



Deliberate Teaching of Collocations – – an Intervention Study of Czech Upper-Intermediate EFL Students¹

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Abstract: *Collocation knowledge is claimed to be poor even among upper-intermediate and advanced learners of English as a second language, which implies that not enough attention is being drawn to these lexical items in lessons. To address this problem, we designed a 12-week teaching intervention in which the participants (39 students of Charles University in Prague) were divided into two groups: an experimental group with an intensive explicit collocation focus (20) and a control group with no such care dedicated to collocations (19). The division of the students was performed in such a way that the groups were equal in terms of the variables which tend to influence the learning process the most, namely language aptitude, anxiety, motivation, and learning strategies. The results showed that the experimental group achieved significantly higher scores for collocation knowledge. No significant difference was found between the groups in understanding of word meanings. Deliberate teaching of collocations with systematic revision and practice thus proved to be more effective than meaning-focused teaching of individual words.*

Keywords: *teaching intervention, collocations, explicit teaching, SLA, anxiety, motivation, learning strategies, lexical approach, individual differences*

1. INTRODUCTION

Collocations and other multi-word units have been the subject of a large body of research (see e.g. Szudarski, 2017; Boers

& Lindstromberg, 2012 for overviews), and yet there is no general consensus on how to define them. As Nesselhauf (2005) describes, researchers tend to adopt two main approaches to defining collocations. The

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² The first author has a study and research interest in the topic and is also the author of the Leximapping tool and the Leximapping web application (www.leximapping.com), which is one of the tools used in the study to facilitate a lexically-oriented approach to teaching. All the other authors declare that they have no conflicts of interest.



first, the frequency-based approach, is commonly represented by Sinclair (1991) and it emphasises a frequent co-occurrence of words; the phraseological approach (e.g. Cowie, 1981) views collocations mainly as fixed expressions. For the purposes of our study, we will work with the definition of Lewis (2000), the originator of the Lexical Approach, who was the main advocate of the explicit teaching of collocations in the 1990s and who urged teachers to actively pay attention to these aspects of language in their lessons (1993, 1997, 2000). According to Lewis, collocation “is the way in which words co-occur in natural text in statistically significant ways” (2000, p. 132). This definition covers a wide scope of word combinations. In our text, it ranges from very strong partnerships, e.g. *pay (somebody) a visit*, via prepositional phrases, e.g. *demand for (something)*, to lexicogrammatical structures, e.g. *It'll be worth it*.

The particular attention which collocations have received from corpus linguists and SLA researchers for some decades suggests that aiming at sufficient knowledge of these word combinations is perceived as a significant part of the language learning process. From the large volume of studies on collocations, several conclusions emphasising their importance can be drawn. A good command of collocations and other formulaic expressions contributes to native-like language

production (Pawley & Syder, 1983; Nattinger & Decarrico, 1992; Boers et al., 2006). That having been said, it has been widely argued that the collocation knowledge of foreign language students is rather poor even at the upper-intermediate and advanced levels (Granger, 1998; Nesselhauf, 2005; Durrant & Schmitt, 2009; Laufer & Waldman, 2011).

Although the importance of collocations is hardly questioned (Wood, 2002), some disagreement remains about whether and how to treat them in lessons. A number of researchers have dedicated their research to implicit learning, claiming that explicit teaching of collocations is not feasible as there are simply too many of them. Recent studies focusing on incidental learning of collocations imply that they can be acquired through watching videos or reading without systematic facilitation (e.g. Vu & Peters, 2021; Teng, 2019; Pellicer-Sánchez, 2017). However, others believe that deliberate attention should be paid to collocations since they are difficult to learn incidentally and their role in classroom teaching should therefore be emphasised (Toomer & Elgort, 2019; Boers, Dang, & Strong, 2017; Debabi & Guerroudj, 2018; Ördem & Paker, 2016; Peters, 2016).

Clearly, the idea that collocations should be teachers' primary interest is not new, and yet common practice does not seem to reflect the results of current research. The reason might be



that most studies have been conducted in short-term lab-based experiments that fail to take into account the complex environment and requirements for classroom teaching. Nevertheless, a couple of longitudinal studies on collocations can be found; for instance, a recent study conducted by Vu and Peters (2021) tested the learning gains of 100 Vietnamese pre-intermediate students in three different reading modes: reading-only, reading-while-listening, and reading with textual input enhancement (the target collocations were underlined), with the last proving to be the most effective. This study was conducted over nine weeks, targeting 32 collocations, and the course consisted of reading graded books and discussing the contents of the books and the participants' attitudes towards the stories.

However, in a classroom environment, the demands for language gains in a long-term course would be higher than what is usually documented in the research to date. To adequately reflect teaching practice, not only in terms of the amount of the target language but also in terms of motivation, an attempt should be made to prepare varied activities in the lessons; moreover, all four basic skills (reading, listening, writing, and speaking) should be included. Therefore, we see the challenge of today's research on collocations as lying in how to achieve adequate learning gains in a long-term course which is not primarily or obviously focused

on one specific activity (e.g. reading books or watching videos).

With enough time and sufficient dedication, anyone can learn a foreign language, yet certain aspects of one's personality and innate abilities might have a substantial impact on how well and how fast one will learn it. The key factor in this regard is the concept of foreign language aptitude (FLA), which refers to a set of relatively stable and intelligence-independent cognitive abilities (Carroll, 1962, 1990). Studies have indicated that when individual differences are being considered, FLA is a more accurate predictor of language learning outcomes than other variables (e.g. Wen et al., 2017; Sparks & Dale, 2023). The close relationship between language learning outcomes and FLA has been confirmed not only during the initial research into FLA (for a review see Carroll, 1981), but also in current studies (e.g. Cochran et al., 2010). However, as Li (2015) specified in his recent meta-analytic review of five decades of aptitude research, when assessing FLA, it is recommended to work with aptitude components rather than a composite score. Apart from FLA, the key influence of learning strategies and styles (e.g. Ehrman & Oxford, 1990; Oxford, 2003), affective factors (e.g. Scovel, 1978; Horwitz et al., 1986; Kao & Craigie, 2010; Lu & Liu, 2011), and motivational factors (Gardner, 2001; Masgoret & Gardner, 2003; Hernandez, 2008) has also been



documented. These factors cannot be ignored, especially when language learning takes place in a classroom environment. To reach achievements in classroom teaching, only those approaches and methods which take these aspects into consideration ought to be adopted. In other words, the chosen approach should not disadvantage anxious students and students with low language aptitude; at the same time, it should help maintain students' motivation and embrace useful learning strategies.

Recent studies often stress the external factors that slow down the process of learning collocations (e.g. their infrequency and incongruence), whereas the internal factors (individual differences among learners, other than prior vocabulary knowledge) have been neglected. One exception would be the study by Montero Perez (2020), in which she measured the role of working memory in connection with learning gains in vocabulary through watching videos. Our study observes the above-mentioned variables in connection with the explicit teaching of collocations in a classroom environment.

2. METHODS

2.1 Aims and Research Questions

As Webb and Nation (2017) suggest, in an optimal language course,

the time dedicated to the explicit teaching of words should take approximately 25 per cent of the teaching time. A longitudinal teaching intervention was designed in an attempt to explore what exactly to teach explicitly in order to use classroom time wisely. We suggest that it should be spent on facilitating the active retrieval of collocations rather than doing elaborative meaning-focus activities, as meaning can be learnt incidentally. The aim of the present study is to address the following questions:

1. Will systematic deliberate collocation-focused teaching applied in the experimental group prove effective in terms of collocation knowledge although the group includes students with various cognitive and affective characteristics?

2. Will prioritising collocations over individual word meanings have a detrimental impact on participants' understanding and usage of the targeted words in isolation?

This paper is a part of a broader endeavour in which we focused on the impact of psychological factors on learning processes. Partial results of this project can be found in Kacařirková et al. (2023).

2.2 Participants

Initially, 40 participants (nine males, 31 females) took part in our study. One female participant could not finish the entire course for personal



reasons, and her data was therefore excluded from the analysis. The participants were Czech university students³ from the Faculty of Education at Charles University in Prague (mean age = 21.8, SD = 2.02). The vast majority of them were enrolled in study programmes focused on psychology or education. Their average level of English was B2 according to the Common European Framework of Reference, as determined by the grammar part of the Oxford Placement Test (Allan, 2004). For the purposes of the study, the level test was administered to exclude students with very low proficiency levels, who might struggle to keep up with the course. As a result of Covid-19 restrictions, the baseline testing and intervention were conducted online; therefore we decided to use solely the grammar section of the OPT for organisational reasons. Regarding the lexical domain, the participants' receptive collocation knowledge was measured (by COLL_REC) prior to the beginning of the course. The participants completed the pre-intervention test battery and were then assigned to either the experimental (i.e. systematic teaching of collocations, $n = 20$) or the control group (i.e. no special treatment for collocations, $n = 19$) on the basis of their results. The following personality-related specifics, including trait and language-specific anxiety (measured by NEO_ASC and

the FLCAS), foreign language learning aptitude, including: language analytic ability (measured by the LAT), rote memory (measured by PA), and phonological sensitivity (measured by PSEU), foreign language learning strategies (measured by STRAT), proficiency level, including grammar knowledge (measured by the Oxford Placement Test), and level of receptive collocation knowledge (measured by COLL_REC), were taken into account when splitting the participants into groups. Participants who scored more than one standard deviation below or above the mean in any of the above-mentioned measures were highlighted and distributed between the experimental and control groups so that the mean values for both groups were as similar as possible in all the observed variables. Descriptive statistics for the entire sample and both groups are shown in Appendix I. The equality of the groups was then statistically tested using either an independent samples t-test for normally distributed variables or the Mann-Whitney U test for the remaining variables. The analysis showed no differences between the experimental (E) and control (C) groups in any of the observed areas, ($p > 0.05$).

In order to minimise the impact of other external variables, it was crucial to ensure that our intensive language proficiency course was exclusive. This

³ A couple of them were of a different nationality but fluent in Czech.



condition was discussed with the students who were participating before the research commenced. Nonetheless, the results of the final survey conducted after the intervention revealed that six students (three from the experimental group and three from the control group) had taken part in a comparable language course or attended lectures taught in English concurrently with our course. Additionally, ten students reported engaging in minor self-study activities such as conversing in English with a friend, reading English books, teaching English to young children, or watching TV shows; however, we consider these activities to have little significance for our research aims.

2.3 Measures

The test battery was designed to assess the effectiveness of the teaching intervention. Pre-tests and post-tests on knowledge of collocation and understanding of word meanings were conducted. Furthermore, tests to identify individual differences were administered. Because of the lack of measures of individual differences available in the Czech language, tasks inspired by methods widely used abroad were constructed for the purpose of this study.

Tests focusing on language gains. Examples of items in these tests can be found in Appendix II.

To test **collocation knowledge** (COLL_SUM), the following three

subtests were used before and after the intervention.

Collocation recognition test (COLL_REC). This test was inspired by Gyllstad's COLLEX 5 (2007). It consists of 40 items to measure receptive collocation knowledge. The students were asked to choose the most natural collocation out of three options. 20 items were not targeted in the lessons; 20 items aimed at strong collocations and were targeted in the lessons. The latter 20-item subtest (COLL_REC_T) was used to measure collocation knowledge before and after the intervention to identify learning gains.

Collocation recall test (COLL_PROD). It consists of 20 items to measure productive collocation knowledge. The test includes three subtests: a gap-fill task (complete five sentences with a word) aimed at prepositional phrases, a cued recall task (complete ten collocations with a missing word; the first letter was given in most cases, and key word transformation (rewrite five sentences using the given word) aimed at structures.

Semi-free collocation production test (ESSAY). Natural and accurate production of collocations was measured via writing a short text using ten given words. If the word was used in a collocation, it was awarded two points. If it was used correctly but not in a collocation, it was awarded one point. If the word was used in a fallacious collocation, the student received



zero points. For example, the expression *boost my confidence* was awarded two points, but the clause *I was without confidence* only one point and *You need a large confidence* zero points for fallacious collocation.

Tests focusing on understanding of word meanings and usage of individual words. To test the comprehension of lexical semantics and usage of words, the following **Meaning recognition and usage test** (MEANING) was used. It consists of 20 items and includes two subtests: a definition-matching task (match eight words with eight definitions), and a cloze task with a list of 12 words (complete 12 gapped sentences).

Tests measuring individual differences. The following test battery was designed to monitor the individual differences and allow them to be controlled for when the students were divided into groups.-

To assess foreign language aptitude, three tasks were prepared to map the level of rote memory, phonemic coding, and language analytic ability.

Pseudoword spelling task (PSEU). A task from the Diagnostics of specific learning difficulties in adolescence and adulthood battery (Cimlerová et al., 2007) was used to examine the phonemic decoding ability. The task consists of five sentences made up of pseudowords that are dictated to the students. The number of errors is counted.

Paired Associates (PA). This task, inspired by Part V, Paired associates,

of the MLAT (Carrol & Sapon, 1959), focuses on rote memory. The students were introduced to a list of 24 written words in a foreign language and were asked to memorise the words and their meaning (Czech translation). After two minutes the students had three minutes to fill in a multiple-choice test. The number of correct answers is counted, with a maximum of 24 points.

Language analytic ability task (LAT). The Language Aptitude Test from the Modern Languages Admissions Test of the University of Oxford (2017) was adapted to measure language analytic ability. The students were asked to apply the rules and patterns of an imaginary language from sample sentences to translate further sentences from the imaginary language to Czech and from Czech to the imaginary language. Points for correct answers were counted, with a maximum of 50 points. There was a 30-minute time limit for this task.

Foreign language learning strategies (STRAT). To assess foreign language learning strategies the students filled in a shortened version of the foreign language learning strategies questionnaire for students of secondary schools (Vlčková & Přikrylová, 2011), which is a Czech adaptation of the Language Strategy Use Survey (Cohen, Oxford, & Chi, 2002). It consists of short statements about possible foreign language strategies. The full version consists of 89 such statements.



The students are asked to indicate on a four-point scale how much the statement describes them. In our shortened version, we chose 46 items to examine memory and cognitive learning strategies.

Foreign language classroom anxiety scale (FLCAS). To measure personality factors regarding anxiety, we used an adapted version of a self-reported measure of learners' anxiety in the foreign language class, the Foreign Language Classroom Anxiety Scale (Horwitz et al., 1986). Like the original scale, the adapted version consists of 33 items and uses a five-point Likert scale, ranging from 'strongly disagree' to 'strongly agree'. The higher the score, the higher the level of anxiety.

Anxiety and self-consciousness inventory (NEO_ASC). To assess Anxiety and Self-Consciousness, we used the standardised Czech version (Hřebíčková, 2004) of the NEO Personality Inventory – NEO PI-R (Costa & McCrae, 1992), which examines a person's Big Five personality traits. 16 items were selected which tested facets of neuroticism using a self-report form and a five-point Likert scale.

Motivation (AMTB). To measure motivation, we used an adapted version of the Attitude/Motivation Test Battery (AMTB), developed by Gardner (2004). Our version of this self-reported scale consists of 28 items in four scales: Interest in Foreign Languages, Motivational Intensity, Inte-

grative Orientation, and Instrumental Orientation. In the instrument, we use a seven-point Likert scale from 'strongly disagree' (1 – low motivation) to 'strongly agree' (7 – strong motivation). Negative statements were scored in reverse.

2.4 Procedure

An optional 12-week seminar for students of Charles University in Prague called *Real life English* was set up for the purposes of our study. The seminar was advertised as a language course open in the 2020 winter semester with a frequency of 90 minutes per week for students with an approximate B2 level who wanted to practise English and who were comfortable with using authentic materials (videos, texts) and wanted to discuss current topics. Students registered for the course voluntarily. The participants were told that the seminar was a part of a research project investigating the efficiency of different teaching methods.

Because of the ongoing Covid-19 pandemic, the course eventually took place online. Before the course started, the above-mentioned pre-tests were conducted via the online learning platform Moodle and the participants were assigned to the groups. The lessons in both groups were taught in parallel via the Zoom platform. Two teachers took turns weekly in the control and experimental groups in order



to avoid the influence of the educator's personality. One teacher was one of the authors of the study and the other one was a lecturer with extensive experience in teaching adults. The teachers had regular weekly meetings to discuss lesson plans and how to work with the materials and conduct the particular upcoming lesson. After the initial meeting with the participants in October 2020, during which all important information was conveyed, the course proceeded with ten teaching sessions. The seminar concluded in January 2021 with post-testing participation.

A flipped classroom teaching model was used, in which the participants received materials (video, audio, or texts) to study before the lessons. The materials were further discussed and analysed in the online lessons. The contents were the same for both groups, so all the participants were exposed to the same language input. The pre-lesson tasks did not take more than 30 minutes, consisting of watching/listening to or reading a text and answering comprehension questions (alternatively, doing a task related to the input, with or without a difference between the groups). As for the materials, authentic articles, YouTube videos, and Ted Talks were used, addressing current topics which might be of interest to university students (minimalism, social media, money and happiness, future careers, first work experience, etc.). Some texts and

audio recordings were taken from the textbook *Outcomes Upper-intermediate* by Dellar and Walkley (2016) and adapted to the needs of our study.

In a 60-minute online lesson, the pre-lesson tasks were checked, and some questions related to the input were discussed, followed by intensive work with the materials, which differed substantially between the control and experimental groups. At the end of the online session, the students had time to speak in small groups and share opinions on questions and topics from each lesson. There was no interference from the teacher during these discussions as they aimed at fluency. After each lesson, there was online homework via the Leximapping application (which will be described later on in this paper) practising vocabulary (control group) or collocations (experimental group).

Target language. To test language gains, 70 word combinations or phrases were chosen. The choice was made on the basis of teaching experience so that mostly items which were not expected to be familiar to the participants were selected. Simultaneously, several criteria were observed to make the choice appropriate. First, attempting to reflect common teaching practice in a language course as accurately as possible, most of the combinations appeared naturally in the materials that were selected; only a few were added (i.e. the original text was modified to meet our needs). Second, language



corpora were consulted to check the frequency of the word combinations but no special criterion for an MI score (mutual-information score) was established. Also, the incongruence of the collocations (i.e. when the translation of the parts differs in L1 and L2) was monitored. Moreover, a pilot study of a form recognition test with pre-selected collocations (with 48 university students) was conducted, which revealed the most problematic ones, and the easiest items were then excluded.

The target language included: strong collocations (often incongruent), a selection which was inspired by Gyllstad (2007): e.g. *draw a conclusion; pay a visit; say a prayer; (be) firmly opposed to; pass judgment on (sb)*; prepositional phrases, e.g. *crammed with; demand for*, and structures, e.g. *(It's) highly likely that; (She's) bound to (verb)*.

Main differences in teaching approaches. Generally, the main difference in the instruction between the groups was the use of memory facilitation tasks focusing on whole chunks of the language in the experimental group and elaboration tasks and varied use aiming at individual words in the control group (a classification based on Webb & Nation, 2017). Various learning tools and apps (e.g. LearningApps.org, Leximapping.com, MS PowerPoint) were used to make the lessons engaging. Examples of the instruction in the experimental and control groups can be found in Appendix III. Apart from the focus on the tar-

get collocations, noticing ability was facilitated by various consciousness-raising tasks (input enhancement, deliberate search for collocations, active noticing) in the experimental group. Such treatment was not provided in the control group; see Appendix IV for examples. The Leximapping application (www.leximapping.com), an online tool for practising language via flashcards, was used for the after-class practice. The students practised the target language using flashcards (called lexicards) and elaborate exercises. The lexicards differed in the information they showed and in the types of practice they offered. The experimental group did keyword transformation/gap-fill and collocation retrieval tasks, while the control group did English-Czech translation and meaning-focused tasks. Examples of the cards can be seen in Appendix V.

3. RESULTS

3.1 Collocation knowledge

To answer the research questions regarding learning gains, the collocation knowledge of the target language in the experimental and control groups before and after the intervention was checked. The learning gains (received by subtracting the results in the pre-test from the post-test in the collocation knowledge tests, i.e. POST COLL_SUM minus COLL_SUM) in the experimental group ranged from



10 to 37 points (mean = 23.6, standard deviation = 7). In the control group, it ranged from -5 to 14 points (mean = 3, standard deviation = 5.2).

A one-way ANCOVA was conducted to compare the effectiveness of the teaching intervention whilst controlling for pre-intervention scores. Levene's test and normality checks were carried out and the assumptions were met. There was a significant difference in the collocation knowledge after the intervention (POST_COLL_SUM) [$F(1,36) = 123.7, p < 0.001$] between the two groups, whilst adjusting for pre-intervention scores (COLL_SUM). The partial Eta Squared value indicates a fairly large effect size ($\eta^2 p = 0.775$). The group the participant was in explains 77.5% of the variance in POST_COLL_SUM. See Table 1.

Comparing the estimated marginal means showed that the experimental group achieved higher scores in POST_COLL_SUM (mean = 50.3) when compared to the control group (mean = 31.3). See Table 2.

3.2 Understanding of meanings and usage of individual words

As for the second research question, a one-way ANCOVA was conducted to check if there were any differences in the learning gains between the experimental and control groups in terms of the meaning and usage of individual words. In this case, no significant difference was found. See Table 3.

Table 1 Collocation knowledge

	Sum of Squares	df	Mean Square	F	p	η^2	$\eta^2 p$	ω^2
GR	3487	1	3487.4	123.7	<.001	0.609	0.775	0.601
COLL_SUM	1222	1	1222.0	43.3	<.001	0.213	0.546	0.208
Residuals	1015	36	28.2					

Table 2 Collocation knowledge – estimated marginal means

			95% Confidence Interval	
GR	Mean	SE	Lower	Upper
E	50.3	1.19	47.9	52.7
C	31.3	1.22	28.8	33.8

Note: E – experimental group, C – control group

**Table 3** Understanding and usage of individual words

	Sum of Squares	df	Mean Square	F	p	η^2	η^2p	ω^2
GR	16.0	1	15.98	3.28	0.079	0.066	0.083	0.045
MEAN_REC	50.4	1	50.44	10.34	0.003	0.208	0.223	0.184
Residuals	175.7	36	4.88					

Table 4 Understanding and usage of individual words – estimated marginal means

			95% Confidence Interval	
GR	Mean	SE	Lower	Upper
E	19.0	0.494	18.0	20.0
C	17.7	0.507	16.7	18.7

Note: E – experimental group, C – control group

Table 4 provides estimated marginal means. The experimental group achieved slightly higher results, which are, however, not significantly different from the results of the control group.

4. DISCUSSION/CONCLUSIONS

Foreign language students can produce accurate and grammatically correct sentences, and yet their language production may still not sound native-like. As experts point out, to reach this level of proficiency, learners must possess collocation knowledge (e.g. Wood, 2002; Nation, 2001). This means to be aware of and be able to produce the combinations of words that co-occur in natural text in statis-

tically significant ways (Lewis, 2000). Research shows that even among upper-intermediate and advanced learners of English as a second language, this kind of knowledge is poor, and it is quite common that the error rate of collocations is rather high (Nesselhauf, 2005). It implies that more attention should be drawn to these lexical items in the lessons. Although there is agreement on the importance of collocations, ambiguity persists about how to proceed effectively in teaching them.

One of the questions we addressed in this paper was whether an explicit way of teaching collocations would yield better learning gains than non-explicit teaching. A one-way ANCOVA showed that the experimental



group which received collocation-oriented treatment had significantly better results than the control group in terms of the gains in collocation knowledge. In a similar longitudinal study, Boers et al. (2006) found that raising students' awareness of collocations and idiomatic expressions in lessons was beneficial in terms of their oral proficiency. A greater range of expressions in the experimental group who had received training in noticing was observed (by impartial judges) than in the case of the control group which had not received this kind of training. The authors, however, admit that 'noticing' is just the first step and does not guarantee acquisition; they suggest incorporating facilitation activities. Later, Boers et al. (2017) conducted a study in which they explored the effects of three kinds of fill-in-the-blank exercises to indicate the most effective way of teaching collocations. Not surprisingly, studying collocations as holistic units, rather than attending to their individual components, was the most effective way of fostering collocation knowledge. In our study, the experimental group was exposed to both consciousness-raising tasks and various memory facilitation activities.

Studies focusing on the explicit teaching of collocation tend to explore only one type of activity. For instance, a study carried out by Ördem and Paker (2016) showed that better results were achieved when vocabulary

was taught through a lexical approach than the traditional approach using definitions, antonyms, and guessing from the context in a longitudinal reading course. Similarly, Zaabalawi and Gould (2017) proved a lexical approach was effective in a reading-focus study. Debabi and Guerroudj (2018) documented better collocation use in language production when a lexical approach was adopted in a writing course. Our study was designed in a way that would address not only collocation knowledge as such but which would aim at communicative competence as defined in the CEFR (Council of Europe, 2001) and would stimulate both receptive and productive skills. Our aim was to achieve learning gains in a long-term course without prioritising one skill over others.

As has been documented, individual differences such as a student's motivation, anxiety, learning strategies, and foreign language learning aptitude play a significant role in learning and have an impact on the effectiveness of language acquisition; unfortunately, a great deal of research focused on the effect of a specific intervention in learning a foreign language does not take these inter-individual differences into account. Actually, very few studies focusing on collocations take individual differences into consideration. Nevertheless, neglecting students' personalities and abilities in individual groups might lead to the misinterpretation of results.



For this reason, in our study individual differences were carefully measured before the participants were divided so as to make the groups comparable in terms of psychological aspects. This setting allowed us to minimise the influence of individual differences on the intervention. By implementing this matched pairs experimental design, we discovered that the explicit teaching of collocations applied in the experimental group led to all the students achieving learning gains. However, this was not observed in the control group, where the performance of 26% of the participants worsened.

In our subsequent analyses, we built upon these findings and examined in detail the relationships between psychological factors and academic performance (see Kacařírková et al., 2023). Two components of foreign language aptitude brought the most interesting results out of all the selected and measured psychological variables. While in the control group learning outcomes were closely related to rote memory (measured by PA) and language analytical skills (measured by LAT), these relationships were not statistically significant in the experimental group. Conversely, in this group, language analytical skills played a significant role only in relation to performance in the word meaning test. Overall, the results suggested that the explicit teaching of collocations was beneficial for the

students, regardless of their individual psychological predispositions (for further details see Kacařírková et al., 2023).

The second question explored whether prioritising collocations over the meaning of individual words would have a negative effect on the use of individual words or, to be more specific, on the ability to match words with their meanings and to complete sentences with individual words. A one-way ANCOVA did not reveal any differences between the groups, suggesting that the time spent on collocations in the lessons was not at the expense of understanding the meaning of the individual words in the multi-word units and that the facilitation of the meaning which was performed with the control group did not bring the anticipated advantage. Apparently, mastering targeted collocations requires more intensive facilitation than mastering the meaning of words. This is in line with authors who claim that more attention should be given to collocations as they are perceived as a learning burden (Boers & Lindstromberg, 2009; Peters, 2016; Webb & Nation, 2017).

Several reservations about our study have to be discussed and directions for future work pointed out. The low number of participants prevents us from generalising, and we cannot be certain that the explicit teaching of collocation is beneficial in the same way for each individual student.



Another limitation might be the on-line interface of the classes, which could have played a role in terms of affective factors and motivation. As much as we tried to eliminate other external factors that might have influenced the effectiveness of the intervention, we found out that several students were participating in another English language course or attending courses conducted in English, which might have had an impact on the results. Additionally, the tests selected for measuring the language level before intervention, as well as the students' individual characteristics, were in most cases taken from existing measures and adjusted for the purposes of the study. Even though we piloted the test battery, we do not have sufficient data about the reliability of the measures, which would require further investigation. Future research should also aim at implicit knowledge, which was not tested in our study.

Despite these limitations, the explicit teaching of collocations in a language course in which consciousness-raising and memory facilitation tasks were adopted proved to be effective. Although both groups generated some learning gains, the experimental group significantly outperformed the control group in terms of both receptive and productive collocation knowledge. Moreover, in spite of the intensive focus on accuracy of the meaning of individual words in the control group, the results in the mean-

ing recognition test were without any significant difference in comparison to the experimental group in which the meaning of individual words was not explicitly taught, suggesting that teachers can dedicate more time to teaching collocations rather than teaching meaning.

Two main aspects distinguish our study from others which stress the importance of collocation knowledge. Firstly, individual differences were taken into account – carefully identified and measured. To ensure comparability between the experimental and control groups, we identified and equally distributed students with similar individual characteristics, such as extremely high/low aptitude, prior knowledge of targeted collocations, and level of anxiety. Secondly, our teaching approach replicated an authentic teaching experience. Similar studies including long-term, intensive interventions that focus on multiple language skills rather than a single skill are still relatively scarce. By demonstrating the feasibility of this approach, we hope our research will contribute to teaching practice by encouraging teachers to incorporate innovative tools and strategies into their lessons, and to use valuable teaching time effectively without having to make dramatic changes to the way they teach. Even small changes, such as incorporating consciousness-raising tasks on collocations (see Appendix IV) and memory facilitation instead



of elaborative meaning-focus activities (see Appendix III and V) and prioritising collocations and chunks over word meaning comprehension, can enhance the learning process.

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REFERENCES

- Allan, D. (2004). *Oxford Placement Tests*. Oxford: OUP.
- Boers, F., Eyckmans, J., Kappel, J., Stengers, H., & Demecheleer, M. (2006). Formulaic sequences and perceived oral proficiency: Putting a lexical approach to the test. *Language Teaching Research*, 10(3), 245–261.
- Boers, F., & Lindstromberg, S. (2009). *Optimizing a lexical approach to instructed second language acquisition*. Basingstoke: Palgrave Macmillan.
- Boers, F., & Lindstromberg, S. (2012). Experimental and intervention studies formulaic sequences in a second language. *Annual Review of Applied Linguistics*, 32(1), 83–110.
- Boers, F., Dang, T., & Strong, B. (2017). Comparing the effectiveness of phrase-focused exercises: A partial replication of Boers, Demecheleer, Coxhead, and Webb (2014). *Language Teaching Research*, 21(3), 362–380.
- Carroll, J. B. (1962). The prediction of success in intensive foreign language training. In R. Glaser (Ed.), *Training research and education* (pp. 87–136). Pittsburgh: University of Pittsburgh Press.
- Carroll, J. B. (1981). Twenty-five years of research on foreign language aptitude. In K. C. Diller (Ed.), *Individual differences and universals in language learning aptitude* (pp. 83–118). Rowley, MA: Newbury House.
- Carroll, J. B. (1990). Cognitive abilities in foreign language aptitude: Then and now. In T. H. Parry & C. W. Stansfield (Eds.), *Language aptitude reconsidered* (pp. 17–35). NJ: Prentice Hall Regents.
- Carroll, J. B., & Sapon, S. M. (1959). *Modern language aptitude test (MLAT)*. New York: Psychological Corporation.
- Cimlerová, P., Pokorná, D., Chalupová, E. et al. (2007). *Diagnostika specifických poruch učení u adolescentů a dospělých osob [Diagnosis of specific learning disabilities in adolescents and adults]*. Praha: IPPP.
- Cochran, J. L., McCallum, R. S., & Bell, S. M. (2010). Three A's: How do attributions, attitudes, and aptitude contribute to foreign language learning? *Foreign Language Annals*, 43(4), 566–582.
- Cohen, A. D., Oxford, R. L., & Chi, J. C. (2002) *Learning style survey*. Minneapolis: University of Minnesota.
- Costa, P. T., & McCrae, R. R. (1992). The five-factor model of personality and its relevance to personality disorders. *Journal of Personality Disorders*, 6(4), 343–359.



- Council of Europe (2001). *Common European framework of reference for languages: Learning, teaching, assessment*. Cambridge: Cambridge University Press.
- Cowie, A. P. (1981). The treatment of collocations and idioms in learners' dictionaries. *Applied Linguistics*, 2(3), 223–235.
- Debabi, M., & Guerroudj, N. (2018). The lexical approach in action: Evidence of collocational accuracy and the idiom principle in the writing of EFL intermediate students. *Arab World English Journal*, 9(3), 176–187.
- Dellar, H., & Walkley, A. (2016). *Outcomes: Upper intermediate, student's book*. 2nd ed. Andover: National Geographic Learning, Cengage Learning.
- Durrant, P., & Schmitt, N. (2009). To what extent do native and non-native writers make use of collocations? *International Journal of Applied Linguistics in Language Teaching*, 47(2), 157–177.
- Ehrman, M., & Oxford, R. (1990). Adult language learning styles and strategies in an intensive training setting. *The Modern Language Journal*, 74(3), 311–327.
- Gardner, R. C. (2001). Integrative motivation and second language acquisition. In Z. Dörnyei & R. Schmidt (Eds.), *Motivation and second language acquisition* (pp. 1–19). Honolulu: University of Hawaii.
- Gardner, R. C. (2004). *Attitude/Motivation Test Battery: International AMTB research project (English version)*. [Online]. Available from <http://publish.uwo.ca/~gardner/docs/englishamtb.pdf>
- Granger, S. (1998). Prefabricated patterns in advanced EFL writing: Collocations and lexical phrases. In A. P. Cowie (Ed.), *Phraseology: Theory, analysis, and applications* (pp. 145–160). Oxford: Clarendon Press.
- Gyllstad, H. (2007). *Testing English collocations: Developing receptive tests for use with advanced Swedish learners*. Lund: Lund University.
- Hernandez, T. A. (2008). Integrative motivation as a predictor of achievement in the foreign language classroom. *Applied Language Learning*, 18(1–2), 1–15.
- Horwitz, E., Horwitz, M., & Cope, J. (1986). Foreign language classroom anxiety. *The Modern Language Journal*, 70(2), 125–132.
- Hřebíčková, M. (2004). *NEO-PI-R: NEO osobnostní inventář (podle NEO-PI-R P. T. Costy a R. R. McCrae) [NEO-PI-R: NEO Personality Inventory (based on the NEO-PI-R by P. T. Costa and R. R. McCrae)]*. Praha: Testcentrum.
- Kacafírková, P., Špačková, K., & Valentová, H. (2023). Prediktivní síla, stabilita a proměnlivost psychologických faktorů ve výuce anglických kolokací. *Gramotnost, pregramotnost a vzdělávání*, 7(2).
- Kao, P., & Craigie, P. (2010). Foreign language anxiety and English achievement in Taiwanese undergraduate English-major students: An empirical study. *Hong Kong Journal*, 61, 49–62.
- Laufer, B., & Waldman, T. (2011). Verb-noun collocations in second language writing: A corpus analysis of learners' English. *Language Learning*, 61(2), 647–672.



- Lewis, M. (1993). *The lexical approach: The state of ELT and a way forward*. Hove: Language Teaching Publications.
- Lewis, M. (1997). *Implementing the lexical approach: Putting theory into practice*. Hove: Language Teaching Publications.
- Lewis, M. (2000). *Teaching collocation: Further developments in the lexical approach*. Hove: Language Teaching Publications.
- Li, S. (2015). The associations between language aptitude and second language grammar acquisition: A meta-analytic review of five decades of research. *Applied Linguistics*, 36(3), 385–408.
- Lu, Z., & Liu, M. (2011). Foreign language anxiety and strategy use: A study with Chinese undergraduate EFL learners. *Journal of Language Teaching & Research*, 2(6), 1298–1305.
- Masgoret, A., & Gardner, R. C. (2003). Attitudes, motivation, and second language learning: A meta-analysis of studies conducted by Gardner and associates. *Language Learning*, 53(S1), 167–210.
- Nation, I. S. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.
- Nattinger, J., & Decarrico, J. (1992). *Lexical phrases and language teaching*. Oxford: Oxford University Press.
- Nesselhauf, N. (2005). *Collocations in a learner corpus*. (Vol. 14). Amsterdam: John Benjamins.
- Oxford, R. L. (2003). Language learning styles and strategies: An overview. *GALA*, 1–25.
- Ördem, E., & Paker, T. (2016). Retention and use of lexical collocations (verb + noun and adjective + noun) by applying lexical approach in a reading course. *European Journal of Foreign Language Teaching*, 1(1), 144–160.
- Pawley, A., & Syder, F. H. (1983). Two puzzles for linguistic theory: nativelike selection and nativelike fluency. In J. C. Richards & R. W. Schmidt (Eds.), *Language and communication* (pp. 191–226). London: Longman.
- Pellicer-Sánchez, A. (2017). Learning L2 collocations incidentally from reading. *Language Teaching Research*, 21(3), 381–402.
- Perez, M. M. (2020). Incidental vocabulary learning through viewing video: The role of vocabulary knowledge and working memory. *Studies in Second Language Acquisition*, 42(4), 749–773.
- Peters, E. (2016). The learning burden of collocations: The role of interlexical and intralexical factors. *Language Teaching Research*, 20(1), 113–138.
- Scovel, T. (1978). The effect of affect on foreign language learning: A review of the anxiety research. *Language Learning*, 28(1), 129–142.
- Selivan, L. (2018). *Lexical grammar: Activities for teaching chunks and exploring patterns (Cambridge handbooks for language teachers)*. Cambridge: Cambridge University Press.



- Sinclair, J., & Sinclair, L. (1991). *Corpus, concordance, collocation*. Oxford: Oxford University Press.
- Szudarski, P. (2017). Learning and teaching L2 collocations: Insights from research. *TESL Canada Journal*, 34(3), 205–216.
- Teng, (M.) F. (2019). The effects of video caption types and advance organizers on incidental L2 collocation learning. *Computers & Education*, 142(C).
- Toomer, M., & Elgort, I. (2019). The development of implicit and explicit knowledge of collocations: A conceptual replication and extension of Sonbul and Schmitt (2013). *Language Learning*, 69(2), 405–439.
- University of Oxford (2017). *Oxford University Modern Languages Admissions Test*. Retrieved from https://www.ox.ac.uk/sites/files/oxford/field/field_document/MLAT_2017.pdf
- Van Vu, D., & Peters, E. (2021). Incidental learning of collocations from meaningful input: A longitudinal study into three reading modes and factors that affect learning. *Studies in Second Language Acquisition*, 44(3), 685–707.
- Vlčková, K., & Přikrylová, J. (2011). *Strategie učení se cizímu jazyku: Dotazník pro žáky (manuál k nástroji) [Foreign Language Learning Strategies: Questionnaire for pupils and teachers (manual)]*. Praha: Národní ústav vzdělávání.
- Webb, S., & Nation, P. (2017). *How vocabulary is learned*. Oxford: Oxford University Press.
- Wen, Z. E., Biedroń, A., & Skehan, P. (2017). Foreign language aptitude theory: Yesterday, today and tomorrow. *Language Teaching*, 50(1), 1–31
- Wood, D. (2002). Formulaic language acquisition and production: Implications for teaching. *TESL Canada Journal*, 20(1), 1–15.
- Zaabalawi, R. S., & Gould, A. M. (2017). English collocations: A novel approach to teaching the language's last bastion. *Ampersand*, 4(1), 21–29.

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KACAFÍRKOVÁ, P., ŠPAČKOVÁ, K., VALENTOVÁ, H., TOPKOVÁ, P., KUCHARSKÁ, A. Záměrná výuka kolokací – intervenční studie u českých studentů anglického jazyka se středně pokročilou úrovní

Znalost kolokací je prokazatelně nedostatečná i u středně pokročilých a pokročilých studentů angličtiny jako cizího jazyka, z čehož vyplývá, že těmto lexikálním prvkům není ve výuce věnována dostatečná pozornost. K řešení tohoto problému jsme navrhli dvanáctitýdenní výukovou intervenci, v níž byli účastníci (39 studentů Univerzity Karlovy) rozděleni do dvou skupin: experimentální skupiny s intenzivním explicitním zaměřením na kolokace (20) a kontrolní skupiny bez zaměření na kolokace (19). Studenti byli rozděleni tak, aby byly skupiny srovnatelné z hlediska proměnných, které nejvíce ovlivňují proces učení, a to cizojazyčných schopností, úzkosti, motivace a strategií učení. Výsledky ukázaly, že experimentální skupina dosáhla výrazně vyšších skóre v oblasti znalosti kolokací. V porozumění významům slov nebyl mezi skupinami zjištěn žádný významný rozdíl. Záměrná výuka kolokací se systematickým opakováním a procvičováním se tak ukázala být efektivnější než výuka zaměřená na význam jednotlivých slov.

Klíčová slova: výuková intervence, kolokace, záměrné učení, výuka cizího jazyka, úzkost, motivace, strategie učení, lexikální přístup, individuální rozdíly

APPENDIX I

Descriptive statistics for the experimental and control groups.



	PA	LAT	PSEU	NEO_ASC	FICAS	AMTB	STRAT	GRAM	COLL_REC
N	39	39	36	39	39	36	36	39	39
	E	20	17	20	20	17	17	20	20
	C	19	19	19	19	19	19	19	19
Missing	0	0	3	0	0	3	3	0	0
	E	0	3	0	0	3	3	0	0
	C	0	0	0	0	0	0	0	0
Mean	21.0	20.0	4.36	33.1	95.8	155	125	35.3	27.3
	E	21.2	5.06	32.9	95.0	158	126	34.8	26.4
	C	20.8	3.74	33.3	96.7	152	124	35.9	28.4
Median	22	20	3.00	33	95	153	126	35	28
	E	22.0	3	32.5	103	161	132	35.5	27.5
	C	22	3	35	93	150	124	35	29
Standard deviation	3.31	6.70	3.53	9.33	22.3	14.7	13.4	5.09	6.99
	E	2.82	4.45	8.36	22.1	12.4	15.1	4.53	6.92
	C	3.83	2.40	10.5	23.1	16.3	12.0	5.69	7.10
Min.	12	4	0	15	44	123	101	26	12
	E	16	4	0	17	127	101	27	12
	C	12	8	1	15	123	103	26	15
Max.	24	31	17	54	144	185	148	47	39
	E	24	17	17	49	171	148	45	35
	C	24	30	11	54	185	144	47	39
Shapiro-Wilk W	0.845	0.960	0.788	0.984	0.980	0.948	0.942	0.978	0.956
	E	0.861	0.955	0.804	0.987	0.858	0.901	0.958	0.924
	C	0.805	0.939	0.856	0.967	0.935	0.964	0.980	0.938
Shapiro-Wilk p	<.001	0.184	<.001	0.840	0.717	0.093	0.058	0.649	0.130
	E	0.008	0.444	0.002	0.992	0.143	0.071	0.508	0.120
	C	0.001	0.253	0.008	0.716	0.988	0.212	0.942	0.244



APPENDIX II

Examples of the questions used in the language tests.

Collocation recognition test (COLL_REC):

Vyberte u každého řádku nejpřirozenější slovní spojení. Zakroužkujte A, B, nebo C. Vyberte vždy pouze jednu odpověď.

- | | | |
|------------------------|-------------------------|-------------------------|
| A) hold a speech | B) perform a speech | C) give a speech |
| A) do a journey | B) go on a journey | C) pull a journey |
| A) keep one's breath | B) house one's breath | C) hold one's breath |
| A) direct an orchestra | B) conduct an orchestra | C) control an orchestra |

Collocation recall test (COLL_PROD):

Dopíšte vhodné slovní spojení (pokud je dané první písmeno, respektujte to).

1. t _____ a loan (doplňte frázové sloveso)
2. p _____ charges against somebody (doplňte sloveso)
3. _____ my respects (doplňte sloveso)

Doplňte vynechaná slova do věty.

1. People are very fond _____ their possessions.
2. It is crammed _____ people.
3. He put great value _____ his education.

Použijte slovo v závorce v daném tvaru a vytvořte větu, která je významově stejná s první. Př: *It is not necessary to go there today. (HAVE) We _____ there today. → We do not have to go there today.*

1. The new shopping mall is expected to open in September. (DUE)

The new shopping mall is _____ in September.

2. It's certain that you will get the job. (BOUND)

You _____.

3. It's probable that the festival will be cancelled. (LIKELY)

The festival _____.

Meaning recognition and usage test (MEANING):

Spojte definice se slovy a)-h).

1. a pile of things arranged one on top of another: _____ = c) stack
2. money that a customer with a bank account is temporarily allowed to owe to the bank: _____ = a) overdraft



Vyberte správné slovo z nabídky a doplňte do vět.

affluent, blame, broke, sustain, deceptive, denied, endeavour, feverish, fierce, stretched, subtle, sufficient

1. There has been _____debate about the role of marketing in our company.
2. When the action commenced, the enemy was unable to _____the attack of our men for long.
3. They live in a(n) _____ area in a huge luxury house.

APPENDIX III

Examples of the instructions in the experimental and control groups.

Experimental group:

- Do you remember the collocations from the text? (first letter given)
- Match the words with their collocates.
- Find the chunks in the text above according to the clues (inspired by a guided discovery task in Selivan, 2018)
- Keyword transformation; rewrite the sentence using the given word.
- Complete the sentences from the video with the correct prepositions.
- Re-read the text, completing the gaps; check your answers in pairs.
- Memorise the chunks; complete the first part of the collocation.

Control group:

- Which words can be used as nouns and verbs?
- Match the words and definitions.
- Find the words in the text according to the definitions.
- Define the words using synonyms and antonyms.
- Which noun suffixes have you noticed in the video?
- Change the word into the given word class.
- Memorise the words, read the definition, and guess the word.

APPENDIX IV

Consciousness-raising tasks in the experimental group.

- Selected language items were in bold or highlighted. (vs. No enhancement in the control group.)
- Find collocations which you think are interesting. (vs. Pick a word from the text, describe it, and let us guess.)
- Notice how these words are used in the text; notice the co-text of the word. (vs. Find the words in the text which are related to the following categories.)




APPENDIX V

See Figure 1 and Figure 2 to compare the lexicards in the control and experimental group.

(Být) švorc
/brəʊk/

01_Money
Adj
Ifm



BROKE


broke

Having very little money: ____

Figure 1 Lexicard in the control group

(Být) švorc
/brəʊk/

01_Money
Adj



BROKE

(I'm) flat ~

broke

I can't afford to go on holiday this year - I'm flat ____.

Figure 2 Lexicard in the experimental group