

**Západočeské univerzita v Plzni**

**Fakulta pedagogická**

**Katedra anglického jazyka**

**Diplomová práce**

**VÝUKA SLOVNÍ ZÁSoby V ANGLICKÉM JAZYCE  
S VYUŽITÍM DIGITÁLNÍCH TECHNOLOGIÍ**

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**Plzeň 2024**

**University of West Bohemia**

**Faculty of Education**

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**Thesis**

**TEACHING VOCABULARY IN THE ENGLISH CLASSES  
USING DIGITAL TECHNOLOGIES**

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**Plzeň 2024**

*Čestné prohlášení*

*Prohlašuji, že jsem svou diplomovou práci zpracovala sama za pomoci uvedené literatury a ověřených internetových stránek.*

*V Plzni dne.....*

.....

## ACKNOWLEDGMENTS

Initially, I would like to express my gratitude to Mgr. Tereza Havránková, Ph.D. has provided wonderful guidance throughout completing my thesis. Her passion for the subject matter has shown me a very engaging insight into the topic, and therefore, made all my work interesting.

Another gratitude belongs to the teachers who have made it possible for me to do the research with their students for my practical part.

Lastly, I would like to thank my family, who has been supporting me during all the years of my studies.

## ABSTRACT

Molendová, Kristýna. University of West Bohemia. April 2024. Teaching vocabulary in English classes using digital technologies.

Mgr. Tereza Havránková, Ph.D.

Understanding the vocabulary of a foreign language is essential for effective communication. To learn new vocabulary efficiently, it is important to apply appropriate methods. In this thesis, digital technologies, specifically two applications called Wordwall and Quizziz, are presented as effective methods for learning new vocabulary. The research was conducted with 9th-grade students from the 2<sup>nd</sup> Elementary School. The research was conducted in two parts. In the first part, the students completed two questionnaires to determine their current strategies for learning new vocabulary and their reactions to new applications. In the second part, qualitative research was included, followed by final interviews and action research. The main component of the action research was observation during taught lessons. The research participants (students) agreed that working more frequently with applications in the English language class would positively affect their learning of new vocabulary and their motivation to learn in general.

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## I. INTRODUCTION

Learning new vocabulary is undoubtedly one of the most challenging tasks in a foreign language. Without words, there cannot be a meaningful conversation. In many cases, it is not difficult for students to use the vocabulary in practice. However, the big problem is that students do not know how to learn vocabulary. A large part of the work is on the teachers themselves, providing a suitable environment for learning and at the same time offering students strategies adapted to their needs, which in this case are digital technologies. The theoretical part progresses from the actual learning of vocabulary to the incorporation of digital technologies into the teaching, where I chose two specific applications - Wordwall and Quizziz.

The main objective of the thesis is to find out if and how the use of digital technologies in English language classes contributes to the learning of new vocabulary. This concept is based on learning strategies and their application in English classes together with digital technologies.

While all learning strategies are described in the literature, the concept of digital technologies is only beginning to work its way into schools. Even if it seems that students these days are sufficiently familiar with different types of digital technologies, it is no longer so obvious for learning. Therefore, many of them do not even realize that applications and digital technologies in general can be used effectively even in this way, i.e. to learn new vocabulary. For this reason, the main goal of the thesis was to find out whether the process of using applications in English language classes contributes to learning new vocabulary or not. This can be established by having students try out applications they have never used before. The tools that were used in the research are described in the Methodology chapter, where, among other things, information about the participants, research questions, and the process itself can be found.

The following chapter presents the research results in individual steps, including the tools used from the previous chapter. The strengths and weaknesses of the research and its possible implications are then presented. The last part of the thesis is the Conclusion.

## II. THEORETICAL BACKGROUND

This chapter deals with the theoretical part related to vocabulary issues. First, it focuses on the learning process itself, the next part contains learning in English language classes. Subsequently, the chapter details the teaching of vocabulary in English language classes, in which various strategies are mentioned. At the end of the theoretical part, particular examples of digital technologies that were involved in the practical part are given.

### **Learning in the life of today's individual**

The concept of digital technology is inseparably linked to the issue of learning, which represents a key process in the life of an individual. Learning can be briefly defined as "acquiring experience, shaping, and modifying an individual throughout their life." (Čáp & Mareš, 2001)

Another author defines learning as *"a process in which, as a result, a person changes their set of knowledge about the natural and human environment. They change their forms of behavior and ways of activity, their personality traits, their image of themselves, and their relationships with people around them and with the society in which they live – towards their development and higher efficiency. These changes occur based on experience, i.e., the results of previous activities, which transform into knowledge systems. It involves individual experience or the acceptance and acquisition of social experience."* (Kulič, 1992).

Learning, therefore, is not limited to the school years but it is a process that is a part of our entire life. It takes on countless forms and can become a part of the virtual environment as well (Zounek et al., 2016).

### **The social character of learning**

Learning is a transformative process, meaning it is not merely a mechanical process where students acquire knowledge from educators. Through transformation, we gain new knowledge that relies on the effort students put into learning. During the learning process, our brain receives certain stimuli and processes them in a way that leads to understanding. Learning can also be characterized as an activity that takes place in social situations. The relationship between learning and society is closely intertwined. In a society where learning occurs, changes also occur based on it.

Students become a part of various communities during their studies, where knowledge is transferred. Examples of such communities include students attending a course at a

university or extracurricular clubs in primary and secondary schools, such as creative clubs. These groups are then characterized as formal. Informal groups include family or peers.

Another well-known domain creating many communities is the internet. When discussing communities related to modern technologies, they are often mentioned in connection with digital technologies which is the most important part of the thesis. Peer learning or learning from individuals who possess specific proven skills can occur in such communities. This significantly influences informal learning.

Thanks to technology, students, teachers, or researchers meet in a virtual environment, which, like "brick-and-mortar" institutions, facilitates sharing and presenting opinions, communication, and collaboration in solving tasks. Learning within digital technologies can, in some cases, have a significant impact on learning experiences compared to traditional educational institutions. While this may not be a rule, the use of digital technologies connects learning with the real world, creating a comprehensive learning environment (Zounek et al., 2016).

### **Lifelong learning**

In today's era, given constant innovations, it is essential for individuals to continuously educate themselves and acquire new knowledge and skills, whether they are students in school or already in full-time employment. We can learn something new every day, even without realizing it. Although learning is defined as a continuous process, the focus is more on being constantly prepared to learn. Lifelong learning should not be imagined as continuous studying.

Speaking specifically about digital technologies, they provide numerous opportunities for lifelong learning. This doesn't necessarily have to involve formal education. The internet offers a variety of electronic resources for acquiring new knowledge, such as e-books, various articles, blogs, and online educational courses. These courses enable learning when needed and at a convenient time.

Digital technologies surround us throughout our lives, becoming companions in lifelong education covering all forms of learning, such as workplace learning, intergenerational learning, and more (Zounek et al., 2016).

## **Approaches and methods in learning a foreign language**

### **History of foreign language teaching development**

In the 18th century, European schools began introducing the first "modern" languages adopted from Latin, such as French, Spanish, or English. Instruction included brief grammatical rules, vocabulary lists, and a few sentences for translation. The spoken form of the foreign language was not the main focus of teaching, as the sentences for translation illustrated specific grammar rather than real language and communication.

Moving into the 19th century, foreign language instruction focused on explaining morphological and syntactic rules and memorizing them. The use of the language in spoken form was minimized, as it was not common. Students had a wealth of written rules without the opportunity to apply them in practice. These methods, concentrating solely on working with the text, evolved into the Grammar-Translation Method (Richards & Rodgers, 2014).

### **Grammar-Translation Method**

This method of teaching prioritizes grammar and everything related to it. However, in this method, teaching a foreign language, specifically English, is not too common (Oxford Learner's Dictionaries, 2023).

Grammar represents a set of rules focused on the correct formation of tenses, sentence structures, etc. Although these rules are written in books or textbooks, reading and memorizing them does not guarantee true learning. The same applies when students repeat rules aloud, and like the previous situation, this method does not ensure a genuine understanding of grammar. All this knowledge can be used if a student can transform acquired knowledge and apply it in real life (Scrivener, 2011).

The main goal of the Grammar-Translation Method is not the use of a language in spoken form, but rather the ability to work with texts in a foreign language. Several characteristics define this method:

- The primary goal of learning a foreign language is the ability to understand written literature in that language or to gain knowledge and skills that learning brings. Grammar Translation is associated with approaches to understanding the language based on its grammatical rules and subsequently applying this knowledge in translation within a foreign language (Stern, 1983).

- The emphasis is on reading and writing, with minimal or almost no attention given to speaking or listening.
- Vocabulary selection and usage are based on texts being studied, and new vocabulary is taught using dictionaries or bilingual lists of words. In a traditional Grammar-Translation text, explanations of grammatical phenomena, vocabulary with Czech equivalents, and translation exercises are pre-determined.
- The sentence is the basic unit of language learning. Most class time is devoted to translating sentences from the foreign language into the native language and vice versa. Approaches to learning a foreign language that preceded this method were used in texts where the discussed grammar appeared. However, this approach seemed too complex for high school students, and focusing on sentence construction was intended to facilitate learning.
- Grammar is taught deductively, meaning students are given grammatical rules with examples to memorize, and based on this, these rules are practiced with additional examples (Richards & Rodgers, 2014).

Despite this, the Grammar-Translation Method continues to be used in some parts of the world, for reasons such as the lack of using the foreign language in spoken form or its effective application in large classes (Slide Share, 2014).

Later, linguists began compiling the best ways to teach foreign languages, sharing principles on which language teaching should be based. Although their opinions differed in many aspects, 19th-century reformers agreed that the spoken form of a foreign language should be a priority. It was further discussed that, for students, it is better to hear a language before seeing it in written form. Finally, grammar is best taught within a certain context. Based on these principles, the Direct Method gained prominence (Richards & Rodgers, 2014).

### **Direct Method**

This method was preceded by the so-called Natural Method. It involves teachers primarily observing small children learning a foreign language. Based on this, an entirely new methodology is developed to have the learning of a foreign language occur similarly to how students learn their native language. During lessons, only the foreign language was applied. Based on this, linguists agreed with the conviction that a foreign language can be taught

without translation into the native language. The main focus, therefore, shifted to the spoken form of the language (Oxford Learner's Dictionaries, 2023).

To strengthen this method as much as possible, it built its foundations on the following pillars. For instance, that instructions were given only in the foreign language. Additionally, grammar and vocabulary used in daily life were taught and new topics were presented orally. Vocabulary was demonstrated with specific examples, and objects, and for abstract vocabulary, it was described using real situations (Slide Share, 2013).

And it is precisely on the vocabulary, which constitutes one of the main parts of my thesis, that we will focus in the following chapter.

### **Learning and teaching vocabulary**

There was not enough attention paid to vocabulary teaching within a foreign language during the 20th century. Despite the efforts of several linguists to point out the importance of vocabulary in foreign language teaching, this language area has not been identified as essential for communication (Seegers, 1946).

One of those linguists was Michael Lewis. His major work *The Lexical Approach*, published in 1993, contributed to the change in the attitude toward vocabulary teaching and presented possible complications that could students encounter during their teaching practice (Lewis, 1993).

#### **What is lexis**

Another part is going to be focused on the explanation of basic terms in vocabulary learning. What does the term lexis mean? Can it be used as a more formal expression of the term vocabulary? These questions will be answered in this chapter.

There are some familiar words, suitable for independent use, such as a computer or water. Other words, on the other side, are collocations and their use is very specific (such as the stock market). Students need to develop their knowledge of collocations in the specific context as they understand how those words work in the sentence. Moreover, the collocation cannot be split into separate words, as they bear a different meaning on their own. Students are not able to derive the meaning of the collocation from those separated words; thus, it is very important to teach these collocations as one word.

This specific teaching attitude can be applied not only to collocations but to idioms as well. The expression *to swim against the tide* contains words with a specific meaning. Used



together, it has both literal and figurative meanings. If one word is changed, the idiom changes its meaning.

The term English vocabulary refers to both individual words, such as dog, green, or wash, and word combinations, containing two or three words, used in a specific order – go off, get on with, etc.

The concept of lexis, however, refers to all words and phrases ever used in the English language and remembered by its speakers, without the need to build new constructions. The lexis group can include stand-alone words, collocations, or longer combinations of words used together as a single word. The knowledge of foreign language grammar structure is usually associated with the ability to use words and phrases in sentences according to the grammar rules but in a new and innovative way. This ability conveys a precise, but unique meaning (Scrivener, 2011).

As the attention is turned to the student's needs and their desire to acquire more communicative skills and lexical competence, the role of a teacher is changing. They strive for the individual approach and set goals, as they support students to use the language as much as possible. To establish effective teaching techniques, the following questions need to be answered: What does it mean to know the meaning of a word? What range of vocabulary should students be able to use at the end of the lessons? And how will they learn it (Murcia, 2001)?

### **What to teach**

Another question, that should be answered, is connected to the amount of vocabulary being taught. The specific content definition appears to be one of the most fundamental questions when teaching foreign language vocabulary. Many studies confirm the fact that students need to learn everyday vocabulary consisting of at least two thousand most frequently used words.

There are several examples, justifying this theory. The first example considers the fact that each language presents a small number of frequently repeated words in printed materials. Then there are many words used only in specific situations. Those two thousand words, mentioned in the previous paragraph, represent approximately 80 % of what people use in regular situations.

The second example is based on the research results obtained in applied linguistics and focused on the number of words students should learn. The research was primarily concerned with procedures limiting the number of taught words. Such an approach was used in the 1930s to develop basic vocabulary used in English language teaching. The research results supported the emergence of the General Service List of English Words in 1953. This list contained the 2000 most used English words, recommended for beginners and pre-Intermediate students. GSL proved to have a great influence on the development of teaching materials and textbooks, and it included, together with other supportive material, the frequency of different meanings of selected words (Decarrico , 2001).

When talking about students' knowledge of vocabulary, it is very important to distinguish between active (productive) and passive (receptive) vocabulary. Passive vocabulary tends to be more voluminous. The number of words students do not actively use counts approximately 3,000 words. This amount allows teachers to understand a high volume of the content.

### **Vocabulary learning in English**

Without learning new vocabulary, students are not able to master a foreign language perfectly. However, students consider this process as one of the most complex. It is confirmed that EFL students are not able to continue with other language disciplines such as listening, speaking, reading, and writing, without acquiring a firm knowledge of vocabulary.

Vocabulary knowledge consists of two parts: breadth and depth. The breadth of vocabulary knowledge is associated with the number of words that students have acquired at a certain language level. Depth defines such vocabulary which is related not only to students' understanding of the word itself but also their ability to pronounce the word correctly, to understand its morphology and the context in which the word is used (Teng, 2015).

The process of learning or acquiring vocabulary should be explained as a gradual process, in which there are different aspects to be learned. The following list provides an example of what the gradual acquisition of vocabulary could look like.

For instance, it is necessary to know the written form of the word, its pronunciation, and the main meaning of the word. Moreover, there are more connections to the word, such as the receptive use, its antonyms, and synonyms, or its other meanings.

However, the aspects and ways in which students acquire vocabulary are not always similar (Richards, 2015).

Acquiring knowledge takes place in different ways and there is a high amount of research related to this area. Meara (1989) focused on the comparison. In this research, students were divided into two groups, and each of them was subjected to different teaching methods. The researcher observed students in both groups for a specific time and compared the effectiveness of these teaching methods. The first group of students is taught by method A, specified at the beginning of the research, while the second group is supposed to learn new vocabulary using method B, which is also specified. The results are later analyzed and transformed into statistical data.

Nevertheless, the received data are not always objective and relevant. Their understanding depends on the definition of “knowing the word”, which is hard to prove in every condition. There is also a problem with defining such a “neutral method”, which would be effective enough and allow learning words from a specific context.

Despite these difficulties, the comparison of different teaching approaches has its place among research methods. Such experimental research studies include not only the description of initial differences between two methods but also how these differences diminish over time (Meara, 1989).

The possibility of method comparison may help teachers to choose the optimal strategy for teaching vocabulary. In her publication, Rebecca Oxford (1990) divides these strategies into direct and indirect learning. Direct strategies support immediate learning of the target language, and students use cognitive or memory strategies to acquire new information. Cognitive strategies enable students to understand and use language in many ways. Memory strategies, on the other hand, support their ability to remember and recall acquired knowledge and to organize new information. Students apply these strategies to create their knowledge mind map, which helps them to organize new information related to not only foreign languages but also other fields of study.

Indirect strategies, on the other hand, include learning vocabulary without the primary focus on the target language. Into this group of indirect strategies belong metacognitive, or social strategies that focus more on the context, and content of learning than on the correct use of language. Social strategies support acquiring a new language through interaction with other students. Metacognitive strategies allow students to manage their learning process in

terms of planning, control, and evaluation. Students are motivated to find the most suitable learning approach and adjust it to their needs. They learn new vocabulary without direct memorization (Oxford, 1990).

### **The role of memory**

The process of acquiring new vocabulary is burdened by the request to memorize a high number of new words. These words can be encountered in various texts or used in different contexts, but to develop a full understanding of them, students need time. Human memory includes two different features – short-term memory, used for retaining information for a short period while it is processed, and long-term memory, where information is stored for future use. The main aim of learning vocabulary is to transfer new words from short-term memory to long-term memory. This process includes passive and active use of these words over a long period and connecting them with previously acquired ones. There are several ways how to make the process of learning new vocabulary more effective. Some of them are described in the following paragraphs (Richards, 2015).

### **Noticing**

This process is based on a conscious focus on vocabulary. Students are required to understand every word in the text or the conversation. They observe the word, listen to the correct pronunciation, compare its grammatical function in a different context, etc. Noticing can occur during listening or reading activity. Students notice if this word is new or if they have worked with it before. The teacher can support this process by writing the word on the board and highlighting its different meanings.

### **Learner involvement**

The second possible approach to learning new vocabulary, described here, is related to the increase in students' involvement in the classroom. It is not the teacher, who prepares the list of new words. The task is transferred to students. This change enables them to work with these words repeatedly and their chance to remember them is higher. The list may include words related to students' experiences from daily life or words students choose from textbooks and organize in their own way (Nation, 2001).

## **Vocabulary in the classroom**

The aim of effective teaching lies in the choice of such techniques, which help students ease up the process of learning new words and enable students to remember them faster.

Many teachers appreciate the possibility of using English-English dictionaries in their lessons, as these books offer students to learn different contexts, in which the word occurs, as well as its meanings and correct pronunciation. The practice in using this vocabulary will help students to gain an important experience. Another possible way how to teach vocabulary includes a few word examples, provided to students without previous preparation. However, this method does not always lead to long-term memory retention of these words (Scrivener, 2011).

Teachers can support their students in the learning process during the following learning processes. It is important to understand the new word and its context of use. Moreover, regular practice of its use in different contexts should be included together with the ability to remember the word and use it in new situations.

There is a difference between the number of words students understand and the number of words they can use confidently. Students are usually able to understand a larger number of words, but they are not able to use many of them in everyday situations. The teacher needs to consider this difference between productive and receptive vocabulary when planning a lesson focused on this subject. They should provide enough opportunities for students to practice new words in active communication. However, the teacher needs to provide only a limited number of words in one lesson, otherwise, students are overwhelmed with information, and they are more likely to forget most of the new words (Willis, 2004).

### **Methods associated with teaching vocabulary in English**

The teacher should pay attention to the presentation of new vocabulary, followed by proper practice of these new words. During the presentation stage, the teacher needs to support the use of new words with a range of prompts. The most favorite teaching aids are pictures, flashcards, and other visual materials. If students can elicit the meaning of the new word by themselves, there is a better chance that they will remember it. The second part of the class should be focused on understanding development. Students in these classes should never be asked if they understood as they most likely provide a positive answer. The teacher needs to offer enough activities for students to apply new words in different contexts and support their process of remembering new words.

There are several activities, focused on practicing new vocabulary. For instance, one of the most frequently used is matching pictures with words. Pictures always help students define a certain word, and there is a high chance for them to remember it. Among preferable

activities, can be included an exercise, in which students fill in the gap in the text. In this case, students learn how to use a word in a specific context, and therefore the teacher works with a text containing a real situation. Using a particular word in the conversation might become efficient for the students not only by practicing the word but also because they are fully engaged in a speaking activity. Sometimes, while working with English terminology, students might be asked to sort words into word groups according to specific criteria, e. g. antonyms, synonyms, fixed collocations, etc. The students need to define these word groups since it can also become a very supporting tool when learning a new word (Scrivener, 2011).

### **Vocabulary learning strategies**

The methods associated with teaching English vocabulary are connected with methods enabling learning vocabulary. Such strategies are designed to help students remember new words more easily and more effectively. Their use is crucial, especially for students who are new to language learning. They tend to be convinced that learning new vocabulary forms the basis of a foreign language (Chamot, 2005).

The aim of using these strategies is to make the learning process automatic for students, so they can master their knowledge as much as possible. Students' activities become an integral part of the teaching process. Adequate learning strategies help students to get aware of their knowledge and skills and improve their concentration and ability to understand new information. They also lead to the continuous development of students, who need to overcome the challenging aspects of the English language, such as the rules of pronunciation, etc. Individualized learning strategies allow students to find their way how to approach the English language and make it more understandable for them (Grenfell & Harris, 1999).

### **An Example of Vocabulary Learning Strategies**

There are many strategies, used in vocabulary learning. Some of them are easily applied, others require more effort from students and more experience from the teacher. The next chapter includes a short introduction of the easier strategies, which are, however, very effective in teaching vocabulary to older students in secondary schools (Oxford & Crookall, 1989).

#### *Flashcards*

The method belongs to the category of knowledge-oriented strategies. The teachers use flashcards to ensure that the words occur in a meaningful context and students can learn the meaning automatically (Gu, 2020).

Many researchers, such as Thornbury (2002), agree that this activity is very effective in learning English vocabulary. Students consider it funny and quite an easy way how to memorize new words and practice their meanings (Thornbury, 2002).

There are many ways how to use flashcards in English lessons. Students can choose which words they write on the flashcards. They make a self-evaluation of their knowledge, which is also a very effective technique. They write down only those words that require more practice. Students might start working with the word in the English language, and they check its meaning in Czech after some time. As another example of how to use flashcards, there is a sentence, made of the words on flashcards, and students repeat it several times. Then the words are shuffled, and students should create the same sentence again (Thornbury, 2002).

This is an example of one of the classic vocabulary strategies. In the next chapter, there is a more particular description of these strategies. Therefore, it is easier to distinguish between classic vocabulary strategies and the use of digital technologies.

### **Digital technologies and vocabulary learning**

Digital technologies are an integral part of our lives. Today, thanks to digital technologies and their rapid development, we can communicate over long distances, we have all information available in one place, we can work much faster, and much more. There is no doubt that digital technologies make our lives easier. But, among other things, digital technologies can be used very well for more efficient learning.

English, French, German, Spanish, but also Arabic, Chinese or Japanese. This is just a basic list of languages that are offered to students in individual schools in the Czech Republic. The ability to understand, speak, and communicate in a foreign language is very desirable. Languages open possibilities for people, whether it is studying abroad, better job offers, or opportunities to travel and get to know new cultures and nationalities. In the last chapter, there will be discussed the teaching of vocabulary in English using digital technologies. We will first focus on classic methods of teaching vocabulary more deeply, mentioning their pros and cons. After that, the focus will be on how digital technology can be used in English vocabulary teaching, including comparing effectiveness with classical methods. Finally, attention will be focused on presenting some of the applications or websites that can be effectively used in English vocabulary teaching.

## **Traditional Approach to Language Learning**

Sufficient vocabulary is very important. If someone does not have a sufficient vocabulary, he is not able to communicate effectively with other people, he is unable to express himself and say what he wants, and he also cannot understand everything or the whole context of what other people say. There is no doubt that when it comes to teaching vocabulary, we are all individuals, and everyone is comfortable with something different. From the position of the teacher, it is necessary to take into account the age of the pupils, their level of language, and possibly also individual needs, such as dyslexia, dysgraphia, etc. However, there is a constant need to work on the vocabulary, it is necessary not only to practice it for recall but also to expand and learn new words from different fields and areas. Based on the literature, three groups of classic vocabulary teaching methods can be mentioned – visual techniques, verbal techniques, and translation.

### *Visual techniques*

The visual technique is based on the connection of a word with an image, with a graphic, or simply with something that can be observed with the eye. The first technique belonging to this group is visuals. It involves the use of various flashcards, photographs, drawings/blackboard drawings, wallcharts, or realia. Through correctly selected pictures or visuals, new vocabulary can be taught very effectively, but also vocabulary already acquired can be practiced thanks to the interaction of pupils and the teacher or pupils with each other. An example could be a picture depicting different types of summer sports. These pictures can then be used as a basis for guided conversations and vocabulary practice related to summer and summer sports (Gairns & Redman, 1986).

### *Verbal techniques*

The second group of Techniques represents verbal techniques that use the spoken form of language. This includes, for example, the use of synonyms and definitions, when synonyms can be used universally, for lower-level students mainly to reduce the length and complexity of the explanation, for higher-level students, for example, to explain colloquial expressions. The definitions can also be adapted to the level of language knowledge and can thus be used for both lower and higher-level students. Another technique belonging to this group is, for example, scales, when the teacher uses a scale of words to teach two contrasting or related gradable items, such as *hot* and *cold* (hot – warm - cold - freezing, etc.). This can



be combined with a visual representation through a percentage scale from 0 % to 100 %, helping students to remember new words through what they can see (Carter, 2012).

### *Translation*

The last one is the translation. Within this classic method, the teacher uses the translation of individual words (of new vocabulary) into the students' mother tongue. However, of course, this can only be used if the teacher also has the given language as his mother tongue or if the teacher is at the level of a native speaker. Many teachers see this method as a kind of cheating, even though translation can be a very effective and efficient way of teaching vocabulary. The fundamental positive of this method is that it can save time, which can then be used for practice or other activities within the lesson. A disadvantage can be, for example, that it is always necessary to find a suitable and fully adequate equivalent in the mother tongue, or the fact that if the teacher uses the method of translation into the mother tongue outside of the vocabulary as well, e.g. as part of the explanation of grammar and other parts of the lesson, the students cannot see and absorb the atmosphere of being in a language class. Which is a significant advantage of learning a foreign language with a native speaker (Gairns & Redman, 1986).

### **Digital Technologies and Their Effectiveness in English Vocabulary Teaching**

Digital technologies allow us to communicate at a distance, quickly search for an incredibly large amount of information, or work efficiently. Thanks to them, we have possibilities that people did not even dream of in the past. Mobile phones, social networks, computers, most of us use them every day. And also because of this, digital technologies have become an integral part of our lives, and they can also be used very well in studying English.

The use of digital technologies in teaching is very effective for both younger and older students. Several advantages of digital technologies can be named. For example, it is an overall more fun form of learning for students, where different activities and forms of teaching can be effectively used. With the help of various applications and tools, the teacher can combine the visual (image of the word) with the written form (text), and even with the listening part, by including the speaker icon and pronunciation recording.

Today, we can create different simple versions of games where, for example, students will connect opposite expressions and thus learn not only the vocabulary itself but also its relationship to other words that they already know or that they are currently learning. An

excellent tool is also an exercise to choose the right word that belongs in the text regarding the other context or depending on the picture. There are many ways and possibilities how implement digital technologies from the position of the teacher (Wikramanayake, 2005).

Also, thanks to digital technologies, it is not only possible to store learning resources in one place for possible further use, but they can also be made easily accessible to students, or quickly edited and changed. In the case of younger students, it is then possible to share the created materials with the parents of the students and thus make it easier for them to practice their vocabulary at home. The teacher can even let the students themselves create their own flashcards or mind maps (based on the topic) by using tablets in the class, and then the digital technology is a perfect tool for their creativity. The use of digital technologies also saves time, which can then be effectively used for practicing grammar or for discussion.

When using digital technologies to teach vocabulary, the teacher should also share information about the different ways how digital technologies can be used to practice vocabulary, or what applications can be installed at home. Learning can be fun, especially through digital technology. Therefore, it is also time to look at the individual applications and tools that can be used in this way.

### **Gamification**

The given method is a process where academic components are transformed into game elements. The main goal of the given strategy is to increase student involvement in the learning process. So, it is about how active the student is in class. Gamification involves creativity and how the student makes decisions, which encourages critical thinking. Among other things, students get instant feedback (Gamification in education, 2023).

#### Examples of existing effective tools and applications of English vocabulary teaching

Regarding the already existing means that digital technology offers, I consider it essential to divide these into tools and applications. Both can be used both from the position of a teacher and from the position of a student. As a tool, I consider everything that includes creativity, i.e. websites (or even applications) for creating cards, images with objects, etc. On the contrary, as an application, I consider everything that can be downloaded to a tablet, phone, or computer, and it is an already created application that serves primarily to make teaching more efficient or to practice. There are many applications and tools available today, so the following paragraphs will represent only a small fraction of what a teacher or student

can use. But it will be about three applications that have interested me or that I have used myself.

## Duolingo

Duolingo is undoubtedly one of the most well-known applications overall, and although it is not exclusively focused on vocabulary, it can be practiced very effectively through individual lessons. The advantage is that most of the words in the application also have a Czech translation after clicking on them, so even if the lesson is focused on the field of travel and the user has to fill in the correct form of the verb, he can simultaneously practice the vocabulary associated with the given topic. The app is available for iOS and Android.

## Wordwall

This is a web application, that provides us with a great number of activities the teachers might use during a lesson. As an example, we can use the flashcards.

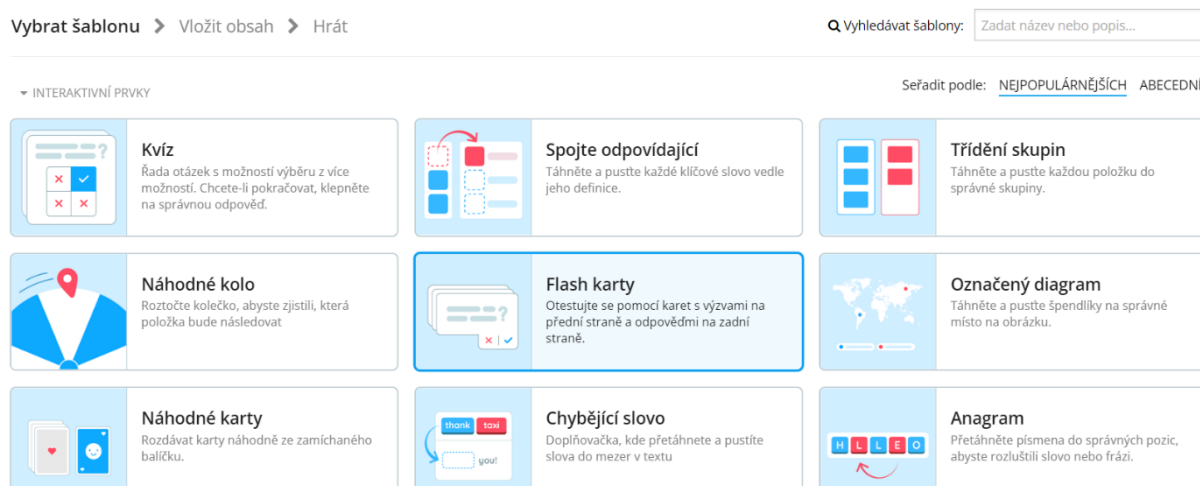


Figure 1: Choosing an activity (Wordwall, 2024).

In the first step, an activity from the table above is chosen. No matter in which template we create the vocabulary activity, it can be changed and practiced in different ones.

Název aktivity

Flashcards

+ Instrukce

Oboustranné  Jednostranný

	Přední	Zpět	
1.			
2.			
3.			
4.			

Zaměnit sloupce

Figure 2: Writing particular words to create flashcards (Wordwall, 2024)

Secondly, a set of vocabulary is created, and it depends on the students or the teacher, whether it will be translated from English into Czech or vice versa. It can be combined both ways. If students are not very confident with new words, they might follow the teacher who is presenting the activity on the board. If they prefer working at their own pace, the QR code is shared, and students may work on their own.

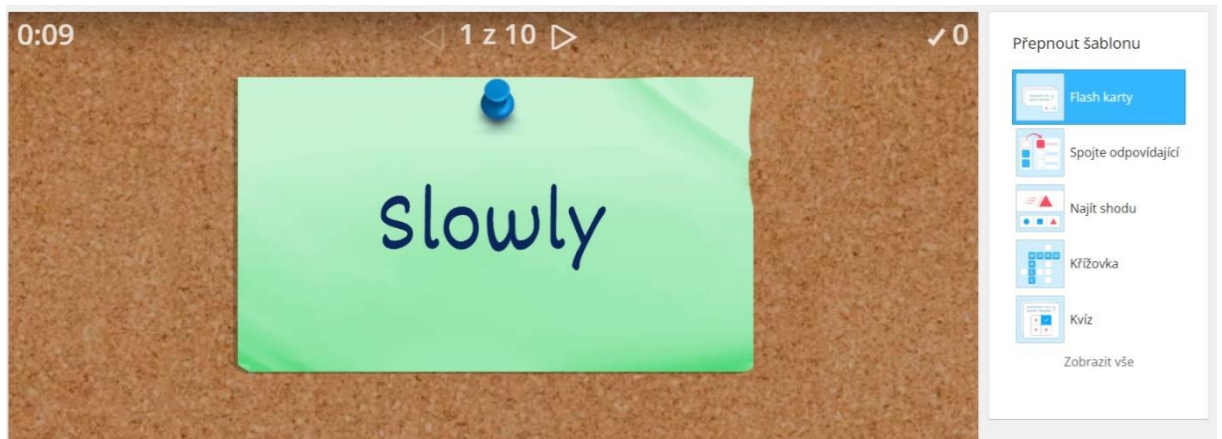


Figure 3: Activity in the process (Wordwall, 2024)

In Figure 3 flashcards are ready to be used. In the left top corner, there is a stopwatch to see how well the students are doing. For some of them, it might present a stressful factor, therefore it depends on the teacher how to work with it.

Teachers create their activities on specific platforms, or they are allowed to use some other platform created by other teachers. This web application connects all the teachers, and

since I found this application very effective, I am going to use it for the research part of my thesis where it will be provided with further details.

## Quizziz

This is another web application that I will cover in more detail as part of my research. In addition to practicing new vocabulary in various platforms, it also offers theoretical background. This means that the teacher can connect the theory in the presentation that the students watch on their devices and immediately follow up with the practice. Let's use the example of the application again.

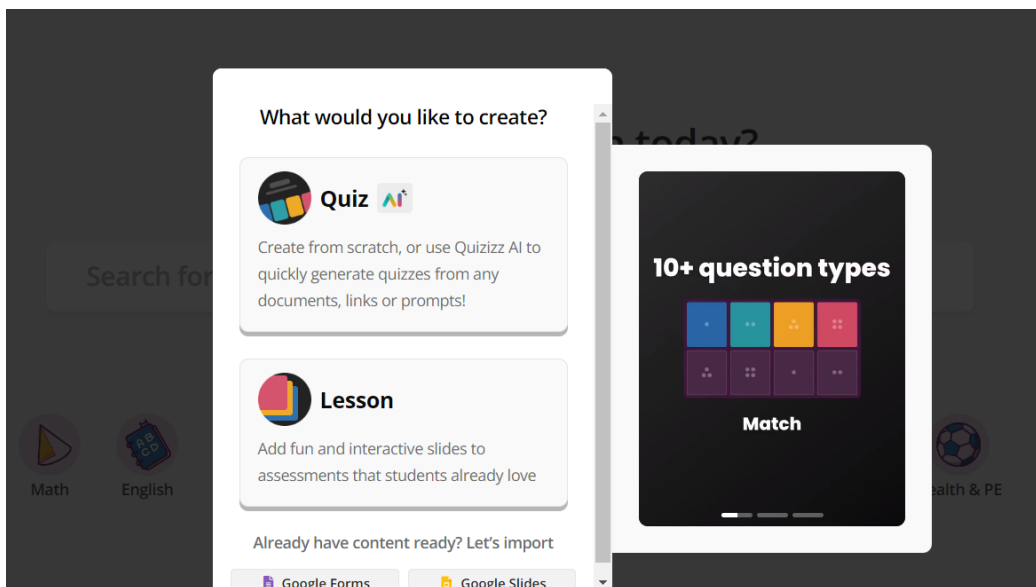


Figure 4: Choosing an activity (Quizziz, 2024).

First, we choose whether we want to create only an activity in the form of practice or we choose the second option, creating a theoretical presentation followed by revision.

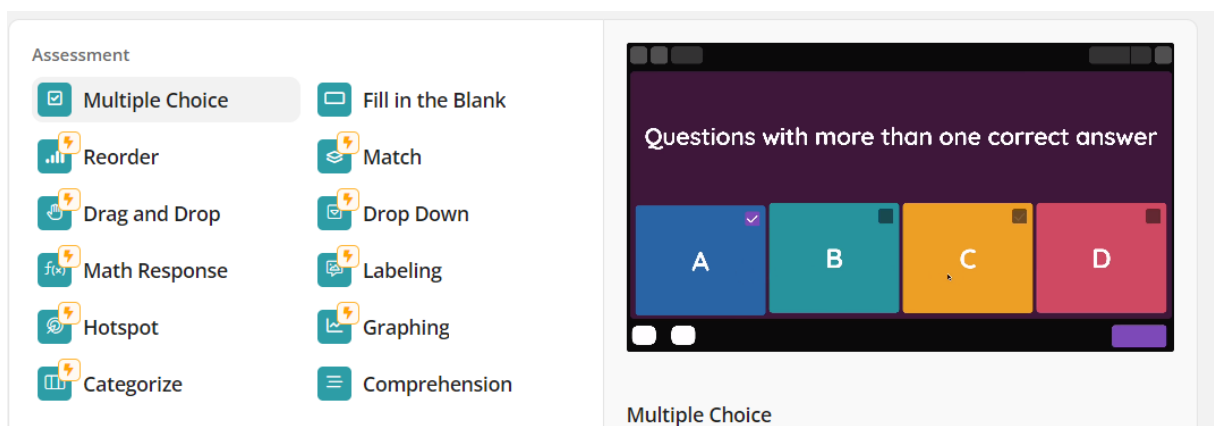


Figure 5: Choosing from various strategies (Quizziz, 2024).

In the last step, we enter the questions and the students answer either within the time limit, or the teacher can set the completion of the questions without a time countdown.

Both applications have their limits and one of the biggest is that only teachers have access to the activities. Without their permission, students cannot enter the activities unless the teachers share a link, or the QR code with their students. However, according to the research results, it was found, that precisely this kind of application might be very effective for the students.

### III. MAIN OBJECTIVE OF THE THESIS AND RESEARCH QUESTIONS

In this chapter, the main goal of the thesis and research questions will be presented. Students encounter digital technologies quite often outside the classroom. However, with the help of this research, I would like to find out if the use of digital technologies in English language classes contributes to the learning of new vocabulary. As part of digital technologies, two specific applications, Wordwall and Quizziz, were included, which were used in the taught lessons. My research questions were:

- How do digital technologies influence the vocabulary learning process among lower-secondary school students?
- What are lower-secondary school student's perceptions and experiences of using digital technologies for vocabulary learning?

In the following chapters, it will be determined whether the mentioned objective has been achieved and the research questions will be discussed more in the research section.

## IV. METHODOLOGY

The upcoming chapter is linked to the central part of the thesis – the research. I have decided to connect digital technologies (online applications) within one of the classes of lower-secondary school students to observe whether using online applications would be more effective when learning English vocabulary. The main reason for choosing this issue is connected with my own experience. Learning new vocabulary has always presented a big problem for my classmates. Among other things, various types of digital technologies are gradually being included in teaching all subjects, so for this reason, I would like to find out if this is the right way.

### **Types of research**

In this research, I have chosen to use a mixed-methods approach, integrating both qualitative and quantitative methodologies.

The quantitative data was derived from questionnaires, while the qualitative data came from action research and semi-structured interviews.

#### **Quantitative research**

This type of research is usually quick to do and less time-consuming. The data analysis is quite brisk, and more respondents are needed. The research does not go completely in-depth. The results are independent of the researchers, as they do not interfere with the course of the research in any way. Quantitative research is mainly explanatory, it uses deduction when concluding the results (Juřeníková, 2023).

#### **Qualitative research**

One of the main reasons for choosing qualitative research was the fact that it works with a smaller number of respondents (interview). It is applicable when we are trying to answer a question that cannot be easily measured. Accordingly, the frequency is not examined, but the causes of individual phenomena and the relationships between them. We try to understand the given phenomenon, to know the wider context. Typically, we are looking for an answer to the questions "Why?" or "How?"

Although qualitative research is carried out on a smaller sample of respondents (compared to quantitative research), it usually requires more time. In addition, it is demanding on the knowledge and skills of the interviewer, on their empathy and ability to think analytically, critically, and creatively. The ability to evaluate which of the huge amounts of information

obtained is important and relevant to the answer. Furthermore, the given question is essential (Švaříček & Šed'ová, 2007).

### **Data collection methods**

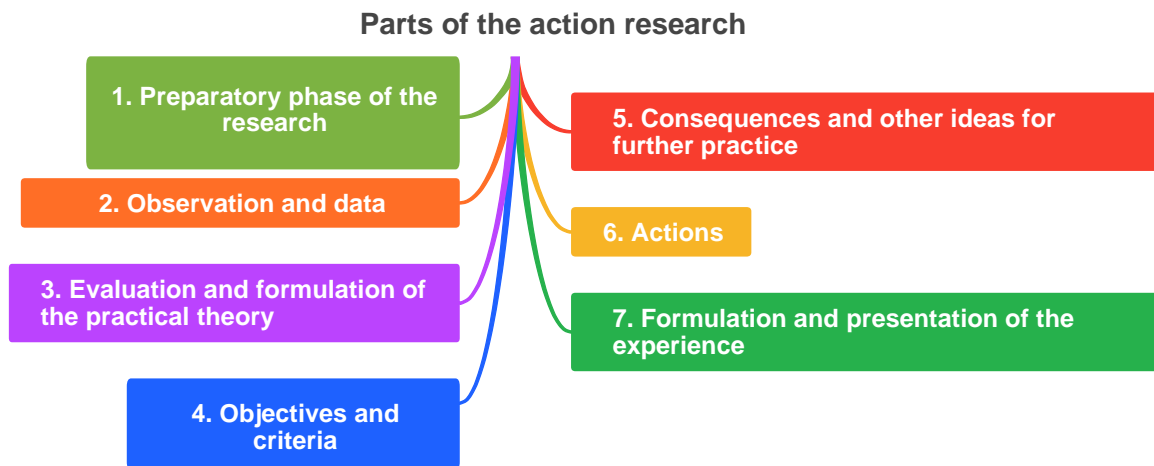
Before starting the research, the students received a first questionnaire that aimed to determine their current strategies for learning new vocabulary. The questionnaire contained five questions. The action research itself followed when the already mentioned applications were included in the lessons. The research took place within five teaching hours. In the next step, the students received a second questionnaire, which this time focused on specific questions about the currently used applications of vocabulary. In the last phase of the research, interviews were held with four selected students, where they could comment more specifically on the progress and effectiveness of the chosen strategies. Selected students are described more in the following chapter.

### **Action research**

Closely related to qualitative research is action research, which is also included. The latter represents a very thin line between theory and practice, i.e. academic research and the real world. Action research is therefore an ideal means of transferring research at the academic level into practice. Although action research is not so much concerned with theory, enough time should be devoted to choosing methods and solving the given problem. The meaning of the word "action" then describes the situation that the teacher examines and tries to improve if necessary (Elliott, 1981).

Action research begins when the teacher notices that something is not quite well in the classroom. It may refer to the behaviour of one student towards another and the teacher is trying to improve the situation. If we reflect this on the background of learning new vocabulary, in our case the teacher will focus on students who are working with new digital technology for the first time. In class, the teacher observes if this improves the learning of new vocabulary (Lewin, 1946).





*Figure 6: Parts of the action research (Janík, 2003).*

What are the main parts of the action research?

The entire research process begins by looking for different starting points (1). At the same time, we try to find answers to the questions: What do I want to explore? Is it possible to handle this task? Is it possible to succeed? As soon as these questions are clarified, the next step is to focus on creating a practical theory, i.e. how it works. We create a given theory based on observations, questionnaires, and other methods of data collection (2). In the next phase, these data are analyzed (3), while emphasis is also placed on the values from the analysis (4).

Subsequently, we create strategies and plans (5), which are later applied (6). Finally, if we want to share the research results, they are processed and published (7), (Janík, 2003).

The following part of the current chapter consists of the research methods, a description of the participants, the used tools, and the main processes.

### **Data analysis methods**

I used thematic analysis to process and examine the interviews. This method involves transcribing all interviews and then creating codes. The process includes highlighting specific words or phrases in the transcripts, which is the basis for generating codes to categorize the content. After creating these codes, common themes frequently occurring in the interviews are identified, forming the foundation for concluding (Clarke & Braun, 2019).

## **Research participants**

The survey was implemented in a class of the 9<sup>th</sup> grade students from the 2<sup>nd</sup> Elementary School in Rakovník. The main reason why I chose the 9<sup>th</sup> graders and not younger students was the fact that older students are more familiar with the world of technology, they have more insight. If they do not know a specific application, it is less difficult to explain to them how everything works. Among other things, they have a few months left before they start studying in high school, where they can use the given applications since they have already encountered them in my research.

I worked with a class of 14 students. Their level of English according to the Common European Framework of Reference (CEFR) ranged at level A2, with students understanding common phrases and sentences from everyday life, communicating in simple situations, and writing simple short messages. There was this number of students because the language classes at this school were divided into two groups. And since the second group was behind the first group in terms of the subject matter, I only worked with one of the groups, since their teacher did not allow any more delay. In total, I spent five lessons with the students. In the first part of the research, all 14 students filled out a questionnaire. Based on the answers, I then selected 4 students for the final interview. When choosing, I focused primarily on their experience with digital technologies. It means, that I chose four students who had never worked with any applications to learn new vocabulary. Before that, however, all students received a second questionnaire from me, where they could comment more specifically on the use of the given applications. Before entering the classroom to present my research, I decided to talk to their teacher to learn about their English level. She said that their English was at level A2. They managed speaking practice without any difficulties, and grammar was not a problem for them to understand. Although for some students it was not easy to find the right way to learn something new. In the following part, four students who were part of the semi-structured interview, are described.

Student A was a 15-year-old male. According to the answers from the first questionnaire, this student did not use any extension materials to learn new vocabulary. It was suggested by his teacher to include this student in my research. The reason is described in the interview section.

Student B was a 15-year-old female. In the questionnaire, she stated that English was her favorite subject and for that reason she used other methods outside of school as well, for instance, reading books in English, and watching YouTube videos, but no applications.

Student C was a 15-year-old male. He mentioned that English was a problem for him, so he tried to include Duolingo in his learning. However, it did not suit him very well, therefore he became another key student for my research.

Student D was a 15-year-old female. She mostly watched movies in English, but she was not getting what she expected in terms of vocabulary.

### **Research tools**

My research consists of several parts – a questionnaire before the main activity, a questionnaire after the main activity, followed by the action research and the interview. Initially, the whole class received an open-ended questionnaire (Appendix A). It was compiled in the Czech language so that even students for whom English is not one of the most popular subjects could fill in the questionnaire without difficulty. The main goal of the given questionnaire was to find out what current strategies students used to learn vocabulary and to consider whether these strategies were effective for them.

As mentioned above, I included another questionnaire (Appendix B) in the following step, thanks to which the students had the opportunity to compare their previous learning strategies with the applications they were working with. Moreover, they commented more precisely on the course of the activities within the use of digital technology. Both questionnaires were printed and given to students in an English class.

Based on the answers from the first questionnaire, I selected four students (described in the previous chapter) for the final interview, as they were students who did not learn new words using digital technologies.

### **Research process**

The research was carried out in March 2024. As already mentioned, the research was accomplished at the 2<sup>nd</sup> Elementary School in Rakovník with the 9<sup>th</sup> graders.

#### **1. Preparatory phase of research**

In the particular phase of the research, which is initial, we look for and create materials for our research activity. Learning vocabulary has always been a big challenge. As a primary

school student myself, I did not find a suitable strategy that would make it easier for me to learn vocabulary in English. Therefore, I entered the research to test how effective it is for elementary school students to use digital technologies (applications) within English language lessons, which would be the subject of my research. To be able to answer two research questions (*How do digital technologies influence the vocabulary learning process among lower-secondary school students? What are lower-secondary school students' perceptions and experiences of using digital technologies for vocabulary learning?*) that are part of my work, I implemented action research. The questions I asked before entering the action research were:

- Is working with applications clear for students?
- Do the applications meet the students' requirements in terms of learning new vocabulary?
- Do applications have a positive effect on student motivation?
- Do students see advantages or disadvantages in using applications in English language classes?

## **2. Data collection**

### **First lesson**

**Lesson objectives:** the students introduce themselves in English

I spent a total of five teaching lessons with the students in this English class. The first lesson aimed to get to know the students a bit and at the same time to present the entire research to them. Among other things, I was also interested in how they related to English. For that reason, I communicated in English only to get to evaluate it. If they used classic methods to learn new vocabulary, it may not have been as fun and interactive. For that reason, through research, I could change their perspective on the subject and encourage their desire to learn.

**Evaluation of the first lesson:** I met the students for the first time that day, and for that reason, I assumed that they would not be too eager to initiate communication. However, to my surprise, the introductory class did not show the slightest sign of uncertainty or nervousness on the part of the students. As their teacher told me, the students were very advanced in communication, which I concluded would make the whole research easier.

## Second lesson

**Lesson objective:** students translate descriptive adjectives from Czech to English (e. g. přátelský x friendly, sladký x sweet), students match descriptive adjectives with the sentences they belong to based on the context (e. g. Opposite of cloudy – sunny)

As part of the second phase (second lesson) of action research, during which the necessary data and information were collected, I focused on teaching and working with applications. The second lesson aimed to introduce two applications that were part of the research to the students. The reason why I chose Wordwall and Quizziz applications was the fact that I use them very often and I find them good to work with, as they offer an abundance of activities. Students were given a first questionnaire at the beginning of the lesson, which was related to their usual learning strategies. We first went through all the questions together. Among other things, I emphasized that it was important for the research that they answered honestly and that their answers would be used only within the research and would not be published anywhere. The questionnaire was filled out within 15 minutes.

As a topic of the given lesson, I followed the textbook, which is used in the 2<sup>nd</sup> Elementary school. It was the *Project Explore 3* textbook, Unit 4 with a topic on *Descriptive adjectives and adverbs*. It was a new set of vocabulary, but at the same time, it contained previous knowledge. For that reason, I adapted the activities so that they could try two different strategies. The list of words used can be found in the appendices (Appendix G).

First activity – The first activity was connected with the Wordwall application and the flashcards learning strategy. Students joined the activity using the QR code I shared with them. The main task for the students was to go through the flashcards containing new words, but I left the system entirely up to them. Some wrote down the unknown vocabulary, some returned several times to words that were new to them. The main goal of this activity was to familiarize the students with new vocabulary and observe how they would be able to cope with an activity for which they did not have precise instructions.

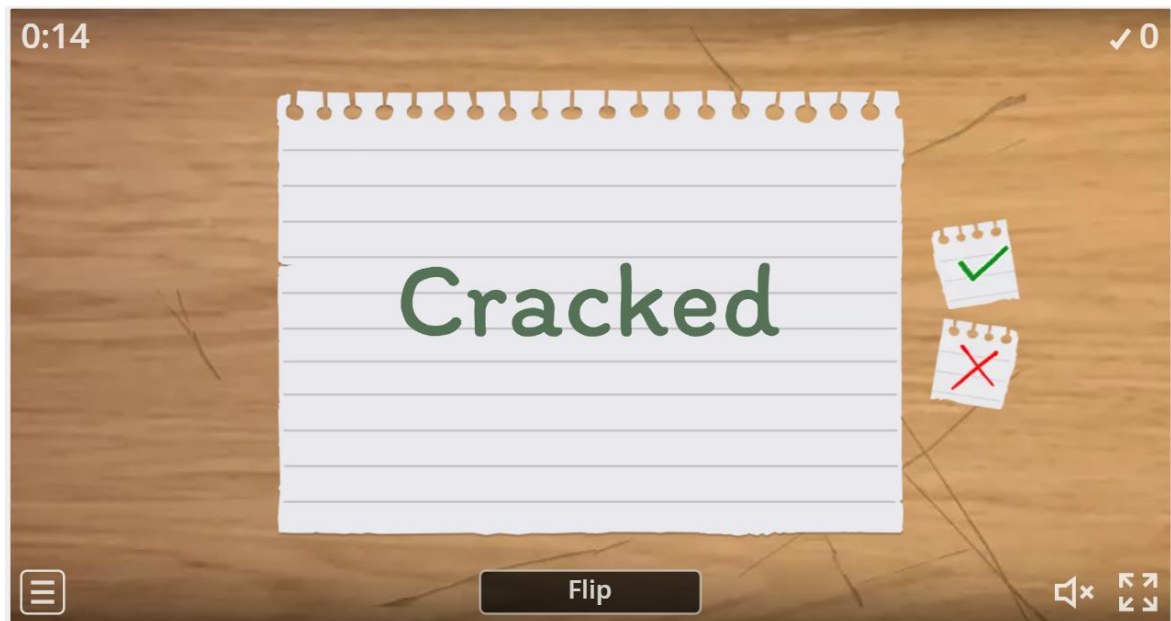


Figure 7: First activity

Second activity – I created the second activity in the Quizziz application. I included words from the first activity, but this time the words were put into context. Students were given a sentence and had to choose the corresponding word according to the context. Since it is possible to set a time limit in the Quizziz application, students did not have too much time to consult their answers with their classmates. The vocabulary was still unknown to them. However, the second activity aimed to present another strategy for learning new vocabulary, i.e. putting new vocabulary into context. It was something they could apply in the first activity.

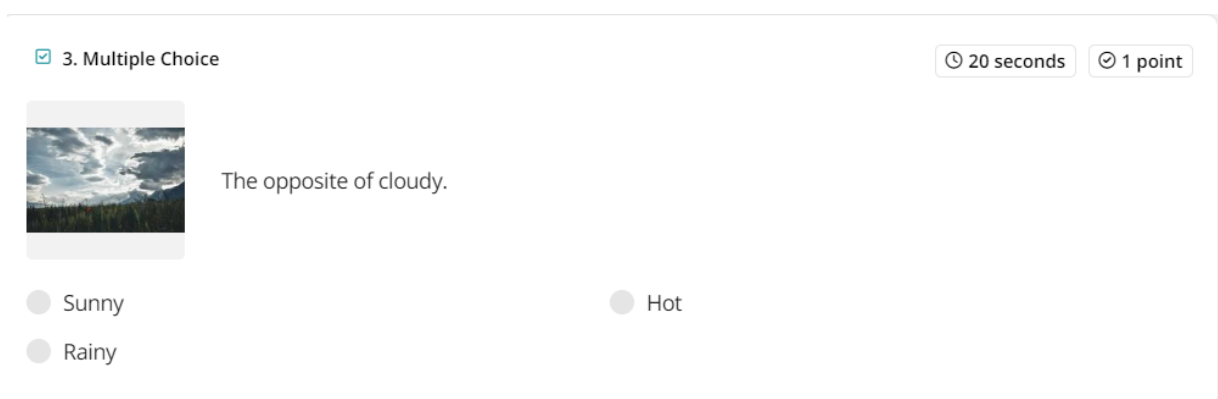


Figure 8: Second activity

As part of both activities, I did not interfere with the student's work. They only had basic instructions, and based on that I observed how they would handle the activities. They first

worked with the Wordwall app, with the help of the given activity in the form of flashcards, which according to the theoretical part belong to visual techniques of learning strategies. Students were familiarized with unknown words. Mostly, they worked better in pairs, which I noticed during the observation. The flashcards contained vocabulary in English with a translation into Czech and vice versa. At the end of the activity, the students could return to the unknown words and practice them one more time. It was obvious that many students faced problems with the first flashcard activity. Since they did not receive precise instructions about what to do with the task, they seemed to be a little confused.

Another part of the lesson was followed by the Quizziz application, where students were supposed to choose a correct word according to the context. During this activity, students were caught off guard by a time limit. Some of them had trouble meeting the time limit. Which meant that they did not focus on new words, but on completing the task within the time limit.

**Evaluation of the second lesson:** As part of the observation during the second lesson, I obtained the first part of the necessary data. The objectives of the lesson were not entirely fulfilled to a greater extent (except for introducing the students to the applications, and observing how they react to them). The fact that the lesson was not without problems in all directions helped me to apply alterations in the following ones.

### **Third lesson**

**Lesson objectives:** students create phrases with particular adjectives (e.g. chilly weather, spicy food, cracked mug)

The next time I spent with the students was devoted to their feedback on the activities of the previous lesson. First, we repeated the words from the previous lesson together, again using flashcards. Now, with more clear instructions, students were able to work on the task without any obvious difficulties. They were supposed to think of a phrase they would connect with a particular adjective. They worked individually or in pairs based on their preference and then we checked their examples together. Subsequently, I included another questionnaire, which was again filled out by all students. This questionnaire concerned the comparison of students' current strategies with the use of new applications. It was distributed to the students and as in the first questionnaire, we went through it together. Since I had the data from the observation gathered, I was curious about how they would express themselves in the questionnaire.

**Evaluation of the third lesson:** During the third lesson, I applied the alterations to assess whether the process of working with applications would improve. The students seemed more relaxed during the activities, and it was obvious that they were more confident with the tasks in the applications. In this case, the main objectives were fulfilled.

#### **Fourth lesson**

**Lesson objectives:** students use the given adjectives to create word combinations, students choose the appropriate adjective according to the context

The goal of the penultimate lesson was to check if the applications after entering more precise instructions contributed to learning new vocabulary. First, the Wordwall application was used with the flashcard strategy. This time different words were used than in the previous lesson. If the students did not know the word, they checked the Czech translation on the other side of the flashcard. Subsequently, they had the task of creating as many word combinations as possible, i.e. they added nouns to adjectives. After about five minutes, we went through their examples, and whoever managed to create as many word combinations as possible, I suggested a small A as a reward.

In the second application, Quizziz, words from flashcards were used and, as in the previous lesson, they were selected based on a wider context. However, this time I adjusted the time limit so that it did not act as a stressful factor. That means that the students could fully concentrate on the vocabulary without other elements to disturb their concentration. At the end of the lesson, I told the students the names of those I decided to include in the last part of the research. I explained to them the reason why I chose these students for the final interview. Of course, I gave them a choice, i.e. that if they decided not to participate in the interview, I would choose someone else. All selected students agreed to participate, so I was able to introduce the purpose of the interview to them in more detail.

**Evaluation of the fourth lesson:** In the given lesson, I more or less focused on alterations in the Quizziz application. During the second lesson, I noticed that most of the students had difficulty managing the time limit. This means that they focused more on completing the given task in the given time than on learning new vocabulary.

#### **Fifth lesson**

**Lesson objectives:** students describe the given situation with adjectives, students match an English adjective with its Czech equivalent, students create sentences with adjectives



In the last lesson spent with the 9th-grade students, they were given a test on the vocabulary covered (Appendix H). The test was not announced to them in advance so that their results would show if the use of the applications helped them in learning new vocabulary. The test took approximately 25 minutes to complete. After that, the students and I corrected them together so that they could get the necessary feedback from me right away. It was evident from their reaction to the test that they were surprised at how much they remembered just thanks to the applications. All it took was one small detail, such as a bolder color or the background of the activity, thanks to which they could recall a specific word. In the end, I said goodbye to the students, wished them a lot of success in their studies and their personal lives, and thanked them for participating in my research.

**Evaluation of the lesson:** I received very positive feedback during our last lesson together. Taking into account the fact that the students did not know about the test, their results turned out to be better than expected. We corrected the tests altogether. Students exchanged the tests in pairs. This way, they gave feedback to each other. It was not without mistakes, as some students simply needed more time to learn new vocabulary, but as the students themselves showed in the test, they memorized most of the words thanks to the applications.

### **3. Evaluation and formulation of the practical theory**

In this part, the results of lessons taught will be summarized. During the first lesson, students introduced themselves and the research was presented. At the beginning of the next lesson, the first complications appeared. Some students had difficulty understanding the task with the first flashcard strategy. In the following activity, the students struggled with the lack of a time limit, which caused them to not focus enough on the new vocabulary. In the next two lessons, I adjusted the activities so that the set goals were achieved. The final test in the last lesson showed that the applications helped to learn new vocabulary without any other preparation.

### **4. Objectives and criteria**

We will move forward in action research. The next step is to focus on our ideas about the values and goals that should have been achieved. The general aim of the given research was to find out whether the use of applications in English classes makes it easier for students to learn new vocabulary or not. Based on the results obtained from the questionnaires and observations, certain complications were revealed within the already-taught lessons.

Therefore, in the next lessons, I decided to adjust the activities to meet the set goals. As described in the lessons, I applied several alterations to see, where the actual problem was, and it turned out I was on the right track.

### **5. Consequences and other ideas for further practice**

One of the main problems that I noticed in the implementation of the activities with the students was the input of inaccurate instructions for the flashcard strategy. The reason why the instructions were not more specific was the fact that I wanted to assess the extent to which the students could adapt the activity to their own needs, i.e. choose how to approach the strategy with flashcards. However, during the observation, it was seen that most of the students did not know how to complete the activity. This resulted in them not focusing on the new words at all. A very similar situation occurred within the Quizziz application. There, the assignment was quite clear, as it was about choosing the right word based on the given context. Even so, certain complications appeared in this application, namely with the setting of the time limit. Knowing that the question had to be answered within one minute was a very stressful factor for the students.

### **6. Actions**

For those reasons stated above, in the following lessons, I decided to redesign the activities so that the students concentrate more on learning new vocabulary and less on the applications themselves. With the flashcard strategy, I provided students with more precise instructions described in the particular lesson. In the following application, the time limit was set up differently, so the students could focus more on the vocabulary. As it turned out, they seemed less stressed and more concentrated.

### **7. Formulation and presentation of the experience**

Final results and outputs of action research will be formulated and presented to the school management where my research was carried out.

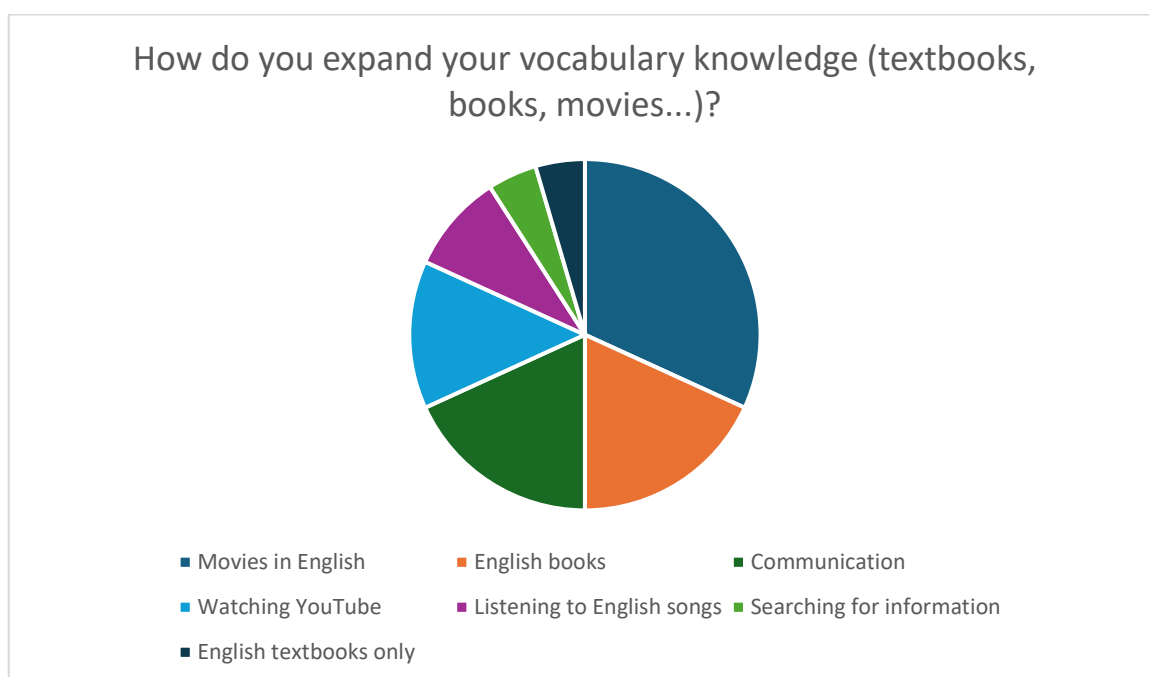
## **V. RESULTS AND COMMENTARIES**

In the upcoming chapter, the results of the research will be analyzed, and focus will be put on the students' commentaries from specific parts, i.e. from both questionnaires and final interviews. At the beginning, the results from the first questionnaire will be introduced to see, what the current strategies were. Another part of this chapter relates to our first research question, which is followed by the second questionnaire. Data from fourteen students who

participated in the questionnaire are analyzed here as well. Lastly, I will present the data obtained from the interviews, including the observations.

### First questionnaire

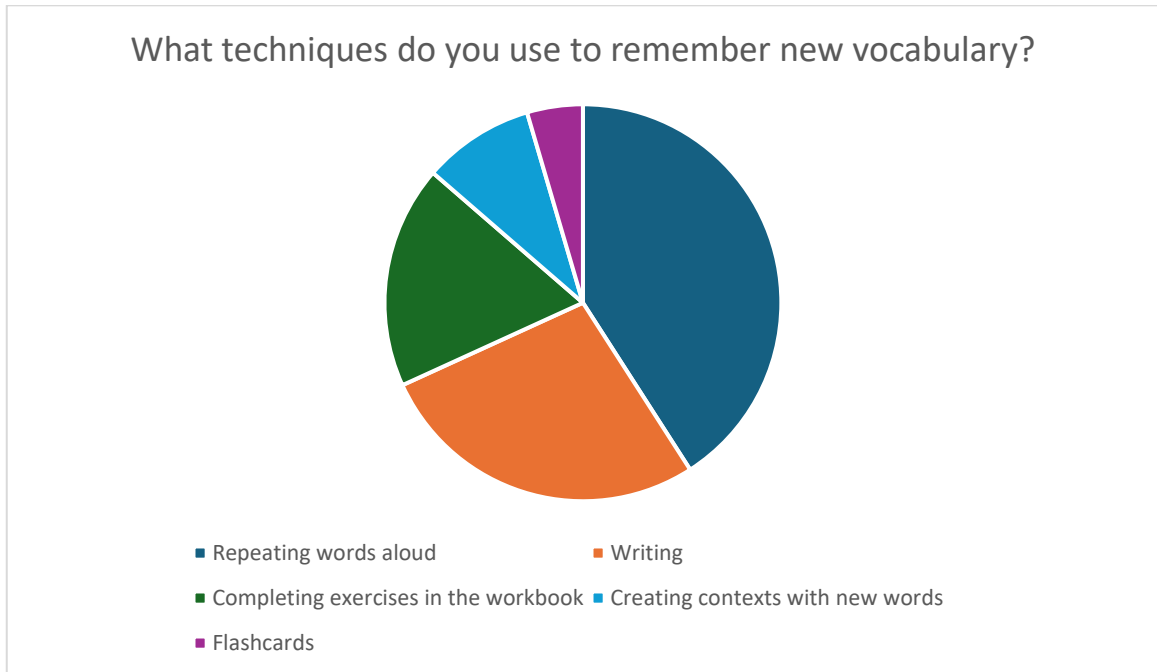
This questionnaire with five questions to answer was created in the open-ended form; therefore, the students might have answered without any limitations. The first question focused on the fact in which form students expanded their vocabulary. We can see from the results that half of the surveyed students preferred movies in English. The same number of students reported reading books in English and communicating on social networks or with more experienced friends. Watching YouTube videos has also become very popular recently, however, in this case, three students were using this platform to expand their vocabulary. For another item, two students said they listened to songs in the English language and one student learned new vocabulary better when he saw the words in context. One student mentioned in the questionnaire that he only used the English language textbook that they worked with in class to expand his vocabulary.



*Chart 1: Ways to expand vocabulary in English*

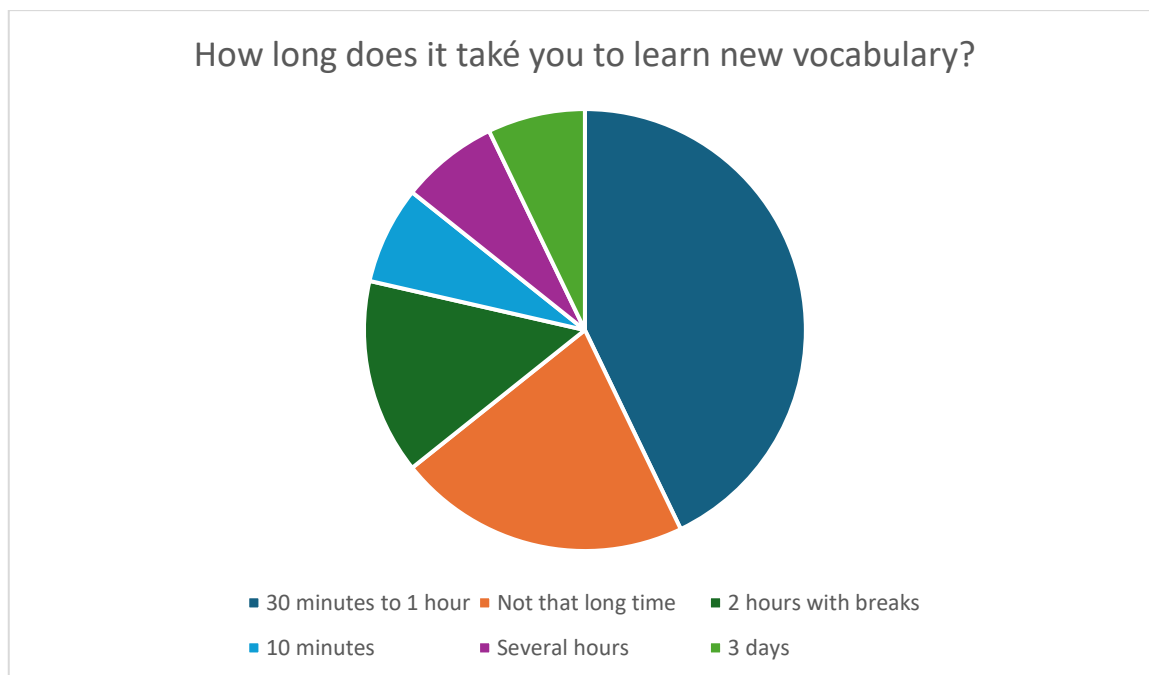
The second question, “*What techniques do you use to remember new vocabulary*” led to the discovery of which repetition rituals students prefer as a part of learning new vocabulary. The first rank was occupied by repeating new words while learning them aloud. Not only do students remember vocabulary better, but they also practice correct pronunciation. The item of rewriting new vocabulary in a notebook or simply somewhere where they can be seen

received another high rating. Four students wrote that they remembered vocabulary best if they used the exercises in the workbook. For two students, context was a key. They said that once they had a word in context, they were more likely to remember it. One student used the flashcards strategy in paper form, which he then used for revision.



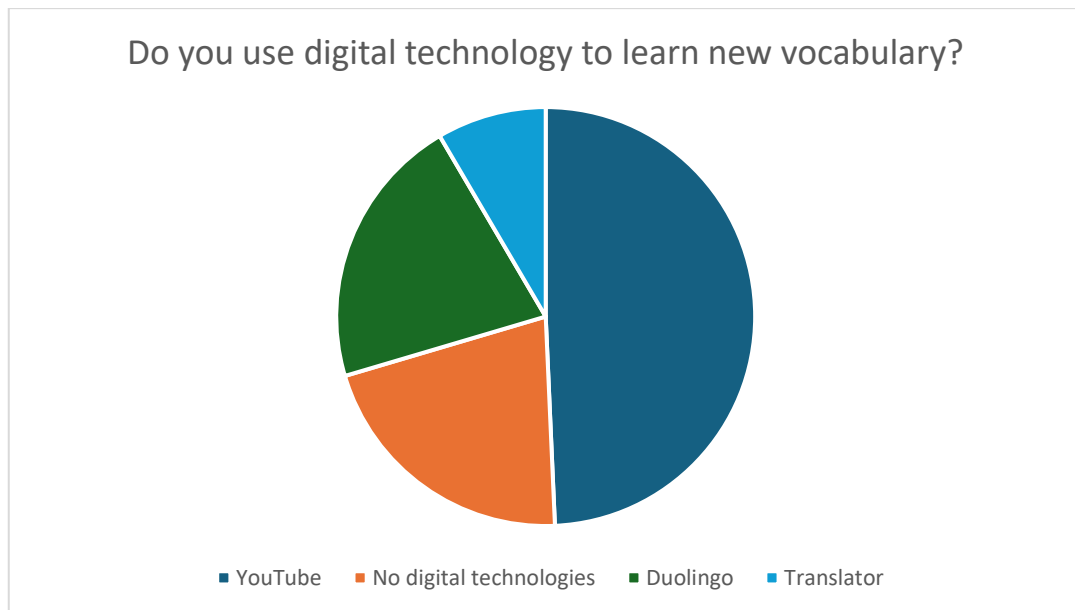
*Chart 2: Strategies helping students remember new words*

For the following question, *"How long does it take you to learn new vocabulary?"* I focused on how much time students spent learning new vocabulary. Most of the students stated in the questionnaire that they needed a maximum of an hour to learn new vocabulary. The other three students did not specify the exact time; however, it can be determined that it is less than one hour. The following items are of slightly different time ranges. They move within 10 minutes and reach up to days. One student stated in the questionnaire that she learned new vocabulary on an ongoing basis, which was why she devoted more time to learning. Other students prepared before the test in the given time frame.



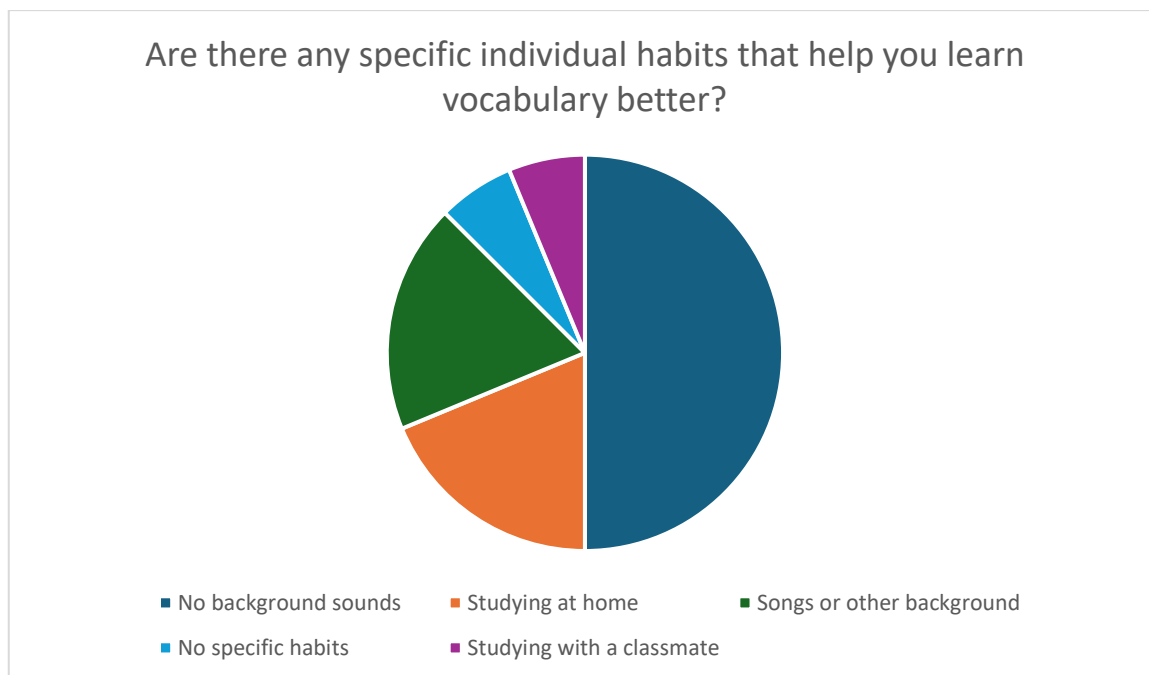
*Chart 3: How long it takes students to learn new words*

Regarding question number 4, "*Do you use digital technology to learn new vocabulary?*" it reveals the goal of the first questionnaire. As already mentioned, for the first questionnaire I mainly focused on finding out how many students use digital technology (applications, online resources, online platforms) to learn new vocabulary. The largest number of students follow the YouTube channel. This platform is used to listen to songs, watch videos, and/or expand the content of the given topic from the lessons. The next item represents the key group of students for the final interviews. They said that apart from watching movies in English or listening to music, they did not use any other digital technologies. Three students had been using the Duolingo application for a long time, and one student used digital technologies to translate unknown words.



*Chart 4: Digital technologies that students use*

As a part of the first questionnaire, we came to our last question, *"Are there any specific individual habits that help you learn vocabulary better?"* This question helped me to find out what kind of environment students preferred to learn vocabulary and generally what kind of conditions helped them to do so. Most students were satisfied if there were no distracting elements in the background in the form of sounds, music, etc. Three students preferred the learning environment only at home, the rest of the students did not place much emphasis on the space. A smaller number of students then gave their preference to have tunes or movies in the background while they studied. One student wrote in his questionnaire that he did not have any specific habits and he did not even look for them. For one student it was better if she could go over the vocabulary together with her classmates.



*Chart 5: Specific habits while learning new vocabulary*

**Commentary**

From the data found in the first questionnaire, I obtained the necessary information for my research. Most students use platforms other than just the textbooks they work with in class to expand their vocabulary. It means that they are actively involved in practicing new vocabulary. If we mention the strategies that students use, they are connected to the individual habits mentioned in the last question. It depends on the environment in which they occur and, on the conditions, shaping the given environment. If these habits are disrupted, students' strategies may not work effectively. Regarding the period that students need to learn new vocabulary; we can notice considerable differences. However, it depends on many factors, such as what kind of vocabulary is involved, its breadth, etc. If we follow up on the use of digital technologies, this is connected with a certain regularity. This may be related to the fact that students do not actively use free applications such as Duolingo, as it could interfere with their free time spent after school. In the next part of the research, we will focus on the first research question, which is linked to the second questionnaire focused on two already specific applications.

In the second questionnaire, students answered four open-ended questions about the applications, and they were supposed to compare these strategies with their current learning. The main goal was to answer the first research question, namely whether students perceived

the use of digital technologies as a positive enrichment of learning new vocabulary or not. The questions from the questionnaire are recorded in Appendix B.

In the first question *"How would you compare working with the applications Wordwall and Quizziz to methods that you have used so far?"* students commented on the applications in comparison with the strategies they had been using until now. Student responses are recorded in the chart below and are divided into several categories. In the case of the first category, it is noticeable that almost the entire group found working with applications more clear than classic methods. More than half of the students commented on the possibility of working in pairs, which I also noted during the observation. Furthermore, I found two mutually exclusive categories in the answers. Eight students concentrated better when using applications, and four students, on the contrary, perceived too many distracting elements in the applications (sound, colors, theme of the background). A small number of students reported no difference compared to their usual methods.

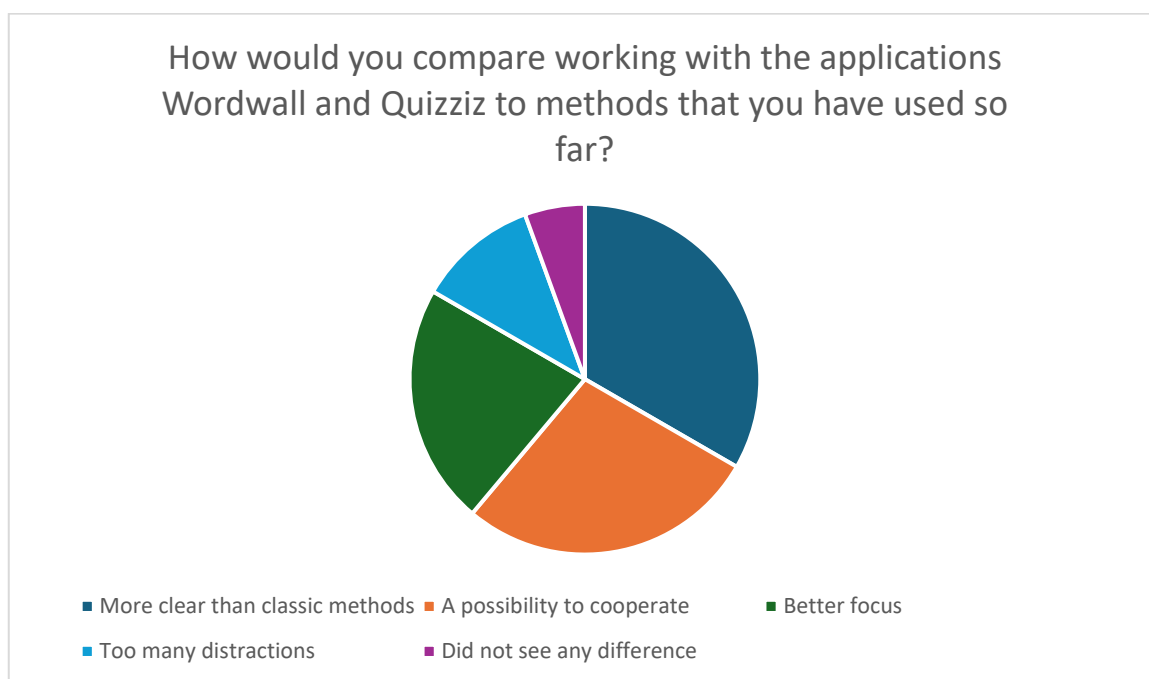


Chart 6: Comparison of digital technologies with their existing methods

For question number 2, i.e. *"What is your preference if you compare Wordwall and Quizziz and why?"*, two main categories were compared, namely which of the two applications students worked better with and why. For the other items of the table, which are always located under the given application, I have recorded the very reasons why students considered one application better than the other. As the last item, I included the option that several students did not express a preference, so they worked well with both



applications. It can be seen from the results that the Quizziz application gained more popularity among the students. It received seven votes, and as it is obvious from the students' responses, it was better to focus on the task with this app. In addition, one student mentioned that he liked competitive challenges, for which reason he preferred if the activity had a set time limit. The Wordwall activity was not as popular as Quizziz from what we can see. Among the positive elements, students liked the possibility of setting a different default arrangement for the given activity. For instance, it is possible to switch from flashcards to random cards, etc. Another decisive element for the students was the fact of the time limit on specific activity. If they had enough time, they could concentrate better on the task.

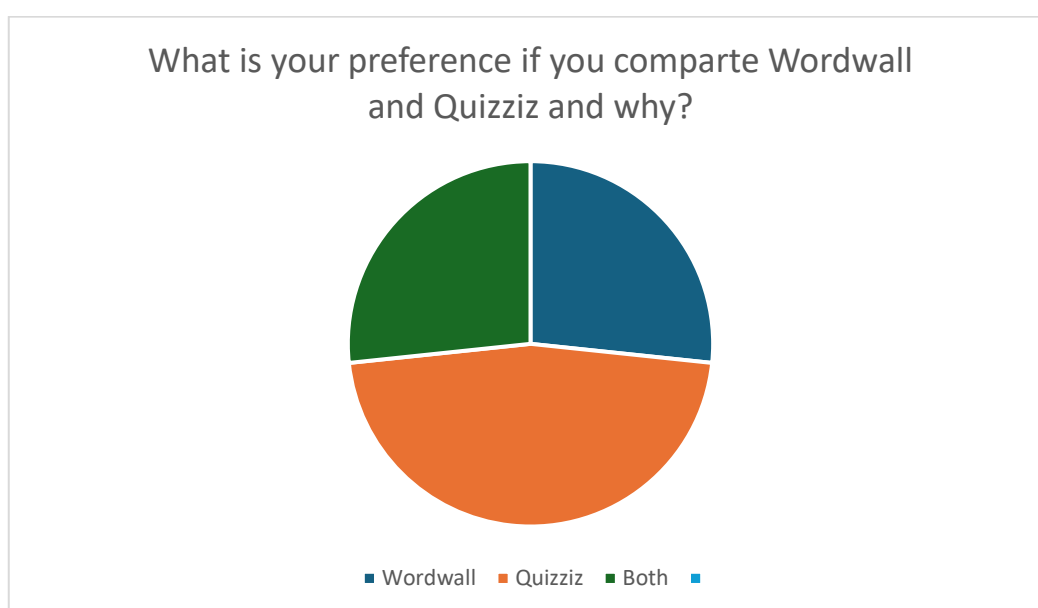


Chart 7: More preferable applications and why

Moving on to the third question, "What disadvantages did you experience when completing the Wordwall and Quizziz activities?" the students had the task of expressing more specifically what disadvantages and pitfalls they noticed with both applications. This question was related to the lesson, during which I explained at the beginning how the applications can be used. Therefore, the students had the opportunity to evaluate for themselves what shortcomings they discovered in the applications. In the given case, there were some negative reactions to both applications. Whether the platform is paid or not was important for students to be able to use the apps whenever they needed. And this phenomenon is completely understandable in the case of students. Another reaction that I received from most of them consisted of independent work. In both applications, it is only possible for the teachers to create activities. They can share the code or the link with the

students to enter the activity. Based on this, they said that another major disadvantage of these apps was that they could not use them whenever they needed. The next item was about receiving feedback from the teacher. Here it was evident that if students are not receiving feedback, it is certain that they are not very confident in their work and that feedback from the teacher is important to them. Eight students responded that they could not create any activities themselves, that they only completed them, and thus prevented them from being creative. The last item indicates whether the students always knew how to deal with the given activity and as we can see, two students struggled a bit.

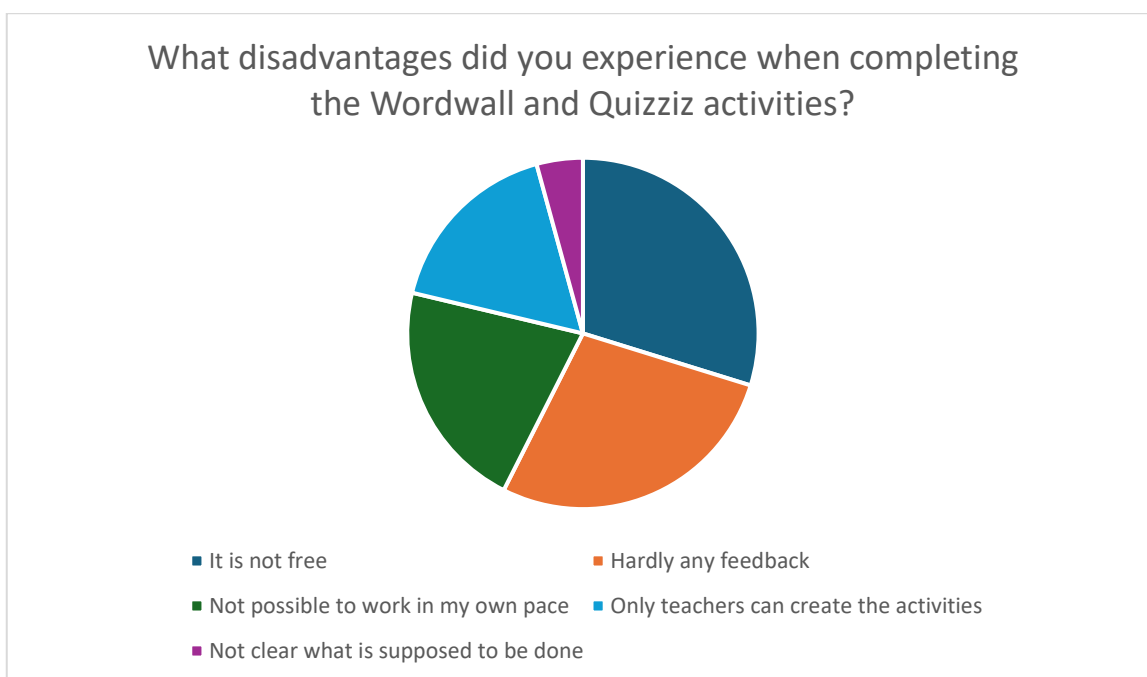
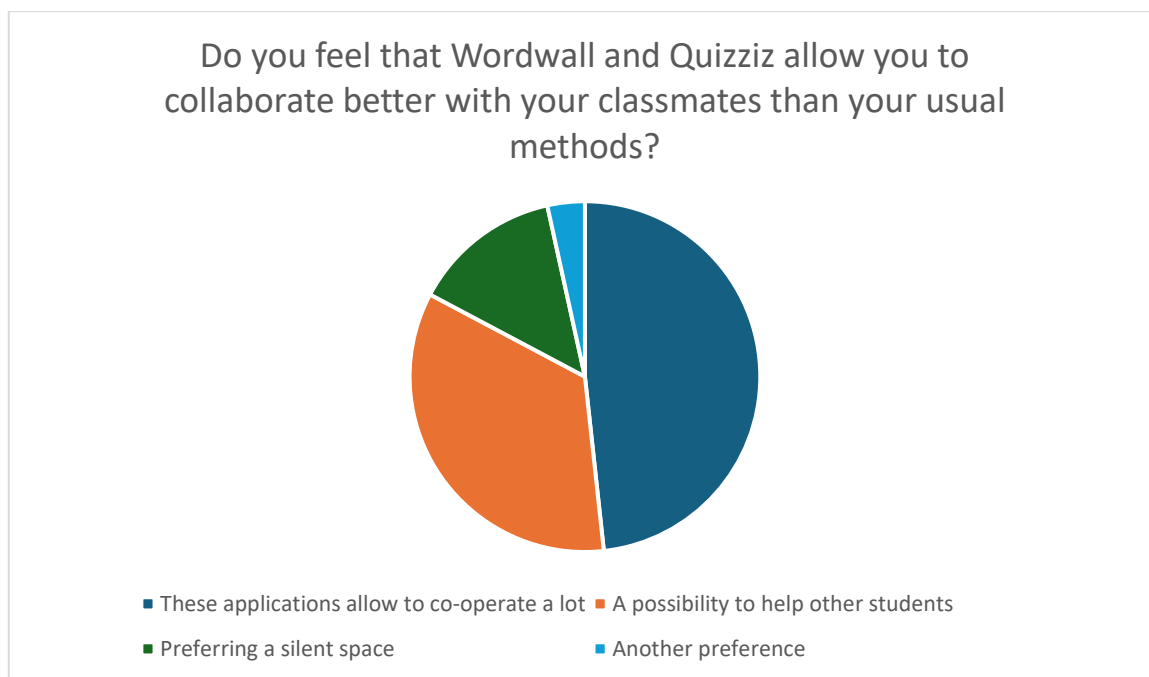


Chart 8: Disadvantages of the applications

In the last question, *"Do you feel that Wordwall and Quizziz allow you to collaborate better with your classmates than your usual methods?"* students focused on cooperation within both activities. I included this question because during my observation I noticed signs of peer learning, which I would consider a big advantage of working with applications. This method allows students to learn from each other without even realizing it. It is clear from the results that all interviewed students found working with digital technologies to be a great means of collaboration. In the questionnaire, ten students commented on the possibility of helping "weaker" classmates, which I was personally very pleasantly surprised by. A few students preferred to work in a quiet environment, which allowed them to concentrate better. As part of the observation, I registered that they were disturbed by their classmates who wanted to share their knowledge. They did not mind working in pairs, but they were more

focused when there were no other voices around. At the end, one student stated that she generally did not like working in pairs or groups, preferring to work everything out on her own. For that reason, she would prefer to work independently with applications.



*Chart 9: A possibility of cooperation*

### **Commentary**

As for the results found, they surprised me in many ways. The main goal of the given questionnaire was to find out what effects working with new digital technologies had on students. Based on the responses from the questionnaires, it was found that for most students, working with applications represented a big positive change in learning new vocabulary. Those students who mentioned in the questionnaire that they did not notice any changes compared to their previous methods said that the English language was not a big priority for them. They focused on subjects in which they wanted to develop more in some way. For that reason, they could get by with the usual methods of learning new vocabulary. Furthermore, the given applications allow working in pairs without the teacher having to intervene in any way, which suited more than half of the students. And as mentioned in the tables, many of the students were helpful. Students also compared which app suited them better and even though the Wordwall app got fewer votes, there is no need to push it aside. As we have registered, some students gave the Wordwall app priority in their evaluation. As with most digital technologies, there have been some downsides to these two. However, if the students found out about the shortcomings of the applications themselves and despite that found them

beneficial, they are without a doubt in the best honor to start using other applications more actively. Now they could test whether this type of strategy suits them. At school, during lessons, teachers use different teaching strategies with students, and one of them is learning to work together. Students must develop and work on this method, and digital technology might be useful.

The interview (Appendix C) was compiled in a semi-structured form, i.e. with questions that are the subject of the interview, and their order can be changed at will. During the interview, we focus on the respondents and the opportunity to share their personal experiences. I interviewed the students in the office, where another teacher was present, and these interviews took place during the English language lesson. At the beginning, I presented the research together with all phases of the interview and gave space for possible questions. Before the start of the interview, I again pointed out that the answers needed to be truthful, and the results would only be used for research purposes. During the interview, the students had the opportunity to comment on the applications and which strategy suited them better.

Four students were involved in the semi-structured interview, who were selected based on the questions from the first questionnaire. As part of the analysis, I approached not only the results in the individual questionnaires but also the observations during the implementation of the activities. From the observation, it was evident how the students worked together and if they were sure how to work with the applications.

At the beginning of the interview, I focused on questions that were related to the observation of activities. In the next step, we already focused on specific questions, so that I could use them to find out how the students perceived the applications and whether they represented a benefit for them.

### **Student A**

Student A was a 15-year-old male. It was evident from his attitude and answers in both questionnaires that learning outside of school was not one of his favorite activities. In other words, he made do with the materials provided by the teachers and did not look for any additional ones himself. Among other things, he was not used to working with any application. For that reason, he was the first chosen student for my interview. I wondered if working with apps would change his mind about learning as such and noticed the benefits that working with apps could give him. During the observation, I noted that this student cooperated with his classmate in both activities. It did not occur because he would not be

confident with the activities, but he saw a big positive if he had the opportunity to work in pairs. He mentioned that in the second questionnaire.

During the interview, I was very surprised by the answers that Student A shared with me. Even though he did not work on the activities alone, he gained something in terms of vocabulary. He did not face any problems understanding the assignments in any of the applications. In terms of app popularity, he chose Quizziz. He mentioned that he found it much better graphically and more fun. Working with both apps was clear to him, but what he liked about Quizziz more was that it allowed him to see the correct answer right away. For both applications, he mentioned that the activities could be performed on any device (mobile phone, tablet), which was very beneficial from the point of view of today's generation. He made a recommendation for both applications, that the teacher needed to give them any kind of feedback. It was essential for him to know, why he made a mistake. However, in terms of new vocabulary, he found Quizziz better because the new vocabulary was presented in a context, so he could logically infer what word to add to the sentence.

#### *Commentary*

From the obtained results, we can see that even students who do not like to spend their free time learning can choose a method that would enrich them and at the same time make learning fun for them. The interview with Student A went perfectly smoothly. He always talked more about each question, which is why I concluded that he enjoyed working with applications. Not only from the point of view that he had the opportunity to work with his classmates but also that he discovered an opportunity to enrich his learning. In the interview, he seemed relaxed and self-confident, during the observation it was clear how he was involved in the activities. Among other things, he told me that he usually did not want to participate in activities during English lessons because he did not find them entertaining. According to his final evaluation after our lesson together, I can conclude that it helped him find a learning path in which he would enjoy it.

#### **Student B**

Student B was a 15-year-old female. In the first questionnaire, she stated that the English language was one of her favorite subjects, so outside of school she liked to read books in English, watch movies or watch English videos. However, she had never tried any apps to learn new vocabulary. I chose her for the final interview because she could also give me her

perspective and opinion on working with digital technologies in this form and whether she was getting something out of it.

Student B, like Student A, worked out activities with a classmate. They shared their observations and ideas, which, among other things, she also mentioned in the first questionnaire, i.e. that she and her classmate test each other's vocabulary knowledge. Among other things, she also enjoyed being able to help “weaker” classmates, which these applications made possible. She did not seem confused as part of the observation. I did not notice any obstacles while working on the activities. She understood the assignments for both of them, but like Student A, she preferred the Quizziz app for better orientation. She was amused that the lesson was built differently than what she was used to. However, she emphasized that she would prefer to be able to practice grammar instead of vocabulary. She stated that as far as grammar was concerned, it would be harder to practice it in applications. In class, she perceived working with applications as a benefit, but she did not want to include them in her free time. What she mentioned as an idea for improving the apps was the fact that only the teacher could create the activities, which she said was a shame. She would like to try designing an activity with which she could practice new vocabulary even better.

#### *Commentary*

The interview with Student B took place in a non-standard way. It was difficult for her to stick to the set questions; she was constantly moving in a different direction. However, despite these initial difficulties, I managed to get the information I needed. The results show that this student preferred collaboration, which both applications allowed. She perceived working with Wordwall and Quizziz as a diversion in English language lessons but did not consider them an inseparable part, i.e. that the applications represent only a kind of supplement for her in the framework of learning and practicing new vocabulary. In her free time, she would still use the methods mentioned above. It was clear from her attitude that she preferred her initiative, which means that she would adapt the individual applications herself to her needs.

#### **Student C**

Student C was a 15-year-old male. He was a hardworking student, but despite this, the English language was one of the subjects in which he did not do very well. In the first questionnaire, he stated that he had tried to practice his English through spoken and written conversation and that he searched for information to broaden his awareness of the topic.

When answering the question about the best way to remember vocabulary, he mentioned the flashcard strategy. Even so, he did not seem too comfortable with the first activity. It was obvious to this student that he did not quite know how to handle the first activity. He stated that he was not sure how to work with it at first. In the next observation step for the second activity in the Quizziz application, it was clear that orientation was much easier because there were precise instructions in the activity. When asked about the use of digital technologies in the context of learning new vocabulary, he said that he used to work with the Duolingo app for several months, but it did not give him much. For that reason, I chose this student for the final interview. During the interview, he did not seem nervous, on the contrary, I sensed a great friendliness from him.

In the very first question, he stated that he preferred the Quizziz application due to greater clarity and fewer distracting elements. In another question, he mentioned that he did not have a bad experience with any of the apps. However, when it came to the chosen activities, he preferred Quizziz, as he felt that this app gave him more in terms of vocabulary.

For the following question regarding the benefits of working with applications, the answer was more than positive. The student stated an example of his classmates who did not concentrate well during learning. That he saw a great advantage in working with the applications since it certainly helped him with his concentration. For the last question, he made several comments and recommendations. For Wordwall, he said it felt outdated and less clear. A positive point for him was the possibility to work independently without setting a time limit. When it came to the second app, he would prefer Quizziz not to function as a "competition" app. He said the apps were meant to teach students something, not to compete to see who had better results.

#### *Commentary*

During the interview, Student C showed complete concentration and I could see that he was focusing on whether he was gaining something or not while working with the applications. As already mentioned above, this student used to work with the application Duolingo, but he did not receive what he had expected. He was a hardworking student, but he struggled to find the most suitable ways to learn new things. He showed engagement throughout the interview, and even though he worked with the apps rather independently, I could see that precise instructions were needed so that Student C knew what the output was supposed to be. While completing the first activity, he kept looking around to see what his

classmates were doing, who mostly worked together in pairs. However, Student C preferred to work independently, so the results indicated that he would prefer Quizziz in the future.

### **Student D**

Student D was a 15-year-old female. In the first questionnaire, she wrote that as far as expanding her vocabulary is concerned, she preferred watching films in English. Before the interview began, it was obvious that speaking did not belong within her favorite activities. During the interview, I faced difficulties as her answers were not very extensive. For that reason, I always asked her a few additional questions. However, during the observation, I noticed how she handled both applications and that the way she worked allowed her to set up a system that could help her learn new vocabulary. Compared to Student C, she did not have the slightest difficulty working with the new vocabulary in her way. First, she went through all the words and then she went back to those that were unknown to her and wrote them down. She had no problem with understanding the assignments in any of the applications. However, for the next question, she mentioned that, as with Student C, she worked better with the Quizziz application. Here, additional questions were needed: "*Why was it better for you to work with the Quizziz application?*" Student D answered that she remembered words in context much better. On the contrary, regarding the Wordwall application, the student said that it was more fun, with more colors and accompanied by music. Therefore, if there was an activity in this application other than flashcards, she would prefer Wordwall, since the Quizziz application did not offer too much variability in activities. The student did not make any recommendations or improvements, so she only focused on the vocabulary activities themselves.

### *Commentary*

From the data obtained from the interview and previous questionnaires for this student, it emerged that she preferred to work in an undisturbed environment, which means alone. She managed to adapt activities to suit her as much as possible. The student performed independently without difficulty. During the interview, she seemed very nervous, however, with the help of additional questions, I managed to get the necessary information. Although she had never worked with any application to learn new vocabulary before, during the observation it became clear that she found her way around the applications without more specific instructions. For that reason, in the future, digital technology could undoubtedly be included in her learning.



## Thematic analysis

As already mentioned in the Methodology chapter, for this part I used thematic analysis, where interviews are transcribed, from which codes are subsequently created. Themes essential for the given analysis are then created from the codes. In the next step, the themes are reviewed, named, and finally, the results are written up.

### *Theme 1 – Feedback and assistance*

The first theme identified is feedback and assistance, which were one of the key parts of the lessons. In both observations and interviews, it was found that any kind of feedback is very important for students. For a few students, feedback or some kind of assistance was not essential, but well-given feedback could clarify many things for them. After completing the activities, the students were not sure where exactly they made a mistake and how they should correct it. Among other things, it is always important to make sure that all students know what to do, which is related to assistance.

During the interviews, the students often found that they lacked feedback, especially with the Quizziz app: *“The great thing about this app was that it showed us the right answers right away. But I was not sure why I made a mistake and missed that in class. Even though I had the opportunity to work with a classmate, due to the time limit I did not have the opportunity to think about the correct answer, and then I was not even told why the given word was correct. But the truth is that at least with Quizziz I knew the right answer. With Wordwall, I didn't even know what to do at first, let alone get any form of feedback.”* (Student A)

From the above, it can be seen that some kind of assistance and feedback regarding both activities in the lesson was definitely in order: *“I enjoyed working with the Quizziz application a lot, not only did it suit my ideas about learning new vocabulary, but also that I immediately knew where I had gone wrong. I did not mind that the results were not specified in any way. I enjoyed the activity. But what did not suit me too well was the first activity in the Wordwall application. I am a student who needs clear instructions for everything. I know this is probably not the best way, but unless someone gives me precise instructions, I am nervous, since everyone around me knows what to do.”* (Student C) From the first theme, it is clear that both students see the importance of feedback in something different, however, from the facts found, providing feedback and accurate instructions are certainly crucial for students.

## *Theme 2 – Learning preferences*

Learning preferences became another rather comprehensive topic. It is obvious that each student prefers a different style of learning new vocabulary, and this was confirmed to me during the interviews. Each student indicated a different method that suited them best. However, the most important thing for me was the realization that students can apply all their favorite learning methods when working with applications: *“English is one of my favorite subjects. On the other hand, I am aware of the fact that not all my classmates are doing well, so I enjoy helping them. In the Wordwall application, I first worked with the activity on my own, but then I thought that I could test my classmates on vocabulary. It was very helpful for her to receive precise instructions and to have someone correct her mistakes if necessary, and this method also helps me because it allows me to revise the words myself.”* (Student B)

*“It always helps me more when I work with my classmates, which is not only about English. We share our observations and ideas and it's just always nice to be able to talk about a topic with someone and discuss it. I don't like it when teachers give us some tasks and we have to work it out on our own. I have always learned better with someone.”* (Student A)

*“I would not say that I have a preferred learning method at all. It depends mostly on the mood and the subject, when I want to study alone, or we prepare for a test with classmates. The advantage of working with applications is the fact that it does not matter what activity we are currently working with. We had a choice of how we wanted to work out the activities, which I liked.”* (Student C)

*“I enjoyed working with the Wordwall application more in terms of work layout. I do not like it at all, when there is a lot of noise around me, it is harder for me to concentrate. The activity with flashcards made it possible for me to organize the activity myself. I am not very used to working with others, I feel that our opinions always differ. So, if I can choose, I always prefer to work independently.”* (Student D). From the results found, it is obvious that each student prefers a different method when it comes to learning new vocabulary. Of course, it is not always possible to adapt activities to the needs and preferences of all students. However, if students have the opportunity to choose the method that suits them best in learning, it can have a very positive effect on their motivation to learn.

### *Theme 3 – Concentration*

Another important topic that I gained through coding concerns concentration and the effect that applications have on it: *"Working with applications is not distracting for me, quite the opposite. I can focus on one thing and not notice anything else around. If we are working with a textbook or a workbook, I often lose track of where we are. It is different with apps. There I do not have more exercises in my field of vision and I can focus better on just one specific thing."* (Student D)

I was particularly curious about this student, and what effect the applications would have on her in terms of concentration. As I already outlined in the interview section, it was challenging to get her to answer the questions. Her passive approach initially surprised me, as she agreed to participate in the interview. However, as she stated, the applications supported her concentration rather than the other way around.

### *Theme 4 – Engagement*

The last topic of this analysis is engagement. The lesson is not too long in terms of time. Even so, it happens that students do not stay active all the time and lose the aforementioned concentration. *"Our teacher would tell you that I have not been so involved in the lessons since the beginning of the year. I know that not all topics are interesting in a foreign language, and I do not enjoy grammar. But I think that if these applications were included not only in vocabulary learning but also in repeating grammar, I would not oppose them at all. Learning is more fun, and I would look forward to English lessons more."* (Student A)

For a student who was always rather passive in class, he enjoyed the class thanks to the applications. During the observation, I noticed that he had fun mainly with the Quizziz application when he could compete with his classmates a bit.

### *Commentary*

Other important facts were discovered from the thematic analysis. All topics are more related to applications only, but they also connect with learning vocabulary and affect memorization. From the results of the thematic analysis, it became clear that all perceptions of applications have a large share in students' learning. Either students learn how to work by trying different methods, discover their hidden skills (helping others), or consider the applications to enrich their learning.

## Summary of key findings

In the following chapter, based on two research questions, we will summarize the findings.

**Research Question 1:** How do digital technologies influence the vocabulary learning process among lower-secondary school students?

**Research Question 2:** What are lower-secondary school student's perceptions and experiences of using digital technologies for vocabulary learning?

Nine-grade students participated in two questionnaires, between which there were key activities. From the first questionnaire, the results showed that most students used other methods than only the one from the textbook to expand their existing vocabulary. Regarding the results from the first questionnaire, I was also very surprised to find that all the interviewed students had a specific strategy that helped them remember new vocabulary. In short, they chose the one that suited them best and they used it for a long time. Many students were working with digital technologies without even realizing it. For that reason, in the following question, it was more specified whether they followed e.g. the YouTube platform, etc. From the results, it was clear that most of them either used these digital platforms or that they used specific applications that made it easier for them to learn new vocabulary. Regarding the time students spent learning new vocabulary, the answers were very varied. Our results range from 10 minutes to several hours, with one student reporting that she learned vocabulary continuously from one lesson to another. Among other things, students used specific habits that they had already proven, and which helped them fully concentrate on learning. Thus, it was obvious that they were aware of their learning and adapted it to their needs.

After completing two main activities, it was evident from the results of the second questionnaire (**1<sup>st</sup> Research Question**) that the students agreed on many points of view. The applications allowed them to work together, which was not always possible with classic strategies. Furthermore, better concentration, which I consider very positive feedback. However, there were also students who, on the contrary, perceived work in the applications as too distracting, as the activities contained too many elements (colors, sounds, etc.). However, students rated various aspects of both apps, favoring Quizziz in terms of learning new vocabulary. They evaluated the first strategy with flashcards and the Wordwall application itself more as a diversion in English lessons, not as a main resource to aid learning. As for the disadvantages of working with applications, the students also listed

several of them. Among the biggest of these was the fact that not a single app is free. As other students stated if they wanted to include the applications in their regular learning regime, it would not be possible, since only the teacher could create activities and therefore only the teacher had access to the activities at any time. Finally, all students needed to be given clear instructions when working with the applications. Working with applications was a pleasant change for the students also from the point of view of cooperation, which, based on the results, was a very important part of learning new vocabulary for them.

Only four students were included in the last part of the research based on their answers to the questionnaires. All four students completed the interview (**2<sup>nd</sup> Research Question**) in approximately forty minutes. From the results based on the thematic analysis, it was shown that it was important for students to receive any form of feedback. In many cases, such as with the Quizziz application, they received it immediately after filling in the question, but even so, the reason needed to be made clearer to them. Working with applications also makes it possible for students to choose the strategy that suits them best, i.e. whether they want to work alone or in pairs, etc. The transcribed interviews revealed that if precise instructions were given, students focused more on learning new vocabulary and noticed different aspects that can make it easier for them. Last but not least, it is necessary to mention the active participation of students in learning. It should be noted that from the thematic analysis of the interviews, but also the observation during the performance of the activities, it became clear that the students were more active and completed the tasks with greater enthusiasm and motivation. I rate this fact as one of the most positive, not only from the point of view that they could look forward to English language lessons more. Among other things, also because they also find the motivation to use the applications themselves to learn new vocabulary, as they perceive it as a benefit.

The results of my research show that digital technologies for learning vocabulary are based on learning strategies. The goal of these strategies is for students to remember new vocabulary better and more effectively and the same is confirmed in the research study of Anna Uhl Chamot who investigated in Language Learning Strategy Instruction connected with Current Issues (Chamot, 2005).

Digital technologies transform this theory into perfect practice, where the classic methods (flashcards in paper form) allow you to set more types of levels, variants, etc. in digital form, which make learning easier and is motivating for students. Working with applications is

reminiscent of computer games, the so-called “gamification,” which makes students more active (Gamification in education, 2023).

The following chapter deals with the fact of how research results can help teachers in practice. Another sub-section of the chapter focuses on the limits of the research, and in the conclusion, suggestions are made on which ways the research could be further developed.

## VI. PEDAGOGICAL IMPLICATIONS

Even though the research was implemented on only one class of 9th-grade students, the results clearly showed that there was an agreement in many aspects. This fact could therefore be helpful to teachers in practice. First, from the point of view that compared to the methods that students have used so far, they would prefer working with applications, since it had a very positive impact on their vocabulary learning, namely on their motivation and vocabulary retention. During the observation it was concluded that the students needed precise instructions. Otherwise, the aim would not be fully achieved as it would result in them not focusing on the new words at all. Another part that needs to be considered is that teachers provide students with enough time within particular activities. Students are not concentrated enough, because an inadequate time limit makes them stressed.

If teachers do not want to include an activity for learning new vocabulary in the English language class, it is possible to assign homework to students with the applications. This gives them enough time to practice and teachers can constantly check the improvement of their students.

As I mentioned in the previous chapter, we can see from the obtained results that each student uses different strategies to remember new vocabulary. So, it is possible to assign several activities, e. g. flashcards, quiz, matching of corresponding words etc., to adjust them to the needs of students. Teachers can also consider that students like to learn new vocabulary through games – gamification (Gamification in education, 2023).

Activities and methods for learning new vocabulary can be applied at the beginning of the lesson as a starter or at the end so that students can reflect on what they have learned within the new vocabulary. Subsequently, all activities for learning new vocabulary are automatically saved, allowing teachers to return to the activities whenever needed.

### **Limitations of the research**

One of the biggest limitations of this research was the fact that it was conducted with only fourteen respondents. As mentioned at the very beginning of the research, fourteen students made up one-half of the entire class. The second part of the students continued their studies, as they were far behind compared to the first group. One student did not feel well during the interview, not only because the interview was being recorded, but also because she had a bit of a problem expressing herself. Even this fact could have influenced her way of thinking. Another thing that also seemed limiting was my presence in the classroom. Since I was new to the students and they did not have the opportunity to spend a lot of time with me, they may not have answered all the questions truthfully. Although I got the results immediately from the research that took place in a short time, it could not guarantee that the applications were effective in terms of learning new vocabulary. In terms of effectiveness, it is meant that students can retain new vocabulary, moreover, they are involved in the lesson, and lastly, they can use the words in context. Last but not least, I included only two applications for learning new vocabulary in the research, Wordwall and Quizziz, as there was no more space to include more applications in the research.

### **Suggestions for further research**

Suggestions for the following research could be conceived in different ways. For instance, a different age category of students could be involved in the research. The class would be split into two groups, one working on a strategy to learn new vocabulary without the use of digital technology, and the other the other way around. Examples of such strategies are given in the theoretical part. They would then exchange their assignments so that each group could compare which method of learning vocabulary they were more comfortable with. Another suggestion for future research could include more applications for learning new vocabulary. In this case, it could be longer-term research, where the teacher would have enough time to record the progress students make when using digital technologies (applications) compared to their regular methods. This chapter has summarized and presented important points that teachers can put into practice. Among other things, the weak points of the given research were also mentioned and suggestions for further research studies were presented. The following chapter concludes the entire work.

## VII. CONCLUSION

This diploma thesis is devoted to the effective use of digital applications in the learning of vocabulary in the English language. The importance of vocabulary in English learning is that it represents the basis for understanding a foreign language and being able to communicate. Digital technologies, in this case, online applications, offer many advantages such as interactivity, individualized learning, and increased student motivation. These factors can positively influence learning outcomes and the development of students' language skills. The research showed that online applications had a very positive effect on students, and not only in terms of new vocabulary. To achieve certain goals, they need the right motivation, for that reason, online applications and other types of digital technologies should be included in their learning.

During the research, specifically in the observation part, it was found that each student preferred a different strategy when learning new words. They simply choose the one that suits them best. It is for this reason that the use of applications in English language classes is effective when learning new vocabulary. I allowed the students to choose any strategy, and thanks to this I was able to obtain the necessary data. Indeed, learning strategies themselves have a great influence on student learning, and applications have contributed to this.

The data collection methods for this thesis were carefully designed to provide a comprehensive insight into how students engaged with new vocabulary through digital applications. As a first step, a questionnaire survey was used to provide a broad picture of students' current learning strategies in the context of new vocabulary. This phase of the research made it possible to identify students' existing practices for learning new vocabulary and at the same time provide important information about the effectiveness of individual applications. Subsequently, a semi-structured interview method was chosen, which enabled a detailed examination of students' attitudes and opinions with the use of digital applications in learning new vocabulary. This kind of interview provided rich material for subsequent thematic analysis, which became an important resource for understanding the effects of working with applications on motivation and learning effectiveness. The combination of these methods was further enriched by action research, in which students were observed while working with applications. This phase of the research was crucial to identify practical aspects of using the apps and to get real-time feedback from students.



Based on the research conducted, it can be concluded that working with digital applications represents an effective means of vocabulary development in English language learning. The results suggested that this form of learning brings several benefits, one of the key ones being the enhancement of students' motivation to learn. Digital applications connect learning with fun and play, which leads to greater engagement and interest on the part of students. At the same time, it is evident that students approach working with applications with enthusiasm, and they can even use their favorite learning strategies. This fact contributes to their efficiency and success. In this way, it can be concluded that the inclusion of digital technology in the students' learning of new vocabulary in the English language represents a promising direction.

The management of the school where I carried out the research was interested in the theme of the diploma thesis. After completing my diploma thesis, I plan to present the research results at this school. I will also draw on the results of my investigation and research in my current workplace at the secondary school.

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## APPENDICES

### Appendix A

#### First Questionnaire in Czech

Slovní zásoba v anglickém jazyce – Cílem daného dotazníku je zjistit, jaké strategie při učení nových slovíček využíváš.

Jméno a příjmení:

**1. Jakou formou si rozšiřujete slovní zásobu (učebnice, knížky, filmy...)?**

**2. Co vám pomáhá k zapamatování si nové slovní zásoby? (psaní, opakování, vytváření asociací apod.)**

**3. Kolik času vám zabere učení se nové slovní zásoby?**

**4. Využíváte k učení se nové slovní zásoby digitální technologie? (aplikace, online zdroje, online platformy). Pokud ano, jaké?**

**5. Existují specifické individuální návyky, které vám pomáhají lépe se učit slovní zásobu? (Uveďte konkrétní místo, jestli máte rádi hudbu v pozadí, nebo absolutní klid, atd.)**

## **Appendix B**

### Second Questionnaire in Czech

Práce s konkrétními aplikacemi – Cílem daného dotazníku je zjistit, jak se ti s danými aplikacemi pracovalo v rámci učení se nové slovní zásoby.

Jméno a příjmení:

**1. Jak byste porovnali práci v aplikacích Wordwall a Quizziz s metodami, které jste doposud používali?**

**2. Jaká je vaše preference, porovnáte-li aplikace Wordwall a Quizziz a proč?**

**3. Jaké nevýhody jste zaznamenali při plnění aktivit v aplikacích Wordwall a Quizziz?**

**4. Máte pocit, že aplikace Wordwall a Quizziz vám umožňují lépe spolupracovat s vašimi spolužáky než vaše běžné metody?**

## Appendix C

### Interview guide in Czech

#### 1. Úvod

Děkuji za účast v tomto rozhovoru. V krátkosti představím, jak bude probíhat. Již jste si vyzkoušeli práci s novými aplikacemi, se kterými jste se předtím nesetkali. Na základě vaší práce s konkrétními aktivitami jsem si udělala pár poznámek. Nyní v první části si tedy obě aplikace konkrétněji rozebereme, abych se přesvědčila, že se umíte v dané aplikaci orientovat.

Ve druhé části se přesuneme ke klasickému rozhovoru. Budu vám pokládat otázky ohledně toho, co jsme spolu prošli a vy odpovíte. Celý rozhovor potrvá přibližně 30 minut a bude nahráván, abych se v rámci analýzy mohla k odpovědím kdykoli vrátit.

Celý rozhovor bude použitý pouze za účelem zpracování mé diplomové práce. Mohu zapnout nahrávání?

#### 2. Wordwall – strategie flashcards (jakým způsobem s nimi pracovat)

- aplikace Wordwall: jak se aplikace používá, jaké má různé funkce

= *Porozuměl/a jsi zadání u dané aktivity?*

= *Je pro tebe lepší si slovíčka překládat z češtiny do angličtiny nebo naopak?*

#### 3. Quizziz – strategie učení se slovíček v kontextu

- aplikace Quizziz: jak se aplikace používá, jaké má různé funkce

= *Je pro tebe práce s danou aplikací přehledná?*

#### 4. Otázky

i. Jakou aplikaci z těchto dvou preferuješ? Proč?

ii. Jak se ti pracovalo s Wordwall/Quizziz?

iii. Vnímáš práci s aplikacemi jako přínos?

iv. Máš nějaké připomínky nebo návrhy na zlepšení, které bys chtěl/a navrhnout ohledně používání aplikací Wordwall a Quizziz ve tvém učení?



## **Appendix D**

### **First Questionnaire in English**

Vocabulary in the English language – This questionnaire aims to find out what strategies you use when learning new words.

Name and surname:

**1. How do you expand your vocabulary knowledge (textbooks, books, movies...)?**

**2. What techniques do you use to remember new vocabulary? (writing, repeating, creating associations, etc.)**

**3. How long does it take you to learn new vocabulary?**

**4. Do you use any digital technologies to learn new vocabulary (apps, online resources, online platforms)? If so, what kind?**

**5. Are there any specific individual habits that help you learn vocabulary better? (a specific place, if you like background music, or absolute silence, etc.)**

## **Appendix E**

### **Second questionnaire in English**

Working with specific applications – This questionnaire aims to find out how it was for you to work with the given applications as part of learning new vocabulary.

**1. How would you compare working with the applications Wordwall and Quizziz to methods that you have used so far?**

**2. What is your preference if you compare Wordwall and Quizziz and why?**

**3. What disadvantages did you experience when completing the Wordwall and Quizziz activities?**

**4. Do you feel that Wordwall and Quizziz allow you to collaborate better with your classmates than your usual methods?**

## Appendix F

### Interview guide in English

#### 1. Introduction

Thank you for participating in this interview. I will briefly introduce how it will proceed. You have already tried working with new applications that you have not encountered before. Based on your work with specific activities, I made a few notes. Now, in the first part, we will analyze both applications in more detail, so that I can make sure that you know how to navigate in the given application.

In the second part, we will move to a classic interview. I will ask you questions about what we have been through together and you will answer. The entire interview will last approximately 30 minutes and will be recorded so that I can return to the answers at any time as part of the analysis. The entire interview will be used only to process my diploma thesis. Can I turn on the recording?

#### 2. Wordwall – flashcard strategy (how to work with them)

- the Wordwall application: how the application is used, what are its various functions

= *Did you understand the assignment for the given activity?*

= *Is it better for you to translate words from Czech to English or vice versa?*

#### 3. Quizziz – a strategy for learning vocabulary in context

- Quizziz application: how to use the application, what are its different functions

= *Is working with the given application clear for you?*

#### 4. Questions

i. Which application do you prefer out of the two? Why?

ii. How was it for you working with Wordwall/Quizziz?

iii. Do you see working with applications as a benefit?

iv. Do you have any comments or suggestions for improvement that you would like to suggest regarding the use of Wordwall and Quizziz in your learning?

## Appendix G

A list of vocabulary used in the activities

Enormous – obrovský

Tiny – malinký

Gray – šedý

Red – červený

Blue – modrý

Triangular – trojúhelníkový

Square – čtvercový

Rectangular – obdélníkový

Smooth – hladký

Silky – hedvábný

Fuzzy – střípatý

Ancient – starodávný

Warm – teplý

Chilly – chladný

Cracked – prasklý

Damaged – zničený

Sweet – sladký

Sour – kyselý

Spicy – spicy

Delicious – výtečný

Friendly – přátelský

Kind – milý

Responsible – zodpovědný

## Appendix H

### The final vocabulary test

1. Match the English words on the left to with their Czech translation on the right.

Chilly	Zničený	OPRAVA: CRACKED - PRASKLÝ
Cracked	Výtečný ✓	DAMAGED - ZNIČENÝ
Damaged	Chladný ✓	
Sweet	Milý ✓	
Sour	Přátelský ✓	
Spicy	Sladký ✓	
Delicious	Kyselý ✓	
Friendly	Prasklý	
Kind	Pálivý ✓	

2. Choose three adjectives and create three sentences with them.

My mother is really kind. ✓  
Dinner was delicious. ✓  
I'm not friendly. ✓

3. Describe the following situations using adjectives.

a) Describe the weather on a sunny day.  
b) Describe the personality of your best friend.  
c) Describe the taste of your favourite meal.

a) It's sunny, warm and not chilly. ✓  
b) My best friend is very friendly and nice. Sometimes he is quite.  
c) My favourite is always spicy, I love Chinese and Indian food.

OPRAVA: QUITE - DOCELA  
QUIET - TICHÝ

Figure 9: The final test

## SHRNUTÍ

Tato diplomová práce se věnuje efektivnímu využívání digitálních aplikací ve výuce slovní zásoby v anglickém jazyce. Důležitost slovní zásoby v anglické výuce spočívá v tom, že je základem pro porozumění a komunikaci v cizím jazyce. Digitální technologie, v tomto případě online aplikace, nabízejí mnoho výhod, jako je interaktivita, individualizované učení a zvýšená motivace student. Tyto faktory mohou pozitivně ovlivnit výsledky výuky a rozvoj jazykových dovedností studentů. Slovní zásobu je třeba pravidelně opakovat, což už potom nezáleží pouze na učitelích, nýbrž také na studentech. Pokud si totiž vyberou aplikaci, která by jim k učení se slovní zásoby vyhovovala, podporují tím nejednu klíčovou kompetenci. Z výzkumu bylo patrné, že online aplikace měly na studenty velmi pozitivní vliv a to nejenom, co se nové slovní zásoby týče. K dosažení určitých cílů potřebují správnou motivaci, z toho důvodu by měly být online aplikace, i jiné druhy digitálních technologií zahrnuty ve výuce.

Během výzkumu, konkrétně v části pozorování, bylo zjištěno, že každý student dává přednost jiné strategii, pokud se učí nová slovíčka. Vybírají si zkrátka tu, která jim nejvíce vyhovuje. A právě i z toho důvodu je využívání aplikací na hodinách anglického jazyka při učení se nové slovní zásoby efektivní. Studentům jsem dala možnost, aby si zvolili libovolnou strategii a já jsem díky tomu získávala potřebná data. Samotné strategie učení mají totiž velký vliv na učení studentů a aplikace tomu přispěly.

Metody sběru dat v rámci této diplomové práce byly pečlivě navrženy tak, aby poskytly komplexní vhled do způsobů, jakými studenti pracují s novou slovní zásobou prostřednictvím digitálních aplikací. Prvním krokem bylo použito dotazníkové šetření, které poskytlo široký obraz o současných strategiích učení studentů v kontextu nové slovní zásoby. Tato fáze výzkumu umožnila identifikovat existující postupy studentů k učení se nových slovíček a zároveň poskytla důležité informace o efektivitě jednotlivých aplikací. Následně byla zvolena metoda polostrukturovaného rozhovoru, která umožnila detailní zkoumání postojů a názorů studentů s používáním digitálních aplikací při učení se nové slovní zásoby. Tento druh rozhovoru poskytl bohatý materiál k následné tematické analýze, která se stala důležitým zdrojem pro porozumění účinků práce s aplikacemi na motivaci a efektivitu učení. Kombinace těchto metod byla nadále obohacena akčním výzkumem, v rámci kterého došlo k pozorování studentů během práce s aplikacemi. Tato fáze výzkumu byla klíčová pro identifikaci praktických aspektů používání aplikací a pro získání zpětné vazby od studentů v reálním čase.

Na základě provedeného výzkumu lze konstatovat, že práce s digitálními aplikacemi představuje efektivní prostředek pro rozvoj slovní zásoby ve výuce anglického jazyka. Výsledky naznačují, že tato forma učení přináší řadu výhod, přičemž jednou z klíčových je posílení motivace studentů k učení. Digitální aplikace totiž propojují učení se zábavou a hrou, což vede k větší angažovanosti a zájmu ze strany studentů. Zároveň je patrné, že studenti přistupují k práci s aplikacemi s nadšením a mohou využít své oblíbené strategie učení. Tato skutečnost přispívá k jejich efektivitě a úspěšnosti. Tímto způsobem lze tedy konstatovat, že zahrnutí digitální technologie do výuky anglického jazyka při učení se nové slovní zásoby představuje perspektivní směr.