



## Empowering learners of English as an additional language: translanguaging with machine translation

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## Empowering learners of English as an additional language: translanguaging with machine translation

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## **Empowering learners of English as an additional language: translanguaging with machine translation**

### **Abstract**

The use of machine translation is increasingly prevalent in language education and social communication. This study explored how multilingual pupils who are learning English as an additional language (EAL) use machine translation within their formal education and everyday lives. A translanguaging framework was employed to understand the ways in which learners use machine translation and how they interpret these practices. Qualitative data was collected from a series of pupil (n=28) focus groups and teacher (n=14) interviews across five secondary schools in Northern Ireland. The findings demonstrate that machine translation permeates various learning and communicative aspects of learners' lives across each stage of their multilingual development. In addition, learners view machine translation as a legitimate multimodal tool which they flexibly, critically and pragmatically incorporate within their semiotic repertoires. These findings show how EAL learners are empowered by their own, and their teachers', use of machine translation and offer insights which inform the continued development of translanguaging pedagogies.

**Key words:** translanguaging; machine translation; English as an additional language; multilingualism; Northern Ireland.

## Introduction

Global migration has made schools increasingly multilingual and multicultural. Concurrently, the use of multimodal digital technologies for communicative and learning purposes is becoming ubiquitous in education. This study arrives at the intersection of these two trends by exploring the role of Machine Translation (MT) software (e.g. Google Translate) in the lives of multilingual pupils who are learning English as an Additional Language (EAL). Anecdotal accounts of multilingual pupils' and their teachers' use of MT in schools are widespread, yet there has been little research attention given to this in the field of EAL. A few notable studies (Beiler & Dewilde, 2020; Vogel, Ascenzi-Moreno, & García, 2018) have found that MT supports pupils' language development in formal learning contexts as they actively incorporate it within their semiotic repertoires. However, pupils' wider uses of and attitudes towards MT, and whether they change as their semiotic repertoire develops, appears an underexplored area. This article addresses these gaps and adds to the nascent literature through analysis of qualitative data gained from pupil focus groups and teacher interviews across five secondary schools in Northern Ireland.

## Translanguaging

Translanguaging has become a prominent theory in the field of multilingual education over the last few decades. It is defined as the “act performed by bilinguals of accessing different linguistic features or various modes of what are described as autonomous languages, in order to maximize communicative potential” (García, 2009, p.140). This theoretical framework empowers pupils by recognising the reality of their fluid linguistic practices, rather than their primary identifier being a perceived deficiency in English

(Blackledge & Creese, 2010; García & Li, 2014). Translanguaging is further defined as a pedagogical approach which encourages pupils to use their full linguistic repertoires for learning and communication (Flores & Schissel, 2014).

The widespread engagement with the term translanguaging among researchers and practitioners has created the need to refine its definition and use as a theory of language (e.g. Jaspers, 2018; Leung & Valdes, 2019). Li (2018) addresses this and argues that:

Translanguaging reconceptualizes language as a multilingual, multisemiotic, multisensory, and multimodal resource for sense- and meaning-making, and the multilingual as someone who is aware of the existence of the political entities of named languages and has an ability to make use the structural features of some of them that they have acquired. (p.22)

By applying this theory we seek to understand “how language users orchestrate their diverse and multiple meaning- and sense-making resources in their everyday social life” (Li, 2018, p.27). While translanguaging continues to expand as a theory, a significant amount of research evidence informing this has been conducted in the context of Spanish-English bilingual education programs for Latinx learners in the United States (Leung & Valdes, 2019). There is a need to refine the theory through research evidence from underexplored socio-political contexts, for instance mainstream education in Northern Ireland. Vogel and García (2017, p.13) further argue that it is essential that any view of translanguaging recognises “all the multimodalities that form part of users’ semiotic meaning-making repertoire”. Therefore, as multilingual learners’ use of digital multimodal technologies, such as MT, continues to increase, this multimodal aspect of translanguaging theory requires greater research attention.

## **Reappraising machine translation from a translanguaging perspective**

Learners' practices when using MT are often situated within the field of Computer-Assisted Language Learning (CALL), centring on writing interventions (e.g. Fredholm, 2019) and university students (e.g. Lee, 2020; Tsai, 2019). In their recent studies on the use of MT for second language writing development, both Lee (2020) and Tsai (2019) found that engagement with MT can improve the quality of university students' writing and that they have positive attitudes towards its use as an educational tool. Briggs (2018) also found that university students in South Korea have positive attitudes towards the use of MT in a range of social and learning settings, yet they can struggle to critically evaluate its output. As evidence of university students' varied uses and positive attitudes towards MT grows, there are increasing calls for incorporating this new reality into pedagogic approaches which guide students to use MT responsibly (Briggs, 2018; O'Neill, 2019).

An issue in the field of CALL has been raised by Buendgens-Kosten's (2020) systematic review of research in the field over the last 10 years, which found that studies have predominantly been informed by a monolingual bias. This bias is defined as a failure to recognise, and value, the role that learners' linguistic and semiotic resources beyond those associated with the target language play in their language learning (Ortega, 2017). In contrast, research evidence concerning secondary EAL learners in the UK (e.g. Anderson et al. 2016) and linguistic minority pupils internationally (e.g. Duarte, 2019; French, 2016; García & Kleyn, 2016) has established that they naturally and regularly engage in fluid, dynamic and intersecting language practices (i.e. translanguaging).

However, despite this evidence base, deficit thinking about the educational value of pupils' languages beyond English continues to prevail in schools and wider society in Northern Ireland (Carruthers & Nandi, 2020), the UK (Cunningham, 2019) and other English language majority contexts such as the USA (Chang-Bacon, 2020) and Australia (Cross, 2011). There remains work to be done in developing pedagogies which challenge and overcome the monolingual restraints of these educational systems (Conteh & Meier, 2014; Menken & Sanchez, 2019). This is particularly relevant in the case of translation related activities as many teachers view them to be decontextualised practices which can limit a learner's progression in English (Wilson & Davies, 2016). The emergence of digital multimodal tools, such as MT, offer new possibilities for translation related activities in EAL. Arnot et al. (2014) found that teachers view MT a useful tool for new-to-English pupils but did not seem to consider it relevant beyond this and questioned its reliability. Thus, the purposeful use of MT in translanguaging pedagogy merits greater attention.

There is a dearth of research investigating EAL learners' practices and perceptions relating to MT. As mentioned previously, two notable studies are Beiler and Dewilde (2020) and Vogel et al. (2018), who examined pupils' translingual practices through the step-by-step actions they took when engaging with MT. Beiler and Dewilde's (2020) study involved 22 newly arrived students in Norway and investigated their translingual practices involving MT during classroom based English writing instruction. They found that pupils often had conflicting monolingual and translingual orientations towards their translation practices, yet it was "a key means of aligning students' communicative resources to write in English as an additional language" (ibid, p.1). Similarly, Vogel et al. (2018) presented a case study of a middle school pupil, Fu-han, who had recently arrived in the USA from China. They present evidence of Fu-han

producing the best results by critically evaluating and editing MT output while merging it with his existing semiotic repertoire. They use this evidence to demonstrate how MT offers a pedagogic entry point from which to “leverage the student’s entire semiotic repertoire” (ibid, p.103). Based on this, Vogel et al. (2018, p.104) advocate that definitions of translanguaging, should “integrate all parts of the semiotic repertoire of bilingual learners, including artifacts and technology”.

Much literature in the field of EAL (e.g. Conteh, 2019; García, Johnson & Seltzer, 2017) argues that pupils are best supported through translanguaging informed pedagogy which recognises the reality of their fluid semiotic meaning-making practices across their entire lives. In this case, little is known regarding the extent to which learners incorporate MT within their semiotic repertoire for everyday communication, informal learning or learning at home. Given the increasing prominence of MT within their lives, this is clearly an area where more research attention is needed. There is also little knowledge on how pupils’ use of and attitudes towards MT might change over time; it seems unlikely that they would remain uniform over a pupil’s multilingual development. These gaps have led to the following research questions.

1. How do multilingual pupils make sense of their use of MT?
2. How do teachers perceive the role of MT in supporting multilingual pupils’ learning?

## **Methodology**

The research questions have been addressed using qualitative data which was gathered as part of a larger mixed methods study concerning language learning, identity and social integration for multilingual pupils with EAL. Special ethical approval



was granted by our university for research involving pupils under 18. Investigating the use of MT was not an aim of the larger study. As the study unfolded and initial analysis was conducted, it became apparent that MT played a significant role in the lives of many pupils. Our flexible design (Robson & McCartan, 2016) then allowed MT to become a more focussed area of investigation as the study progressed. Thus, there is a serendipitous element to the findings as the significance of MT for pupils and teachers emerged organically. Pupil focus groups are the primary data source and are supported by data from teachers' interviews.

### **Context and Participants**

The research took place in Northern Ireland, where inward migration has seen the linguistic and cultural diversity of schools increase significantly in the last 20 years. The number of EAL pupils was less than 1% (1,366) in 2002 and has since increased to 5% (17,664) in 2021 (DENI, 2021). In this study both pupils who were new arrivals in the early stages of learning English and advanced multilingual learners who had been at school in Northern Ireland for several years were recruited. Using the Northern Ireland schools census 2018/2019, secondary schools with a significant number of EAL pupils (i.e. more than 5% of total pupils) were identified and contacted; five schools agreed to participate (table 1). None of the schools had a policy specifically relating to EAL pupils' use of MT, teachers were free to incorporate it in pedagogy at their discretion.

### **Data**

In total, 22 focus groups were held involving 28 pupils across the five schools (table 2). Depending on which pupils in each school agreed to participate, focus groups were organised based on whether they were in the same class group or shared a particular background (e.g. Syrian pupils who were refugees). Once a group was formed, these pupils took part in a series of focus groups together. There were 14 teacher interviews involving teachers from four of the five schools (table 3). Teachers in school D were not available for interviews after the school's closure due to COVID-19. All pupils and teachers have been given pseudonyms.

Data was analysed by merging grounded theory (Corbin & Strauss, 2008) and analytic induction (Katz, 1983) approaches, as advocated by Taylor, Bogdan and DeVault (2016). Grounded theory was used first to generate themes by coding pupils' and teachers' uses and perceptions of MT in their own terms. Following this, analytic induction was employed by focussing on negative cases to verify, enhance or qualify each theme. Finally, the themes were examined through a translanguaging lens. MAXQDA software was used to complete these processes and organise the data systematically.

## Findings

### ***Research Question 1: How do multilingual pupils make sense of their use of MT?***

Pupils' uses of MT varied across their stages of English language development and were categorised according to the following three stages: (1) MT as a survival tool for newly arrived pupils, (2) pupils' explorative use of MT as their English develops, and (3) pupils taking control of MT as advanced multilingual learners.

## (1) MT as a survival tool for newly arrived pupils

### Survival communication

Several pupils described MT as a key means to support essential communication with teachers and other pupils when they first arrived. The use of MT as a survival tool is evident in extract one as it enabled Joseph to communicate basic everyday information such as making a request or explaining an event to his teacher. Joseph also recognised at the time that he had made errors when entering Romanian into the MT App, but was able to critically evaluate whether the English output was sufficient to achieve his communicative purpose.

#### Extract 1

**Int:** let's say someone new is coming to your class. What would you say to them or what kind of advice?

**Joseph:** [...] and I would probably try and Google Translate it and then you know, because I remember when I was in primary school teachers did that a lot. And because I didn't know how to speak English and so they would just let me type on Google translate what I wanted or what happened. I think I would do the same because if it helped me a lot, I think it should help other people too.

[...]

**Int:** you typed it in Romanian obviously and whenever it came out in English

**Joseph:** Oh, yeah. I was like, "is that how you say it? did I spell something wrong?" I remember a time I tried to type something but in Romanian, it didn't sound as great but when it came with the English sentence it was just like spot on. Like it's exactly what I wanted to say even though I did like a grammar mistake in my country, in my language.

(School E)

Fatima (school C) suggested “*Google Translate [...] to use it a lot*” when discussing how a new pupil could communicate with other pupils. Marcus, a 19-year-old teaching assistant at School A, previously joined the school as an EAL pupil when he was 13 and reflects on his experience in extract two below. He details how MT was an essential tool which enabled him to play games and, therefore, communicate and interact with other pupils. Marcus also describes how he would fluidly incorporate MT within communicative interactions by asking his friend to wait while he checked his understanding using MT.

### Extract 2

**Marcus:** yeah you know, when I was learning English too I would say that I was actually using a lot of Google translate too. So when I was, even like playing some card games with my friends, you know like, board games and stuff and so then I was actually typing on what does it mean on this card. So I know what the rules are. So probably just memorise and a lot of translator.

**Int:** would you use a translator too for speaking?

**Marcus:** Sometimes would, when I was saying something then forgot about the word or whatever I was like right hold on one second because I need to check it.

(School A)

### Curriculum learning

Pupils across all five schools reported using MT to support language and curriculum learning during the early stages of learning EAL. This involved individual and collaborative use of MT to engage with mainstream lessons, withdrawal lessons and homework.

Numerous pupils reported using MT independently during mainstream lessons in the beginning “*if we don’t know that word*” (Maisha, School A). Joanna (School A) agreed

that MT “*helped a lot*” when she began learning English and that she preferred to use MT when attempting to understand something before asking the teacher “*because you didn’t understand the teacher either*”. Moreover, Robin (School B) said he used MT “*when I didn’t understand something*” but “*just like 10 times*”. In Robin’s case it appears that he purposefully incorporated MT within his semiotic repertoire. There was a shared view among pupils that teachers accepted and supported their independent use of MT during lessons rather than discouraging it. For example, Maisha answered “*yeah of course*” when asked if teachers say it is “okay” for them to use MT use during lessons. She further described collaboratively using MT with a teacher, “*sometimes we watch film and if we don’t know that word we translate it with [teacher]*”. The only negative cases being Klara (School A) and Wiktor (School A), who reported that teachers did not permit them to use MT when they were in primary school (approximately seven years earlier).

Many pupils utilised MT by recording key language from lessons or everyday school life and then translating it at home as seen in Weronika’s representative example in extract three. In particular, her insistence that she would take MT output and “*the next day I’d try and use it as much as I can*” positions MT as a legitimate tool in developing her semiotic repertoire.

### Extract 3

**Weronika:** or like hearing a word then going home and trying to translate it into your own language and trying to use it as much as you can to make it stick, that’s also useful.

**Int:** so did you have like a little book or something where you would translate it or how did you do that?

**Weronika:** no just like if I heard an interesting word. I will just go home and put it into Google Translate. It’s useless for sentences but with single words it’s good. That’s what that means then go the next day I’d try use it as much as I can.

(School A)

### **Engaging with teachers' use of MT**

A further example of newly arrived pupils' ability to critically engage with MT is their evaluation of MT output produced by their teacher for lesson aims, key words or instructions. Several pupils said that they find their teachers' use of MT helpful and they understand the output despite recognising errors in it. Amir (School B) said his teacher's use of MT was *"good for us"* despite occasions where he recognises *"it's not right"*. Other newly arrived pupils described similar cases where they get a *"feeling (...)* *that's not good, that's not right"* (Bashir, School A). In these cases, pupils are proactive and *"look back like the question in English"* to critically view the text again (Robin, School B) or ask the teacher to *"explain it but in more straightforward English"* (Klara, School A).

### **(2) Pupils' explorative use of MT as their English develops**

The majority of pupils with intermediate or advanced English proficiency reported that they used MT less as their English progressed to a more intermediate stage. They described a range of timelines for this, highlighting the appropriacy of a translanguaging framework which recognises the pupils themselves as those best placed to judge their multilingual development (García & Kleyn, 2016; Canagarajah, 2013). Joanna (school A) described how she used MT to support her vocabulary learning and she then stopped doing this after *"a good half a year or more"*. Weronika (school A) similarly stopped this MT practice when *"3 years after I arrived I started knowing English better than Polish"*. Justyna and Agata, who have been at school B

in Northern Ireland for two and four years respectively, described how they used MT for support with homework “*more in the past*”.

Some pupils in the intermediate stages expressed more critical attitudes towards using MT. In the previous section, Joseph detailed how MT significantly helped him to communicate with teachers in the beginning; now four years later he states that “*most of the time it doesn’t really work*”. Vasara and Dora, twin sisters who joined school D in Northern Ireland two years ago, also have a complex relationship with MT. They prefer to “*go to mom*” for support with homework but sometimes use MT apps. They state that “*sometimes we don’t trust the translator*” but may use it exploratively to “*see how it translates*” because “*we know the correct*”. Despite their misgivings and infrequent usage, they still demonstrate the ability to use MT critically by identifying and post-editing incorrect translations.

Andrius (School D) described how he requires MT for homework support, which works “*most of the time*” but it can be “*annoying*” when it does not work effectively. In the following extract four he shows resilience by trying “*over and over*” and then a willingness to explore and “*work with*” unsatisfactory MT output rather than discard it.

#### Extract 4

**Andrius:** I mean it’s really hard for me to do homework because I have to use like a translator or something and sometimes it doesn’t work and it’s really annoying. It’s hard for me to read and write.

[...]

**Int:** you said it can be annoying sometimes, what happens when it’s annoying?

**Andrius:** because like some words don’t like, you can try over and over, they don’t really, they just stay the same, because some words are like, the translator just doesn’t understand.

**Int:** and when that happens is there any way you can get around it or fix it?

**Andrius:** not really I just have to work with what it did, but most of the time it works.

(School D)

### (3) Taking control of MT as an advanced multilingual learner

Although many pupils with advanced English reported that they no longer used MT to support their English language development or curriculum learning, Klara, as seen in extract five, and Joanna (school A) were two pupils who differed with this general agreement.

#### Extract 5

**Klara:** if I can't remember the word in English I'll translate it, like see if I don't know the word in English, then I put in Polish and then I look like different meanings or words I could use instead of.

(School A)

Once Klara accesses the definition in Polish through MT she situates it alongside an English definition then critically explores the language by considering different words in English that are synonyms. The other differing case was Joanna, who described using MT for support only with specific curriculum language such as “*some business language and I never heard of the word before*”. She also demonstrated critical engagement with MT output by adding “*but sometimes it doesn't make sense in Polish either*”.

The most common usage of MT by more advanced multilingual learners was to enable communication with family members in their home language as seen in extract six below from David (School E). Interestingly, in other focus group discussions David felt that MT “*doesn't really translate properly*”. However, he continues to describe



instances where he evaluates translations as inaccurate then retypes them to “*make more sense*”. Learners’ ability to post-edit and redraft translations demonstrates that, despite some scepticism, they mindfully incorporate MT within their semiotic repertoire.

### Extract 6

**Int:** how often would you use Google translate?

**David:** only when I need to speak to my mom or my family.

[...]

**Int:** then whenever you get Google Translate, how do you check it, or how do you.

**David:** I don’t really check it, well because I know Italian, I know like how it should sound like in Russian. So just listen to it if it sounds.

**Int:** so if you Google Translate, and then if you want to check whether it’s sounds right you’ll listen to it?

**David:** yeah

**Int:** what if you think it doesn’t sound.

**David:** I would retype the button make it something, make it more what do you call it... make more sense.

(School E)

In a similar case in extract seven, Emilia describes how she uses MT to support home-school communication between a teacher and Polish speaking parents of other pupils.

### Extract 7

**Emilia:** [teacher] always gets me to like send text messages from her office, I’ve done it in fourth year and I’ve been doing it every year. Like I don’t know how to text [in Polish], just text it on Google Translate and just make sure it makes sense in Polish and fix it where I can.

(School A)

Similarly to David, Emilia believes that she needs MT to support texting in her home language. She critically engages with the Polish output by post-editing and redrafting it where she can. She also stated in a different instance *“if you know both languages, you’re able to tell what’s wrong and what’s right so you try to like fix it yourself”*. It seems she feels that she would be unable to support her teacher in this way without the use of MT. These practices show that pupils purposefully incorporate MT within their existing semiotic repertoire and it should not be predominantly framed as an English language support tool in an EAL context.

A salient theme arising from the extracts in this section is pupils’ ability to critically edit and redraft output from MT as their language proficiency develops. This is consistent across several other pupils’ accounts where they criticise the accuracy of MT but have, or are developing, the ability to refine the output. For example, Wiktor described MT as unreliable *“it just makes no sense [...] if you put it in a sentence, you’re not getting the same sentence back”*. Despite this criticism he feels that he now has the ability to fix it himself, something he could not do *“back in the day”* (i.e. at an earlier stage of his English proficiency). Joanna also stated that she will post-edit output and use it once she feels *“someone will understand that so yeah it’s good enough for me”*.

The findings in this section demonstrate that more advanced multilingual pupils are critical and dexterous users of MT. They are consistent in recognising accuracy issues but address these proactively by post-editing and redrafting MT output to meet their communicative purpose. It is apparent that these pupils are taking greater control of their MT usage and incorporate it as a digital multimodal tool within their semiotic repertoire.

***Research Question 2: How do teachers perceive the role of MT in supporting multilingual pupils' learning?***

Teachers' perceptions of MT primarily focussed on its use for communication and learning when pupils are in the early stages of learning English, concerns over accuracy and a desire to use MT less as pupils' English develops. They did not comment on the role of MT for more intermediate and advanced multilingual learners.

Several teachers described a reliance on MT to communicate with pupils in the beginning. Mel, an EAL Learning Support Assistant (LSA), suggested that the only means of communication with new to English pupils was an MT app (extract eight).

**Extract 8**

**Mel:** when the two first Syrian pupils arrived it was quite challenging, and the fact that the only thing that we had in between to communicate was Google Translate which is for translation but better than nothing.

(School A)

Teachers mainly described pedagogic approaches which encouraged students to use MT independently or in one-to-one interactions with teachers and classroom assistants. In extracts nine and ten below, MT is used as a tool to effectively aid a pupil's understanding of instructions and ability to participate in mainstream lessons. These public and collaborative translanguaging acts offer examples of teachers legitimising MT as a digital multimodal tool in the classroom.

**Extract 9**

**Marcus:** I'll just try to use some Google Translate and type it into my phone so it would appear to him in Hungarian [...] then he was like 'oh okay' and he was doing his work because he knew what to do after that.

(School A)

**Extract 10**

**Caoimhe:** I know one of our classroom assistants uses an app with pupils [...] she photographs the work and it translates it into Polish like live there and then in the classroom.

(School C)

Other pedagogic practices described by Caoimhe included classroom assistants requesting key language for assessments “*then they Google Translate it for the pupils so that they have a better way to understand the questions.*” However, Caoimhe stated that this focussed pedagogic support with MT apps was only for “*those with a weaker grasp of English*”.

Teachers’ other uses of MT involved activities such as translating learning intentions for all EAL pupils in a class group. Maria describes the practical challenges this poses in extract eleven:

**Extract 11**

**Maria:** If I had a set of learning intentions I was translating them into different languages [on the interactive whiteboard]. The problem was I had that many different languages in the class that I was running out of space. So it was kind of just very time consuming and I don't know whether students got out of it what I wanted them to.

(School B)

Maria further expressed concerns regarding the accuracy of translations and when pupils use MT independently (extract twelve).

**Extract 12**

**Maria:** some of the times you look at their smiling faces and you think “how is that actually translated?” So I don’t know whether it’s reliable, or as reliable as

it should be, but I think again as their language progresses you can stay away from that.

(School B)

Mel (school A) echoed these sentiments of needing to move away from MT by suggesting “*the most difficult part is behind us*” once MT is no longer required for communication with pupils.

Finally, it is worth noting that no pupils who took part in the study mentioned using paper bilingual dictionaries and several teachers reported that pupils are unwilling to use them at school. Teachers suggested that pupils resisted using paper bilingual dictionaries due to the feeling that “*it sets them aside from others*” (Maria, School B) or “*embarrassment*” (Katy, School E).

## Discussion

Our analysis led us to broadly characterise multilingual pupils’ MT usage in three stages; as a survival tool when they first arrive in an EAL context, moving to a more explorative tool as their English reaches an intermediate level and finally taking control of MT as advanced multilingual learners. Pupils’ engage with MT critically and flexibly at each stage. This finding aligns with previous research arguing that pupils critically incorporate MT within their semiotic repertoire in a formal learning context, rather than passively reproducing the output they receive from it (Beiler & Dewilde, 2020; Vogel et al., 2018). We argue that this study further extends our understanding by presenting learners’ MT use beyond formal instruction. In particular, pupils’ use of MT for survival communication, independent learning and communication in their home language(s).

The diversity of these practices unveils the reality of pupils' translanguaging and extent to which MT permeates various aspects of their lives.

Teachers in this study utilised MT to effectively support pupils in the initial stages of learning English (Arnot et al., 2014). They then sought to gradually stop its use as students' English proficiency developed. However, the accounts of the pupils themselves demonstrate that they can critically and pragmatically use MT for learning purposes when they are at intermediate and advanced stages of their multilingual development. The pedagogic potential of MT for more intermediate and advanced multilingual learners is evident through its use in developing writing skills for university students (Lee, 2020; Tsai, 2019). Translanguaging pedagogy for intermediate and advanced EAL learners which makes use of MT is an area for further development.

Some tension appeared in cases where pupils described MT as inaccurate yet continued to detail instances where it enabled them to successfully communicate or learn. It is possible that some pupils' conflicting attitudes and practices could be influenced by the monolingual ideology which typically pervades their schools and wider society in Northern Ireland (Carruthers & Nandi, 2020). Such monolingual ideologies devalue and delegitimise pupils' translanguaging practices. The extent to which pupils internalise this deficit perspective may influence the conflict between their MT practices and perceptions. The influence of this monolingual ideology may also be present in pupils' rejection of paper bilingual dictionaries as a more visible sign which may 'other' them. However, it may not be the only factor at play; several pupils felt that their teachers legitimised, supported and collaborated with their use of MT. How pupils reconcile the conflict between their practices and attitudes, and their rationale for differentiating MT and paper bilingual dictionaries are areas which merit further research. When this is considered alongside the constant improvement of MT software

and ubiquity of technological devices, the necessity for further research which enhances our understanding of MT in the field of EAL becomes clear.

A limitation of this study is that opportunities to further explore the role of MT were lost as the original research project did not aim to specifically explore multilingual pupils' MT use. Conversely, this may also be a strength of the research in that the important role MT plays in pupils' lives emerged organically. The lack of observational data which could have triangulated pupils' and teachers' self-reported MT practices should also be acknowledged as a limitation of the research.

The findings of this study demonstrate that MT can be incorporated into translanguaging informed pedagogies (e.g. Conteh, 2019; García et al., 2017) at any stage of pupils' multilingual development. There is an imperative to do so as these pedagogies must be informed by the reality of students' semiotic meaning-making practices (Vogel & García, 2017). Recent research on university students' use of MT in the field of CALL has also called for teachers to guide students in using it responsibly (Briggs, 2018; O'Neill, 2019). There are three key recommendations for translanguaging pedagogy arising from our findings. First, MT should be utilised as a legitimate tool for supporting new to English pupils as it provides them with a means to communicate essential survival needs and to participate in learning interactions. Second, intermediate and advanced multilingual learners can critically and fluidly engage with MT, therefore, they should be empowered to do so. Finally, secondary school pupils have demonstrated the knowledge and capacity to use MT pragmatically, teachers should work with them to co-construct principles for its responsible use in learning.

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For Peer Review

## 1. Schools

School	Status	No. of Pupils	% EAL pupils
<b>A</b>	Catholic Maintained	500-750	9%
<b>B</b>	Catholic Maintained	250-500	19%
<b>C</b>	Catholic Maintained	1000-1250	8%
<b>D</b>	Integrated	250-500	8%
<b>E</b>	Integrated	750-1000	10%
<p>Note:</p> <p>Catholic Maintained schools are managed by Catholic authorities.</p> <p>Integrated schools are non-denominational.</p>			



2. Pupils

School	Group	Pupil	Gender	Age	Age on arrival	Languages spoken	Arrived from	Parents' countries of origin	Additional Information	No. Focus Groups Attended
A	1	Wiktor	M	18	4	Polish, French	Poland	Poland	-	2
		Emilia	F	18	3	Polish, French	Poland	Poland	-	2
		Klara	F	18	12	Polish	Poland	Poland	-	3
		Weronika	F	17	10	Polish, French	Poland	Poland	-	2
		Joanne	F	17	11	Polish, French	Poland	Poland	-	3
		Vera	F	17	7	Hungarian	Hungary	Hungary	-	3
	2	Azima	F	15	13	Arabic, Turkish	Lebanon (5 years) Syria (8 years)	Syria	Refugee	1
		Maisha	F	16	15	Arabic, French	Lebanon (6 years) Syria (9 years)	Syria	Refugee	1
		Bashir	M	14	13	Arabic	Egypt (4 years) Syria (9 years)	Syria	Refugee	1
	3	Sadia	F	12	12	Arabic	Lebanon (5 years) Syria (6 years)	Syria	Refugee Ali's sister	1

		Ali	M	15	15	Arabic	Lebanon (5 years) Syria (10 years)	Syria	Refugee Sadia's brother	1
<b>B</b>	<b>1</b>	Bahi	F	13	13	Arabic	Egypt (4 years) Syria (9 years)	Syria	Refugee	3
		Bushra	F	14	13	Arabic	Egypt (6 years) Syria (7 years)	Syria	Refugee	3
		Raja	F	13	12	Arabic	Egypt (6 years) Syria (6 years)	Syria	Refugee	3
		Amir	M	13	13	Arabic	Egypt (7 years) Syria (6 years)	Syria	Refugee	3
		Anwar	M	14	13	Arabic	Egypt (6 years) Syria (7 years)	Syria	Refugee	1
	<b>2</b>	Agata	F	13	9	Polish	Poland	Poland	-	3
		Justyna	F	13	11	Polish	Poland	Poland	-	3
		Robin	M	13	12	Romanian, Hungarian	Romania	Romania / Hungary	-	3
<b>C</b>	<b>1</b>	Ben	M	12	11	Tagalog	Philippines	Philippines	-	4
		Fatima	F	12	10	Portuguese	Portugal	Portugal	-	1
		Pawel	M	12	-	Polish	Born in NI	Poland	-	4
		Idris	M	13	3 months	Punjabi	Pakistan	Pakistan	-	4

D	1	Andrius	M	12	7	Lithuanian	Lithuania	Lithuania	-	3
		Dora	F	12	10	Russian, Lithuanian	Lithuania	Ukraine / Lithuania	Vasara's twin sister	3
		Vasara	F	12	10	Russian, Lithuanian	Lithuania	Ukraine / Lithuania	Dora's twin sister	3
E	1	David	M	14	9	Russian, German, Italian	Germany	Russia / Italy	-	4
		Joseph	M	14	10	Romanian	Romania	Romania	-	4

### 3. Teachers

School	Name	Role	First Language
<b>A</b>	Marcus	LSA	Polish
	Mel	LSA	French
	Patricia	EAL Coordinator / French Teacher	English
	Aoibheann	English Teacher	English
<b>B</b>	Maria	EAL Coordinator / Technology and English Teacher	English
	Darren	Vice Principal	English
	Carol	Principal	English
<b>C</b>	Mary	LSA	Polish
	Caoimhe	Religious Education Teacher	English
	Eva	LSA	English
	Rachel	EAL Coordinator / French Teacher	English
<b>E</b>	Katia	EAL Coordinator / LSA	Polish
	Katy	LSA	English
	Sam	Spanish Teacher	English

LSA: Learning Support Assistant