Research Article

THE EFFECT OF CORPUS-BASED ACTIVITIES ON THE ACQUISITION OF PHRASAL VERBS - A CASE STUDY

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Abstract

While the corpus-based approaches have been influential in language teaching in countries with developed education systems, their influence can be hardly recognised in the EFL teaching in Bosnia and Herzegovina. Therefore, this research study had a two-fold aim: to investigate the effect of the application of corpus-based activities (CBAs) on the acquisition of phrasal verbs among senior students of an elementary school and senior students of a high school and to determine the effect of application of corpus-based activities on the students' motivation for learning phrasal verbs. To test the research hypotheses, an empirical case study was conducted with 50 participants in total divided into experimental and control groups. In contrast to the control groups, the experimental groups in each grade were continuously exposed to corpus-based activities over the period of a school term. The study findings were based on the comparison of the pre-exposure and post-exposure test results which were run through the Paired Samples T-test, as well as on the results of motivation questionnaires collected via a 5-point Likert scale at the beginning and the end of the study. The statistical analysis of the test results showed there was no statistically significant effect of application of the corpus-based activities on the acquisition of phrasal verbs at both levels (A2 and B2+). Additionally, there was no statistically significant effect of the application of CBAs on students' motivation for learning phrasal verbs.

Keywords: Phrasal verbs, Corpus-based activities, Data-driven learning

INTRODUCTION

Research studies investigating the effects of the application of corpus-based activities in the context of BCS EFL teaching are rare (Bureković 2012). There is only one empirical study investigating the effects of application of corpus-based activities on teaching vocabulary to seventh graders conducted by Rizvić-Eminović & Neslanović (2022). Therefore, the present study aims to investigate the acquisition of phrasal verbs through the application of corpus-based activities in the context of EFL in Bosnia and Herzegovina. The primary intention of the study is to investigate the relationship between the application of corpus-based activities and the acquisition of phrasal verbs among senior students of an elementary and a high school, levels A2 and B2+. The study shall compare the results of the tests containing phrasal verbs taken before and after the application of corpus-based activities to determine at which level the use of corpus-based activities is more effective. Additionally, the present study shall investigate the effects of corpus-based activities application on students' motivation for learning phrasal verbs. The results of the study.

Phrasal verbs and formulaicity

Formulaic language is defined as "multiword units of language that are stored in long-term memory as if they were single lexical units" (Wood, 2020). Native speakers have a complete linguistic system underlying their linguistic expression and a considerable proportion of everyday language is formulaic because formulaic language is for native speakers an easy option in processing and communication (Wray, 2002). Biber *et al.* (1999) calculated the formulaicity of English at around 21% in written texts and up to 30% in the spoken language.

According to the findings of Schmitt & Carter (2004), formulaic sequences of different types constitute 58.6% of spoken English discourse and 52.3% of written discourse. The proportion led them to conclude that "if formulaic sequences are so widespread in English discourse, it follows that proficient English speaker must have knowledge and mastery of these sequences at some level" (1). This is why a significant aspect of foreign language learning is the acquisition of formulaic language, because although it represents "the biggest stumbling block to sounding nativelike" (Schmitt & Carter, 2004: ix), it ultimately leads to native-like competency and proficiency. Formulaic language covers a wide range and scope of types of multiword units; however, one of the most challenging groups for both teachers and learners of English to handle is the group of phrasal verbs (Gardner & Davies, 2007). Li *et al.* (2003) found that phrasal verbs form about one-third of the English verb vocabulary. Sinclair & Renouf (1988) point out that "English makes excessive use, e.g., through phrasal verbs, of its most frequent words, and so they are well worth learning" (1988). Being one of the most productive areas of the English language, phrasal verbs occur, on average, in every 192 words, which is almost two phrasal verbs per page of written text (Schmitt & Redwood, 2011). This is why teaching phrasal verbs requires different techniques and approaches. A more recent one is the use of corpus-based activities, which is embedded within the theoretical approach of corpus linguistics. Putz *et al.* (2001) claim that "corpus linguistics offers ways and means to facilitate foreign language learning because it enables us to point out the motivation behind every aspect of language. Language thus becomes explainable, and once learners see the way or ways a language works, they may start constructing and reconstructing their own hypotheses about the language they are learning" (Putz *et al.,* 2001). Even though they are scarce in number, research studies dealing with the use of corpus and corpus-based materials in the EFL classroom clearly show the benefits of such an approach to both teachers and learners. The incorporation of corpus-based materials

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could provide evidence that it is possible to use the materials without disrupting the normal classroom routine (Frankberg-Garcia, 2012), and that application of corpus-based materials and activities for teaching and learning phrasal verbs could significantly facilitate the processes.

Phrasal verbs and corpus-based activities

Corpus linguistics has provided a more detailed insight and broadened the knowledge of the role of phraseology in the English language. As Ke (2013) puts it, "one significant finding resulting from the corpus method is that phraseology lies at the heart of language acquisition". Phrasal verbs play a significant role in classroom conversation since much of classroom language includes phrasal verbs (Buyukkarci, 2010). Most beginner courses include simple phrasal verbs, however, as learning continues learners get exposed to more complex forms. Nevertheless, they find phrasal verbs challenging due to their syntactic and semantic characteristics. Limited exposure outside the classroom setting significantly hinders the phrasal verbs acquisition process. Additionally, the piecemeal approaches to teaching phrasal verbs negatively affect the learning process and most commonly result in learners' poor ability to actively incorporate phrasal verbs in their communication. Teaching and learning phrasal verbs in EFL has not received sufficient attention in research. It has been recognised that most intermediate EFL courses focus mainly on promoting learners' academic writing and reading proficiency without paying sufficient attention to communicative language use (Fu, 2015). A reason behind this might be found in the underrepresentation of significant native language markers, such as phrasal verbs, in EFL course books. On the other hand, there are a few studies investigating teaching and learning phrasal verbs in EFL at the intermediate level (Liao & Fukuya 2004; Sarah & Mohammadreza 2013). The findings suggest that intermediate students avoid using phrasal verbs and that the avoidance decreases as the language proficiency level increases.

Both elementary and intermediate level students struggle with phrasal verbs because of semantic and syntactic peculiarities associated with them (Azzaro, 2012; Okoh & Ghampson, 2019). Apart from that, phrasal verbs' productivity and frequency make them one of the most notoriously challenging aspects of language learning. Despite a general consensus among linguists and researchers about the importance of learning phrasal verbs for language use, the type of language engagement that could contribute to the acquisition of phrasal verbs, hence active application in communication, has still not been fully explored (Omidian, Akbary, & Shahriari, 2019; Sarab & Kardoust, 2014). However, a promising approach that has recently gained attention is the corpus-based approach (Choorit & Supakorn, 2014; Bernardini, 2014; Girgin, 2019). The traditional language teaching methodology is currently under the pressure of teaching protocols in the sense that learning a foreign language amounts to memorising. Taking advantage of modern technology, learners are seeking ways of alternative learning methods that provide them hands-on experience in learning. This is where corpus-based materials could be used to their full potential. Data-driven learning and concordance lines could be used as a tool beneficial to both teachers and learners. Applying the original or adapted four-step approach to corpus-based activities designed by Kennedy & Miceli (2001), students are encouraged to perform corpus investigation that allows them to be active participants in the learning process. It gives them an opportunity to first formulate questions, devise a search strategy, observe the example and select the relevant ones, and finally draw conclusions (Cheng, 2010). Activities like these have the potential to be a powerful resource in the language classroom, however, at the same time, some authors believe that corpus use can have detrimental effects. Negative effects are most commonly associated with the fact that the analysis of corpus data is rather time-consuming, laborious, and tedious, and that, at certain learning stages, teachers might become redundant in the learning process. As Azzaro (2012) puts it, learning in some cases may occur without a teacher and even be more effective. It is still up to the teachers to popularise and appreciate the benefits of corpus-based materials for the designers to start incorporating corpus findings to a much greater and more consistent extent (Burton, 2012). Research studies in EFL around the globe have proven that, with initial detailed preparation, corpus-based activities have a positive effect on foreign language acquisition. Corpus-based materials can have a wide range of uses in a language classroom, one of them being the exploration and understanding of phraseology. Putz (2001: xiv) maintains that "by showing the systematic elements in phrasal verbs, idiomatic expressions, phraseology, and especially metaphorical avenues in language, the learning materials may trigger off new impulses for the acquisition of a more sophisticated level of competence in FL".

The significance of phrasal verbs to communicative competence does not make them any less difficult for learners, especially those whose native language does not recognise the construction of phrasal verbs. There are countless research studies dealing with the teaching and learning of phrasal verbs (Jackendoff, 2002; Liao & Fukuya, 2002; Moon, 2007; Azzaro, 2012; Guilquin, 2015). There is also a great number of research papers investigating phrasal verbs through corpora or corpus-based approaches (De Cock, 1998; Pickard *et al.,* 1993; Mishan, 2004; Bannard, 2005; Rőmer, 2006; O'Keeffee *et al.,* 2007; Guilquin, 2015). Little research has been done into the teaching of a formulaic sequence of any kind at any level in the context of BCS EFL learners. One research study conducted by Bjelajac (2017) investigates the role of formulaic sequences on EFL fluency. The underpinning idea of the study is that fluency is proportional to the formulaic sequence frequency in communication. The results related to the usage of the phrasal verbs were not as expected – the research participants rather used simple lexical variants of language segments thus avoiding idiomatic structures of any kind. Another research study centred around the teaching of phrasal verbs in the final grades of primary school was conducted by Malešević (2018). The results revealed that 60% of teachers/participants considered that formulaic sequences and phrasal verbs were not present in each and every lesson and that, when taught, the students learned the best through the communicative approach which allowed them to seek meanings in the contexts.

State of the art: EFL in B&H, corpus linguistics, and phrasal verbs

English has been taught in Bosnia and Herzegovina as a foreign language for more than seventy years now. (Imamović & Delibegović-Džanić, 2016). However, it was not until the 1980s that teachers started to move towards the global trends in methodology which meant a move towards the communicative method. English is now taught with a combination of methods intended to prepare students for the

communicative use of English outside the classroom. Phrasal verbs have had their place in the syllabi for a long time, however, little is known about the teaching and acquisition of phrasal verbs in elementary and high schools in Bosnia and Herzegovina. Even though there are corpus-based research studies in Bosnia and Herzegovina (Bureković, 2012; Rizvić-Eminović & Hadžić, 2022), none of them investigates teaching phrasal verbs. The empirical study dealing with the direct application of corpus-based activities application in teaching vocabulary to seventh-graders (Rizvić-Eminović & Neslanović, 2022), however, suggests that there is a statistically significant improvement in vocabulary acquisition, which is contributed to the application of CBAs. Within that context, the present study aims to investigate the relationship between the application of corpus-based activities and the acquisition of phrasal verbs among senior students of an elementary school and a high school (A2 and B2+ levels). The study also compares the results of the tests containing phrasal verbs taken before and after the application of corpus-based activities by elementary school students and high school students to determine at which level the use of corpus-based activities is more appropriate. Furthermore, the research shows how the use of corpus-based activities affects students' motivation for learning phrasal verbs. Led by the lack of research, the present study sets out with the following research questions (RQ):

RQ1: Does the application of corpus-based materials and activities in EFL facilitate the acquisition of phrasal verbs in elementary and high-school final grades?

RQ2: Is the application of corpus-based materials and activities in EFL more effective with the final grade high school students than with the final grade elementary school students?

RQ3: Does the application of corpus-based materials and activities in EFL positively impact the students' motivation to learn phrasal verbs?

Based on the above research questions, the following hypotheses have been formulated:

H1: The application of corpus-based activities in EFL classrooms facilitates the acquisition of phrasal verbs in final elementary and high school grades.

H2: The application of corpus-based activities in EFL classrooms is more effective with the final grade high school students than with the final grade elementary school students.

H3: The application of corpus-based activities in EFL classrooms positively impacts the students' motivation to learn phrasal verbs.

METHODOLOGY

Research setting and participants

The present research study is an empirical study based on the quantitative data obtained from the corpus-based activities test scores and motivation questionnaires. The study was conducted over the course of one semester in two elementary school final, ninth, grades - one being the experimental (EG), the other the control group (CG) - and two final high school, fourth, grades in Bosnia and Herzegovina - also an experimental and a control group. Originally, the study was planned to be carried out in classrooms; however, due to

COVID-19 pandemic, the number of participants had to be reduced and the classes were transferred to online Google Classroom platform and so were the corpus-based activities. The following table presents the structure of the research participants.

Table 1. Research study participants

Participants		Percent		Frequency		Total	
		M	F	M	F	%	No.
Elementary school (ES)	EG	41.7%	58.82%	7	10	100%	17
	CG	52.94%	47.05%	9	8	100%	17
High school (HS)	EG	37.5%	62.5%	3	5	100%	8
	CG	12.5%	87.5%	1	7	100%	8
Total				20	30		50

Instruments and procedures

The instruments used in this study were two phrasal verb tests, a motivation questionnaire, and corpus-based activities, all designed for the purpose of the present study. First, two lists of phrasal verbs were compiled from the course books[1] used according to the applicable Curriculum in the ninth grade of elementary schools (Harris *et al.,* 2007) and fourth grade of high schools (McKinlay, 2009), each containing 36 phrasal verbs. The phrasal verbs were used to design two tests with multiple-choice and gap-filling test items, one for the elementary and the other for the high school. The same test was used before and after the application of CBAs both in elementary (ES) and in high school (HS), which is why it was referred to as pre-test and post-test. The pre-tests were administered to both the ninth grade EG and the CG and the fourth grade EG and the CG before using CBAs in the experimental groups at the two levels. At the end of the semester, after the application of the CBAs, the post-tests were administered at both levels. The pre- and post-test scores were used to determine whether the application of CBAs had a significant effect on the acquisition of phrasal verbs in the EG compared to the CG in both the ninth grade of ES and the fourth grade of HS and, more importantly, to determine whether the application of CBAs had a significant effect on the success of acquisition of phrasal verbs in the elementary school EG compared to the high school EG.

The motivation questionnaire (MQ) was prepared and administered only to students of the two experimental groups, the ninth-grade students of elementary school and fourth-grade students of high school, where the CBAs were applied. The same questionnaire was administered twice, before and after the application of CBAs, referred to as MQ1 and MQ2, respectively. The MQ consisted of three statements. The first statement was related to the students' attitude about the importance of learning phrasal verbs in building one's vocabulary; the second to their opinion about the activities for learning phrasal verbs; the third to their subjective assessment of the usefulness of the classroom activities in acquiring phrasal verbs. The responses were offered in the Likert scale with the following options: 1 – Strongly Agree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly Agree. The aim of the motivation questionnaire was to determine whether there was a significant difference in attitudes towards learning phrasal verbs before and after the application of CBAs. Designed as additional teaching materials, the CBAs were administered

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[1]Harris, M., Mower, D., Sikorzynska, A., Mešić, A. (2007) *Challenges 4, Students' Book* Pearson Education Limited; McKinlay, S. (2009) *Success, Advanced, Students' Book* Pearson Education Limited

over a period of fifteen weeks only in the experimental groups in ES as well as in HS. Each CBA contained sentences extracted from the Corpus of Contemporary American English (COCA); it was designed for teaching three phrasal verbs and contained three sections. In the first section, the students were asked to read the sentences and guess the meaning of the phrasal verbs from the given context. In the second section, the students were asked to match the meaning with the given phrasal verbs. The third section contained gap-filling items with the same phrasal verbs. The aim of the corpus-based activities was to expose the EG students in both ES and in HS to additional activities with the phrasal verbs they were taught in the course books in that semester. In contrast, the two CG students would only be exposed to phrasal verbs as much as the course book and regular teaching required. The data collected through the MQs and the pre- and post-tests were analysed using SPSS software and the descriptive statistics and Paired Samples T-test was applied. The descriptive statistics test was used to analyse responses to individual questions to obtain mean scores. Additionally, the Paired Samples T-test was used to determine the statistical significance of the results. The data collected from the Pre- and Post-test were also run through the Descriptive statistics and Paired Samples T-test to determine the effects of the CBAs application.

RESULTS AND DISCUSSION

Motivation questionnaire results and discussion

The motivation questionnaire was administered to both experimental groups in the ninth grade of ES and fourth grade of HS, one before the application of CBAs and the other after, referred to as MQ1 and MQ2. The results were analysed using frequency, and the Paired Samples T-test was used to determine the statistical significance of the results. According to the results presented in Tables 2 and 3, there is a slight difference and decline in the mean scores in the elementary school EG. The descriptive statistics for the elementary school EG suggest that the mean values are lower in MQ2 (M=4.73, SD=.458) in comparison to MQ1 (M=4.93, SD=.258) for Q1 which was related to the importance of phrasal verbs in building vocabulary. A slight decrease is present for Q2, related to the motivation for participating in activities for learning phrasal verbs. Namely, the mean score value for the second question decreased from M=4.20 (SD=.676) to M=4.07 (SD=.961). The third question in MQ1 was related to the regular course book activities for phrasal verbs acquisition, whereas in MQ2 it was related to the CBAs. The mean score value only slightly decreased from M=4.33 (SD=.617) to M=4.00 (SD=1.309) for the third question.

According to Table 3, which reports the results of both MQ1 and MQ2 in elementary school, students either agreed (5.9%) or strongly agreed (94.1%) that phrasal verbs are important in vocabulary building. The results were slightly different at the end of the semester with an increase in those who agreed (23.5%) and a decrease in those who strongly agreed (64.7%). Yet, no one disagreed or remained neutral with this statement. When it comes to the next statement, there was 11.8% of those who remained neutral in the MQ1 and even more (20.0%) in MQ2. However, 47.1% agreed that they enjoyed participating in the activities designed for learning phrasal verbs at the beginning of the semester, but fewer (33.3%) found the activities interesting at the end of the semester. In the same manner, the number of those who strongly agreed decreased in

the MQ2 (from 41.2% to 40.0%). There were even some (6.7%) who disagreed with Q2 in MQ2. When it comes to the activities for learning phrasal verbs, 5.9% of students were neutral in their responses, 52.9% agreed and 41.2% strongly agreed that the course book activities help them to acquire phrasal verbs. As much as 6.7% of students strongly disagreed and 6.7% disagreed with the statement related to the application of CBAs, whereas 20.0% were neutral in reference to the application of CBAs. A total of 52.9% of students in MQ1 and 13.3% in MQ2 agreed that the CBAs helped them to acquire phrasal verbs. On the other hand, there was an increase from 41.2% to 53.3% in those who strongly agreed that the CBAs helped them to acquire phrasal verbs. Furthermore, the results presented in Table 4 for the high school EG show a slight decrease in mean scores which is similar to the mean score results for Q1 in elementary school EG as the mean values are lower in MQ2 (M=4.75, SD=.463) in comparison to MQ1 (M=4.88, SD=.354) in high school EG. Additionally, there is a decrease in the motivation to participate in the CBAs (Q2) with M=3.88 (SD=.835) in MQ2 in comparison to M=4.00 (SD=1.069) in MQ1. However, a more significant increase can be seen for Q3 in high school EG results where M increased from =3.88 (SD=.354) in MQ1 to M=4.43 (SD=.787) in MQ2. As reported in Table 5, none of the final high school grade students strongly disagreed with any of the statements whatsoever. Starting with the first statement, 12.5% in MQ1 and even more (25.5%) in MQ2 agreed that phrasal verbs were important in vocabulary building, and 87.5% of those who strongly agreed in MQ1 decreased to 75.0% in MQ2. Disagreement was present only in 12.5% for Q2 in MQ1. However, no one disagreed that they liked the activities for learning phrasal verbs in MQ2. A total of 12.5% was neutral for the same statement in MQ1 and the percentage increased to 37.5 in MQ2. The same number of students (37.5%) agreed with statement Q2 in both MQ1 and MQ2. 37.5% of students strongly agreed with Q2 in MQ1 and the number decreased to 25.0% in MQ2. Responding to Q3 related to activities for learning phrasal verbs, 12.5% in MQ1 and 14.3% in MQ2 remained neutral. Out of 87.5% who agreed with Q3 in MQ1 a total of 28.6% agreed in MQ2 and even 57.1% strongly agreed that the CBAs helped them to acquire phrasal verbs. A Paired Samples T-test was used to compare the results obtained in MQ1 and MQ2 to investigate whether there is any statistical significance. According to the results reported in tables 6, the Paired Samples T-test findings revealed that there was no statistically significant difference in the elementary school EG (p=.189, p>.005) or in the high school EG (p=.598, p>.005) results in reference to the students' beliefs about the importance of learning phrasal verbs for vocabulary building. The findings for Q2 also revealed that there was no statistically significant difference as the p-value was found to be .698 (p>.005) for elementary school EG and p=.802 (p>.005) for high school EG. Even though a slight increase was reported in Table 4 for Q3 in MQ2 in high school, the result was not statistically significant as p=.172 (p<.005).

Pre-test and Post-test results and discussion

The Pre-test and Post-test were distributed and administered at the same time as the MQ1 and MQ2 respectively. Both control and experimental groups in both schools took the tests. For the research hypotheses to be tested, the results of both CG and EG test scores were first analysed using descriptive statistics. The Paired Samples T-test was run to determine whether there was any statistically significant difference in the results of the Post-tests scores of the ES and HS experimental groups.

Table 1. Descriptive statistics for the elementary school experimental group

		Learning phrasal verbs in English language is important for vocabulary building. 1_EG_ES	Learning phrasal verbs in English language is important for vocabulary building. 2_EG_ES	I like participating in activities in which I learn phrasal verbs. 1_EG_ES	I like participating in activities in which I learn phrasal verbs. 2_EG_ES	Activities in classes help me acquire phrasal verbs easily. 1_EG_ES	Activities in classes help me acquire phrasal verbs easily. 2_EG_ES
N	Valid	17	17	17	15	15	15
	Missing	0	0	0	2	2	2
Mean		4,93	4,73	4,20	4,07	4,33	4,00
Std. Deviation		,258	,458	,676	,961	,617	1,309

Table 2. Elementary school MQ responses in percentage

	Q1 MQ1	MQ2	Q2 MQ1	MQ2	Q3 MQ1	MQ2
Strongly disagree						6.7%
Disagree				6.7%		6.7%
Neutral			11.8%	20.0%	5.9%	20.0%
Agree	5.9%	23.5%	47.1%	33.3%	52.9%	13.3%
Strongly agree	94.1%	64.7%	41.2%	40.0%	41.2%	53.3%

Table 3. Descriptive statistics for the high school experimental group

		Learning phrasal verbs in English is important for vocabulary building. 1_EG_HS	Learning phrasal verbs in English is important for vocabulary building. 2_EG_HS	I like participating in activities in which I learn phrasal verbs. 1_EG_HS	I like participating in activities in which I learng phrasal verbs. 2_EG_HS	Activities in classes help me acquire phrasal verbs easily. 1_EG_HS	Activities in classes help me acquire phrasal verbs easily. 2_EG_HS
N	Valid	8	8	8	8	8	7
	Missing	0	0	0	0	0	1
Mean		4,88	4,75	4,00	3,88	3,88	4,43
Std. Deviation		,354	,463	1,069	,835	,354	,787

Table 4. High school MQ responses in percentage

	Q1 MQ1	MQ2	Q2 MQ1	MQ2	Q3 MQ1	MQ2
Strongly disagree						
Disagree			12.5%			
Neutral			12.5%	37.5%	12.5%	14.3%
Agree	12.5%	25.5%	37.5%	37.5%	87.5%	28.6%
Strongly agree	87.5%	75.0%	37.5%	25.0%		57.1%
No answer						15.4%

Table 5. Paired Samples T-test comparing the MQ results in ES and HS experimental groups

Paired Samples Test[a]

School		Grupe	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	t	df	Sig. (2-tailed)
ES	EG	Q1 - MQ1-MQ2 Learning phrasal verbs in English language is important for vocabulary building.	.200	.561	.145	-.110	.510	1.382	14	.189
		Q2 - MQ1-MQ2 I like participating in activities in which I learn phrasal verbs.	.133	1.302	.336	-.588	.854	.397	14	.698
		Q3 - MQ1-MQ2 Activities in classes help me acquire phrasal verbs easily.	.333	1.291	.333	-.382	1.048	1.000	14	.334
HS	EG	Q1 - MQ1-MQ2 Learning phrasal verbs in English language is important for vocabulary building.	.125	.641	.227	-.411	.661	.552	7	.598
		Q2 - MQ1-MQ2 I like participating in activities in which I learn phrasal verbs.	.125	1.356	.479	-1.009	1.259	.261	7	.802
		Q3 - MQ1-MQ2 Activities in classes help me acquire phrasal verbs easily.	-.571	.976	.369	-1.474	.331	-1.55	6	.172

a. No statistics are computed for one or more split files

The Pre-test and Post-test scores for both experimental and control group elementary school final graders were first run through Descriptive statistics. As reported in Table 7, the mean score in the elementary school EG decreased after a full semester of exposure to CBAs from being M=15.12 (SD=5.510) in the Pre-test to M=12.59 (SD=6.829) in the Post-test. The mean score presented in Table 9 for the elementary school CG, which was not exposed to CBAs, slightly increased from M=21.19 (SD=7.007) in Pre-test to M=22.25 (SD=8.418).

Table 6. Mean scores on Pre-test and Post-test for elementary school EG

Descriptive Statistics	N	Mean	Std. Deviation
PreTest - EG_ES	17	**15,12**	5,510
PostTest- EG_ES	17	**12,59**	6,829
Valid N (listwise)	17		

Table 7. Mean scores on Pre-test and Post-test for elementary school CG

Descriptive Statistics	N	Mean	Std. Deviation
PreTest - CG_ES	16	**21,19**	7,007
PostTest - CG_ES	16	**22,25**	8,418
Valid N (listwise)	1		

The same procedure was applied in the analysis of the Pre- and Post-test results for the high school experimental and control group. The results of both tests were first analysed using Descriptive statistics to be further run through the Paired Samples T-test for comparison purposes. According to the results presented in Table 9, there was an increase in the mean score in the high school experimental group. The value of the mean score increased from M=16.88 (SD=8.659) in the Pre-test to M=17.75 (SD=10.236) in the Post-test. As for the high school CG, there were no changes in the mean score as it is M=14.00 (SD=6.708) for both Pre-Test and Post-Test (Table 10).

Table 10. Mean scores on Pre-test and Post-test for high school EG

Descriptive Statistics	N	Mean	Std. Deviation
PreTest - EG_HS	8	**16,88**	8,659
PostTest - EG_HS	8	**17,75**	10,236
Valid N (listwise)	8		

Table 11. Mean scores on Pre-test and Post-test for high school CG

Descriptive Statistics	N	Mean	Std. Deviation
PreTest - CG_HS	5	**14,00**	6,708
PostTest - CG_HS	5	**14,00**	6,708
Valid N (listwise)	3		

The Paired Samples T-test, reported in Table 11, revealed no statistically significant difference in any group whatsoever. The comparison of the mean scores of Pre- and Post-test in the elementary school EG was not found to be statistically significant as the p-value was .196 (t=1.3350), according to Table 11. No statistically significant result was found for the elementary school CG either as p=.491 (t=-.706). As for the high school EG, there was no statistically significant result in the comparison of the mean scores of Pre- and Post-test (p=.519, t=-.679). Similarly, no statistically significant result was obtained for the comparison of the mean scores for the Pre- and Post-test of CG (p=1.000, t=.000). As for the final analysis, the Post-test results of both elementary and high school experimental groups were run through Descriptive statistics. The results, presented in Table 12, reveal that the mean score is considerably higher for high school EG (M=17.75, SD=10.236) than for elementary school EG (M=12.59, SD=6.829). In order for the crucial research question to be answered, the mean scores of Post-tests of both elementary and high school experimental groups were compared using the Paired Samples T-test.

Table 8. Post-test mean scores

						95% Confidence Interval of the Difference				
School	Grupe		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
ES	EG	PreTest - PostTest	**2.529**	7.723	1.873	-1.441	6.500	**1.350**	16	**.196**
	CG	PreTest - PostTest	**-1.062**	6.016	1.504	-4.268	2.143	**-.706**	15	**.491**
HS	EG	PreTest - PostTest	**-.875**	3.643	1.288	-3.920	2.170	**-.679**	7	**.519**
	CG	PreTest - PostTest	**.000**	9.028	4.037	-11.209	11.209	**.000**	4	**1.000**

Paired Samples Test — Paired Differences

Table 9. Paired Samples T-test for Pre- and Post-test results

Descriptive Statistics	N	Mean	Std. Deviation
PostTest - EG_ES	17	**12,59**	6,829
PostTest - EG_HS	8	**17,75**	10,236
Valid N (listwise)	25		

Table 12. Post-test statistics

		Paired Samples Test								
			Paired Differences						Significance	
				95% Confidence Interval of the Difference						
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	One-Sided p	Two-Sided p
PreTest - PostTest EG_ES	2.529	7.723	1.873	-1.441	6.500	1.350	16	.098	.196
PreTest - PostTest EG_HS	-.875	3.643	1.288	-3.920	2.170	-.679	7	.259	.519

Table 13 Paired Samples T-test of Pre- and Post-test scores

		Paired Samples Test								
			Paired Differences						Significance	
				95% Confidence Interval of the Difference						
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	One-Sided p	Two-Sided p
PostTest - EG_ES - PostTest EG_HS	-3.500	9.783	3.459	-11.679	4.679	-1.012	7	.173	.345

The *p*-value result, as reported in Table 13, indicated no statistically significant difference in either elementary school or high school final grades as *p*=.196 (*p>0.05*) for elementary school EG and *p*=.519 (*p>0.05*) for high school EG. Additionally, table 14 reported no statistically significant difference when Post-test scores of both final grades were compared.

Conclusion

This section reflects on each of the three hypotheses individually formulated based on the three research questions.

RQ1: Does the application of corpus-based activities in EFL classrooms facilitate the acquisition of phrasal verbs in the final elementary and high school grades?

According to the results reported in Table 7, there was a decrease in the mean score results when Pre-test and Post-test results were compared for the elementary school EG. Contrary to the expected, the mean score had an increase in the results for the elementary school CG, which was not exposed to CBAs but only to course book activities for learning phrasal verbs (Table 8). Additionally, table 11 reveals that the mean scores within the respective groups were not statistically significant as the *p*-value for EG was .196 (>.005), and the *p*-value for CG was .491 (>.005). As neither group showed a statistically significant improvement at the end of the term, it can be concluded that the application of corpus-based activities did not facilitate the acquisition of phrasal verbs in the final elementary school grade under the conditions in which the research study was carried out.

In reference to the results obtained in the final high school grade, the EG showed an improvement in the mean score of the Post-test results. Namely, the mean score for the EG, presented in Table 9, increased from *M*=16.88 to *M*=17.75. However, such an increase was still not statistically significant (*p*=.519) (Table 11). Contrary to all other groups, the high school CG showed no difference in the Pre- and Post-test results as the mean score remained *M*=14.00 (*S*=6.708) and *p* was found to be 1.000 (*t*=.000). When the mean scores of both groups were statistically tested, no significant difference was found. Given that the high school EG results were statistically insignificant, it can be concluded, in relation to RQ1, that the application of CBAs in the final high school grade over

a school term did not facilitate the acquisition of phrasal verbs more than the regular course book activities. Based on this interpretation, it can be concluded that the first hypothesis that the application of CBAs in EFL classrooms facilitates the acquisition of phrasal verbs in the final grades of elementary school and high school has been refuted.

RQ2: Is the application of corpus-based activities in EFL classrooms more effective with final-grade high school students than with final-grade elementary school students?

To answer RQ2, the Post-test mean scores of both elementary and high school experimental groups were analysed and compared. In Table 12, *M*=12.59 was reported for elementary school EG and *M*=17.75 for high school EG. Further statistical analysis of the mean score (Table 14) revealed no statistical significance (*p*=.345) in the results obtained in the elementary school EG and the high school EG. It is reported in Table 13, however, that the *p*-value for elementary school EG was closer to being significant than the *p*-value for the high school EG. Taking into consideration the results reported in Table 13, it can be concluded that the application of CBAs is more effective in terms of the acquisition of phrasal verbs in the final high school grades than in the final elementary school grades, however, not to the extent that is statistically significant. Therefore, it can be concluded that the second hypothesis, namely, that the application of corpus-based activities in EFL classrooms is more effective with final-grade high school students than with final-grade elementary school students is confirmed, however, without any statistically significant difference.

RQ3: Does the application of CBAs in EFL classrooms have a positive effect on the students' motivation to learn phrasal verbs?

The statistical analysis of all three statements in both motivation questionnaires (Tables 2 and 4) did not reveal any significant difference either in the final grades of elementary school or high school when it comes to the students' perception of the importance of learning phrasal verbs for vocabulary building, the students' willingness to participate in the activities in which they learn phrasal verbs, or their perception of the usefulness of CBAs in the acquisition of phrasal verbs. Therefore, the third hypothesis has also been refuted that the application of CBAs in EFL classrooms has a

positive effect on the students' motivation to learn phrasal verbs, which is in line with results of the research carried out by Rizvić-Eminović & Neslanović (2022), who also found that there was no statistically significant difference in the application of CBAs in teaching vocabulary. What made the present research distinct from all studies mentioned so far is that it compared the results in the final grades of an elementary school and a high school. Contrary to the findings of Girigin's (2019) study with upper-intermediate students found that exposure to CBAs resulted in significant learning and understanding of phrasal verbs, as well as in improvement in the usage of phrasal verbs in communication, the present study did not yield statistically significant results for the A2 and B2 students. Additionally, contrary to the findings by Sarab & Kardoust (2014) that CBAs are appropriate for teaching phrasal verbs at lower levels, this study shows that, when the application of CBAs for teaching phrasal verbs yields better results in the final grade of high school (B2 level), than in the final grade of elementary school (A2 level). Although corpus-based activities are an innovative approach within the Data-Driven Learning framework, the present study suggests they may not be suitable for students at lower levels of English language proficiency. However, although, there is a lot of preparatory work for their application, they do have more effect when implemented with students at higher level of English language proficiency, although without any statistically significant difference.

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