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Article

Primary School Pupils' Use of Verb Collocations in Science Assessment: Patterns of Linguistic Behaviour by Language Background Factor

xxx[1], xxx[2]

[1] xxxx 1; xxxxx
[2] xxxxx 2; xxxx
* Correspondence: xxxxx

Abstract: This article explores patterns of linguistic behaviour and challenges associated with low(er) linguistic competences in primary school learners in subject specific areas of the curriculum. The study draws on science test data, specifically on two assessment tasks, collected from 208 primary school students, aged between 9 and 11 years (Key Stages 5 and 6 of the statutory framework for learning in England). Population sample is comprised of learners from 6 state primary schools in Yorkshire and Humber Region, UK. Some of the learners speak English as their mother tongue while others speak English as their second or third language. Learner test data was analysed in order to answer the following research questions: 1) What verb collocations do learners use when demonstrating their content knowledge on the topic of 'separating solids and liquids' in Science? 2) Do English language learners (ELLs) and English native speaking learners (ENSs) use verb collocations differently? If so, what is the nature of these differences? The results revealed differences between linguistic performances in the two groups of learners. ENSs tended to produce natural collocations with motion verbs. ELLS, however, faced challenges in producing idiomatic language. They also encountered more difficulties than ENSs in understanding assessment tasks' instructions and/or in reporting subject-specific knowledge in response to the assessment tasks.

Keywords: verb collocations; content-area assessment; English language learners; primary education; Science

1. Introduction

In recent years, the use of collocations by learners who are relatively proficient in the target language in EFL and ESL classrooms has been extensively investigated by scholars [1, 2, 3, 4, 5]. However, scholarly work that investigates use of collocations by second language learners whose second language proficiency is still developing, in other instructional settings, such as immersion, minority or CLIL, is still relatively scarce but is steadily gaining momentum [6, 7]. To date, these studies had been largely focusing on examination of language use by adolescent or adult learners, rather than by young learners [8, 9]. This study aims to investigate the use of verb collocations by primary school children in the context of minority education setting, whose second language proficiency is still developing. It also aims to compare use of verb collocations by English language learners (ELLs) and English native speaking learners (ENSs).

In England, English language learners are known as 'EAL' – English as an additional language users. According to the most recent educational census data [10], in 2023 the population of EAL learners in national schools in England had reached over 1.7 million. This number represents 22% of pupils in primary state funded schools and 18.1% of pupils in secondary state funded schools [10]. According to the National Association for Language Development in the Curriculum (NALDIC), EAL learners are similar in most

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characteristics to their English native speaking peers, however they may struggle with understanding and expressing themselves in English, which can hinder their academic progress. These communication difficulties can affect their ability to comprehend lessons' content, participate in class discussions, and complete assignments effectively. [11] (p. 641) analysed EAL learner attainment data on National Tests at the end of Key Stage 2 (SATs) and Key Stage 3 (GCSE) by the new national EAL proficiency stages in England [12] and found that 'the percentage of EALs attaining expected outcomes or above at KS2 and GCSE increased as stage of proficiency in English increased'. The author also reported that 'EALs in the early stages of English proficiency performed at low levels, while the achievement of EAL pupils who were fully fluent in English far outstripped that of pupils for whom English was their only language' (ibid). Similar findings were reported by other scholars researching second language medium instructed contexts, such as [13, 14, 15]. The role of language in the process of acquisition of subject-specific content in instructional settings cannot be undervalued. Research on language acquisition in children suggests that acquiring verbs can be more challenging than acquiring nouns [16]. The complexity of verb argument structure, grammatical inflections, and their diverse usage in different contexts might contribute to this difficulty.

[17] (p. 5), drawing on the growing body of research into language and literacy development across the curriculum [18, 19, 20], asserts that "explicit attention to language can accelerate [learners'] development of subject literacies as part of mainstream curricular practices". The scholar further states that "paying explicit attention to the linguistic patterns and structures through which subject knowledge is realised […] can be of benefit to all [learners] regardless of their linguistic backgrounds" (ibid: 3). Furthermore, official educational documentation highlights that: "pupils' acquisition and command of vocabulary are key to their learning and progress across the whole curriculum" [21] (p. 11). With regards to the Science curriculum specifically, National Curriculum in England states "the quality and variety of language that pupils hear and speak are key factors in developing their scientific vocabulary and articulating scientific concepts clearly and precisely" [21] (p. 169).

This article investigates the patterns of language use and difficulties associated with accurate language use by English language learners with lower levels of English language proficiency in primary schools in science area of the curriculum. More specifically it focuses on the analysis of learners' linguistic performance in two science assessment tasks. The study also aims to unpack discrepancies in ENS and ELLs learners' linguistic behaviour on this topic. More specifically, the study aims to answer the following research questions:

1. What verb collocations do learners use when demonstrating their content knowledge on the topic of 'separating solids and liquids' in Science?

2. Do English language learners and English native speaking learners use verb collocations differently? If so, what is the nature of these differences?

The paper is organized in the following way: section 2 presents the methodological aspects of the study, including information about the study's materials and methods, design framework and participants' details; section 3 presents the study's main findings; section 4 discusses the findings in light of existing research and outlines the study's limitations, and finally, section 5 closes the paper with some concluding remarks.

2. Materials and Methods

This study investigates the use of verb collocations by ELLs and ENSs in formal assessment tasks at Key Stage 2 (Years 5-6, ages 9-11) of England's National Curriculum for Science. Learner test performance data on 'separating solids and liquids' topic was collected from 209 primary school students aged 9 to 11 years (Years 5 and 6, Key Stage 2, of

the statutory framework for learning in England). from 6 state primary schools in the Yorkshire and Humber Region, UK. The data was analysed quantitatively using the SPSS software package.

This study forms a part of a larger classroom-based mixed-methods research project (EAL-Science Project, 2013-2015 & 2018-2019) that was conducted in six state primary schools over a period of two years in Yorkshire region, and over a period of one year in the Lancashire region. The schools had varying densities of ELLs, ranging from 17% to 96%, and represented children from various ethnic, social and economic backgrounds. The schools were selected on the recommendation of senior EAL consultants from the Local City Councils. The target classes in these schools were selected by the schools' headteachers on the basis of teachers' willingness to take part in the research. The study received full ethical approval from the educational authorities under which it was conducted, namely the University of Sheffield and Lancaster University, prior to its implementation. Due to the young age of its participants (under 18 years), informed consent for participation in the study was sought from their parents or guardians. Where consent was granted, children were additionally consulted about their willingness to participate in the study. Where children expressed a preference for not participating in the study, their requests were granted. Children and parents were aware that they could withdraw from the study at any point without giving an explanation for their decision.

2.1. Study design and participants

As was mentioned above, this study is a part of a larger research project, which is comprised of qualitative (classroom observation, teacher and learner interview) and quantitative (learner test, learner, teacher and parent questionnaire) data samples. Only learner test performance data is reported in this study as it forms its sole focus. In the main study (not reported here), learners were invited to complete several science assessment tasks at the end of the year, appropriate to their educational phase. The maximum number of tasks that learners completed as part of the main study was 20 (in Year 5) and the minimum was 8 (in Year 3). Of interest to this particular study is learner performance data from Years 5 and 6 on two specific science tasks (5c and 5d, see Figure 1) that required learner-initiated active use of language (at phrase or sentence level) in response to the assessment task. Figure 1 details the number of science tasks that learners engaged with, their thematic areas and distribution of tasks across year groups.

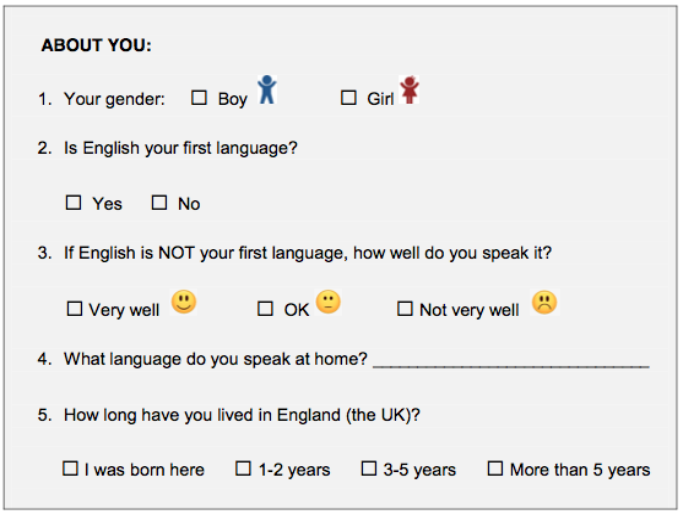
Figure 1. Learner language. An overview of the composition of science assessment tasks by year group used in the main study.

Year Group	Year 3								Year 4				Year 5				Year 6							
					Year 6																			
Time	10 minutes								20 minutes				25 minutes				25 minutes							
Topic	Teeth and eating				Growing plants				Magnets				Habitats and Food chain				Separating solids and liquids				Changing state			
Taught in	Y3 topic				Y3 topic				Y3 topic				Y4 topic				Y4 topic				Y5 topic			
Question No	1a	1b	1c	1d	2a	2b	2c	2d	3a	3b	3c	3d	4a	4b	4c	4d	5a	5b	5c	5d	6a	6b	6c	6d

Year Group	Year 5				Year 6																			
Time	25 minutes				25 minutes																			
Topic	Changing sounds				Changing circuits																			
Taught in	Y5 topic				Y6 topic																			
Question No	7a	7b	7c	7d	8a	8b	8c	8d																

In order to differentiate between ELLs and ENSs we collected data on learners' language background. In doing so we relied on learner self-reported data. To collect the language background data, we invited learners to complete a short questionnaire which was attached to the first page of their assessment booklets (see Figure 2). Once the data was collected, we classed it into two categories according to whether English was perceived to be learners' first language or not. These were: (i) 'English Native Speaker', which included all cases where learners self-reported speaking English as their first language; (ii) 'English Language Learner', for the cases where learners self-reported speaking English as their second or third language or where learners reported routinely speaking more than one language at home.

Figure 2. Learner language background and self-assessment questionnaire.



Participants' characteristics by their first language variable are shown in Table 1.

The study sample comprised 208 schoolchildren: 104 (49.8%) males and 105 (50.2%) females, thus ensuring gender balance. 112 were ENS whereas 97 were ELL. 98 of learners were from Year 5 and 111 from Year 6. The number of participants from each school varied significantly based on the criteria described above, with a varied proportion between na-tive and non-native learners.

Table 1. Distribution of ELL and ENS learners by gender, school-year, and school. Data are shown as frequency and percentage.

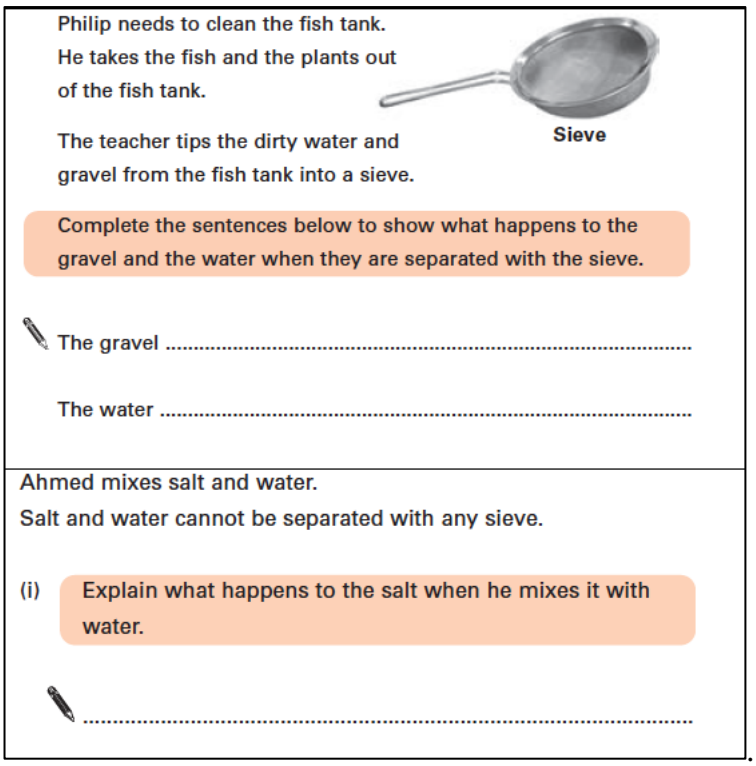
	Overall (n=208)	**ENS (n=112)**	**ELL (n=97)**
Gender			
Female	105 (50.2)	55 (49.1)	50 (51.5)
Male	104 (49.8)	57 (50.9)	47 (48.5)
School-year			
Year 5	98 (46.9)	44 (39.3)	54 (55.7)
Year 6	111 (53.1)	68 (60.7)	43 (44.3)
Schools			
School 1	28 (13.4)	19 (17.0)	9 (9.3)
School 2	27 (12.9)	21 (18.8)	6 (6.2)
School 3	29 (13.9)	29 (25.6)	-

School 4	49 (23.4)	16 (14.3)	33 (34.0)
School 5	35 (16.7)	16 (14.3)	19 (19.6)
School 6	41 (19.6)	11 (9.8)	30 (30.9)

2.2. Study variables

The assessment tasks were taken from the 2003–2011 National Curriculum assessment papers [17]. More specifically, for the analysis of learners' use of verb collocations in response to the assessment tasks, two tasks were analysed based on the following: (1) the focus of the assessment tasks had to be on the topic of 'separating solids and liquids' -a key topic area of the national curriculum for science at KS2, and (2) the assessment tasks had to require active production of written language on the side of the learner (see questions in Figure 3):

Figure 3. Questions of the assessment tasks.

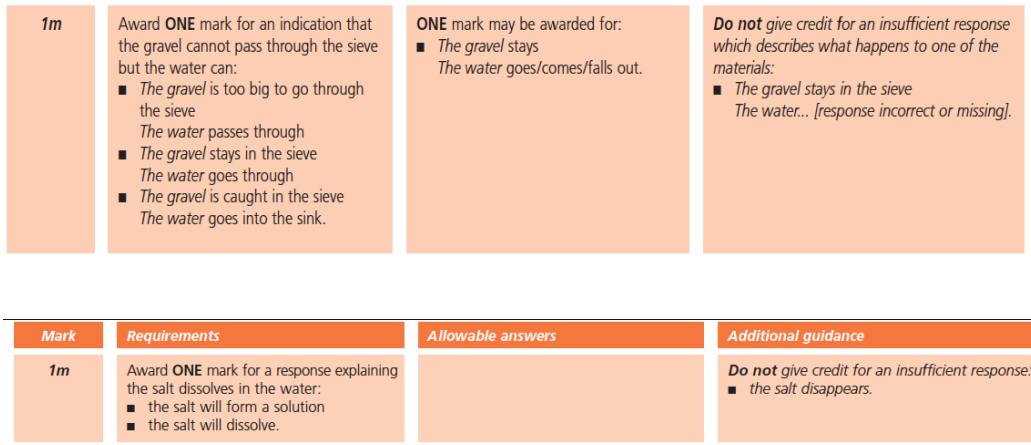


By active language production we understand "the creation of spontaneous responses [oral or written] and appropriate meaning making [by learners] in learning tasks and assessment questions" [23] (p. 6) as opposed to their "passive reproduction of language [which is often realised by means of mere] incorporation or transferring of provided linguistic models into responses" (p. 7). The following types of assessment tasks belong to the active language production group: 1) "Name", 2) "Explain", 3) "Name and Explain", and 4) "Describe" (see [24] for comprehensive definitions of these types of assessment tasks and their specific examples).

Eligible language data on verb collocations was extracted from learner written responses to the target assessment tasks. More specifically, in the first assessment task, (see Figure 2) we analysed the verbs that learners used with the nouns 'gravel' and 'water' to convey the meaning of movement or non-movement. For example, when a learner wrote "the gravel stays in the sieve and the water goes through the hole", 'stay' was taken as a verb collocation of 'gravel' and 'go through' as the verb collocation for 'water'. In the second assessment task, we analyzed the verbs they used in combination with the noun 'salt'

to express phenomenon of salt being dissolved in water. Some examples were "the salt dissolves in the water", "the salt disappears". For the purposes of this research the factual correctness of learner response was irrelevant. What was important was the type of language that learners used to produce their response. In other words, although 'disappear' does not collocate with 'salt' here to convey the meaning, it was taken into account for the analysis to reflect what learners said. Figure 4 shows the evaluation rubrics for the first and the second assessment task.

Figure 4. Evaluation rubrics.



1m	Award **ONE** mark for an indication that the gravel cannot pass through the sieve but the water can: ■ *The gravel* is too big to go through the sieve *The water* passes through ■ *The gravel* stays in the sieve *The water* goes through ■ *The gravel* is caught in the sieve *The water* goes into the sink.	**ONE** mark may be awarded for: ■ *The gravel* stays *The water* goes/comes/falls out.	***Do not*** *give credit for an insufficient response which describes what happens to one of the materials:* ■ *The gravel stays in the sieve* *The water... [response incorrect or missing].*

Mark	Requirements	Allowable answers	Additional guidance
1m	Award **ONE** mark for a response explaining the salt dissolves in the water: ■ the salt will form a solution ■ the salt will dissolve.		***Do not*** *give credit for an insufficient response:* ■ *the salt disappears.*

3. Results

This section presents the analysis of verbal collocations used by ENSs and ELLs with the nouns 'gravel' and 'water' to express the phenomenon of non/movement, and the verbal collocations with the noun 'salt' to convey the phenomenon of salt being dissolved in water (see Figure 3). In addition to examining learners' responses that included use of verb collocations we also considered responses where (a) learners did not provide an answer to the question (black responses), (b) provided a response that was unrelated to the question asked, or (c) provided an illegible response to the question.

The data were analyzed using Statistical package for Social Scientists (SPSS) Version 25.0. The data were presented as frequencies and percentages for all categorical variables. To compare the two groups (ENSs and ELLs), we used χ^2. Probabilities exceeding 95% (alpha p values < 0.05) were used as the threshold cut-off for statistical significance.

The data were firstly analysed by assessment task, and then within each assessment task by learner language background variable. Tables 2, 3 and 4 present the following information (left to right): (i) the verb collocations used along with the category 'blank' and 'illegible/others', in descending order of frequency; (ii) the total number of learners who opted for each verbal collocation (both ENSs and ELLs); (iii) the specific number of ENSs and of ELLs that used each verbal collocation; (iv) the *p* value. Data in the tables is shown as frequency and percentages. When presenting learner data in the analysis tables, we used the following conventions. All instances where verbs were misspelt or used incorrectly in terms of syntax were included followed by an asterisk.

3.1. Verb collocations with 'gravel' by language variable

Table 2 presents frequency and percentage of verb collocations with the noun 'gravel' to express the phenomenon of non/movement, produced by 97 ELLs and 112 ENSs in the first assessment task. The results are ordered by frequency, in alphabetical order. The findings reveal that there are significant differences between ELLs and ENSs language use (p

= 0.001). More specifically, 75 learners out of 209 left the answer blank. Out of them, 49 (50.5 %) were ELLs and 26 (23.2 %) were ENS. Leaving the answer blank was the most common patrern of behaviour among ELLs, with more than half of them displaying it. The majority of ENSs used collocation 'stay in' (42.9%) as in 'the gravel stays in the sieve'. Only 18.6% of ELLs used the collocation 'stay in'. Number of illegible responses as well as responses with no or with irrelevant anwers were similar for ENS and ELLs (16.1% ENS and 18.6 ELLs). Other collocations used by both groups of learners were 'go through' (4.5% ENS vs. 4.1% ELLs), 'get stuck' (4.5.% ENS vs. 2.1% ELLs), 'stay inside' (3.6% ENS and no instances by ELLs), 'stay on*' (4.1% ELLs vs 0%ENSs). It is worth noting that the preposition 'on' used with the verb 'stay' seems not to be idiomatic in this context. Other less frequent responses provided by ENSs (0.9%) but not by ELLs (apart from 'go on*') were 'be left', 'be stuck', 'get caught', 'get separated from', 'go on*','move', 'stay into', 'travel through'.

A noticeable difference between the two groups becomes apparent when we look at learners' use of prepositions to convey the meaning of non/movement when combined with the noun 'gravel'. The data shows that ENSs did not experience difficulties in choosing correct prepositions for specific verbs, whereas ELLs did have problems, as is evidenced in ELLs use of such phrases as 'go on' ('the gravel goes on the sieve', 1%) or 'stay on' ('the gravel stays on the sieve', 4.1%).

Table 2. Verb collocations with 'gravel'. Data are shown as frequency and percentage.

	Collocations with 'gravel'			
	Overall	**ENS**	**ELLs**	**P value**
blank	75 (35.9)	26 (23.2)	49 (50.5)	0.001
stay in	66 (31.6)	48 (42.9)	18 (18.6)	
non sense/others	36 (17.2)	18 (16.1)	18 (18.6)	
go through	9 (4.3)	5 (4.5)	4 (4.1)	
get stuck	7 (3.3)	5 (4.5)	2 (2.1)	
stay inside	4 (1.9)	4 (3.6)	-	
stay on*	4 (1.9)	-	4 (4.1)	
be left	1 (0.5)	-	1 (1.0)	
be stuck	1 (0.5)	1 (0.9)	-	
get caught	1 (0.5)	1 (0.9)	-	
get separated from	1 (0.5)	1 (0.9)	-	
go on*	1 (0.5)	-	1 (1.0)	
move	1 (0.5)	1 (0.9)	-	
stay into	1 (0.5)	1 (0.9)	-	
travel through	1 (0.5)	1 (0.9)	-	

With regards to the collocations used by learners in combination with the noun 'water' to explain what will happen when it is separated from the gravel with the help of a sieve (see Figure 3), it can be observed from Table 3 that there was some difference in ENSs' and ELLs' use of verb collocations in this assessment task (p=0.056). Among ELLs, the most frequent response type was leaving the response blank (50.5% ELLs vs 22.3% ENSs). ENSs more frequently opted for the verb 'go through' producing such sentences as 'the water goes through the sieve,' which is a common idiomatic expression (31.3% ENS vs 17.5% ELLs). There was a similar percentage of responses between ELLs and ENSs who offered an illegible response to the assessment task or those who produced responses

unrelated to the assessment task (14.3% ENSs vs 18.6% ELLs). Other idiomatic expressions used by both groups of learners were 'pour out of' (4.5% ENSs and 3.1% ELLs); 'drain out of' (4.5% vs. 1.0%); 'go out of' (2.7% of ENSs and 2.1% of ELLs); 'come out of', 'drain through', 'fall through', and 'flow out' (1.8% ENSs vs. 1.0% ELLs); 'stay in' (2.7% ENSs and 0% ELLs), and 'travel through' (1.8% ENSs and 0% ELLs). A significant difference that can be derived from this finding is that ENSs appear to use a greater variety of verb+noun combinations with different prepositions. For example, idiomatic collocations such as 'disappear through', 'drain away', 'drain from', 'dribble out', 'escape', 'fall out of', 'fit through', 'get separated from', 'move', and 'run out of' were used exclusively by ENSs. Language variations used by ELLs only were 'leave', 'part out', and 'run through'.

Table 3. Verb collocations with 'water'. Data are shown as frequency and percentage.

	Collocations with 'water'			
	Overall	**ENS**	**Non ENS**	**P value**
blank	74 (35.4)	25 (22.3)	49 (50.5)	0.056
go through	52 (24.9)	35 (31.3)	17 (17.5)	
nonsense/others	34 (16.3)	16 (14.3)	18 (18.6)	
pour out of	8 (3.8)	5 (4.5)	3 (3.1)	
drain out of	6 (2.9)	5 (4.5)	1 (1.0)	
go out of	5 (2.4)	3 (2.7)	2 (2.1)	
come out of	3 (1.4)	2 (1.8)	1 (1.0)	
drain through	3 (1.4)	2 (1.8)	1 (1.0)	
fall through	3 (1.4)	2 (1.8)	1 (1.0)	
flow out	3 (1.4)	2 (1.8)	1 (1.0)	
stay in	3 (1.4)	3 (2.7)	-	
travel through	2 (1.0)	2 (1.8)	-	
disappear through	1 (0.5)	1 (0.9)	-	
drain away	1 (0.5)	1 (0.9)	-	
drain from	1 (0.5)	1 (0.9)	-	
dribble out	1 (0.5)	1 (0.9)	-	
escape	1 (0.5)	1 (0.9)	-	
fall out of	1 (0.5)	1 (0.9)	-	
fit through	1 (0.5)	1 (0.9)	-	
get separated from	1 (0.5)	1 (0.9)	-	
leave	1 (0.5)	-	1 (1.0)	
move	1 (0.5)	1 (0.9)	-	
part out	1 (0.5)	-	1 (1.0)	
run out of	1 (0.5)	1 (0.9)	-	
run through	1 (0.5)	-	1 (1.0)	

Finally, with regards to responses produced by both groups of learners in response to the second assessment task, (see Figure 3) a significant difference was observed (p = 0.036). The standard response options expected for this type of task would typically involve production of such common collocations as 'the salt dissolves in the water' or 'a solution is formed.' Table 3 shows that, once again, leaving the response space blank was the most preferred option among ELLs (40.2% ELLs vs 19.6% ENSs). The most frequent

response option among ENSs was 'disolve' (22.3% ENS vs 8.2 ELLs). Table 3 also presents all instances of learners' use of the word 'dissolve', even those where the word was misspelt: 'disolve', 'desolve' 'dissvolwe' and 'dizolve'. When percentages of all instances of the word 'dissolve' usage are summed up, we observe that 42.9% of ENSs and 21.6% of ELLs chose the correct collocation. However, only 15.2% of ENSs and 10.3% ELLs spelt it correctly.

Responses that were illegible or had no relevance to the question accounted for 14.3% for ENSs and 10.6% for ELLs. Other scientifically incorrect responses included the use of the words 'evaporate' (although salt can indeed evaporate and it is an idiomatic collocation, it did not fit within the purpose of the assessment task), 'melt', 'disintegrate', 'disappear', 'mix in', 'turn salty water', 'become salt water', 'fizzes up', 'go salty', 'get salty' or 'go fizzy'.

Table 4. Verb collocations with 'salt'. Data are shown as frequency and percentage.

	Collocations with 'salt'			
	Overall	**ENS**	**Non ENS**	**P value**
blank	61 (29.2)	22 (19.6)	39 (40.2)	0.036
no sense	35 (16.7)	16 (14.3)	19 (19.6)	
disolve	33 (15.8)	25 (22.3)	8 (8.2)	
dissolve	27 (12.9)	17 (15.2)	10 (10.3)	
disappear*	10 (4.8)	6 (5.4)	4 (4.1)	
desolve	7 (3.3)	5 (4.5)	2 (2.1)	
evaporate*	6 (2.9)	5 (4.5)	1 (1.0)	
became salt water*	5 (2.4)	4 (3.6)	1 (1.0)	
mix in with/mix with water*	5 (2.4)	3 (2.7)	2 (2.1)	
turn salty / turn to salt water*	5 (2.4)	2 (1.8)	3 (3.1)	
get salty	3 (1.4)	1 (0.9)	2 (2.1)	
fizz up/ fizz*	3 (1.4)	1 (0.9)	2 (2.1)	
melt*	2 (1.0)	1 (0.9)	1 (1.0)	
disintegrate*	2 (1.0)	2 (1.8)	-	
go fizzy*	2 (1.0)	-	2 (2.1)	
dissvolwe*	1 (0.5)	-	1 (1.0)	
dizolve*	1 (0.5)	1 (0.9)	-	
go salty*	1 (0.5)	1 (0.9)	-	

4. Discussion

The analysis of the data revealed that for the two assessed tasks on the topic of 'separating solids and liquids' there were significant differences between ELLs' and ENSs' use of idiomatic verbal collocations. Firstly, it is worth noting the most striking fact, which was the remarkably high percentage of ELLs who left all three responses blank: 50.5% for the first two questions and 40.2% for the third. This percentage was significantly lower for ENSs (23.2%, 23.2%, and 19.6% respectively). According to [25] weak collocational knowledge may impact on reading decoding, being reading a key area of difficulty for ELL children. In other words, while, generally speaking, ELL children catch up with

monolingual peers by late adolescence, their reading is often weaker than other academic skills such as Maths [26].

Moreover, ENSs tended to use a wider range of idiomatic collocations than ELLs. In line with [27] the limited exposure of the ELL children usually impacts on their collocational knowledge. When the percentage of ENSs who left the question blank or provided an illegible response was excluded from the analysis, we observed that for the first part of the first assessment task (explaining what happens to the gravel when it is separated from the water with a sieve), 60.7% of ENSs used an appropriate collocation (23.2% left blank, and 16.1% provided illegible responses). 'Stay in' was the most commonly used verbal collocation by ENSs. For the same assessment task, only 25.8% of ELLs used an appropriate idiomatic collocation (50.5% left blank, 18.6% provided illegible responses, and 5.1% provided incorrect collocations). 'Stay in' was also the most commonly used verbal collocation by ELLs. For the second part of the first assessment task (explaining what happens to the water when it is separated from the gravel with a sieve), 63.7% ENSs provided an appropriate collocation (22.3% left blank, and 14.5% provided illegible responses). 'Go through' was the most commonly used verbal collocation by ENSs. However, only 30.9% of ELLs provided semantically appropriate collocations (50.5% left blank, and 18.6% provided illegible responses). Again, 'go through' was the most commonly used verbal collocation by ELLs.

For the second assessment task (explaining what happens to the salt when Ahmed mixes it with water), we observed that twice as many ENSs used an appropriate collocation compared to ELLs (42.9% ENSs vs 21.6% ELLs). These responses included all uses of the word 'dissolve', including misspellings, but excluding response options that did not fit semantically into the requirements of the assessment task.

Probably unsurprisingly, ENSs produced a wider range of appropriate collocations when answering the assessment tasks. Specifically, for the first part of the first assessment task (i.e., the 'gravel' section), ENSs used such collocations as 'stay inside', 'be stuck', 'get caught', 'get separated from', 'stay into' or 'travel through'; and for the second part of the first assessment task (i.e, the 'water' section), they used collocations such as 'disappear through', 'drain away', 'drain from', 'dribble out', 'escape', 'fall out of', 'fit through', 'get separated from', 'move', and 'run out of'. None of these collocations were used by ELLs. Research on children's language development suggests that native-speaking children generally show a higher proficiency in producing idiomatic collocations compared to their non-native speaking peers; this lexical and semantic advantage in native speakers is due to the natural and immersive exposure to the language from birth, which allows them to internalize and use idiomatic expressions more effortlessly [24].

Finally, findings of our study also revealed that ELLs, unlike ENSs, had additional difficulties with correct usage of prepositions with specific verbs. Several studies explored the discrepancies in the use of verb prepositions by native and non-native children. Some research suggests that native children tend to use verb prepositions more accurately and proficiently than non-native children, especially for motion or fictive verbs, as they are exposed to the language from an early age and have a more comprehensive understanding of its grammar and syntax [28].

4.1. Limitations of the study

Despite its strengths, our study had several limitations. Firstly, it analysed language performance of a relatively small group of learners in a linguistically restricted setting (verb collocations with two nouns only) imposing restrictions on the extent to which our findings could be generalised to wider groups of the population. Secondly, the assessment questions themselves might not have elicited as rich samples of learner language data as they could have done had the questions been formulated differently. Analysing learner performance on a wider range of assessment tasks within the same topic could have further assisted insightful interpretation of learner linguistic behaviour. Finally, analysing language performance of older learners, i.e. those studying at the secondary education

phase, would have allowed us to elicit richer samples of data that could be contrasted against samples of learner data collected for this study (i.e. those for the primary educational phase), possibly resulting in a more profound understanding of the issues investigated in this paper.

5. Conclusions

Our study supports the assertion that differences exist in collocation use between ENSs and ELLs. ENSs tended to produce more natural collocations with motion verbs. ELLs, however, faced more challenges in producing idiomatic language. They also encountered more difficulties than ENSs in understanding assessment tasks' instructions and/or in reporting subject-specific knowledge in response to the assessment tasks.

Drawing on these findings, we recommend that ELLs are provided with more explicit instruction and more exposure to the target language use in disciplinary contexts to help them develop collocational competences comparable to those of ENSs. This approach would allow narrowing down linguistic competency gap between ENSs and ELLs. We believe that with exposure to appropriate and frequent language input in content classrooms and with ample opportunities for its practice, ELLs will gradually become able to develop their linguistic competencies to levels comparable to those performed by ENSs.

As highlighted above, it would be beneficial to further study the collocation patterns' use by ENSs and ELLs in controlled settings. Such studies will provide us with valuable insights into how language development occurs in young ENSs and ELL and will help us to better understand the factors that influence language development and language production in ELLs and ENSs in various educational settings.

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