"I don't like English; I don't like writing": A case study of EAL learner support in a secondary school in England

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The demand for quality practice to support learners with English as an additional language (EAL) in educational settings across the globe remains ever present (Cunningham, 2020). Educators in secondary schools are constantly seeking ways to enable learners with EAL to effectively access their teaching and to succeed in all areas of the curriculum. This paper focuses on the issues that learners with EAL face in the core subject of science. Findings, drawn from original research conducted in an English secondary school, suggest that a suite of practical strategies and professional support is needed to positively address issues associated with vocabulary and writing that learners with EAL encounter. The paper recognises the significance of these findings for international contexts such as Kazakhstan that are adopting a tri-lingual system of education and who seek to embrace the model of English-medium science education in their secondary schools.

Introduction

It is argued that the role of English as a global language has impacted on the rise of learners with English as an additional language (EAL) in classrooms across the world (Cenoz & Gorter, 2019). This is not unique to England for it applies to international contexts that include New Zealand, South Africa (Setati, Adler, Reed & Bapoo, 2002) and Australia (Romova & Andrew, 2011), where English is the home language. Countries such as Argentina, Bulgaria, Estonia and Kazakhstan have started providing education through the medium of English for learners in a number of secondary schools, mainly in science subjects (Gaipov, Yaylaci, Cig & Guvercin, 2013; Dearden, 2015). This trend inevitably brings with it various challenges when attempting to educate learners with EAL effectively. At a policy level, the effective allocation of resources, time and support required to meet professional demands needs to be carefully considered (Zwiers, O'Hara & Pritchard, 2014; Evans et al., 2016; Pennycook, 2017). At a classroom level, the demands on teachers to embrace an inclusive pedagogy model are necessary as they seek effective and innovative ways to respond positively to the needs of learners with EAL in the classroom (Safford & Collins, 2007; Curdt-Christiansen, 2020).

This paper locates itself in the heart of this discussion by exploring the practices and perceptions of professional educators and learners in relation to the core subject of science in a secondary school context in England. It offers a unique opportunity to report the rarely heard views of learners with EAL, comparing these to the views of professionals and triangulating these with observations of practice to see how the needs of learners with EAL are met in the classroom. Findings suggest that there are key areas of difficulty that learners with EAL constantly face; these relate specifically to vocabulary and

writing. Effective teaching practices emphasise the value of key professionals, resources and pedagogical approaches to positively target these key areas. As such, we argue that vocabulary and writing need to be given much more priority and consideration when designing and facilitating learning opportunities for learners with EAL in science classrooms. The reporting of this research is significant in its efforts to initiate some critical reflection about how the needs of learners with EAL can be met in international contexts such as Kazakhstan, where this debate is in its infancy. The paper opens with a review of the existing literature.

Review of the existing literature

Academic and professional discourse in the literature regarding EAL highlight a wealth of rich discussion. Our review of the literature serves to discuss the following:

- The emergence of EAL and associated key issues;
- The National Curriculum in England and language and guidance for EAL; and
- Supporting learners with EAL.

The emergence of EAL and associated key issues

Costley (2014) noted that the term 'English as a second language' (ESL) was initially used in England in about 1950 when the country accepted a considerable number of immigrants from Commonwealth countries whose school-age children needed to go to English-speaking schools. From that period onwards, professionals and academics including Baker and Jones (1998), Leung (2001), Andrews (2009) and Costley (2014) have all questioned how to offer effectively the language and pedagogic support needed for learners whose first language is not English. This is largely in response to national statistics revealing that the number of learners with EAL has increased significantly in England: approximately 1 in 6 primary school pupils and 1 in 8 secondary school pupils do not speak English as their first language (Leung, 2016). This highlights the significance of EAL in schools in England and the need for schools to develop their provision and practices to support learners with EAL effectively, with both care and efficiency. Of importance is the recognition that learners with EAL have issues with the English language when engaging with different school subjects, these being individual or shared in nature. We turn to several of these issues.

Key issues associated with EAL include data tracking, staffing, teaching, and assessment (Leedham, 2015). Safford and Collins (2007) suggested that curriculum subjects delivered in English can create additional linguistic, cognitive and cultural demands on learners with EAL, as each subject area requires different levels and types of language use on the part of learners. In this sense the teacher's role is essential in providing what we like to call a 'language scaffold' to support learners with EAL. However, as Lee, Quinn and Valdes (2013) pointed out, teachers face significant challenges themselves in providing the professional support that learners with EAL demand, several of which we will explore later on in this review. Many of the challenges identified above are fuelled by the National

Curriculum in England (DfE, 2013), especially when considering the issues of language and professional guidance.

The National Curriculum in England and language and guidance for EAL

In her review paper, Leung (2005) acknowledged and supported the inclusive policy of mainstream curriculum provision in England, particularly as it offered an equality of access to education, yet her analysis identifies various challenges associated with the mainstream curriculum provision for learners with EAL. Of concern is the development of EAL as a language pedagogy which has received an insufficient amount of attention within the mainstream curriculum. Indeed, Costley's (2014) exploration of the ways in which social policy and social concerns have impacted upon and shaped provision for students with EAL specifically identifies the shortcomings of the National Curriculum in England (DfE, 2013), as this sets out the same requirements for learners in terms of statutory assessment in English for both those that are native-English speaking and those with EAL. Leung's (2016) more recent analysis of the National Curriculum in England focused on the role and status of EAL. She highlighted that only two visible sections of the curriculum document refer to EAL, its associated discussion being limited to just ninety-four words.

Based on this, Leung (2016) asserted that content specification for EAL exists only in subjects such as English and science, whereas in other subjects such as computing and the humanities an implicit model of practice is utilised, whereby EAL is deeply and invisibly enmeshed in classroom communication. Miller, Windle and Yazdanpanah (2014) and Lee et al. (2013) recognised this in their respective research as a significant issue in effective EAL provision, suggesting that the integrating of both language and content at the planning stage remains an on-going challenge for many professionals, particularly those in secondary schools. Indeed, Tangen and Spooner-Lane (2008) suggested that teachers need to guard against embracing a deficit model of teaching, as learners with EAL may be missing out on important English language instruction due to limited teacher preparation and/or limited resources. Learners with EAL typically find that learning the linguistic attributes of academic genres of writing specific to particular subject areas is problematic (Arnot et al., 2014) – this is in addition to content knowledge challenges as identified in the work of Cummins (1991), Carrasquillo and Rodriguez (2002), Verplaetse and Migliacci (2007), and MacSwan (2020). Indeed, it can take learners with EAL between seven to ten years to learn these attributes as opposed to a native speaking learner (Collier & Thomas, 2009).

We [the authors of this paper] argue that the National Curriculum in England needs to be accompanied with clear guidelines and recommendations to help teachers cater for the needs of learners with EAL so that they [learners] can effectively access the mainstream curriculum. In contrast, the Department for Children, Schools and Families (DCSF) (2007) recommended in their excellence guidance that primary and secondary schools need to develop and provide *their own* guidelines for learners with EAL within the mainstream curriculum provision. Support for the development of these guidelines has been offered by the likes of Keeffe and Carrington (2006), Haworth (2008), Coleman

(2010) and Dobinson and Buchori (2016), whose empirical research and analyses of practice recognised significant issues relating to language and pedagogy when considering effective provision for learners with EAL.

Pedagogical issues such as insufficient language support and guidance are frequently expressed by subject teachers when they work with learners with EAL, as evident in the findings from semi-structured interviews conducted by Coleman (2010). Contributing to this are two interconnected issues, one being the lack of professional training activities available to support staff members, the other being the lack of support offered by the senior management team (SMT) in the school. Research by Miller, Mitchell and Brown (2005) and Lucas and Villegas (2010) argued that these two issues need to be given priority and consideration by policy makers and SMTs, as they can negatively impact on teachers' abilities to effectively help learners with EAL access the curriculum that is offered to them in the classroom. Failure to address these issues can result in behaviour issues, as learners with EAL are prone to descend into a cycle of failure that impairs their motivation to learn, as recognised in the literature review by Mahdi (2015). As such, learners with EAL are likely to develop inappropriate means of gaining attention in class which subsequently affects the learning of others (Keeffe & Carrington, 2006; Zwiers et al., 2014).

To address this, an analysis of existing studies by Sharples, Blatchford and Webster (2018) concluded that the presence of teaching assistants (TAs) is helpful, not only in managing associated behavioural issues, but also helping to keep learners with EAL engaged in activities, by offering them individual and personalised support and understanding. Subsequently, a practical guidance report on effective use of TAs in the classrooms was published by the Education Endowment Foundation (Sharples et al., 2018) to provide practical, evidence-based guidance to help primary and secondary schools make the best use of TAs.

Haworth's (2008) year-long study involving eight class teachers in four different New Zealand primary schools found that the self-confidence of teachers is affected when they attempt to teach learners with EAL, especially those learners with very low English proficiency. Not only does this present communication challenges that many teachers feel unequipped to deal with effectively, but Haworth (2008) also highlighted a tension whereby teachers are unable to share teaching time equally among all learners, especially when there are learners with EAL in the classroom. This raises an important question as to *how* teachers can effectively support learners with EAL.

Supporting learners with EAL

Research by Evans et al. (2016) recognised a number of ways in which the education of learners with EAL can be best supported; these specifically relate to aspects such as funding, policy changes, assessment practices and home-school communications. Moreover, Evans et al. developed an EAL assessment framework for schools that serves as an operational resource for EAL coordinators and SMTs to use to help them respond to the needs of learners with EAL. At the classroom level, Chen (2009) recognised the

value of a supportive environment for learners with EAL by distinguishing four inclusive components to promote this, these being:

1. A contribution of the learner's first language in the classroom;
2. Frequent interaction with the class teacher;
3. Interaction with the learner's peers; and
4. A sense of belonging to the bi/multicultural community.

A supportive environment, to a large extent, helps learners with EAL to study language across the whole curriculum (Chen, 2009). Interestingly, contributing to this supportive environment is the gradual *withdrawal* of adult support for learners with EAL in an effort to promote learner independence.

Englezou and Fragkouli (2014) proposed a differentiated approach to supporting learners with EAL based on a variety of factors that include gender, intellectual, psychological and emotional differences. They found that, depending on the interests of learners with EAL (influenced by their abilities and preferences), a variety of inclusive activities such as drawing, speaking aloud, interactive language games, singing songs, reading stories aloud, and using classroom displays can all be used to support the individual needs of learners with EAL. Gustad (2014) extended this suite of strategies by advocating the use of technology-based tools such as blogging and multimedia presentations, as these provide opportunities for learners with EAL to create products in a controlled environment, allowing learners with EAL to make mistakes while they practise their English without making them vulnerable to the attention of others.

Smyth, Tharia and Gravelle (2009) advocated the use of group work by examining its impact on learners with EAL, particularly when engaged in the subject of science. The researchers argued that group work activities provide positive opportunities for learners with EAL to adapt to activities, first by observing other groups who may be involved in similar activities, and second because in well-ordered practical work a teacher has the potential to interact with each group. In comparison, Wellington and Osborne (2001) specifically examined the pedagogic strategies associated with the teaching of science, highlighting the significance of its language and the need for teachers to adapt and model the language used in both oral and written form for learners with EAL, practical examples of which include:

• The classification of scientific terms;
• The development of a taxonomy of scientific words; and
• A checklist for writing and directed activities for reading texts (DARTs).

Moreover, Wellington (2002) put emphasis on the effective usage of language skills such as reading, speaking and writing, which help to shape an effective set of guidelines for subject teachers to support learners with EAL. These recommendations can all contribute to activities used to support teachers' professional development and are helpful in targeting the academic needs of learners with EAL, something which Hutchinson (2018) strongly argued for, based on her analysis of current data and robust international

comparisons of the achievements of learners with EAL. Interestingly, '[a]lthough the needs of EAL students are an increasing focus of research and practice, attention in the UK has until now been more directed towards primary rather than secondary-level pupils and schools' (Hall, 2018, p.3). This served as the catalyst for the research that was undertaken and is reported in the remainder of this paper as it strives to contribute to our knowledge of the less explored teenage age group.

Data were collected to answer the following two research questions that were used to drive the direction of the research:

1. What challenges do secondary school learners with EAL face when learning science?
2. What kinds of support are provided for learners with EAL in science lessons and how are known challenges targeted with the support provided?

Method

Setting

The research was conducted in a state-funded secondary school in the south east of England. The school hosted the lead author as a visiting scholar as a part of a six-month professional development internship program. Native-speaking pupils constituted the vast majority of the mainstream school provision – with 49 different languages spoken in the school, just 17% (n=225) of the 1324 pupils were non-native speaking and were offered EAL support. The research set out to explore the provision and practices in the school for learners with EAL through a small-scale case study (Mariano, 2000), with a particular focus on the subject of science.

Data collection

Located in the interpretivist paradigm, the researchers selected qualitative data collection methods for the study. Table 1 indicates the staged approach to data collection that was embraced (Clough & Nutbrown, 2007), acknowledging individual research methods that were used to collect specific data, along with the chosen approach to data analysis.

Because the research was a small-scale case study, six pupils – three female and three male – were randomly selected from those whose personal timetables would facilitate opportunities to meet with the lead author. Furthermore, three individual learners with EAL (2 female and 1 male) in addition to the six identified above were selected by the gatekeeper (vice principal) for observation, one learner with EAL being observed in each of the observed classes. To triangulate the data collected, two subject teachers – one science teacher and one language teacher (each with more than 15 years of teaching experience) were invited individually for interview along with two members of the SMT (each with more than 10 years of management experience), one who was linked to science and the other who was linked to language (both having responsibility for these different subject areas).

Table 1: Stages of data collection

Stage	Research method	Participants	Language background (length of stay in UK), where known	Data analysis
1	3 unstructured observations of science lessons	3 learners with EAL from Years 9, 11, 12	Thai (1 year), Chinese (2 years), Italian (3 years)	Conventional content analysis (Hsieh & Shannon, 2005)
2	A focus group interview	6 learners with EAL from Years 7, 8, 9	Russian, Italian, French, Spanish, Polish, Chinese	
3	4 semi-structured individual interviews	2 subject class teachers (science and language) and 2 members of the SMT (responsible for science and EAL)	Polish, English	

Procedure

Institutional ethical approval was actively sought by the lead author and all ethical considerations were addressed in accordance with the British Educational Research Association guidelines (BERA, 2011; 2018), e.g. informed consent and assurances of confidentiality. Once the research sample had agreed to take part in the research, the data was collected over a three-week period in February 2017 following the piloting of the data collection methods to evaluate their appropriateness and effectiveness. Three observations were initially carried out using an unstructured schedule by taking freehand notes, the primary aim of which was to investigate the nature of the engagement of individual learners with EAL (n=3) in separate science lessons (n=3), and to ascertain what kind of challenges learners with EAL faced.

In the second stage of the research, a focus group interview was carried out with six learners with EAL (their home languages are provided in Table 1). The focus group interview was approximately 20 minutes in duration and took place in a classroom as it was arranged by a placement coordinator. The placement coordinator was not present during the focus group interview though she was available to provide support for the interviewees if needed. The full focus group interview was audio-recorded and subsequently transcribed for analysis. In the final stage of the research, the two subject teachers and the two members of the SMT were individually interviewed. These interviews each took approximately 20 minutes. The interviews were semi-structured in nature and focused on two main topics of discussion that included the challenges for them in terms of EAL provision and the nature and types of support provided by the school to address these challenges.

In an effort to answer the two main research questions, the data gathered were subsequently analysed 'after-the-event', due to time constraints (Angelides, 2001). Once the data had been anonymised, conventional content analysis (Hsieh & Shannon, 2005; Flick, 2018) was used to categorise, reduce and interrogate the data. This involved the lead author immersing himself in the data, allowing codes and associated labels to emerge

during the reading of the observation notes/interview transcripts. These codes were then sorted into categories and sub-categories by clustering groups of codes, based on how they were related and linked to others.

Results

The presentation of results follows the stage order in which the research data were collected.

Stage one: Observations

The observations undertaken allowed the lead author to see science teachers and the learners with EAL working in the same learning space. Individual learners with EAL at three different levels of language proficiency and age were observed:

1. Those who had limited level of English competency (Year 9, 13-14 years old);
2. Those who were considered to have a competent level of English (Year 11, 15-16 years old); and
3. Those who had a proficient level of English (Year 12, 16-17 years old).

The year group order above is used to sequence the presentation of observation findings below.

Year 9
The science teacher (ST) explained the specific topic which was on the central nervous system and neurons. From time to time she asked some open-ended questions to which individual learners around the class replied. However, the learner with EAL did not reply to any of them, and the ST did not specifically direct any questions towards the learner with EAL. A teaching assistant (TA) was sat next to the learner with EAL and took notes for the learner in English as she did not speak the learner's first language, explaining to the learner with EAL what was being discussed in the lesson in simple English. The ST then set some differentiated tasks for the class; the learner with EAL was asked to complete a missing-word-in-the-sentence task and here the TA provided a verbal explanation of the task. The learner with EAL slowly approached her task with the help of the TA. It was noted that the learner with EAL clearly struggled in the lesson in a number of ways:

a. actually understanding the topic due to the limited knowledge of vocabulary and subject specific terminology;
b. being able to orally respond to the TA's questions about the task;
c. engage with the task that was set; and
d. completing the writing task set.

These observations were validated by the TA during an informal conversation post-lesson. However, it was recognised that the TA was deemed to be providing effective support for the learner with EAL through her focused questioning, clear explanations and dutiful patience. As it is indicated in Table 1, this student had been in the UK for a year – due to

her individual educational (language) needs the school had provided a TA to support the student in class. The EAL coordinator also provided one-to-one academic and EAL support after taught classes for the student.

Year 11

The lead author observed a chemistry lesson in which a learner with EAL was able to independently engage with the problem-solving tasks that he was set – these related to the recapping of the topic of covalent bonding. The ST regularly praised the student based on both his efforts and academic performance. It was recognised that the skills of the ST as an experienced teacher played a significant role in engaging the learner with EAL in the lesson. For example, the lesson organisation and the professional guidance offered by the ST clearly helped the learner with EAL to flourish in her class in a way that the ST's well-planned guiding questions and set tasks enabled *all* pupils to engage with the problem-solving tasks and consolidate the presented topic. Unlike the student in Year 9, the student in Year 11 had been in the UK for two years and had a competence level in English; as such, he did not need TA support. However, as a part of her professional duties, the EAL coordinator kept a track of the academic progress of each learner with EAL in the school including the learner in Year 11.

Year 12

A learner with EAL was observed engaging in a chemistry lesson – she was clearly proficient, language-wise, and advanced in the subject, having been in the UK for three years. Notes made during the lesson highlighted how she listened attentively to the ST during the main teaching exposition and actively engaged in the given assignments that involved group-work and group discussions related to enthalpy change and Hess' Law. Unlike the observations conducted in the Year 9 and Year 11 classes, the number of students was significantly less in the Year 12 class and the ST spent most of the time directly instructing learners using a *PowerPoint* presentation. Once complete, the teacher quickly divided the students into two groups and set them group tasks. It is worthy of note that the learner with EAL was observed helping her native speaking counterparts during the lesson when they sought her assistance.

Despite the limited availability of different teachers and learners with EAL due to the school timetable, these three lesson observations supported the lead author to recognise

a. the nature of language challenges learners with EAL typically face at the initial stage of exposure to an authentic English classroom, these notably being vocabulary and writing;
b. the nature of select EAL provision and select ways that the STs and TAs interacted with the learners with EAL; and
c. how learners with EAL responded to this through their engagement with the lessons.

Stage two: Focus group interview

The focus group interview (Appendix 1) involved six learners with EAL and sought to establish the following:

1. Learner perceptions of the best way of learning English;
2. The kinds of challenges learners encountered when learning science through English;
3. The types of support that were provided for learners with EAL by teachers and the school in general; and
4. Who learners sought help from when they faced language problems.

Most of the participants (n=4) said that they learned English better through reading in the classroom and outside of it; they also learned English by listening and talking to people as well. According to the participants, the typical challenges they encountered when learning science through English included spellings and the meanings of words, the pronunciation of words, and understanding, as illustrated below:

Interviewer: What [is] difficult [about learning English]?
Participant 4:   Spelling, by learning spellings we learned new vocabulary.
Participant 3:   Meanings of the words …
Participant 4:   Asking other people what the words mean.

The responses provided by participants and the notes taken from the observation at the first stage helped the lead author to appreciate the main challenges that they faced while studying different science subjects; these have been collated and are presented in diagrammatic form in Figure 1.
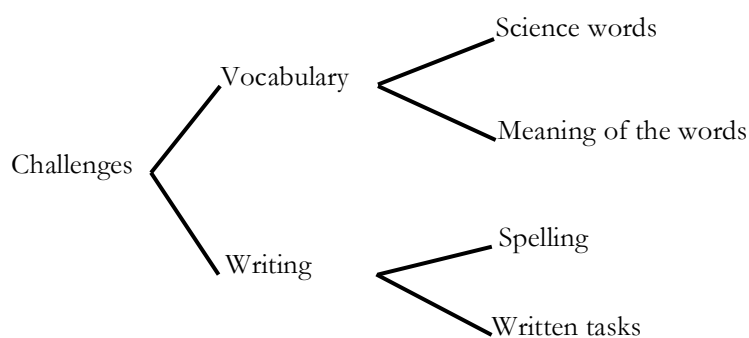

Figure 1: Challenges learners with EAL face when studying science

When asked about what kinds of support they were provided with by teachers and the school, participants identified several things which included one-to-one sessions, dictionaries and vocabulary lists, mainly agreeing that teachers encouraged them to read. Participants also highlighted that particular subjects, examples of which included maths, science and physical education (PE), were perceived to be easier to study; in contrast, English was regarded as a harder subject because of the expectation that students would engage in more writing activities:

Interviewer:	What subject are you good at?
Participant 5:	… PE as well.
Interviewer:	Why?
Participant 5:	Because, you don't have to write a lot in PE.
Participant 4:	Maths, because it is like exploring problems and finding ways to solve [them] …
Participant 1:	I don't have a favourite subject. French, it is really easy. I don't like English; I don't like writing.

It became clear from the focus group interview that writing continues to be one of the predominant challenges that learners with EAL encounter; this was also recognised by the teachers who were individually interviewed at Stage three (see below). Finally, when the focus group participants were asked whose help they sought when they had language problems, four of the six participants said that they asked for the help of their peers, with only a couple of participants mentioning either their teachers or their parents.

Stage three: Individuals interviews

Key questions that were asked during the individual interviews (Appendix 2) involving teachers and members of the SMT focused on the following:

1. The typical challenges that learners with EAL and teachers faced as part of the learning and teaching process;
2. The types of support provided for learners with EAL by teachers and the school in general;
3. Improvements or suggestions that could be made to enable teachers to provide more effective support for learners with EAL; and
4. The extent to which support is provided for learners with EAL and teachers by the SMT.

According to the teachers, the typical challenges that learners with EAL face include dealing with (scientific) words, writing skills, general vocabulary, and understanding written tasks. This is exemplified by the SMT science teacher:

> …. then you come in with a subject, this is … technical sciences with archaic nomenclature, because a lot of even English-speaking students find the Latin structure of science words quite complicated and when they start to understand the structures and roots, prefixes and suffixes, and their links to some Latin, particularly with human biology and anatomy, then it starts to make a lot of sense, but for students, when they come across this for the first time, it is very challenging. (SMT 1)

When discussing the types of support that were provided for learners with EAL by teachers and the school, a wealth of strategies was identified - these have been organised into three distinct but interconnected categories, as presented in Figure 2.
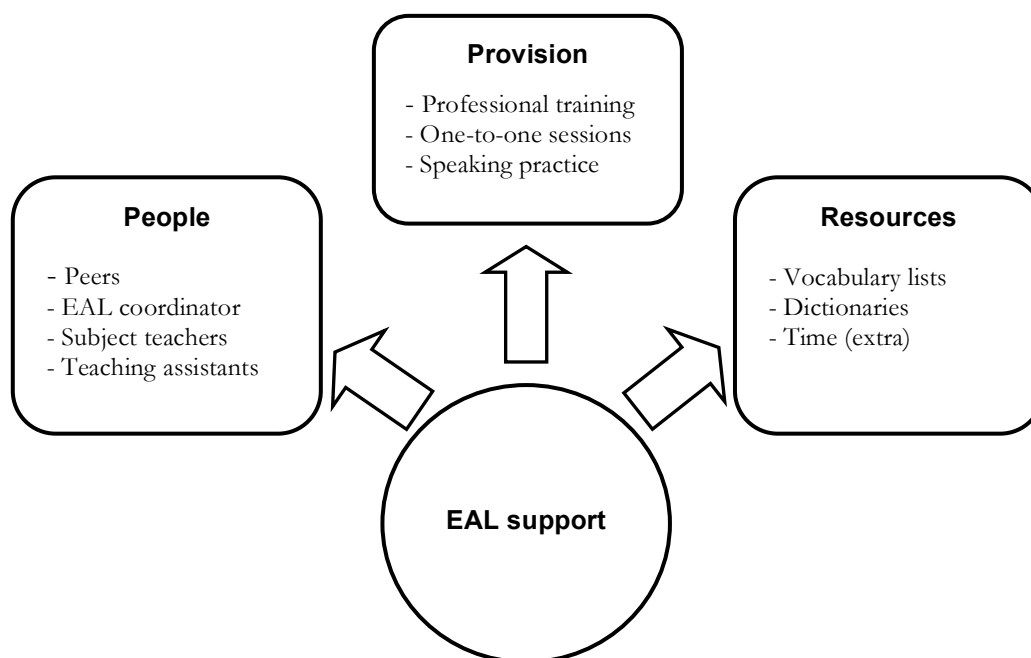
Figure 2: Types of support for learners with EAL
in learning and teaching linked to science

This suite of strategies was supported by the SMT language teacher who stated that:

> … basically, I normally give a list that I've got - a list of strategies that I would probably give to the teacher or the department and they'll have to use it ... Because it is really good and useful…, I mean, going into one or a couple of lessons is not going to fix the problem. It has to be quite consistent in terms of what we do. (SMT 2)

Some specific techniques like modelling, sentence starters, and providing a scaffold or framework were also suggested by the SMT language teacher as being effective for supporting learners with EAL; this is in comparison to the science teacher who suggested that learners with EAL responded well to pictures during their science classes:

> … pictures and visuals, it is really a bit weird in science, if you [inaudible] we can obviously get so far when we deal with quite abstract concepts, but it does speak a thousand words. It is useful for kids if they are English speakers, you mean it is more useful if your English is not your first language. And it goes some way to explain what you are doing and why you are doing it. (Teacher 1)

As for the support offered for learners with EAL by the SMT and the school in general, the subject teachers highlighted that the TAs and the EAL coordinator were essential for facilitating quality EAL provision. However, it was acknowledged that this provision was dependant on government reforms as sometimes funding could be limited for EAL support in the school.

Discussion

Based on the findings from this research, we recognise that learners with EAL face a number of key challenges in learning science through the medium of English. Vocabulary was consistently acknowledged by both learners and teaching staff as one of the most frequently encountered challenges that learners with EAL face. Wellington (2002) recognised this, highlighting the complex nature of science words regardless of learners having EAL or having English as a native language. This emphasises the idea that the learning and teaching of vocabulary needs to be prioritised in relation to EAL provision, as it is complex and needs to be tailored to the learner's level of capability. Moreover, Hutchinson, Whiteley and Smith (2003, cited in Robinson, 2005) stated that the vocabulary knowledge of learners with EAL tends to be significantly lower than that of non-EAL learners, which makes learning even more challenging for them in mainstream classrooms. We argue that this issue can be positively addressed by embracing Wellington's (2002) suggestion of dividing the scientific words into various types of categories, e.g. naming words, process words, concept words, and subject specific words. By doing this, science teachers can become more aware of the language they use in classrooms. Similarly, during the data collection period the lead author was shown a range of adapted online teaching materials by staff members who suggested that these served as a valuable source of ideas that were all linked to vocabulary, writing and reading, and that were specifically designed for learners with EAL. These resources are considered to be of crucial importance in today's climate, given that schools are providing their services online due to the Covid-19 pandemic.

Interviews with the science teacher and the SMT science lead offered clear ideas about effective practices associated with vocabulary and writing for learners with EAL. These included adapting the teaching materials in accordance with the individual needs of learners with EAL, and sometimes allowing usage of the student's first language while describing specific terms in order to compare them with the English equivalent. Our findings highlight the importance of positive cooperation between the EAL coordinator and class teachers in responding to the needs of learners with EAL, either by providing one-to-one sessions or offering them individualised support *during* their science lessons wherever possible.

Another important challenge that learners with EAL face is writing and this was confirmed both by the responses of learners with EAL (Stage 2) and the teaching/SMT staff (Stage 3). In most cases the spelling of words and the understanding of written tasks were the most common challenges that learners with EAL encountered. Our findings suggest that the challenge of writing may demotivate learners, as is the case of one student (Participant 1) who did not regard English favourably as a subject. To combat this, Wellington (2002) proposed that teachers do not correct learners' written errors, instead suggesting that these are identified and discussed during a face-to-face meeting, providing written feedback 'after-the-event'. Of interest is Wellington's (2002, p.168) efforts to get science teachers to rethink the whole notion of writing by asking the question 'Why

write?', offering useful tips on 'writing good material', 'watching your language', and 'having a checklist in order to getting it right' first time.

Moreover, Cameron and Besser (2004) suggested a number of important recommendations, suggesting that schools need to ensure that learners with EAL have extensive opportunities to encounter and work with a range of genres of written English, e.g. fiction, non-fiction and poetry. Learners with EAL can also be helped by teachers offering them set phrases linked to a key focus that can be used across the curriculum, e.g. multiword units, lexical strings, fixed phrases and structured sequences. The key consideration here is that the phrases offered should be whole units rather than just individual words, e.g. learners need to meet terms, phrases and sentences in a range of texts and contexts in order to fully understand them and appreciate how to use them, both orally and in written form.

Our data reveals that the writing challenges learners with EAL face can be managed with either some special support provided by professionals in the classroom, e.g. teachers or teaching assistants, or by allowing learners with EAL extra time to complete the writing tasks set. This is an important finding as the same writing challenges described above are known to exist in other countries such as Kazakhstan where the tri-lingual educational policy is currently being implemented (MoES, 2015). However, professionals in Kazakhstani classrooms have great difficulty in finding professional online sources of information to help them positively address the issues of vocabulary and writing that have been highlighted in the English context. With this in mind, we feel that the general findings from this study could serve as a useful base for an exploratory study in Kazakhstani schools given that the secondary school system is currently undergoing a huge reform in terms of the updated curriculum and a tri-lingual system of education (MoES, 2017).

Concluding comments

This paper set out to explore the provision for learners with EAL in a secondary school in England, focusing on the challenges that learners with EAL face when learning science, and the support that is provided by teaching staff and the SMT in the school. We recognise that there is not a common policy for EAL provision in all schools (Foley, Sangster & Anderson, 2013; Cummins & Persad, 2014); this means that schools have some autonomy over their EAL provision in response to the number of learners with EAL that they have and the amount of funding they have available to support them (this is due to the fact that the ring-fencing of budgets for languages no longer exists in the current national policy (Leung, 2010). In England, on the other hand, an increasing number of migrants and refugees to the UK continue to create a professional challenge for schools, especially in relation to EAL provision (McEachron & Bhatti, 2005; Moskal & North, 2017).

Findings from our data highlight two key areas which we have categorised as 'challenges' that learners with EAL face during their studies, and the 'support' that can and should be

provided by professionals and schools as part of their EAL provision. Participants at all levels, including learners with EAL, subject teachers and the SMT recognised that the main challenges in EAL provision related to vocabulary and writing. We recognise that vocabulary and writing are explicitly and frequently used in the education process, serving as an essential part of the academic language (both verbal and written) for learning. If we reflect on the challenges faced by learners with EAL and the support offered for EAL provision, we can see that these challenges have, to a large extent, been positively targeted by the provisions offered by the school. However, we feel that the characteristics of quality in terms of school support for effective EAL provision needs to be a focus for further study and discussion (see Schneider & Arnot, 2017; Badock & Birdi, 2017; Demie, 2018).

This paper has enabled us to examine practices for EAL provision in an English context and has acknowledged, as a possible outcome, opportunities for its transfer to international contexts such as Kazakhstan in support of the successful implementation of its tri-lingual education policy. This is important as an analysis of sources on tri-lingual education in Kazakhstan (Mazhitaeva, Balmagambetova & Khan, 2012; Aliyeva, Kumpeyssova & Tleuzhanova, 2013; Gaipov, Yaylaci, Cig & Guvercin, 2013; Polatova, Lekerova, Kistaubaeva, Zhanaliyeva & Kalzhanova, 2020) shows that the vast majority of these studies are dedicated to theoretical aspects, cultural perceptions, and beliefs and attitudes towards multilingualism and tri-lingual education, as opposed to empirical studies relating to classroom practice. With this in mind, we believe this research will provide a sound foundation for us to conduct new research on the implementation of tri-lingual education in secondary school contexts in Kazakhstan.

We subsequently argue that policymakers and professionals in Kazakhstan need to carefully think about the educational needs of learners with EAL in relation to the amount and nature of support that they receive, along with the resources they offer learners as part of the tri-lingual educational system. In addition, we believe that there is some merit in advocated pedagogical practices from this study being embraced and adapted in international contexts to help learners study science subjects more effectively through the medium of English.

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Appendix 1: Semi-structured interview questions for learners with EAL

1. What is the best way for you to learn English? Why?
2. What kind of difficulties have you encountered in learning English?
3. How does your English teacher help you to learn English?
4. How does your science teacher help you learn English and science?
5. Who do you ask for help if something is not clear during the lessons in English and science? Why?

Appendix 2: Semi-structured interview questions for individuals

1. What type of difficulties do you think non-native students have in studying English and science?
   - What is the most difficult thing for them? Why?
2. How do you help non-native students to learn English and science if they have language barriers? Why?
3. What do you think is the most effective way of supporting students with EAL to study English and science? Why?
4. In what ways does the Senior Management Team support you to help non-native students study English and science?
5. How do you work with the English and science teachers in order to help the non-native students in these subjects?
6. Do you think non-native students should study English and science in their first language when needed? Why/not?
7. How is your work load flexible in terms of the number of learners with EAL you have to support? Why?

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