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Multilingualism, Multilingual Identity and Academic Attainment: Evidence from Secondary Schools in England

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ABSTRACT

Multilingualism is highly prevalent in schools around the world. Yet, the relationship between multilingualism and academic attainment is not well understood. Where research on this topic exists, it has predominantly focused on how home language background impacts on academic success, lacking in a broader view of multilingualism which extends beyond home languages and also considers the identity component of being multilingual. This paper explores the relationship between multilingualism, multilingual identity and academic attainment. Using school-reported and student-reported data from five secondary schools in Southeast England, we disentangle the complexity of multilingualism in schools by contrasting self- and other-ascriptions of multilingualism, as well as investigating indicators of "multilingualism" and "multilingual identity." Our findings reveal meaningful differences between how students are identified and identify themselves as "multilingual," and foregrounds "multilingual identity" as a potentially more meaningful indicator for understanding academic attainment than multilingualism indicators traditionally used in United Kingdom schools.

Introduction

"Monolingual" and "multilingual" are terms commonly deployed by various stakeholders in educational settings and wider social contexts. However, who counts as "monolingual" or "multilingual" is often ill-defined and interpreted in different ways, particularly in school contexts. For example, in the United Kingdom the number of students with English as an additional language (EAL) is frequently taken as a proxy for how multilingual a school is; however, this focus solely on home languages overlooks the full range of students' engagement with language, whether inside or outside school. Although teachers and school administrators may attach different interpretations to these terms compared to their students, little attention is paid to issues of *self-ascription* and *other-ascription* of multilingualism: whether an individual identifies themselves, or is identified by others, in a given way and why. This raises important questions about what counts as reliable indicators of multilingualism for understanding student learning and academic attainment. We propose "multilingual identity," a broad conceptualisation consisting of *evaluative, emotional* and *experiential* dimensions, as a legitimate indicator of multilingualism, and seek to reveal its relationship with attainment empirically.

In this paper, we explore the relationship between secondary school students' attainment across the curriculum (including languages) and three ways the marker "multilingual" may be deployed in educational settings:

(1) School-ascribed EAL, that is, whether students have home languages other than English as registered by schools;

(2) Self-ascribed EAL, that is, whether students themselves report home languages other than English; and

(3) Self-ascribed Multilingual Identity, that is, students' self-reported affinity towards being or becoming multilingual.

We are interested in these, because a comparison of (1) and (2) enables our understanding of the difference between other- and self-ascriptions of multilingual experience, while (3) allows both other- and self-ascribed multilingual experience indicators to be compared with students' self-reported multilingual orientations more broadly (i.e., their multilingual identity). We present quantitative evidence to highlight that issues of self- and other-ascription matter within our understanding of being a multilingual learner in schools. We also contest the EAL marker as a precise representation of school and individual multilingualism, and reveal multilingual identity as a potentially more meaningful indicator for understanding student learning and academic attainment in U.K. secondary schools. This represents a first step in endeavouring to understand the relationship between multilingualism, multilingual identity and school attainment and engagement.

Literature review

Defining multilingual identity

Within the field of applied linguistics and languages education, language is viewed as integral to identity, and as a central medium through which we think, define ourselves and present ourselves to others. Given the recent increasing global movement of people, research attention is shifting to "multilingual identity" as a concept associated with, but distinct from, "linguistic identity." Multilingual identity is understood as an "umbrella" identity (Fisher et al., 2020) that "encompasses but, in important ways, transcends a multilingual person's language-specific identities" (Henry, 2017, p. 548). This means that an identity as multilingual may remain constant despite changes to one's linguistic repertoire (e.g., attrition) and their perceptions of these languages.

Research on multilingual identity has been hampered by the complexity of the underlying concepts of "multilingualism" and "identity." For example, regarding the term "multilingualism," some researchers have used it to describe individuals "who can communicate in more than one language" (Wei, 2008, p. 4), thus treating bilingualism as a particular instance of multilingualism, while others see multilingualism as an extension of bilingualism and a field of study distinct from the study of first (L1) and second language (L2) acquisition (e.g., Jessner & Herdina, 2002). We understand multilingualism to include not only proficient bi- and multilinguals, but also *emergent* multilinguals who are beginning to learn a foreign language in school, who know or are learning dialects and other varieties, as well as those using non-verbal forms of communication like sign languages. In doing so, we place value not only on proficiency and whether an individual is a user or learner of a "named language" (Otheguy et al., 2015), but acknowledge the myriad ways in which an individual's full linguistic repertoire may impact on learning. However, we also acknowledge that individuals themselves may not be aware of, or choose to value their linguistic repertoire this way. It is, in fact, the convergence or divergence between a person's actual and perceived levels of experience with languages that is central to the study of multilingual *identity*.

Identity can broadly be defined as "how a person understands his or her relationship to the world, how that relationship is structured across time and space, and how the person understands possibilities for the future" (Norton, 2013, p. 45). Researchers therefore understand multilingual identity to be more than learners' actual or perceived experiences and proficiencies in languages, and that it also has evaluative and emotional dimensions (Aronin & Laoire, 2003; Henry, 2017), along with current and future dimensions (Ushioda & Dörnyei, 2009). Specifically, explorations of one's psychological commitments, such as one's perceptions, values and emotions, are understood as necessary for

incorporating new knowledge into a person's emerging sense of self (Fisher et al., 2020). "Multilingual Identity" is thus more concerned with an individual's relationship to their linguistic repertoire than with the exact constitution of this repertoire, although the two may well correlate.

Moreover, identity is generally understood as simultaneously an individual/psychological and a social/relational process (Block, 2006; Fisher et al., 2020; Norton & Toohey, 2011), though the phenomenon is generally studied adopting one of these two perspectives. We understand multilingual identity as both a construction of the self (i.e., self-ascription) and a projection on the self by others (i.e., other-ascription), both of which emerge and interact within specific sociocultural contexts. We thus operationalise multilingual identity as an emergent property being shaped by *experiences* of languages and language learning, by *evaluations* of languages and of an individual as language learner, held both by the individual and by others, and by *emotions* relating to language and language learning (i.e., the 3Es Framework of Multilingual Identity—see Forbes et al., 2021). *Experiences* of languages and language learning concerns exposure to other languages in different settings, such as at home, in school and on holiday; *evaluations* incorporate individuals' beliefs, attitudes and motivations in relation to languages and language learning; and *emotions* focuses on feelings towards languages and the language learning process.

We thus consider differences between self- and other-ascription, as well as differences between multilingual identifications resulting from the unique constellations of individuals' language experiences, evaluations and emotions, as central to understanding the relationship between multilingualism and student learning and attainment. While there is research suggesting that multilingual identity *may* impact on attainment, to the best of our knowledge, no studies have collected and analysed data specifically investigating this, particularly not within this specific framework. In the next sections, we therefore draw on empirical research from the three dimensions of multilingual identity (experience, evaluations and emotions) to inform our understanding of how multilingual identity may impact academic attainment.

Multilingual experience and academic attainment

Multilingualism has to date received particular attention within the fields of applied linguistics and psycholinguistics (e.g., May, 2013), where it is generally approached from a cognitive perspective. Here, multilingualism is usually understood as a specific language proficiency or competence that the learner brings to the learning process (Jessner, 2017). The notion of multicompetence (Cook, 1995) recognises multilinguals as having a "common underlying proficiency" (Cummins, 1991) rather than separate proficiencies in their languages, and as not just the sum of two or more monolinguals (Grosjean, 1989). Research on multicompetence has resulted in the "theoretical recognition that multilingualism leads to the development of proficiencies not to be found in monolingual speakers" (Jessner & Herdina, 2002, p. 17), and there is now virtual consensus that learners with a multilingual repertoire incur benefits in further language learning (Cenoz, 2003; Hirosh & Degani, 2018), and may experience cognitive benefits (Adesope et al., 2010) that could impact learning and academic attainment generally.

In the United Kingdom, schools often take EAL as a proxy for students' multilingual experience. The criterion schools currently use to categorise EAL pupils follows the Department for Education's (2020) official guidance: "A pupil is recorded to have English as an additional language if she/he is exposed to a language at home that is known or believed to be other than English." The most recent data indicate that EAL students represent 21.3% of students in state-funded primary schools and 17.2% of students in state-funded secondary schools in England (Department for Education, 2020). Regarding EAL learners' academic attainment, analyses using school EAL data suggest that the gap in students' scores on the General Certificate of Secondary Education (GCSE)[1] between EAL and English first language is negligible, but that EAL students clearly outperform English first language students in foreign languages, an advantage that reflects not only community languages, since it was upheld for the three main taught foreign languages of German, French and Spanish (Strand et al., 2015).

However, these analyses also highlight EAL students being, as we might expect, a far from homogenous group, and that many variables can influence their academic attainment, including age of arrival in the United Kingdom, the first language, ethnicity, socio-economic background, region of settlement, prior educational and life experiences (Hutchinson, 2018; Strand et al., 2015). EAL students' English proficiency in particular was found to be an important factor explaining variation in their attainment (Strand & Hessel, 2018), with high English language proficiency students outperforming their English first language counterparts, but those with lower proficiency scoring below.

These findings suggest that multilingualism can have positive associations with academic attainment, but that this depends on a range of variables influencing the richness of individuals' language exposure. For example, the perspective of the above EAL-focused research is crucially one of comparison between an EAL group and a group presumed to comprise monolingual native English-speaking students. Using other experiential criteria allows one to differently group students as "multilingual" or "monolingual." Moreover, the perspective of the above research on multilingual experience and academic attainment is one of other-ascription, whereby the label "multilingual" is applied by others to certain people based on certain characteristics. The exact characteristics that determine who is multilingual likely differ for the individuals themselves and, crucially, could extend beyond experiential criteria. What the field of educational research lacks is a quantitative analysis of multilingualism and achievement based on a broader conception of multilingualism which includes additional language learning as well as home languages and English, and also entails consideration of what we call in this paper "multilingual identity." Such an approach enables us to define the complexity of the relationship between multilingualism, language learning and attainment.

Multilingual evaluations and academic attainment

Language learning attitudes and motivations have long been a fruitful area of inquiry within second language research (e.g., Gardner, 1985; Oxford & Shearin, 1994). Recent trends reflect an important conceptual shift towards an understanding of L2 attitudes and motivation in relation to the self and identity (e.g., Dörnyei & Ushioda, 2009). This reconceptualization borrows from the field of psychology the notions of "actual selves," "possible selves" and "future self-guides" as linking self, in particular "Ought-to" and "Ideal" future self, with behavioural orientations and actions, including motivation (Dörnyei, 2005). Within this reconceptualization, "ought-to self" corresponds to more extrinsic types of orientations, or representations of someone else's sense of the personal attributes that one should possess, while "ideal self" corresponds to more integrative and internalised instrumental orientations associated with attributes that individuals themselves would ideally like to possess (Dörnyei, 2009). The hypothesis is that "if proficiency in the target language is part and parcel of one's *ideal* or *ought-to* self, this will serve as a powerful motivator to learn the language" (Ushioda & Dörnyei, 2009, p. 4), which may positively influence academic attainment.

Research on the relationship between the L2 Motivational Self System and L2 attainment remains scarce and inconclusive. Some studies found consistent correlations between the L2 self-system's components (i.e., L2 learning experience, ideal L2 self, and ought-to L2 self) and intended L2 effort (i.e., motivation), but NOT with L2 attainment (e.g., Moskovsky et al., 2016). Others found a strong relationship between "ideal L2 self," but NOT "ought-to L2 self," and attainment scores (Dörnyei & Chan, 2013), and that the impact of "ideal L2 self" on L2 attainment was mediated by L2 use and experience (Tort Calvo, 2015). These findings provide tentative evidence for, on the one hand, the notion that evaluations associated with one's own beliefs and values (i.e., "Ideal L2 self") are likely more strongly associated with positive academic success than internalised values of others (i.e., "Ought-to L2 self"). On the other hand, they suggest that different dimensions of multilingual identity, such as one's awareness and evaluations of their languages and language learning, likely intersect within the impact they exert on academic attainment.

However, further research is still needed to establish a consistent impact of the L2 Self-System components on both motivation and attainment to confirm these tentative conclusions. Moreover, while "possible self" notions are relevant to the concept of multilingual identity, the latter is both broader and more complex than the "L2 self." Research has, for example, shown the close relationship between "Ideal L2 self" and self-efficacy, and some researchers are calling for incorporating a self-evaluative dimension within the L2 Self System (Ueki & Takeuchi, 2012), especially when conceptualising it as a person-sensitive framework of motivated learning (Ushioda, 2009). This seems particularly relevant given that self-efficacy is a key component of learner identity (Trujillo & Tanner, 2014), and is known to impact strongly on learning and learning outcomes (Alivernini & Lucidi, 2011). Moreover, while initial research on conceptualising and validating the "multilingual self" construct as separate from L2-self components has been conducted (Henry, 2017; Henry & Thorsen, 2018), there is no empirical work specifically investigating its relationship with language learning or broader academic outcomes. Finally, research on the L2 Self System has largely ignored the influential work on emotions as central to both identity (Fisher et al., 2020; Schachter & Rich, 2011) and academic attainment (Pekrun et al., 2014; Shao et al., 2019).

Multilingual emotions and academic attainment

Recent research on multilingualism and emotions has foregrounded both the centrality of emotions for understanding multilinguals (Dewaele, 2010; Prior & Kasper, 2016), and the role of emotions in classroom language learning (Dewaele, 2011; Shao et al., 2019). Where previously SLA research has focused largely on negative emotions such as anxiety, the challenge now is understanding both the "positive-broadening" and "negative-narrowing" effects (MacIntyre & Gregersen, 2012). Recently some researchers have addressed this (see Dewaele & MacIntyre, 2014; Dewaele et al., 2018) by focusing on young language learners' enjoyment and concluding that higher enjoyment levels were linked, among other things, to higher scores on attitudes towards the language itself, the teacher and classroom language use. Similarly, although with Chinese college students, Shao et al. (2019) found that when students felt confident about language learning and considered the learning tasks and outcomes important and interesting, not only did they experience more positive emotions and fewer negative emotions but demonstrated improved performance in language exams. This preliminary work echoes findings from the wider field of educational psychology (e.g., Linnenbrink-Garcia & Pekrun, 2011; Pekrun et al., 2014) which links emotions to achievement in learning, though in different ways; positive-activating emotions such as enjoyment, pride and hope can increase motivation and help learners use effective learning strategies, while negative-deactivating emotions such as anxiety, fear and boredom may do the opposite, thus resulting in different learning outcomes.

In summary, previous findings reveal that many questions remain as to the impact of both multilingualism and multilingual identity on academic attainment. The existing research suggests that multilingual identity, as realised psychologically in social contexts through attitudes, self-perceptions and emotions, both positive and negative, may impact academic attainment, but in different ways. Multilingual experiences such as having an additional home language, too, may impact academic attainment differently, depending on students' proficiency levels in their languages. It is less clear, however, how students' multilingual identities relate to meaningful language learning experiences (including but not exclusive to home language learning), and what their respective or combined impact on learning outcomes may be. Moreover, no studies have explicitly explored the relationship between multilingualism and academic attainment based on whether an individual identifies themselves or is being identified by others as "multilingual." The analytical exploration presented in this paper offers a first step towards disentangling the complexity of multilingual identification processes in relation to language experiences, evaluations and emotions, and their impact on learning outcomes in a secondary school context. It does so by answering the following research questions:

(1) What is the relationship between school-ascribed and self-ascribed multilingual identifications?
(2) What is the relationship between both school-ascribed and self-ascribed multilingual identifications and academic attainment?

Methodology

The current analytical exploration is part of a larger longitudinal mixed-methods study, which aimed to (a) ascertain the relationship between UK secondary school students' multilingual identifications and their academic attainment, and (b) investigate the effects on students' academic attainments of a pedagogical intervention designed to change students' orientations towards being or becoming multilingual (see Forbes et al., 2021). For this larger study, we collected student demographic and attainment data from schools, as well as student self-report data through questionnaires, interviews and drawings to capture students' identification along three interrelated multilingual identity dimensions, namely students' experiences with languages, and their evaluations of and emotions towards language learning and themselves as users and learners of languages, both current (actual) and future (imagined). Data were collected from students in Years 8–9 (age 12–14) and Years 10–11 (age 15–16) over a 2-year period, from seven secondary schools in the South East of England representing a range of geographical locations (urban/rural) and student demographics (proportion of EAL students/socioeconomic status [SES]). The findings presented in this article relate to a sub-set of the quantitative data collected for this larger study (i.e., student demographic, attainment and questionnaire data), with our analyses focusing on Year-11 students in five schools, for whom we were able to obtain standardized attainment data in the form of national GCSE results.

Participants

The 818 Year-11 participants included students who spoke an additional language at home, and those who did not (see Table 1 for a breakdown of the sample according to school, gender, EAL status and SES). While the number of boys and girls was similar, both in the overall sample and at school level, the schools differed according to their proportions of EAL students, and students of lower SES. Students' SES was computed using participating schools' Pupil Premium (PP) data and the parental education levels that students reported on the questionnaire. Introduced in 2011, PP is a yearly sum of money the UK Government gives schools to improve the attainment of disadvantaged children, and thus serves as an important SES indicator. Students received a score of zero (i.e., "No") if (a) they were not a PP recipient and (b) had at least one parent/carer with a university degree; however, they received a score of one (i.e., "Yes") for *either* PP receipt or having parents/carers without a university degree. While neither are perfect indicators, we believe that a composite variable of these measures is a more accurate SES indicator than each alone.

In the present exploration, we used the total sample from all five schools for most analyses; however, as not all students sat exams for all subjects, and students did not always complete all questionnaire items, sample sizes and compositions are different depending on the school subject and the predictors included in the analytical models (see data analysis and results below).

Table 1. Description of the overall sample of Year-11 students (age 15–16).

School	Total	Gender		EAL		LowSES	
		Male	Female	No	Yes	No	Yes
School 1 (rural/high linguistic diversity)	204	108	96	105	99	116	46
School 2 (rural/low linguistic diversity)	167	83	84	155	12	49	55
School 3 (urban/low linguistic diversity)	139	74	65	113	26	58	72
School 4 (urban/high linguistic diversity)	132	66	66	42	90	51	54
School 5 (urban/medium linguistic diversity)	176	90	86	122	53	79	68
Total	818	421	397	537	280	353	295

Data sources and instruments

The current analytical exploration used data from two sources: (a) student demographic and attainment data collected by and from schools, and (b) student self-report data collected through a questionnaire designed to gather information along the three multilingual identity dimensions outlined above.

School attainment data concerned Year-11 students' GCSE results. These qualifications are awarded on grade-scale of 1 (lowest) to 9 (highest), and includes U (ungraded) for instances where students achieve insufficient marks to receive a grade (which we represented as zero). To explore the role of multilingualism in relation to both sciences and humanities core subjects, along with most commonly taught modern languages, analysis focused on performance in French, Spanish, German, English Language, English Literature, Maths, Science,[2] Geography, and History.

The demographic data requested from schools included information on students' gender, EAL status (Yes/No), home languages (where known), and whether they received a pupil premium (PP). Information about students' EAL status is gathered primarily by schools asking parents about the languages used in their home. The EAL status information parents provide is not verified or explored further through any standardized English or home language assessments, nor does it account for students' own insights into their usage and skills in the different languages they know. While we considered using students' particular home languages as a more specific indicator of multilingual experience than EAL, we were unable to collect this information from all schools, thereby preventing us from analysing any differences between other- and self-ascription that are the primary focus of this paper. We also consider home language to suffer from the same limitation as the EAL indicator, namely that it says little about students' actual proficiency in these languages. Similarly, we contemplated students' ethnicity for our modelling, but considered this a less accurate indicator of students' experience with languages than the EAL indicator. This reveals the complexities inherent in adequately measuring both multilingual experience and multilingual identity and their impact on school learning and attainment.

These demographic data were triangulated, complemented and, where relevant, contrasted with student self-report data collected by a questionnaire consisting of two main parts. The first captured background information and students' experiences with languages, and included an item designed to elicit information on all languages in students' linguistic repertoires, and asked students to self-identify their first or native languages (see Figure 1, item B4[ii]). The second consisted of evaluative and emotive five-point Likert scale items on language learning and on themselves as language learners, as well as open-ended items employing metaphor elicitation to capture this (Fisher, 2013). The second part also included a simple "Visual Analogue Scale" (VAS) item, where students put a cross on a continuous 100 mm straight line, with labels "monolingual" and "multilingual" as the extreme end-points of students' orientations towards multilingualism, with space for students to elaborate on their cross placement (see Figure 2).

B4. Please write the name of **ALL** the languages you know or study along the top, and answer the questions for each. *Please include information about your first/native language(s); languages you have learned at school; languages you use with your family; and any others that you know in any way.*

	English	....	....	....	....
i. How many years have you been learning/speaking this language? (please write number of months/years)					
ii. This is (one of) my first/native language(s) (please tick)					

Figure 1. The self-ascribed first/native language item on the Multilingual Identity questionnaire.

Figure 2. The multilingual VAS item on the Multilingual Identity questionnaire.

The multilingual VAS item (henceforth "mVAS") potentially offers a more holistic and sensitive picture of students' identifications with multilingualism than traditional research using multiple questionnaire items to measure a latent variable. VASs have long been used in the measurement of perceptual experiences, characteristics and attitudes that cannot easily be directly measured and that are believed to range across a continuum rather than to take discrete jumps, such as sensory intensity, affective magnitude, health status or quality of life (De Boer et al., 2004; Price et al., 1983). VASs facilitate more precise answers (Funke & Reips, 2012), and are valuable for measuring strong effects at either scalar end and for avoiding the clustering effects associated with conventional Likert scales (Hayes et al., 2013). This makes VASs particularly apt for measuring a phenomenon as multifaceted and affective as identity. Additionally, as the instrument was aimed at school-aged learners, it had to be easily understood by participants from diverse educational backgrounds to encourage high levels of responsiveness. To ensure accuracy of the mVAS data, a preceding item asked students to explain what "monolingual" and "multilingual" mean, and non-response and inaccurate answers resulted in students' mVAS data being disregarded.

In this initial analytical exploration, we compare three multilingualism indicators. Previously, we discussed how schools often impose "school-recorded EAL" as an indicator of multilingualism. We propose two alternative self-reported multilingualism indicators, namely "Self-ascribed EAL" and "Self-ascribed Multilingual Identity," and explore their relevance for understanding the relationship between multilingualism and academic attainment. Students' self-ascribed EAL was computed by transforming students' responses on the self-reported first/native language item (see Figure 1) into two scores, namely zero for "English only" (i.e., non-EAL) and one where students identified either a language other than English, or both English and another language as their first or native language (i.e., EAL). Students' self-ascribed multilingual identity was measured using the mVAS. We compare the relationship with attainment for all three indicators of multilingualism, and argue for a broadening of the concept of multilingualism to include the notion of "multilingual identity."

Data analysis

All data obtained were analysed with SPSS version 25. Our analysis of the role of multilingual identifications in academic attainment had two objectives, corresponding to the research questions above.

The first objective was to better understand the relationship between three multilingualism indicators: School-ascribed EAL, Self-ascribed EAL, and Self-ascribed Multilingual Identity. To do this, we investigated whether students identified as EAL in schools' records (a) self-report having

a home language other than English and (b) report a stronger self-ascribed multilingual identity. We also explored whether students' self-ascribed EAL status is consistent with their self-ascribed multilingual identity. For our first objective, point-biserial correlation techniques, a particular type of Pearson correlation used when one variable is dichotomous, were used to describe the strength and direction of the relationship between the three variables. The assumption of normality for the numerical variable (mVAS) was tested both visually, by means of histograms, boxplots and Q-Q plots, and quantitatively through a Shapiro-Wilk test. While the distribution for the mVAS was found to violate normality, W(475) = 0.950, p = .000, revealing an approximate rectangular distribution on the scatter diagram of residuals versus predicted residuals, box plots revealed no evidence of outliers. Moreover, it has been shown that Pearson correlations are robust to even rather extreme violations of normality, including rectangular distributions (Havlicek & Peterson, 1976).

Our second objective was exploring the relative effects of the three multilingualism indicators (School-ascribed EAL, Self-ascribed EAL, and Self-ascribed Multilingual Identity) on Year-11 students' GCSE results for Languages (i.e., French, Spanish, German and English) and for Maths, Science, Geography and History. Particularly, we wanted to know whether (a) self-ascribed measurements of multilingualism are better attainment predictors than school-ascribed measurements, and (b) a multilingual identity indicator is a better predictor of attainment than an EAL indicator. This second objective included exploring whether the relationship between self-ascribed multilingual identity and academic attainment depends on EAL status. General linear mixed-effects modelling was used. We fitted four models for each subject (GCSE scores as the response variable). The first model incorporated School-ascribed EAL status, the second model self-ascribed EAL status, and the third model students' mVAS scores. The fourth model expanded the third model by adding an interaction term between EAL status (whether school-ascribed or self-ascribed) and the mVAS (i.e., Self-ascribed Multilingual Identity). No evidence for a statistical interaction between EAL status and the mVAS would mean a positive (or negative) effect of mVAS score on attainment, regardless of EAL status. All models included School, Gender and SES as potentially confounding factors, whereby School was modelled as a random factor and Gender (M/F) and LowSES (Yes/No) as fixed factors.

Assumptions were assessed by examining a normal probability plot of residuals and a scatter diagram of residuals versus predicted residuals. The error distributions of GCSE scores for all subjects were found not to deviate substantially from a normal distribution and there was no evidence of substantial heterogeneity of variance across the predictors. As the results for objective one below will reveal, the correlations between both school-ascribed and self-ascribed EAL status and the mVAS score were moderate (i.e., between 0.3–0.7). Moreover, the Variance Inflation Factor (VIF) values for the independent variables included in these interaction models were all below four. It is therefore safe to assume that our interaction models were not affected by the issue of multicollinearity (Field, 2013, p. 325), whereby two or more independent variables are highly correlated and may therefore compete to explain much of the same variance.

Results

The relationship between school-ascribed and self-ascribed multilingual identifications

Table 2 shows the point-biserial correlation coefficients between the three predictors of interest of School-ascribed EAL, Self-ascribed EAL, and Self-ascribed Multilingual Identity on the mVAS, providing insight into the possible relationships between the three indicators (objective 1). While the three indicators of multilingualism were all found to correlate moderately and significantly with each other, the correlation coefficient for EALSchool and EALStudent, R(347) = 0.636, p < .01, was stronger than the correlation coefficients for either EALSchool and mVAS, R(347) = 0.502, p < .01, or EALStudent and mVAS, R(347) = 0.565, p < .01. This suggests that EALSchool and EALStudent relate more to each other than either of the EAL indicators to the mVAS, although it should be noted that the 95% confidence intervals for both the EALSchool x EALStudent and EALSchool x mVAS correlation coefficients, and the EALSchool x EALStudent and EALStudent x mVAS coefficients overlap.

Table 2. The relationship between School-ascribed EAL, Self-ascribed EAL and Self-ascribed Multilingual Identity (mVAS).

Predictor		EALSchool	EALStudent	mVAS
EALSchool	Pearson Correlation Coefficient	1	.636** (.557 — .714)	.502** (.411 — .582)
	N	347	347	347
EALStudent	Pearson Correlation Coefficient	.636** (.557 — .714)	1	.565** (.486 — .642)
	N	347	347	347
mVAS	Pearson Correlation Coefficient	.502** (.411 — .582)	.565** (.486 — .642)	1
	N	347	347	347

$*p < .05; **p < .01; ***p < .001$.
The 95% confidence intervals were calculated using bootstrapping, and are based on 1000 bootstrap samples.

Nevertheless, given that the School-ascribed and Self-ascribed EAL indicators should theoretically measure the same thing (i.e., whether students have another home language in their repertoire alongside English), it is perhaps surprising that their correlation is only moderate. This discrepancy between the school data and students' self-reported data may reveal inaccuracy in school-recorded EAL data, potentially raising concerns about using this indicator for research and statistics on the relationship between EAL and academic attainment. Yet, it remains unclear whether the stronger correlation between EALStudent and the mVAS than that between EALSchool and the mVAS, is mainly due to inaccuracies in the school data or in the self-reported data, the latter also perhaps capturing a certain "willingness" to state that one is multilingual, as relying on more subjective and perhaps affective notions of students' multilingualism and the place of their home languages within it. The analysis suggests, however, that differences between other- and self-ascription of multilingualism are likely to exist and affect empirical findings on the relationship between multilingualism and school learning.

The correlational results also suggest that the mVAS taps into a construct that, whilst related to EAL status (both school-ascribed and self-ascribed), is nevertheless likely distinct from either of these multilingualism indicators in important ways. Specifically, these correlational data tendencies suggest that, despite EAL status being one of the most common indicators for labelling a student as "multilingual" (or not) within UK schools, it may not fully match students' own understandings of themselves as multilingual. This suggests that their multilingual repertoire draws on more than just their awareness of their home language(s), and may also encompass their awareness of how other languages learned in or outside of school contribute to their multilingual status. In addition, this may also include the strength of their attitudes and feelings towards their multilingualism. This raises important questions about the exact value of the EAL indicator for understanding student learning and academic attainment in UK secondary schools, not only in terms of its uncertain relation to students' actual English and additional language skills, but also in contrast with students' more holistic, subjective and affective orientations towards multilingualism: namely, their multilingual *identities*.

The relationship between both school-ascribed and self-ascribed multilingual identifications and academic attainment

The results relating to our second objective shed further light on the relationship between the three indicators through their respective association with GCSE scores. Table 3, Table 4 and Table 5 show the results for the general linear models for School-ascribed EAL, Self-ascribed EAL and Self-ascribed Multilingual Identity (mVAS) as the predictors of interest respectively.

Table 3 reveals that school-ascribed EAL was found to have no significant impact on students' GCSE results, except for the subject of Spanish, where EAL students did significantly better and scored on average nearly two grades (B = −1.855) higher than their non-EAL peers. A possible explanation may be students' language backgrounds, as a proportion of the EAL students may have Spanish or

Portuguese as their native or additional home language, which is perhaps advantageous for learning Spanish in school. The results for Self-ascribed EAL (Table 4) reveal that the significant association with attainment scores now includes all Modern Foreign Language (MFL) subjects (i.e., French, Spanish and German), as well as Science. Despite these differences in significant associations, both EAL indicators (school-ascribed and self-ascribed) display similar patterns in the direction of their association with attainment, with EAL students tending to perform slightly better than non-EAL students for all subjects (indicated by a negative B coefficient), except for English Language and Literature, as well as History in the case of EALSchool (indicated by a positive B coefficient). This tendency was only significant, however, in relation to MFL subjects, while students' EAL status may

Table 3. Magnitudes of the relationship between School-ascribed EAL and attainment (GCSE scores) within a general linear model including School, Gender and SES as potentially confounding factors.

				Attainment outcomes					
	N	B/Coeff[1]	95% CI low	95% CI up	F	df1	df2	MSE	Sig
French	307	−0.266	−0.707	0.174	1.413	1	299	3.026	0.235
Spanish	254	−1.855	−2.441	−1.268	38.829	1	246	3.999	0.000***
German	89	−0.399	−1.266	0.468	0.839	1	84	3.851	0.362
English Language	633	0.210	−0.085	0.505	1.960	1	625	2.579	0.162
English Literature	633	0.127	−0.184	0.439	0.645	1	625	2.872	0.422
Maths	634	−0.054	−0.385	0.276	0.104	1	626	3.239	0.747
Science	632	−0.117	−0.423	0.190	0.561	1	624	2.777	0.454
Geography	281	−0.257	−0.837	0.322	0.763	1	273	3.934	0.383
History	312	0.095	−0.452	0.642	0.117	1	304	4.129	0.733

*$p < .05$; ** $p < .01$; *** $p < .001$.
[1]The B coefficients reflect the score difference for non-EAL students as compared to EAL students.

Table 4. Magnitudes of the relationship between Self-ascribed EAL and attainment (GCSE scores) within a general linear model including School, Gender and SES as potentially confounding factors.

				Attainment outcomes					
	N	B/Coeff[1]	95% CI low	95% CI up	F	df1	df2	MSE	Sig
French	304	−1.051	−1.482	−0.621	23.066	1	296	2.829	0.000***
Spanish	253	−1.855	−2.411	−1.300	43.251	1	245	3.887	0.000***
German	89	−1.188	−1.933	−0.382	8.588	1	84	3.528	0.004**
English Language	618	0.240	−0.051	0.531	2.633	1	610	2.533	0.105
English Literature	618	0.001	−0.305	0.308	0.000	1	610	2.805	0.992
Maths	619	−0.093	−0.416	0.230	0.319	1	611	3.128	0.572
Science	617	−0.246	−0.546	0.054	2.591	1	609	2.678	0.004**
Geography	275	−0.386	−0.939	0.167	1.893	1	267	3.789	0.170
History	307	−0.037	−0.579	0.505	0.018	1	299	4.015	0.893

*$p < .05$; ** $p < .01$; *** $p < .001$.
[1]The B coefficients reflect the score difference for non-EAL students as compared to EAL students.

Table 5. Magnitudes of the relationship between Self-ascribed Multilingual Identity (mVAS) and attainment (GCSE scores) within a general linear model including School, Gender and SES as potentially confounding factors.

				Attainment outcomes					
	N	B/Coeff	95% CI low	95% CI up	F	df1	df2	MSE	Sig
French	193	0.021	0.013	0.029	26.199	1	185	2.709	0.000***
Spanish	158	0.043	0.032	0.054	59.194	1	150	3.134	0.000***
German	63	0.029	0.013	0.045	12.762	1	58	3.545	0.001***
English Language	338	0.005	0.000	0.011	3.571	1	330	2.142	0.060
English Literature	338	0.006	0.000	0.012	4.404	1	330	2.417	0.037*
Maths	338	0.008	0.002	0.015	6.132	1	330	2.925	0.014*
Science	337	0.012	0.005	0.018	12.833	1	329	2.717	0.000***
Geography	171	0.011	0.001	0.021	4.509	1	163	3.294	0.035*
History	153	0.006	−0.004	0.017	1.368	1	145	3.602	0.244

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

also impact Science scores if we take students' self-ascribed EAL status as the basis for analysis. We thus found evidence that EAL students are likely to outperform their non-EAL peers in MFL subjects, while equalling their peers in the non-language subjects, although the data do suggest they may struggle slightly more with the English subjects. Nevertheless, our results confirm that how data on students' EAL status is collected may lead to different significant findings, and that care must be taken when interpreting findings using school EAL data only.

The results for the general linear models using students' mVAS scores as the predictor of interest (see Table 5) reveal a significant association between Self-ascribed Multilingual Identity and almost all GCSE subjects, except English Language and History. While the association between the mVAS and students' English Language and History scores fall outside the significant range, the positive B coefficient (English Language, B = 0.005; History, B = 0.006) follows a pattern similar to the other subjects: the more multilingual you consider yourself, the higher your GCSE scores. Importantly, our results across the three predictors of interest reveal Self-ascribed Multilingual Identity as more predictive of students' academic attainment than both School-ascribed and Self-ascribed EAL.

To further understand the relationship between EAL status, Self-ascribed Multilingual Identity (mVAS) and academic attainment, we added the relevant interaction effects to our models to establish whether the relationship between students' multilingual status and their attainment might change depending on EAL status. The graphs in Figure 3 show, for most subjects, a flatter trend line for students identified by the schools as EAL. This suggests that a stronger identification as multilingual might have a weaker association with attainment for EAL students than for non-EAL students. However, and despite these visual patterns, none of the interaction terms between Self-ascribed Multilingual Identity (mVAS) and EAL status (whether School-ascribed or Self-ascribed) were statistically significant (Table 6 and Table 7), except for that of English Literature in the interaction with School-ascribed EAL.

These results indicate that there is insufficient statistical evidence of a difference in the direction or magnitude of the association between mVAS and GCSE scores depending on EAL status. Importantly, the positive association between Self-ascribed Multilingual Identity (mVAS) and GCSE scores holds irrespective of whether students are EAL or not. This finding is supported by statistically significant main effects for Self-ascribed Multilingual Identity (mVAS) in those models with interaction terms for which this was also found in the models without interaction terms in Table 5, namely those for all GCSE subjects except English Language and History (results not shown). This suggests that students' sense of themselves as multilingual stems from more than their experiences with home languages. It should perhaps be mentioned that our inability to detect significant interactions between Self-ascribed Multilingual Identity and EAL status, could be partly due to both the lower occurrence of a strong multilingual identification in the non-EAL groups, and the lower occurrence of weak multilingual identification in the EAL groups (evidenced by the higher number of teal dots [EAL], relative to red dots [non-EAL], in the right half of the graphs in Figure 3, and vice versa). This makes it harder to make inferences about the relationship between Self-ascribed Multilingual Identity and attainment outside the range of mVAS values shown by each EAL group.

Despite the current lack of statistical support for a potential difference in the relation between Self-ascribed Multilingual Identity and attainment depending on EAL status, we still find it reasonable to expect the tendencies observed in Figure 3 (i.e., of a weaker relationship between Self-ascribed Multilingual Identity and attainment for EAL students), since EAL students may indeed be facing language barriers in English that could hinder their engagement with the curriculum and therefore cancel out the effect of their closer affinity with multilingualism on their academic attainment. Another reason to expect this pattern might be that non-EAL learners may have multilingual experiences of a different nature to the home language experiences of EAL learners (e.g., their language learning experience is likely to be more strongly associated with classroom-based, instructed language lessons), and these experiences may, on average, be more directly related to performance at school, whether these experiences impact on attainment directly or indirectly through their impact on
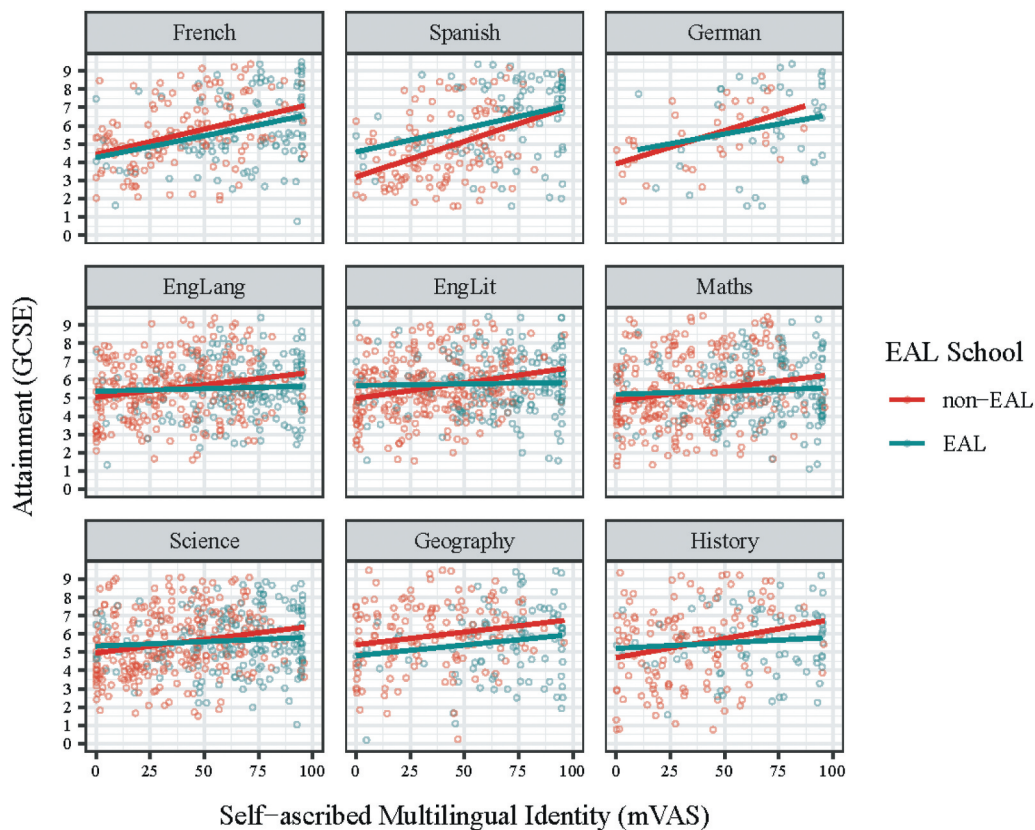
Figure 3. The relationship between Self-ascribed Multilingual Identity (mVAS) and attainment (GCSE) by School-ascribed EAL.

Table 6. Magnitudes of the EALSchool x mVAS interaction effect on attainment (GCSE scores) within a linear model including School, Gender, and SES as potentially confounding factors.

	N	B/Coeff	95% CI low	95% CI up	F	df1	df2	MSE	Sig
				Attainment outcomes					
French	193	0.001	−0.017	0.019	0.012	1	183	2.700	0.915
Spanish	158	0.006	−0.019	0.031	0.230	1	148	3.072	0.632
German	63	0.013	−0.025	0.052	0.478	1	56	3.640	0.492
English Language	338	0.009	−0.004	0.022	1.755	1	328	2.139	0.186
English Literature	338	0.017	0.003	0.031	5.796	1	328	2.384	0.017*
Maths	338	0.008	−0.007	0.023	1.019	1	328	2.931	0.314
Science	337	0.003	−0.011	0.018	0.216	1	327	2.728	0.643
Geography	171	−0.004	−0.028	0.020	0.103	1	161	3.282	0.749
History	153	0.009	−0.016	0.034	0.475	1	143	3.570	0.492

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

learning attitudes and achievement emotions. Finally, the tentative differential relationship between Self-ascribed Multilingual Identity and attainment for EAL versus non-EAL students could also be expected because EAL students, on average, could be more likely to identify as multilingual based on their language backgrounds and experiences, while for the non-EAL students, the mVAS may be more strongly measuring the evaluative (including self-evaluative) and emotional dimensions of multilingual identity, with the latter potentially being more predictive of educational outcomes than language experience. This, however, does not apply to the MFL subjects, where skills associated with previous language learning experiences, alongside positive attitudes towards multilingualism,

Table 7. Magnitude of the EALStudent x mVAS interaction effect on attainment (GCSE scores) using a linear model including School, Gender and SES as potentially confounding factors.

				Attainment outcomes					
	N	B/Coeff	95% CI low	95% CI up	F	df1	df2	MSE	Sig
French	191	0.014	−0.007	0.035	1.667	1	181	2.719	0.198
Spanish	158	0.018	−0.010	0.045	1.613	1	148	3.083	0.206
German	63	0.029	−0.011	0.069	2.072	1	56	3.472	0.156
English Language	333	0.000	−0.014	0.014	0.004	1	323	2.159	0.948
English Literature	333	0.008	−0.007	0.022	0.994	1	323	2.426	0.319
Maths	333	0.003	−0.013	0.019	0.162	1	323	2.878	0.687
Science	332	0.004	−0.012	0.020	0.266	1	322	2.706	0.607
Geography	168	−0.005	−0.031	0.021	0.141	1	158	3.289	0.708
History	152	−0.007	−0.033	0.020	0.250	1	142	3.518	0.618

may be more directly relevant to learning outcomes than for other curricular subjects. This suggests that different "types" of multilingual identities and affinities may differentially impact learning outcomes. Further analysis is, however, needed to determine what dimension of multilingual identity (i.e., experience, evaluations or emotions) explains most of the variation in students' GCSE scores, and whether differences may exist here for EAL and non-EAL students.

Discussion

Our results confirmed the complexity of understanding the role that multilingualism plays in school learning and academic attainment. Our results broadly corroborate previous research on the relationship between EAL and academic attainment, similarly finding that EAL students clearly outperformed English first language students in foreign languages, with negligible differences between EAL and English first language students' GCSE scores for the other subjects, including English (Strand et al., 2015). However, our results also raise questions about the value of the school EAL indicator for understanding the role of multilingualism in school learning and academic attainment, revealing that particular care is needed when interpreting research findings using school EAL data (Evans et al., 2020; Strand & Hessel, 2018).

Firstly, that School-ascribed and Self-ascribed EAL were found to correlate only moderately, and were also found to lead to different significant results in their association with attainment, suggests that there are potentially meaningful differences between self- and other-ascription as EAL that affect empirical work on this topic. This relates not only to the label "EAL" hiding important differences in students' actual experiences and proficiencies in English and their other language(s), but also to the extent to which different actors may be willing to claim that identity marker, with our findings suggesting multilingual identity to be relevant to school learning (Taylor et al., 2013), but not often taken into consideration.

Moreover, the differential impact of the three multilingualism indicators on academic attainment further suggests that EAL is an insufficient indicator for understanding how multilingualism impacts on school learning more broadly. The positive correlation between the mVAS and GCSE scores for both EAL and English first language students reveals that a more holistic and affective notion of multilingualism, incorporating not only all the students' languages (including those learned at school), but crucially also their attitudes and feelings towards them and themselves as users of these languages, is more predictive of better GCSE results than whether or not students identify or are identified as having a home language other than English.

Although detailed analysis is needed of the specific identity-related factors (or their interactions) that may explain the positive correlation between Self-ascribed Multilingual Identity (mVAS) and GCSE scores, this finding lends tentative support for interpreting multilingual identity as transcending a person's language-specific identities, and that further research into multilingual identity as an umbrella identity within schools is merited (Fisher et al., 2020; Henry, 2017). Moreover, embedded

within these results lies the narrative that what you think you are might be more important than what others say you are. Our findings suggest that the evaluative and emotive dimensions of multilingualism may have a greater effect on attainment than an experience as powerful as having an additional language in the home, revealing a potential impact of students' beliefs and emotions on academic attainment that may not be understood or acknowledged by schools and teachers. This foregrounds the vital importance of attitudes, self-beliefs and emotions for understanding the relationship between multilingualism and academic attainment (MacIntyre & Gregersen, 2012; Shao et al., 2019). It also opens the door to classroom interventions that target students' affinity towards multilingualism, both within languages classrooms and the wider school curriculum, as a potential means of improving learning outcomes (Fisher et al., 2020; Forbes et al., 2021). In other words, the sole dependence on language competence is insufficient for understanding multilingualism in schools, and the notion of multilingual *identity* should be drawn upon to understand the full impact of "being multilingual" on academic attainment.

Conclusion

Our exploration of the relationship between multilingualism, multilingual identity and academic attainment suggests that a greater willingness to claim a multilingual *identity* seems more predictive of better GCSE results than the multilingualism indicator of EAL commonly used in UK secondary schools. In doing so, our research foregrounds the importance of adopting a more holistic notion of multilingualism as including all of a learner's languages, and an attitudinal and affective lens within educational research on this topic. The research reported in this paper has clear implications for different education stakeholders. For schools and teachers, the findings suggest a need to rethink current distinctions between EAL and non-EAL students in school and to examine how the emotional and evaluative dimensions of multilingual identity can be fostered as a stimulus for academic attainment. For policy makers, the implications suggest a need to promote a more inclusive societal and educational vision of multilingualism and multilingual identity to better tap into the inner resources of learners in school. Further research is still needed to understand exactly how the various facets of multilingual identity affect students' engagement in learning and their learning outcomes. In particular, future research should aim to establish what multilingual identity profiles—as composed of different constellations of language *experiences, evaluations* and *emotions*—are conducive to learning and academic attainment, and what pedagogical experiences and interventions may contribute to meaningful changes in these profiles that positively impact students' educational outcomes.

Notes

1. The General Certificate of Secondary Education is a set of standardized exams on a range of subjects, taken in England, Wales, Northern Ireland and other British territories at the age of 14–16.
2. As there are two types of Science GCSEs, also known as Double and Triple Award Science, students' scores for Science were calculated by averaging their scores across the subjects Biology, Physics and Chemistry where students sat these subjects as separate GCSEs (i.e., Triple Award Science), and across the two GCSE scores that students receive when sitting the Double Award Science, which covers approximately two-thirds of the content for all three sciences that is covered by the Triple Award Science.

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