my research, I will write to your school about what I found out in my research. You are welcome to read this if you are interested.

All research data and records will be stored for 3 years after publication or public release of the work of the research. Third parties may be given access to research data for monitoring and/or audit of the research, or for data storage purposes.

Data Protection

The University of Oxford is the data controller with respect to your personal data, and as such will determine how your personal data is used in the research.

The University will process your personal data for the purpose of the research outlined above. Research is a task that we perform in the public interest.

Further information about your rights with respect to your personal data is available from https://compliance.web.ox.ac.uk/individual-rights.

What if I don't want to take part in the research anymore?

Just tell your parent/guardian and the people carrying out the research that you don't want to take part. You don't have to give a reason and no one will be annoyed with you. It is YOUR choice.

Who is organising and funding the research?

This research is organised by me, Maddy Masters and supervised by Dr Faidra Faitaki. The research is self funded as it is a component of my degree.

Who has reviewed the research?

This research has received ethics approval from a subcommittee of the University of Oxford Central University Research Ethics Committee. (Ethics reference [redacted])

What do I do now?

Please tell your parents, guardians and/or teacher if you do not want to participate.

What if there is a problem or something goes wrong?

Please tell us if you are worried about any part of this research, by contacting the researcher ([redacted]ox.ac.uk). You may also talk to your teacher/parent/guardian who will let me, the researcher know. If you are still unhappy or wish to make a complaint, either you or your teacher/parent/guardian can contact the chair of the Research Ethics Committee at the University of Oxford:

Chair, **Social Sciences & Humanities Interdivisional Research Ethics Committee**; Email: ethics@socsci.ox.ac.uk; Address: Research Services, University of Oxford, Boundary Brook House, Churchill Drive, Headington, Oxford OX3 7GB

Further Information and Contact Details

If you would like to discuss the research with someone beforehand (or if you have questions afterwards), please contact:

[redacted]
Department of Education
15 Norham Gardens, Oxford OX2 6PY
University email: [redacted]

[redacted]
Department of Education
15 Norham Gardens, Oxford OX2 6PY
University email: [redacted].ox.ac.uk

Thank you for reading – please ask me any questions.

Appendix G: Opt-out form and assent form

Department of Education,
15 Norham Gardens,
Oxford
OX2 6PY

Supervisor: Dr [redacted]

E-Mail: [redacted]

Oxford University telephone number: [redacted]

Primary researcher: [redacted] MSc student

E-Mail: [redacted]

ASSENT FORM FOR CHILDREN UNDER 16

Music skills and French listening

Child/Young Person (or if unable, parent/researcher/teacher on their behalf) to circle all they agree with:

- Has somebody else explained this project to you? Yes/No
- Do you understand what this project is about? Yes/No
- Have you asked all the questions you want? Yes/No
- Have you had your questions answered in a way you understand? Yes/No
- Do you understand it's OK to stop taking part at any time? Yes/No
- Are you happy to take part? Yes/No
- Are you happy for your voice to be recorded? Yes/No

If any answers are "no" or you don't want to take part, that's OK! No one will be cross with you.

If you do want to take part, please write your name below, or place your thumb print in the box.

Your name _____

Date _____

The researcher who explained this project to you needs to sign too:

Print Name _____

Sign _____

Date _____

Thank you!

DEPARTMENT OF EDUCATION

[redacted]
E-Mail: [redacted]cation.ox.ac.uk
[redacted]
E-Mail [redacted]x.ac.uk

Music skills and French listening: understanding different French accents

OPT-OUT FORM

Ethics Approval Reference: [redacted]

If you **DO NOT** want your child to be included in the above-named research study please fill out the form below and return it to the school either online or in person by 18/07/2023

If we do not receive an opt-out form from you by this date, your child may be included in this study, as described in the accompanying information sheet.

I, the undersigned, hereby DO NOT give permission for my child to be included in the study titled music skills and French listening: understanding different French accents

Name of child: _____

Name of parent/guardian: _____

Signature: _____ Date: _____

Name of researcher: _____

AP15_v1.0 Opt-out form

Appendix H: CUREC approval confirmation

SOCIAL SCIENCES & HUMANITIES
INTERDIVISIONAL RESEARCH ETHICS COMMITTEE
DEPARTMENTAL RESEARCH ETHICS COMMITTEE

Department of Education
15 Norham Gardens, Oxford OX2 6PY
student.curec@education.ox.ac.uk; staff.curec@education.ox.ac.uk

[redacted]

Department of Education, Social Sciences Division
University of Oxford

2 May 2023

De[redacted]

Research ethics approval

Research title: Musical aptitude and comprehension of non-standard French accents in the French Language classroom.

Research ethics reference: [redacted]

The above application has been considered on behalf of the Education Departmental Research Ethics Committee (DREC) in accordance with the University's procedures for ethical approval of all research involving human participants.

I am pleased to confirm that, on the basis of the information provided to the DREC, ethics approval has now been granted for this study.

Please note the following:

Personal data: It is the responsibility of the PI to ensure that all personal data collected during the project is managed in accordance with the University's guidance and legal requirements.

In-person activities: Any data collection involving in-person interactions with participants must have an up-to-date fieldwork risk assessment in place; further guidance is available from the Safety Office's website.

Amendments: Please notify the committee if you intend to make any amendments to the information in your ethics application as submitted at date of this approval, as all changes must receive ethical approval prior to implementation. The amendment form is available on the SSH IDREC webpage.

We welcome feedback on your experience of the ethical review process and suggestions for improvement. Please email any comments to staff.curec@education.ox.ac.uk / student.curec@education.ox.ac.uk or ethics@socsci.ox.ac.uk.

Yours sincerely

Gosia Marschall

DREC member

cc: Dr [redacted]ducation.ox.ac.uk

Appendix I – Descriptive statistics

Descriptive statistics

1. Z-scores
2. French overall
3. French Parisian
4. French Senegalese
5. French Guadeloupian
6. French Canadian
7. MET
8. Histogram Overall French
9. Histogram MET
10. French score comparisons
11. Class group French scores overall
12. Class group MET

1. Z-scores

	Overall French	Parisian	Senegalese	Guadeloupean	Canadian	MET
Z-score Skewness	-0.749	-1.173	-1.162	-1.642	0.904	-0.456
Z-score Kurtosis	-0.643	-0.108	-0.759	0.908	-0.654	0.400

2. French overall

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Overall French score	79	10	41	27.86	7.449	-.203	.271	-.344	.535
Valid N (listwise)	79								

3. Parisian French

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Parisian French	79	0	12	7.81	2.381	-.318	.271	.058	.535
Valid N (listwise)	79								

4. Senegalese French

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Senegalese French	79	1	12	7.35	2.112	-.315	.271	.406	.535
Valid N (listwise)	79								

5. Guadeloupean French

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Guadeloupian French	79	0	12	7.47	2.336	-.445	.271	.486	.535
Valid N (listwise)	79								

6. French Canadian

Descriptive Statistics

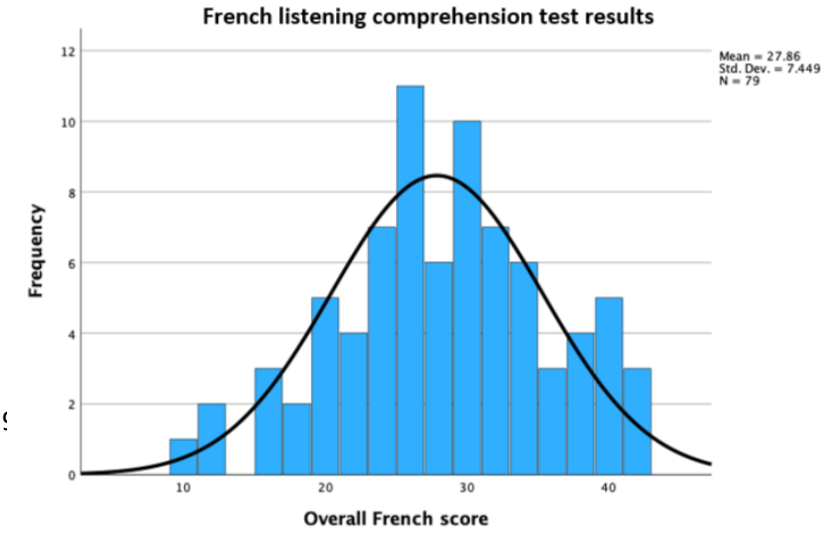
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Canadian French	79	0	10	5.23	2.136	.245	.271	-.350	.535
Valid N (listwise)	79								

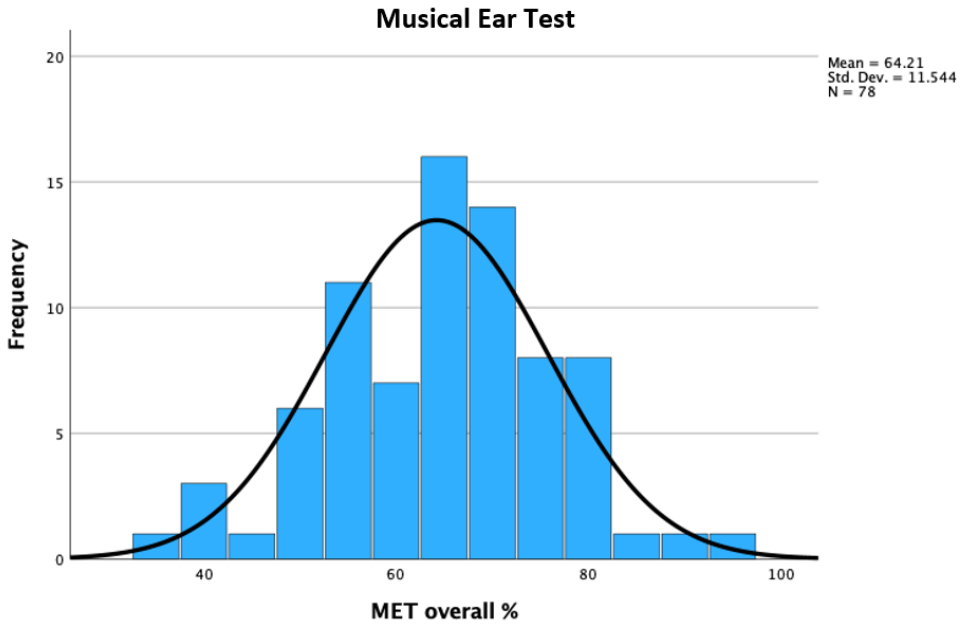
7. MET overall

Descriptive Statistics

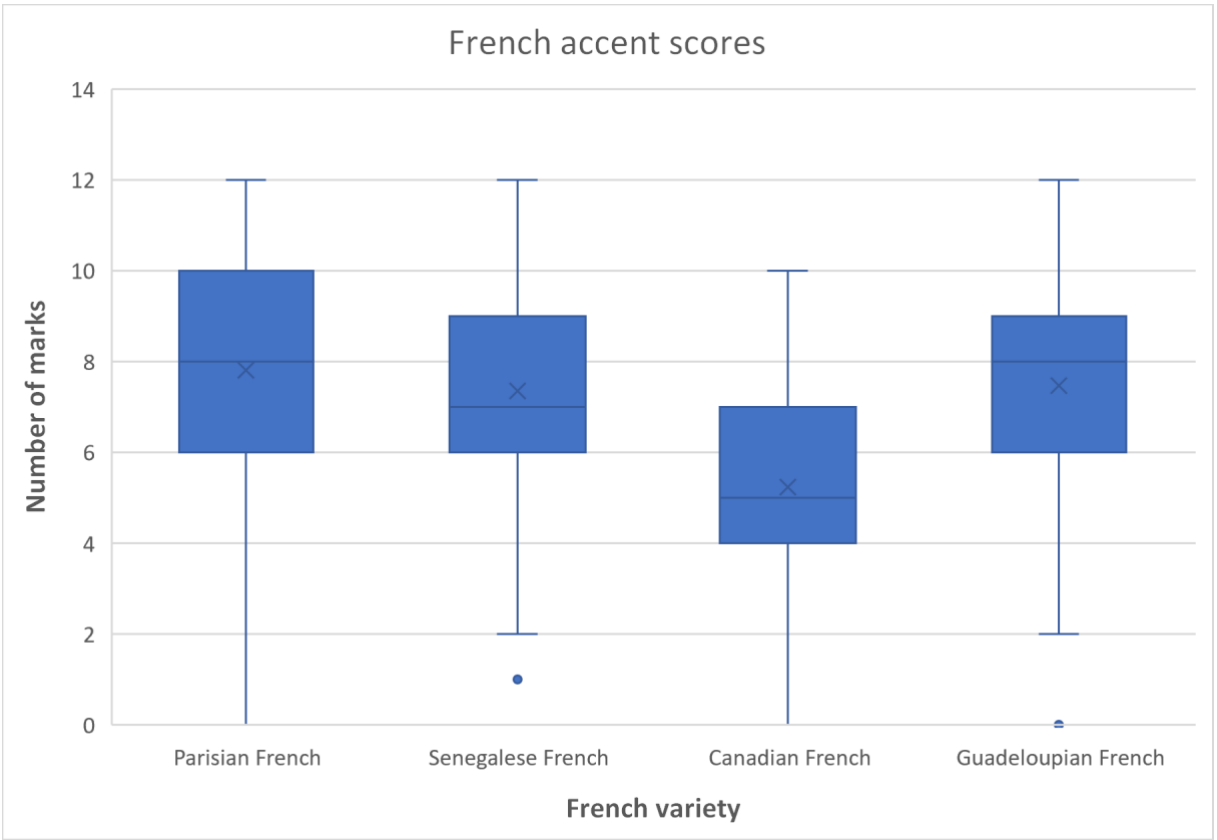
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
MET overall %	78	35	94	64.21	11.544	-.124	.272	.215	.538
Valid N (listwise)	78								

8. .

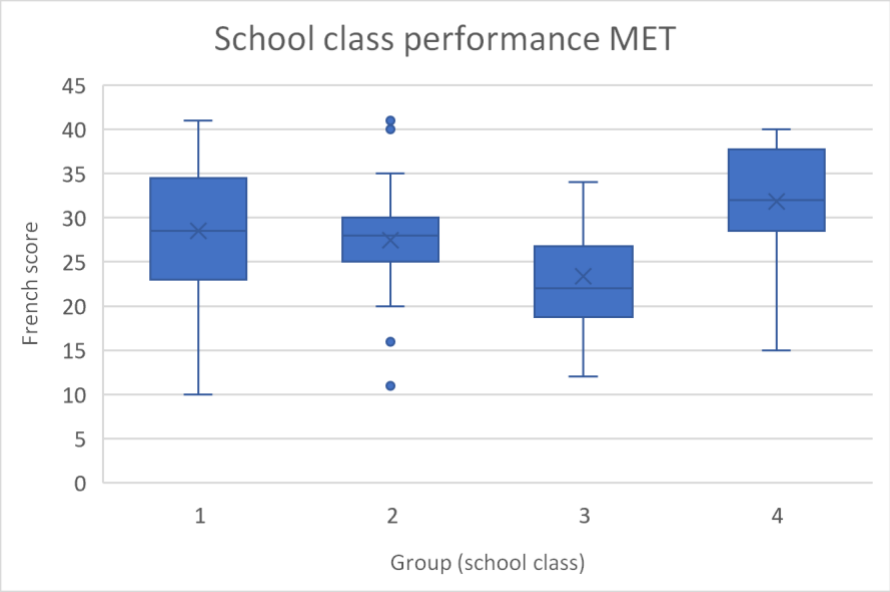



Musical Ear Test
Mean = 64.21
Std. Dev. = 11.544
N = 78
Frequency
MET overall %
0
5
10
15
20
40
60
80
100

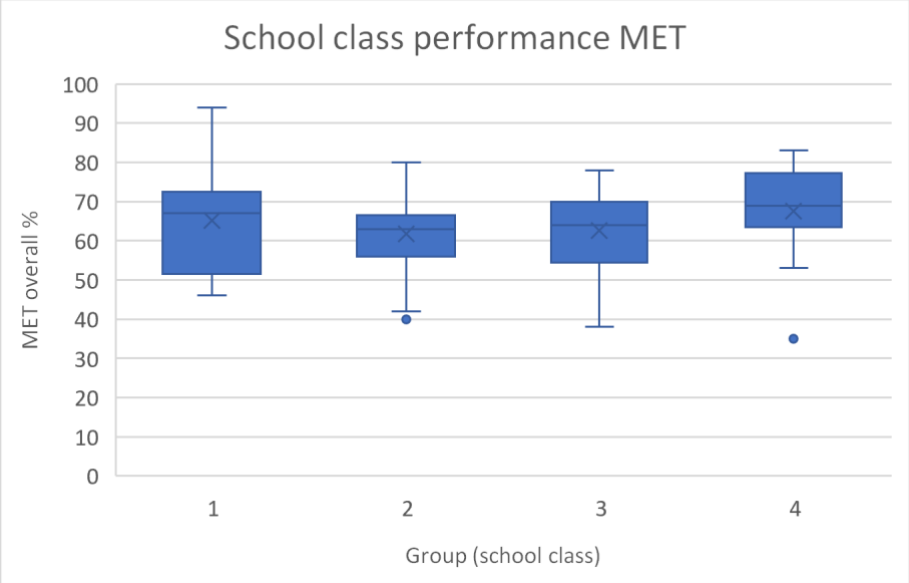
10. .


French accent scores
Number of marks
French variety
0
2
4
6
8
10
12
14
Parisian French
Senegalese French
Canadian French
Guadeloupian French

11. Class and French



12. Class and MET



Appendix J – Correlation coefficients

1. MET and overall French test

Correlations

		Overall French score	MET overall %
Overall French score	Pearson Correlation	1	.261*
	Sig. (2-tailed)		.021
	N	79	78
MET overall %	Pearson Correlation	.261*	1
	Sig. (2-tailed)	.021	
	N	78	78

*. Correlation is significant at the 0.05 level (2-tailed).

2. MET and Parisian French

Correlations

		MET overall %	Parisian French
MET overall %	Pearson Correlation	1	.228*
	Sig. (2-tailed)		.045
	N	78	78
Parisian French	Pearson Correlation	.228*	1
	Sig. (2-tailed)	.045	
	N	78	79

*. Correlation is significant at the 0.05 level (2-tailed).

3. MET and Guadeloupian French

Correlations

		MET overall %	Guadeloupian French
MET overall %	Pearson Correlation	1	.315**
	Sig. (2-tailed)		.005
	N	78	78
Guadeloupian French	Pearson Correlation	.315**	1
	Sig. (2-tailed)	.005	
	N	78	79

**. Correlation is significant at the 0.01 level (2-tailed).

4. MET and Senegalese French

Correlations

		MET overall %	Senegalese French
MET overall %	Pearson Correlation	1	.051
	Sig. (2-tailed)		.660
	N	78	78
Senegalese French	Pearson Correlation	.051	1
	Sig. (2-tailed)	.660	
	N	78	79

5. MET and Canadian French

Correlations

		MET overall %	Canadian French
MET overall %	Pearson Correlation	1	.256*
	Sig. (2-tailed)		.023
	N	78	78
Canadian French	Pearson Correlation	.256*	1
	Sig. (2-tailed)	.023	
	N	78	79

*. Correlation is significant at the 0.05 level (2-tailed).

Appendix K – Paired t-tests

Paired Samples Test

		Paired Differences					t	df	Significance	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			One-Sided p	Two-Sided p
Pair 1	Parisian French – Senegalese French	.456	2.037	.229	-.001	.912	1.989	78	.025	.050
Pair 2	Parisian French – Canadian French	2.582	2.029	.228	2.128	3.037	11.310	78	<.001	<.001
Pair 3	Parisian French – Guadeloupian French	.342	2.105	.237	-.130	.813	1.443	78	.077	.153
Pair 4	Senegalese French – Canadian French	2.127	1.931	.217	1.694	2.559	9.790	78	<.001	<.001
Pair 5	Senegalese French – Guadeloupian French	-.114	2.178	.245	-.602	.374	-.465	78	.322	.643
Pair 6	Canadian French – Guadeloupian French	-2.241	1.989	.224	-2.686	-1.795	-10.014	78	<.001	<.001

Parisian	vs	Senegalese	= not significant
Parisian	vs	**Canadian**	= **significant**
Parisian	vs	Guadeloupean	= not significant
Senegalese	vs	**Canadian**	= **significant**
Senegalese	vs	Guadeloupean	= not significant
Canadian	vs	Guadeloupean	= **significant**

Appendix L – Linear regression

1. Overall French and MET
2. Parisian and MET
3. Guadeloupean and MET
4. Canadian and MET

1. Overall French and MET

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	284.579	1	284.579	5.545	.021[b]
	Residual	3900.409	76	51.321		
	Total	4184.987	77			

a. Dependent Variable: Overall French score

b. Predictors: (Constant), MET overall %

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.261[a]	.068	.056	7.164

a. Predictors: (Constant), MET overall %

2. Parisian and MET

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.592	1	22.592	4.172	.045[b]
	Residual	411.562	76	5.415		
	Total	434.154	77			

a. Dependent Variable: Parisian French

b. Predictors: (Constant), MET overall %

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.228[a]	.052	.040	2.327

a. Predictors: (Constant), MET overall %

3. Guadeloupean and MET

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41.150	1	41.150	8.399	.005[b]
	Residual	372.337	76	4.899		
	Total	413.487	77			

a. Dependent Variable: Guadeloupian French

b. Predictors: (Constant), MET overall %

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.315[a]	.100	.088	2.213

a. Predictors: (Constant), MET overall %

4. Canadian and MET

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.707	1	22.707	5.349	.023[b]
	Residual	322.639	76	4.245		
	Total	345.346	77			

a. Dependent Variable: Canadian French

b. Predictors: (Constant), MET overall %

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.256[a]	.066	.053	2.060

a. Predictors: (Constant), MET overall %

Appendix M – data set

School A – classes 1and 2

Participant number	Group	Overall French score	Parisian French	Senegalese French	Canadian French	Guadeloupian French	MET overall %	Melody %	Rhythm %	Gender	Current grade in French	Target grade in French	Music GCSE	Music extra curricular?
1	1	34	9	8	8	9	74	84	64	0	7	8	1	1
2	1	23	7	7	3	6	50	44	56	0		8	0	0
3	1	28	9	6	5	8	70	76	64	0	6	6	0	0
4	1	26	9	6	3	8	56	60	52	0	6	8	0	1
5	1	22	5	7	5	5	68	76	60	1	4	6	0	0
6	1	24	7	5	3	9	66	64	68	0	5	6	0	0
7	1	23	6	7	2	8	52	52	52					
8	1	30	8	9	5	8	50	44	56	1	7	9	0	0
9	1	28	8	7	6	7	56	44	68	1	6	9	0	0
10	1	22	6	7	3	6	76	72	80	1			0	0
11	1	41	12	9	9	11	94	96	92	0	5	9	1	1
12	1	29	6	9	6	8	46	36	56	0	6	7	0	0
13	1	31	11	7	4	9	50	52	48	0	6		0	0
14	1	37	11	10	6	10	70	72	68	1	7	9	0	0
15	1	38	10	8	9	11	92	96	88	0	7	9	1	1
16	1	36	11	9	8	8	68	68	68	0	7	9	0	0
17	1	31	8	6	7	10	72	72	72	1	6	8	1	1
18	1	10	5	2	0	3	64	56	72	1	4	7	0	1
19	2	25	5	7	5	8	56	48	64	1			0	0
20	2	20	6	6	3	5	56	56	56	0	7	6	0	1
21	2	30	9	9	6	6	42	52	32	1	5	8	0	1
22	2	25	7	8	4	6	62	52	72	0	6	9	0	0
23	2	28	9	8	4	7	62	80	44	1		7	0	0
24	2	21	5	4	5	7	40	36	44		8	8	0	0
25	2	27	8	6	5	8	66	68	64	0	4	7	0	0
26	2	16	5	5	2	4				0	4	4	0	0
27	2	35	9	9	7	10	54	52	56	1	6	8	0	0
28	2	40	12	10	7	11	64	84	44	0	9	9	0	1
29	2	41	11	10	8	12	78	80	76	1		9	0	0
30	2	31	10	9	3	9	64	60	68	1	6	8	0	
31	2	28	7	8	4	9	58	52	64	1	4	5	0	0
32	2	25	8	7	5	5	68	68	68	0	6	9	0	0
34	2	30	10	6	6	8	58	56	60	1	6	8	0	1
35	2	26	6	7	4	9	74	76	72	1	4	6	0	0
36	2	24	7	7	4	6	64	64	64	0	5	5	0	0
37	2	33	10	11	6	6	80	80	80		5	6	0	0
38	2	30	10	6	7	7	70	72	68	0	4	7	0	0
39	2	30	10	8	4	8	60	72	48	1	4	4	0	0
40	2	25	7	7	3	8	64	56	72	1	4	8	0	1
41	2	30	10	8	4	8	54	40	68		6	7	0	0
42	2	11	6	1	2	2	64	64	64	0	4	4	0	0

School B – classes 3 and 4

Participant number	Group	Overall French score	Parisian French	Senegalese French	Canadian French	Guadeloupian French	MET overall %	Melody %	Rhythm %	Gender	Current grade in French	Target grade in French	Music GCSE	Music extra curricular?
43	3	19	6	6	2	5	78	75	80	0	2	3	0	1
44	3	21	5	8	4	4	38	50	25	0	2	4	0	0
45	3	26	5	7	6	8	63	70	55	0	2	4	0	
46	3	34	8	12	5	9	68	65	70	0	2	4	0	1
47	3	33	9	11	5	8	63	55	70	0			0	0
48	3	26	7	8	4	7	73	70	75	1	4	5	0	0
49	3	24	8	6	4	6	65	65	65	0	5	7	0	0
50	3	15	5	3	2	5	78	75	80	0	2	3	0	0
51	3	29	7	8	5	9	53	65	40	1	5	9	0	0
52	3	20	4	6	5	5	55	50	60	0	4	9	0	
53	3	18	5	4	3	6	70	75	65	0		5	0	0
54	3	19	5	4	5	5	50	45	55	0	5	9	0	0
55	3	19	4	5	4	6	58	60	55	1	2	4	0	
56	3	17	4	5	3	5	48	50	45	1				
57	3	25	8	6	5	6	68	80	55	1	4	5	0	1
58	3	23	5	7	3	8	70	75	65	1	4	5	0	1
59	3	41	12	10	9	10	68	70	65	1	8	9	1	0
60	3	12	0	5	4	3	60	45	75	0		4	0	0
62	4	30	8	10	5	7	53	35	70	0	4	6	1	
63	4	31	10	7	6	8	53	45	60	0	4	5	0	0
64	4	40	10	9	9	12	78	75	80	1	6	6	0	1
65	4	23	6	6	5	6	65	65	65	0	6	7	1	1
66	4	25	9	7	5	4	75	75	75	0	7	9	0	
67	4	25	5	9	4	7	75	70	80	1	5	6	1	1
68	4	39	12	10	10	7	65	50	80	1	8	9	0	0
69	4	33	9	7	8	9	68	75	60	0	8	9	0	0
70	4	37	10	9	7	11	65	70	60	0	6	8	0	0
71	4	40	11	10	8	11	78	80	75	0	8	9	1	1
72	4	15	7	6	2	0	53	60	45	1	7	8	0	
73	4	31	8	7	7	9	80	80	80	0	5	7	0	0
74	4	32	8	7	8	9	78	80	75	0	6	6	1	1
75	4	39	10	11	10	8	35	70	0	1			0	1
76	4	32	6	10	9	7	73	70	75	1	5	7	0	
77	4	35	10	8	6	11	65	70	60	1			1	1
78	4	28	8	5	6	9	83	90	75	0			1	1
79	4	30	7	6	6	11	75	85	65	1	6	7	1	0
80	4	33	10	9	7	7	70	75	65	0	7	9	1	1
81	4	38	11	11	7	9	63	75	50	0	6	7	1	1