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**ASSESSING VOCABULARY DEVELOPMENT
POSSIBILITIES AND STUDENTS' PERCEIVED
USEFULNESS USING TED TALKS IN A
FIRST-YEAR LANGUAGE SKILLS DEVELOPMENT COURSE**

Introduction

Vocabulary acquisition is a key aspect of language learning, and as a complex area, it underlies all four skills. For this reason, setting level-appropriate learning and achievement goals in instructed acquisition is of key importance. Familiarity with the learning process, possible challenges that can emerge during it and various scaffolding techniques will help instructors to provide their students with meaningful learning experiences. In terms of situating vocabulary requirements, the CEFR¹ defines the range for each of its six levels ranging from “familiar everyday expressions” for the A1 level to “virtually everything heard or read” for the C2 level. Based on these descriptors, teachers can further refer to CEFR- or corpus-based vocabulary lists. Regarding essential vocabulary, the New General Service List² contains level-based collections of the 2,800 most common words. Similarly, the New Academic Word List³ represents the most frequently used academic words. However, various other resources, such as the Oxford 3,000⁴ and 5,000⁵ lists, build on the CEFR and cover words from A1 until C1 level, representing similar comprehensive lists of items for teachers to use. Thus, the main challenge that follows is scaffolding vocabulary acquisition to meaningfully develop, extend, and build on language learners' existing vocabulary knowledge.

The study at hand presents the findings of a longitudinal vocabulary development project with first-year non-native speaker English teacher majors (N=15). Students worked with interactive materials using TED talks and various scaffolding solutions, such as learning primers, illustrated vocabulary flashcards and practice tests. The participants completed multiple data collection instruments, and the findings show that students' vocabulary increased differently on global and individual levels. Students also reflected on the frame and expressed high levels of motivation and engagement. In the following, key aspects of vocabulary acquisition, multimedia support and EFL classroom challenges are addressed that underlie the study and pedagogical conclusions are drawn related to the main findings.

¹ COUNCIL OF EUROPE. *Global scale – Table 1 (CEFR 3.3): Common Reference levels*. 2024. <https://bit.ly/4bb6pBo>

² BROWNE, Charles. *A New General Service Vocabulary List: Helping students help themselves*. The Language Teacher, 2013/4, 13–16.

³ COXHEAD, Averil. *A New Academic Word List*. TESOL Quarterly, 2000/2. 213–238.

⁴ OXFORD UNIVERSITY PRESS. *The Oxford 3,000 By CEFR Level*. 2024a. <https://bit.ly/4b5mMin>

⁵ OXFORD UNIVERSITY PRESS. *The Oxford 5,000 By CEFR Level*. 2024b. <https://bit.ly/4b7Am4R>

Theoretical background

In terms of vocabulary benchmarks, Nation⁶ established that ideal coverage, which stands for understanding 98% of the given discourse, can be set at “8,000-9,000” and “6,000-7,000 word families”⁷ for written and spoken text respectively. Further positioning these values, Nation and Beglar’s⁸ Vocabulary Size Test explains that non-native university students’ vocabulary level can be approximated to 5,000-6,000 word families.⁹ Skill-specific findings, like Matthews’¹⁰ study on listening skills further support the level established in the Vocabulary Size Test as the comprehension of mid-frequency items was established as a predictor of higher language proficiency.¹¹ What these numbers entail is the complexity of vocabulary acquisition as word families contain several related words across various types. For this reason, focusing on increasing not just the breadth of students’ vocabulary¹² (i.e., “the number of words known”¹³) but its depth or (i.e., “the richness of word knowledge”¹⁴) should be promoted¹⁵ through the development of “semantic links among lexical items”.¹⁶

In terms of scaffolding students’ vocabulary development, Nation¹⁷ addresses that vocabulary instruction needs to factor in three main aspects of vocabulary knowledge: form, meaning and use.¹⁸ Strong connections between components¹⁹ such as “form–meaning link, derivatives, multiple meanings, and collocations”²⁰ have also been identified. Thus, in providing students with meaningful and relevant learning opportunities for encountering words, using them in various contexts that aids the development of a multilayered vocabulary knowledge, instructors can increase the potential extension of learners’ productive vocabulary. Akşit and Şükran²¹ have also found that the vocabulary level of first-year

⁶ NATION, Ian Stephen Paul: *How large a vocabulary is needed for reading and listening?* The Canadian Modern Language Review, 2006/1, 59–82. (Hereinafter: NATION, 2006)

⁷ NATION, 2006. 79.

⁸ NATION, Ian Stephen Paul–BEGLAR, David. *A vocabulary size test*. The Language Teacher, 2007/7. 9–13. (Hereinafter: NATION and BEGLAR, 2007)

⁹ NATION and BEGLAR, 2007. 12.

¹⁰ MATTHEWS, Joshua: *Vocabulary for listening: Emerging evidence for high and mid-frequency vocabulary knowledge*. System, 2018/72. 23–36. (Hereinafter: MATTHEWS, 2018)

¹¹ MATTHEWS, 2018. 31.

¹² LI, Miao-KIRBY, John R. *The effects of vocabulary breadth and depth on English reading*. Applied Linguistics, 2015/5. 611–634. (Hereinafter: LI and KIRBY, 2015)

¹³ LI and KIRBY, 2015. 611.

¹⁴ Ibid.

¹⁵ ENAYAT, Mostafa Janebi-DERAKHSHAN, Ali. *Vocabulary size and depth as predictors of second language speaking ability*. System, 2021/99/102521 1–15. (Hereinafter: ENAYAT and DERAKHSHAN, 2021)

¹⁶ ENAYAT and DERAKHSHAN, 2021. 11.

¹⁷ NATION, Ian Stephen Paul. *Learning vocabulary in another language*. 2013. Cambridge University Press. (Hereinafter: NATION, 2013)

¹⁸ NATION, 2013. 49.

¹⁹ GONZÁLEZ-FERNÁNDEZ, Beatriz–SCHMITT, Norbert: *Word knowledge: Exploring the relationships and order of acquisition of vocabulary knowledge components*. Applied Linguistics, 2020/4. 481–505. (Hereinafter: GONZÁLEZ-FERNÁNDEZ and SCHMITT, 2021)

²⁰ GONZÁLEZ-FERNÁNDEZ and SCHMITT, 2021. 481.

²¹ AKŞIT, Zeynep-SAYGI, Şükran: *Which components of word knowledge do EFL learners learn?* Language Learning in Higher Education, 2024/1. 253–268. (Hereinafter: AKŞIT and SAYGI, 2024)

university students is not only connected to their previous exposure to English but can dictate their vocabulary acquisition strategies during their studies with first resorting to L1 (lower vocabulary level students) or L2 dictionaries (higher vocabulary level students).²²

Regarding the challenges language teachers may face in the EFL classroom, Schmitt²³ outlines a complex picture that includes appropriate vocabulary size, multilayered vocabulary knowledge, students' varying learning speeds, connections to previously learned concepts, learners' knowledge development and vocabulary instruction.²⁴ These variables represent an interconnected web that greatly affects students' eventual vocabulary development. The variables can be grouped based on their roles in the learning process. Thus, diagnostic ones, like required vocabulary size and vocabulary knowledge need to be set as benchmarks that should specify the types of vocabulary knowledge development that are expected from learners. Formative variables involve providing opportunities for acquisition to take place at various learning speeds and fostering students' understanding of the interconnectedness of vocabulary and knowledge development. Finally, teaching methodology includes creating engaging learning experiences based on individual and classroom variables.

Advances in information technology have greatly contributed to the multitude of vocabulary acquisition support options language teachers and learners have access to. Although the central focus of the present study is video-based (i.e., listening-focused) vocabulary acquisition, it is important to address that a multitude of relevant materials, if they are accessible and can be integrated meaningfully, are prime sources for vocabulary development purposes. For example, a subgroup of such projects focuses on using various online news platforms for targeted vocabulary extension, which, as shown in Dang and Lu's²⁵ study can lead to university students' increased academic vocabulary.

Accessing multimedia and a wealth of learning applications has never been easier. While the focus of the present study is university-level EFL students, it is important to note that songs have been used for receptive vocabulary development as early as the pre-school level.²⁶ Teachers can integrate authentic materials such as videos into their ELF lesson while also making use of various scaffolding tools like subtitles, rewinding and playback speed that can help with differentiated instruction. Furthermore, applications such as Quizlet or Duolingo utilize gamification to increase learners' motivation. A multitude of key benefits of using multimedia have been identified, such as increased retention with the help of digital flashcards,²⁷ the motivating aspect of using mobile learning in vocabulary

²² AKŞIT, Zeynep-SAYGI, 2024. 263.

²³ SCHMITT, Norbert: *Key issues in teaching and learning Vocabulary*. In: CHACÓN-BELTRÁN, Rubén-ABELLO-CONTESE, Christian-DEL MAR TORREBLANCA-LÓPEZ, María (Eds.): *Insights into non-native vocabulary teaching and learning*. Multilingual Matters, 2010. 28–40. (Hereinafter: SCHMITT, 2010)

²⁴ SCHMITT, 2010. 28.

²⁵ DANG, Thi Ngoc Yen-LU, Cailing: *Learning academic vocabulary through reading online news*. International Review of Applied Linguistics in Language Teaching. 2024, March, 1–27.

²⁶ see COYLE, Yvette-GÓMEZ GRACIA, Remei: *Using songs to enhance L2 vocabulary acquisition in preschool children.*, ELT Journal, 2014/3. 276–285.

²⁷ YOWABOOT, Chadaporn-SUKYING, Apisak: *Using digital flashcards to enhance Thai EFL primary school students' vocabulary knowledge*. English Language Teaching, 2022/7. 61–74

development²⁸ as well as videos being a resource that students enjoy working with as a self-paced learning strategy.²⁹ The format has potential for incidental learning³⁰ which is the process of acquiring³¹ “new lexical items without intending to do so”.³² Furthermore, illustration-based scaffolding³³ lessens the possible learning challenges associated with the “audio information [in videos] that may impose additional cognitive load”,³⁴ learning applications can meaningfully contribute to the development of student autonomy³⁵ and learner engagement can increase with a gamified approach.³⁶ The various benefits of technology-based vocabulary acquisition support point towards not only the possibility but the potential need for extending the learning space beyond the classroom and giving students scaffolding and control in how they want to approach their own vocabulary development after a certain proficiency level.

Study

The study at hand was conducted during the fall semester of the 2023–2024 academic year at the Institute of English Studies at the University of Pécs in the English Language Development I course. As a compulsory 14-week-long course in both the BA and teacher training programs, it provides first-year English majors with opportunities for developing their listening and speaking skills in particular. Further courses, focusing on reading and writing skills as well as targeted grammar development are also part of the compulsory courses in both programs. Furthermore, these courses also aid students’ preparation for their Proficiency Exam at the end of their second semesters, which is a C1-level milestone exam required for the majority of upper-year courses.

The participants of the study were a group of first-year English majors (N=15, F: 10, M: 5, average age: 18.76 years) who had previously completed the advanced-level school-leaving exams in English. However, regarding their proficiency levels, the group was quite heterogenous with a range between B2 and C1 levels. In terms of study backgrounds, the group was made up of teacher trainees exclusively which meant that they had three separate study tracks: the English teacher, their other teaching major and the pedagogy track. As one of the core motivations for the project at hand was to pilot a vocabulary development

²⁸ XUEHONG, He–LOEWEN, Shawn: *Stimulating learner engagement in app-based L2 vocabulary self-study: Goals and feedback for effective L2 pedagogy*. System, 2022/105/ 102719. 1–13. (Hereinafter XUEHONG and LOEWEN, 2022)

²⁹ WILLOUGHBY, Luisa–SELL, Cathy: *Online videos for self-directed second language learning*. Language Learning & Technology, 2024/1. 1–15.

³⁰ TENG, Mark Feng: *Incidental vocabulary learning from listening, reading, and viewing captioned videos: frequency and prior vocabulary knowledge*. Applied Linguistics Review, 2024. 1–31.

³¹ ENDER, Andrea: *Implicit and explicit cognitive processes in incidental vocabulary acquisition*. Applied Linguistics, 2016/4. 536–560. (Hereinafter ENDER, 2016)

³² ENDER, 2016. 537.

³³ ZOU, Di–TENG, Mark Feng: *Effects of tasks and multimedia annotations on vocabulary learning*. System, 2023. 115. 1–15. (Hereinafter: ZOU and TENG, 2023)

³⁴ ZOU and TENG, 2023, 13

³⁵ DALY, Nigel. P.: *Investigating learner autonomy and vocabulary learning efficiency with MALL*. Language Learning & Technology, 2022/1. 1–30.

³⁶ ZHANG, Ruofei–ZOU, Di–CHENG, Gary: *Learner engagement in digital game-based vocabulary learning and its effects on EFL vocabulary development*, System, 2023/119/103173. 1–19.

support system that utilizes self-paced learning, the teacher trainees represented a relevant test group for the study as they have more courses than their BA peers and would benefit from such a language learning scaffolding system. For data protection purposes, students are referred to using codes, like S1 (S: student).

The study had three main research questions that aimed to assess the impact of the self-paced vocabulary development approach by collecting data on students' vocabulary development pre- and post-treatment (RQ1), students' experiences (RQ2) and language learning scaffolding (RQ3). As such, the research questions are as follows:

1. How does the implementation of interactive materials affect students' vocabulary level?
2. How do students evaluate key aspects of their language learning experiences using interactive vocabulary development materials?
3. In what ways does the interactive book-based format scaffold language learning?

Set 1	Set 2	Set 3	Set 4	Set 5
<i>accumulate</i>	<i>archeologist</i>	<i>demonstrate</i>	<i>explore</i>	<i>fancy</i>
<i>android</i>	<i>convinced</i>	<i>deviant</i>	<i>headline</i>	<i>recommendation</i>
<i>century</i>	<i>embarrassed</i>	<i>engineer</i>	<i>obsessed</i>	<i>sustainability</i>
<i>collaborate</i>	<i>flourish</i>	<i>pinnacle</i>	<i>quote</i>	<i>talent</i>
<i>constant</i>	<i>prominent</i>	<i>remarkable</i>	<i>spontaneously</i>	<i>wander</i>
Set 6	Set 7	Set 8	Set 9	Set 10
<i>advance</i>	<i>appeal</i>	<i>dormant</i>	<i>government</i>	<i>pattern</i>
<i>alarming</i>	<i>commercial</i>	<i>encounter</i>	<i>invisible</i>	<i>regret</i>
<i>armor</i>	<i>determined</i>	<i>genius</i>	<i>modulate</i>	<i>regret</i>
<i>behavior</i>	<i>disaster</i>	<i>individual</i>	<i>paraphrase</i>	<i>rehearse</i>
<i>appointment</i>	<i>implication</i>	<i>irony</i>	<i>pretend</i>	<i>trivial</i>

The 50 vocabulary items used in the pre- and post-treatment tests (Table 1.)³⁷

A	<i>dormant</i>		the funny or strange aspect of a situation that is very different from what you expect
B	<i>encounter</i>		a meeting, especially one that is sudden, unexpected or violent
C	<i>genius</i>		a person considered separately rather than as part of a group
D	<i>individual</i>		unusually great intelligence, skill or artistic ability
E	<i>irony</i>		not active or growing now but able to become active or to grow in the future

Excerpt from the pre- and post-treatment instruments illustrating the matching sets (Table 2.)³⁸

The following data collection instruments were utilized in a mixed-methods design using a paper and pencil format administered in-class: a pre-treatment test (week 1), two vocabulary tests (weeks 6 and 11), a post-treatment test and an end-term course assessment feedback questionnaire (both week 12). The pre- and post-tests contained the same 50 items in a matching test format

³⁷ Vocabulary items were selected from the ten TED talks used in the study (see Table 3 for the complete list)

³⁸ Definitions for the vocabulary items were taken from the Oxford Learner's Dictionaries (<https://www.oxfordlearnersdictionaries.com/>) and the Merriam-Webster Dictionary (<https://www.merriam-webster.com/>)

(see Tables 1 and 2). Students then worked with five sets of interactive vocabulary development materials on Moodle (the university's LMS) that accounted for fifteen percent of their grade and completed two ten-item matching vocabulary tests in-class which attributed to ten percent of their final course grades. Finally, after completing the post-treatment test, students also filled out the end-term course assessment feedback questionnaire which contained 26 five-point Likert-scale subitems encompassing accessing the interactive materials (Q1a-c), working with learning priming questions (Q1d-f), video-based learning experiences (Q1g-o), flashcard-based learning experiences (Q1p-u), reflections regarding the practice tests (Q1v-x) and views on scheduling and further exposure (Q1y-z). These were followed by two open-ended items collecting information for students' perceived benefits and limitations of the approach (Q2a-b) and two open-ended items regarding their overall impressions (Q3a-b) and descriptive statistical data for their gender and age.

Preparing interactive books for vocabulary development

This section presents the preparation, design, administration and assessment of the interactive materials developed for scaffolding participants' vocabulary development. The central aim of the project was to provide students with self-paced learning possibilities using authentic materials and utilizing various interactive materials in an integrated fashion. Thus, the goal was to prepare engaging interactive scaffolding solutions using authentic resources that are not only intuitive to access but also build on the possible learning preferences and build on potential language learning strategies students have developed during their secondary studies. For this reason, the authentic materials were represented by thematic TED talks and the interactive solutions were integrated into H5P interactive books on Moodle.

The large variety of topics covered by TED talks makes them perfect candidates for language development projects. For this reason, the English Language Development I course utilized them in a quasi-flipped classroom manner. A key feature of flipped classroom design³⁹ is students working with materials shared on the learning management system on their own before the in-class meetings,⁴⁰ the approach allowed for a topic-based integration. However, it was a limited implementation of the flipped-classroom as only the general topics were readdressed during the face-to-face lessons.

Illustrating the quasi-flipped lesson design, the second week of the course had creativity as a central topic (see Table 3). The chosen TED talk students watched prior to the face-to-face session (Manoush Zomorodi: How boredom can lead to your most brilliant ideas) discussed out-of-the-box thinking. This was a central strategy addressed in a gamified group-based problem-solving task students worked with during week two where they practiced generating, evaluating and presenting their ideas using the Persuasion Map⁴¹ graphic

³⁹ GALINDO-DOMINGUEZ, Héctor: *Flipped classroom in the educational system. Trend or effective pedagogical model compared to other methodologies?* Educational Technology & Society, 2021/3. 44–60. (Hereinafter: GALINDO-DOMINGUEZ, 2021)

⁴⁰ GALINDO-DOMINGUEZ, 2021. 44.

⁴¹ Available on the ReadWriteThink website at <https://bit.ly/4byohCr>

organizer (see Figure 1). Although the quasi-flipped classroom frame was present throughout the course, its implementation was not a primary objective but rather it served as a set of thematic connection points between students' in-class and out-of-class learning.

Topic and (week)	Presenter	Title of talk
Creativity (W1)	Manoush Zomorodi	<i>How boredom can lead to your most brilliant ideas</i>
Communication (W2)	Celeste Headlee	<i>10 ways to have a better conversation</i>
School life (W3)	Sir Ken Robinson	<i>Bring on the learning revolution!</i>
Travelling (W4)	Ann Morgan	<i>My reading a book from every country in the world</i>
Genres (W6)	Adam Savage	<i>My love letter to cosplay</i>
Festivals and traditions (W7)	Alexis Charpentier	<i>How record collectors find lost music and preserve our cultural heritage</i>
Digital word (W8)	Tim Urban	<i>Inside the mind of a master procrastinator</i>
Arts (W9)	Tom Wujec	<i>Got a wicked problem? First, tell me how you make toast</i>
Time (W10)	Laura Vanderkam	<i>How to gain control of your free time</i>

Thematic list of TED talks utilized in the interactive vocabulary development materials (Table 3.)

H5P, which stands for interactive html5 materials,⁴² is available as a Moodle plugin and enables instructors to develop many engaging activities that prioritize some form of interaction⁴³. While individual H5P content types can be developed and inserted on the Moodle course spaces, doing so can end up giving the participants a fragmented learning experience or may even lead to confusion. This is even more problematic when self-paced learning, where students do not have access to immediate instructor feedback is intended to be a key feature. Thus, developing interactive vocabulary learning materials began by creating an interactive book template for two reasons. First, the H5P interactive book enables the integration of various subunits into a major one and the interactive books lists them as chapter in their table of contents (see left side of Figures 2–6). Second, familiarity with the format can help students progress through the materials easier. Thus, each interactive book included the following sections with a simple symbol system in order for students to get an immediate idea of what they need to complete at a glance:⁴⁴

1. an instructions page with the list of activities students needed to complete,
2. a learning priming 'before listening' page for familiarizing students with the given week's topic and getting them ready for learning with two brainstorming questions and a quote from the given TED talk (see Figure 1),
3. a 'this week's TED talk' page with the chosen TED talk as an embedded YouTube video (see Figure 2),

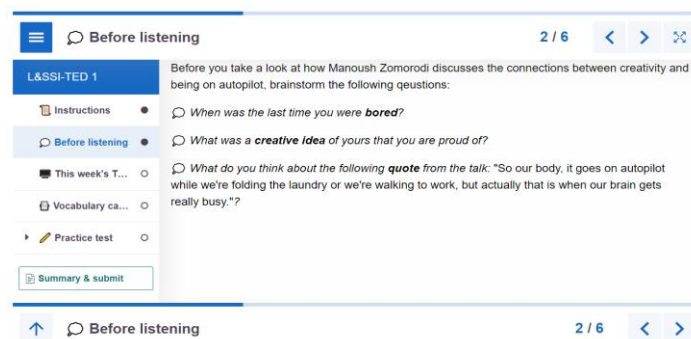
⁴² See <https://h5p.org/>

⁴³ The content list with examples can be accessed on <https://h5p.org/content-types-and-applications>

⁴⁴ Icons were taken from Emojipedia (<https://emojipedia.org>)

4. a 25-item vocabulary flashcard set with an illustration,⁴⁵ the word, its type on one side and its definition as well as a sample sentence on the other side⁴⁶ for the selected vocabulary items (see Figures 3 and 4),
5. a ten-item matching practice test with immediate feedback (see Figure 5).

The ten interactive books were developed using Lumi⁴⁷ and uploaded to Moodle where they were scheduled to become available one week before the in-class sessions to which they had some topical connections (e.g., the interactive book shown on Figure 2–5 was connected to the second week’s in-class topic and was available from week one). Besides the date-based restrictions, students had access to all interactive books throughout the semester and could return to them as many times as they wanted to review the flashcards and retake the practice tests.



The 'before listening' learning priming questions in the first interactive book (Figure 1)

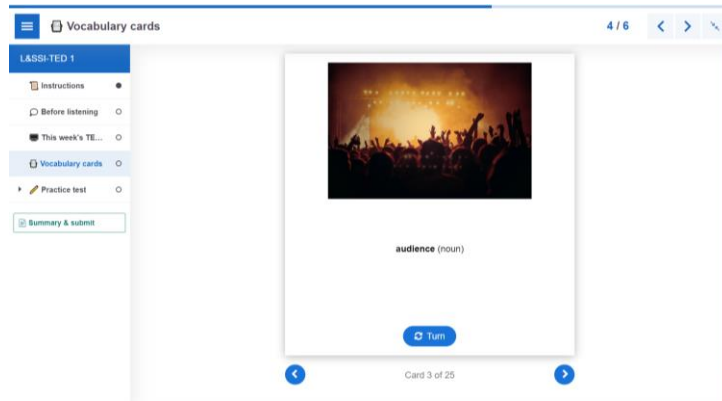


The 'this week's TED talk section in the first interactive book (Figure 2)

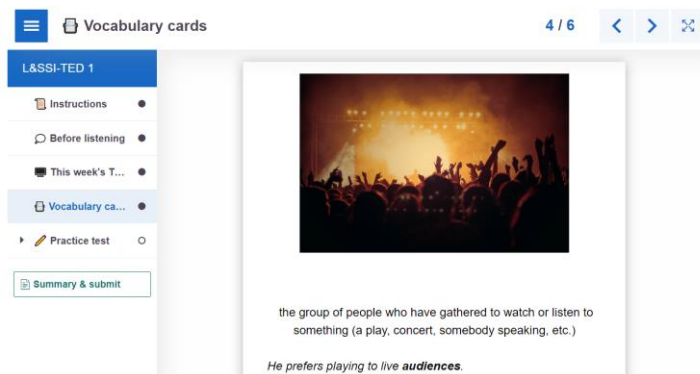
⁴⁵ Illustrations for the flashcards were taken from Pixabay (<https://pixabay.com>) and Pexels (<https://www.pexels.com>)

⁴⁶ Definitions and sample sentences taken from the Oxford Learner's Dictionaries (<https://www.oxfordlearnersdictionaries.com>) and the Merriam-Webster Dictionary (<https://www.merriam-webster.com>)

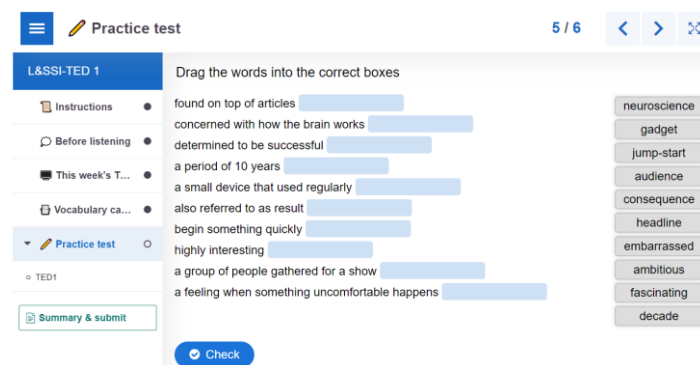
⁴⁷ Lumi is a desktop H5P editor (<https://app.lumi.education>)



The term side of the vocabulary flashcards in the first interactive book (Figure 3)



The definition side of the vocabulary flashcards in the first interactive book (Figure 4)



The drag-and-drop matching practice test at the end of the first interactive book (Figure 5)

Data collection and analysis

The study used quantitative and qualitative data analysis protocols for the data collection instruments. As every instrument was administered in paper-and-pencil format, the first step was digitizing them. Next, basic descriptive statistics were calculated to determine the mean (M.) and standard deviation (S.D.) values for the pre- and post-treatment tests, the two vocabulary tests and the five-point Likert-scale items in the end-term feedback questionnaire (n=11). In order to ensure comparability of the pre- and post-test values, only those students' scores were included who completed both tests. Finally, the answers to the open-ended items were analyzed and color coded to establish meaningful trends. Overall, six of categories emerged:

1. interactive book benefits: reflections connected specifically to advantages of the interactive book-based format (e.g., S5 "It was really great that I could practice on my own and I still understand everything."),
2. language learning benefits: answers related to general and specific experiences (e.g., S9: "I can understand and use more words than before."),
3. limitations: shortcomings and issues with the LMS or the interactive books (e.g., S4: "I was just missing the listening part when I didn't know how to say a word."),
4. general benefits: overall reflections regarding the format (e.g., S2: "It was really enjoyable working with the flashcards after watching the video."),
5. being pleased with the approach: overall positive reflections (e.g., S11: "I didn't find problems with it"),
6. development as a teacher: answers connected to the possible future use of the interactive book-based vocabulary development frame as a teacher (e.g., S1: "If I get to the part of being a teacher, I will definitely use this method, hoping it will make it as easy for my students as it was for me.").

Findings and discussions

In the following, findings and answers relevant to the three research questions are discussed. The first research question was concerned with whether there are identifiable changes in students' vocabulary level due to the implementation of interactive vocabulary development materials that can be measured using the pre- and post-treatment 50-item vocabulary matching tests. As indicated before, only those students' scores were included in the comparison who completed both tests (N=11). As Table 4 shows, students already scored quite high on the pre-treatment test (group M=42.9/50, S.D.: 5.61) and there was only a small measurable global increase with a difference of 2.55 in the post-treatment test (group M=45.45/50, S.D.: 6.28). When looking at the mean group scores in the two in-class vocabulary tests, similar patterns emerge regarding the relatively stable group values (test 1: M=8.6/10, S.D.=2.23; test 2: M=8.14/10, S.D.=2.74).

In terms of students' global (i.e., whole class) vocabulary level, the vocabulary test values remain rather stable being in the 80+ percent range and there was only an incremental overall increase due to the treatment. These

findings are consistent with the possible challenges⁴⁸ as students have highly different language learner backgrounds that affect their vocabulary level and background knowledge. Similarly, as first-year non-native speaker English majors, their vocabulary level could have been around the 5,000-6,000 word families range⁴⁹. Furthermore, a limitation of the tests used in the study was that it only focused on students' receptive knowledge which can be significantly larger than the productive one. However, reviewing the differences between the pre- and post-treatment test scores reveals a high degree of individual variability. A surprising result is that S7 shows a five-point decrease. In the case of two students (S6 and S8), there were no changes, however, the majority of the sample shows increases (S1, S4, S5, S10, S11, S12, S13 and S15) that can even reach twelve points in difference in the case of S4 (i.e., a 24% increase). Thus, the implementation of interactive vocabulary development materials showed minimal changes on the whole-class-level, however, they resulted in significant changes on the individual-student-level.

Student	Pre-test			Post-test			Difference
	Score	M.	S.D.	Score	M.	S.D.	
S1	47	0.94	0.4	48	0.96	0.2	+1
S4	38	0.76	0.43	50	1	0	+12
S5	39	0.78	0.42	50	1	0	+11
S6	50	1	0	50	1	0	0
S7	48	0.96	0.2	43	0.86	0.2	-5
S8	48	0.96	0.2	48	0.96	0.2	0
S10	46	0.92	0.27	50	1	0	+4
S11	32	0.64	0.48	33	0.66	0.48	+1
S12	39	0.78	0.42	34	0.68	0.47	+3
S13	40	0.8	0.4	46	0.92	0.27	+6
S15	45	0.9	0.2	48	0.96	0.2	+2
Overall	42.9			45.45			+2

An overview of the pre- and post-treatment test results (Table 4.)

The second research question was concerned with students' reflections as language learners concerning the interactive material-based vocabulary development project. Students completed an end-term questionnaire during week twelve of the English Language Development I course and the first question had 26 subitems that asked students to evaluate their experiences using five-point Likert scales regarding accessing the materials, the learning priming questions, video-based learning, flashcard-based learning, practice tests as well as scheduling and further exposure. Students rated the statements on five-point scales (1: completely disagree; 2: somewhat disagree; 3: neither agree, nor disagree, 4: somewhat agree; 5: completely agree). In the following, key aspects are discussed, and conclusions are drawn regarding students' experiences as concerning the interactive materials. These items are referred to using the main question and subitem for clarity (e.g., Q1a represents the first subitem).

⁴⁸ see SCHMITT, 2010. 28.

⁴⁹ see NATION and BEGLAR, 2007. 12.

Accessing the interactive materials		M.	S.D.
a)	<i>Finding the interactive books on the Moodle course space was easy.</i>	4.18	1.17
b)	<i>The interactive books were logically structured.</i>	4.55	0.93
c)	<i>It was clear what my tasks were with the individual interactive book segments (instructions, before listening, this week's TED talk, vocabulary flashcards, practice test).</i>	4.55	0.82
Working with learning priming questions		M.	S.D.
d)	<i>I reviewed the 'before listening' questions before watching the weekly TED talk.</i>	3.55	1.04
e)	<i>The weekly 'before listening' questions supported my language development.</i>	3.82	0.75
f)	<i>The 'before listening' questions helped me prepare for the topic of the TED video that week.</i>	4.36	1.03
Video-based learning experiences		M.	S.D.
g)	<i>The weekly TED talks supported my language development.</i>	4.7	0.48
h)	<i>I found the topics covered in the TED talks interesting.</i>	4.18	1.17
i)	<i>I could understand the TED talks without any problems.</i>	3.91	1.04
j)	<i>I could not understand the TED talks without problems.</i>	2	1.49
k)	<i>Watching videos is a great way to develop my language skills.</i>	4.45	1.21
l)	<i>I could develop my vocabulary with the chosen TED talks.</i>	4.36	1.21
m)	<i>I will watch more TED talks because of the project.</i>	4.09	1.38
n)	<i>I watched the weekly TED talks multiple times.</i>	3.27	1.19
o)	<i>I would have liked to have more TED talks per week.</i>	3.00	1
Flashcard-based learning experiences		M.	S.D.
p)	<i>The weekly vocabulary flashcard sets supported my language development.</i>	4.55	0.82
q)	<i>The illustrations improved my understanding of the terms.</i>	4.36	1.03
r)	<i>The word types improved my understanding of the terms.</i>	4.36	0.92
s)	<i>The sample sentences improved my understanding of the terms.</i>	4.27	0.9
t)	<i>The TED talks had many unknown words.</i>	2.82	1.08
u)	<i>I like working with vocabulary flashcards</i>	4.64	0.67
Working with the practice tests		M.	S.D.
v)	<i>The practice tasks supported my language development.</i>	4.45	0.93
w)	<i>I found the practice tests easy to complete.</i>	3.91	0.94
x)	<i>I would have like to see more types of practice tests.</i>	3.91	0.7
Learning scheduling and further exposure		M.	S.D.
y)	<i>I could easily fit completing the interactive books in my weekly schedule.</i>	4.18	0.75
z)	<i>I would like to see interactive books in my other courses as well.</i>	4.64	0.67

Students' categorized assessments regarding the interactive materials (Table 5.)

Students had no trouble accessing the interactive books on Moodle (Q1a: M=4.18/5, S.D.=1.17), found the structure logical (Q1b: M=4.55/5, S.D.=0.93) and could easily work with individual segments (Q1c: M=4.55/5, S.D.=0.82). While students indicated that they found the 'before listening' learning priming questions useful for getting them ready for working with the weekly TED talks (Q1f: M=4.36/5, S.D.=0.82), only some of them reviewed the items regularly (Q1d: M=3.55/5, S.D.=1.04), however, students also expressed that the priming questions had a rather positive impact on their language development (Q1e: M=3.82/5, S.D.=0.75).

As a defining feature of the interactive materials, students strongly agreed that the selected TED talks supported their language development (Q1g: M=4.7/5, S.D.=0.48) and they also found the topics covered in them interesting (Q1h:

M=4.18/5, S.D.=1.17). These results are further supported by the participants expressing that they only had smaller issues with understanding the contents of the talks (Q1i: M=3.91/5, S.D.=1.04; Q1j: M=2/5, S.D.=1.49). Generally, students highly enjoyed working with videos as language skills development materials (Q1k: M=4.45/5, S.D.=1.21) and strongly agreed that the TED talks improved their vocabulary (Q1l: M=4.36/5, S.D.=1.21). In terms of their motivation for working with TED talks, they were mostly motivated to work with further such content due to their involvement in the vocabulary development project (Q1m: M=4.09/5, S.D.=1.38). They partially agreed with having viewed the TED talks multiple times (Q1n: M=3.27/5, S.D.=1.19) indicating that the chosen videos were mostly suitable for their proficiency levels and were neutral regarding the prospect of having multiple TED talks per week in the project (Q1o: M=3/5, S.D.=1).

Students' views concerning their flashcard-based learning experiences were similarly favorable. They strongly agreed that the weekly flashcard sets contributed to their language learning (Q1p: M=4.55/5, S.D.=0.82) and highlighted the illustrations (Q1q: M=4.36, S.D.=1.03), word types (Q1r: M=4.36/5, S.D.=0.92) and the sample sentences (Q1s: M=4.27/5, S.D.=0.9) as highly useful additions for scaffolding their learning. In terms of the vocabulary level of the TED talks, students indicated that they did not find a large number of unknown words in them that would have hindered their comprehension (Q1t: M=2.82/5, S.D.=1.08). Furthermore, participants also expressed that they highly enjoyed working with the flashcards (Q1u: M=4.64/5, S.D.=0.67).

Based on students' assessments, the practice tests at the end of the interactive books also reached their goal as there was a high degree of agreement among the participants that the test supported their language development (Q1v: M=4.45/5, S.D.=0.93). They also strongly agreed that the tests were easy to complete (Q1w: M=3.91/5, S.D.=0.94) and would have liked to have had more types of practice tests integrated in the materials (Q1x: M=3.91/5, S.D.=0.7). Finally, students indicated that they could easily integrate completing their weekly interactive books in their schedule (Q1y: M=4.18/5, S.D.=0.75) and expressed their strong desires to work with the format in other courses too (Q1z: M=4.64/5, S.D.=0.67).

The final research question focused on identifying the various ways in which the interactive book-based vocabulary development format can scaffold students' language learning. Furthermore, a goal of this research question was also to gather qualitative data to contrast with the findings of the quantitative questionnaire results. Students' answers to the open-ended items in the end-term questionnaire were analyzed and grouped to identify emerging trends. These items included the participants' views on the strengths (Q2a) and limitations (Q2b) of the project as well as their overall impressions (Q3a) and further comments (Q3b).

Analyzing students' answers revealed six trends that complement the findings for the second research question. The benefits identified for the interactive books (N=17), namely flashcards (n=6), videos (n=4), self-paced learning (n=2), topics (n=2) and scaffolding such as sample sentences (n=1), pictures (n=1) and tasks (n=1) represent the largest category of students' answers. Similarly, the language learning benefits group (N=15) was overwhelmingly

represented by flashcards (n=10), however, language development (n=3) and practice opportunities (n=2) were directly mentioned as well. Regarding limitations (N=9), four students expressed technical issues with Moodle. Only one answer mentioned the difficulty of the integrated vocabulary. The lack of further practice opportunities (n=4) was also present in the sample which further underlies that students enjoyed working with the format and would have welcomed additional activities as well. Four answers indicated that they were pleased with the project and would not implement changes with one participant directly reflecting on being motivated to use the interactive material-based vocabulary development approach in her future teaching career.

The findings for the second and third research questions highlight various benefits of using interactive, multimedia-based materials for language learning support. Students expressed high levels of motivation while working with the various resources, similarly to the increased engagement, previously identified in studies assessing mobile learning experiences specifically.⁵⁰ The underlying reasons show similarities of the interactive books to language learning smartphone applications, self-paced learning integration and appropriate cognitive load. Thus, the design of the interactive books shared key functions, like a similar practice feature using the vocabulary flashcards and immediate feedback in the practice tests as found in various popular learning applications (e.g., Quizlet) specifically to make learning progression intuitive for students. Potentially, it also corresponded to a structure students might have already been familiar with from the secondary school studies which can influence their L2 strategies regarding unknown words.⁵¹ Also, students' positive relationship with videos as learning resources⁵² not only contributed to their increased motivation and engagement but enabled the meaningful integration of cognitive load lowering scaffoldings in the form of illustrations⁵³ besides Nation's⁵⁴ categories of form (word and definition), function (word type) and usage (sample sentence).

Conclusion, limitations and further research

The present study piloted an H5P interactive book-based vocabulary development project integrating authentic video-based materials targeting first-year non-native English majors. The main findings show that the frame had limited positive effects on students' overall in-class vocabulary development, however, major individual differences have also emerged (RQ1). Students identified key language learning benefits of the interactive book-based vocabulary development project that were consistent with the initial design of the frame. Their assessment is consistent with the literature as their answers showed that for meaningful self-paced learning, materials need to use a clear and intuitive structure, integrate students' existing learning preferences such as videos and digital flashcards and provide meaningful practice opportunities with immediate feedback (RQ2). Thus,

⁵⁰ see XUEHONG and LOEWEN, 2022

⁵¹ see AKŞIT and ŞÜKRAN, 2024. 263.

⁵² see WILLOUGHBY and SELL, 2024

⁵³ see ZOU and TENG, 2023. 13.

⁵⁴ see NATION, 2013. 49.

the main ways in which the frame can scaffold language learning concerns engagement, motivation, exposure to authentic materials and managing cognitive load in a self-paced learning structure (RQ3). A main limitation of the project was its context and the small sample size that does not allow for the generalization of the findings. However, based on the results, further research should be conducted with a larger sample size (e.g., all first-year English majors at the University of Pécs) with data collection concerning productive use as well as the study only focused on receptive vocabulary knowledge.

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Absztrakt

A SZÓKINCSEJLESZTÉSI LEHETŐSÉGEK ÉS A HALLGATÓK ÁLTAL TAPASZTALT HASZNOSSÁG FELMÉRÉSE TED TALKS SEGÍTSÉGÉVEL EGY ELSŐÉVES NYELVI KÉSZSÉGFEJLESZTŐ KURZUSON

A tanulmány egy feltáró, kis léptékű vizsgálat eredményeit mutatja be, amelyet a Pécsi Tudományegyetem Angol Tanulmányok Intézetében végeztek a 2023–2024-es tanév őszi félévében. A projekt középpontjában az elsőéves, nem anyanyelvi angoltanár szakos hallgatók (N=15) szókincsének fejlesztése állt, a nyelvi készségfejlesztő kurzuson kiválasztott TED-előadások segítségével, halláskészség-alapú megközelítéssel. A hallgatók tíz előre elkészített H5P interaktív könyvvel dolgoztak (a Moodle-on megosztva), amelyek tartalmazzak tanulási alapozó kérdéseket, TED-beszélgetéseket, szókincs-tárcsákat és gyakorló teszteket. A résztvevők szókincsszintjét a kezelés előtt és után, valamint két szókincs-teszttel mértük, és a tanfolyam végén reflektáltak tapasztalataikra. Bár a szókincsszint általános növekedése nem volt szignifikáns, jelentős pozitív egyéni különbségek mutatkoztak, ami azt jelzi, hogy a keret alkalmas a tanulók szókincsfejlesztésének megala-
pozására, valamint a tanulók motivációjának és a nyelvtanulás iránti elkötelezettségének növelésére.