Development of self-regulation in EFL vocabulary learning

Žaper, Marijana

J.J. Strossmayer University of Osijek

Faculty of Humanities and Social Sciences

Double Major MA Study Programme in English Language and Literature and German Language and Literature - Teaching English as a Foreign Language

Marijana Žaper

Development of self-regulation in EFL vocabulary learning

Master's Thesis

Supervisor: Dr. Višnja Pavičić Takač, Full Professor

Osijek, 2018

J.J. Strossmayer University of Osijek

Faculty of Humanities and Social Sciences

Department of English

Double Major MA Study Programme in English Language and Literature and German Language and Literature - Teaching English as a Foreign Language

Marijana Žaper

Development of self-regulation in EFL vocabulary learning

Master's Thesis

Scientific area: humanities

Scientific field: philology

Scientific branch: English studies

Supervisor: Dr. Višnja Pavičić Takač, Full Professor

Osijek, 2018

Sveučilište J. J. Strossmayera u Osijeku

Filozofski fakultet Osijek

Dvopredmetni sveučilišni diplomski studij engleskog jezika i književnosti i njemačkog jezika i književnosti - nastavnički smjer

Marijana Žaper

Razvoj samoregulacije u učenju vokabulara u engleskom kao stranom jeziku

Diplomski rad

Mentor: prof. dr. sc. Višnja Pavičić Takač

Osijek, 2018

Sveučilište J.J. Strossmayera u Osijeku

Filozofski fakultet Osijek

Odsjek za engleski jezik i književnost

Dvopredmetni sveučilišni diplomski studij engleskog jezika i književnosti i njemačkog jezika i književnosti - nastavnički smjer

Marijana Žaper

Razvoj samoregulacije u učenju vokabulara u engleskom kao stranom jeziku

Diplomski rad

Znanstveno područje: humanističke znanosti

Znanstveno polje: filologija

Znanstvena grana: anglistika

Mentor: prof. dr. sc. Višnja Pavičić Takač

Osijek, 2018

TABLE OF CONTENTS

Abstract

Self-regulated learning has been introduced in the field of foreign language learning relatively recently. The present study attempts to examine the development of self-regulated vocabulary learning in Croatian EFL learners. For this purpose, the relationship among learners' self-regulating capacity, level of education, and gender is explored. SRCvoc is administrated to a sample of 368 learners in order to measure their self-regulating capacity. Furthermore, the paper investigates the relationship between learners' attitude towards vocabulary learning, their perception of difficulty of English, and self-regulated vocabulary learning. The statistical analysis has shown no statistically significant relationship among self-regulating capacity in vocabulary learning, level of education, and gender. However, significant correlations between self-regulating capacity and level of education and gender variables, respectively, have been found. The findings have revealed a positive relationship between self-regulating capacity and attitude towards vocabulary learning. Also, the results have shown a negative relationship between self-regulating capacity and perception of difficulty of English.

Keywords: self-regulation, vocabulary learning, level of education, gender, SRCvoc

Sažetak

Samoregulirano je učenje relativno nova tema istraživanja u području ovladavanja inim jezikom. U ovom se radu istražuje razvoj samoreguliranog učenja vokabulara među hrvatskim učenicima koji uče engleski kao strani jezik. U tu svrhu istražena je međusobna povezanost samoregulirajućeg kapaciteta, razine obrazovanja i spola. Samoregulirajući kapacitet 368 učenika izmjeren je pomoću SRCvoc-a. Rad također istražuje odnos učenikova stava prema učenju vokabulara, uloge procjene težine engleskog jezika i samoreguliranoga učenja vokabulara. Statistička analiza nije pokazala međusobnu povezanost samoregulirajućeg kapaciteta u učenju vokabulara, razine obrazovanja i spola. No, uočena je pojedinačna povezanost razine obrazovanja i spola sa samoregulirajućim kapacitetom. Otkrivena je proporcionalna povezanost između samoregulirajućeg kapaciteta i stava prema učenju vokabulara. Isto tako, rezultati pokazuju obrnuto proporcionalnu povezanost između samoregulirajućeg kapaciteta i procjene težine engleskog jezika.

Ključne riječi: samoregulacija, učenje vokabulara, razina obrazovanja, spol, SRCvoc

1. Introduction

Self-regulation is perceived as the most important component of successful learning. Thus, self-regulation has become a matter of great interest in a wide range of education fields, including the field of second language acquisition. For many years language experts have studied language learning strategies. However, previous work has failed to establish theoretical and methodological properties of language learning strategies, which caused scientists to shift their focus on self-regulated learning, a new concept found in educational psychology. The learning process is more adequately described in terms of self-regulation due to its various aspects, such as motivational beliefs, emotions, behaviour, cognition and metacognition strategies, etc.

Learning English as a second language is complex due to its multidimensionality. In language learning research, vocabulary learning is perceived as one of the most important components. On account of complexity of vocabulary learning, the scientists have introduced the concept of self-regulation in this research area. However, research on self-regulation in vocabulary learning has so far been scarce. With this in mind, the present paper aims to investigate the self-regulating capacity in vocabulary learning. Self-regulating capacity is a term established by Tseng et al. (2006), who developed an instrument called SRCvoc with the aim of incorporating self-regulation in vocabulary learning. Many studies found that successful language learners have a higher self-regulating capacity. Thus, higher self-regulating capacity is used as an indicator of successful vocabulary learning. This study adds to the considerably limited research data on self-regulating capacity with different education levels, gender aspects, and other individual differences.

This paper is divided into two parts. The first part of the paper is the theoretical part which gives a brief overview of self-regulated learning. It presents its most prominent definitions, models, instruments, and components. It describes relevant research findings on self-regulation in language learning. Also, the relationship between self-regulated learning and vocabulary acquisition is outlined in this part. The second part reports on the study carried out among primary school, secondary school, and university EFL learners with the aim of exploring the relationship between self-regulated capacity in vocabulary learning and several learners' individual differences, such as level of education, gender, attitude towards vocabulary learning, and perception of difficulty of English. The most important conclusions are drawn in the final section along with implications and recommendations for future research.

2. Self-regulation

2.1. *Defining self-regulation*

A growing body of literature has studied 'self-regulation' over the past few decades. Some preliminary research was carried out in the 1980s in the field of psychology, to be more precise in the branch of social and personality psychology. Self-regulation has recently become one of the most researched topics among psychologists (Sorić, 2014).

Self-regulation is metaphorically portrayed as "an extraordinary umbrella" under which numerous aspects of successful learning can be found and examined (Panadero, 2017). In recent years, there has been a growing interest in self-regulation in various fields of studies, such as medicine, technology, education, sport, etc. (Abdulhay, 2015). A key problem with much of the literature on self-regulation is that a majority of definitions and models of self-regulation has developed due to a diversity in research fields. To put it simply, numerous studies resulted in various explanations of self-regulation. There is still considerable disagreement with regard to a systematic and formulation of one comprehensive definition (Sorić, 2014). Taking everything into account, it can be concluded that a satisfactory definition of self-regulation is yet to be formed. Throughout this paper we will focus on the articles addressing self-regulation in the learning context. Educational psychologists consider self-regulation to be an essential aspect of successful learning. Due to its importance, the term 'self-regulated learning' has developed. Self-regulation and self-regulated learning have become synonymous terms in the field of educational psychology (see Schunk, 2005; Cleary et al., 2012). Thus, the terms 'self-regulation' and 'self-regulated learning' are used interchangeably in this paper.

Commenting on self-regulation, Schunk (2005) stated that it was primarily studied due to its influence on the learners' academic achievement. It was evident that achievement differences could not be fully explained by learners' skills and strategies, which resulted in research on self-regulation and its aspects. Academic achievement, its differences, and improvement have remained the main aim of the research on self-regulation (Pintrich, 2000; Schunk, 2005; Zimmerman, 2008). Other prominent lines of study on self-regulation include research on the key self-regulatory processes and aspects, which include metacognition, cognition, motivation, behaviour, and emotions. Scholars have also studied the development of self-regulatory skills usually by comparing more and less successful learners (Schunk, 2005).

Various theories on self-regulation resulted in different models. Self-regulated learning models enable us to understand how learners regulate their own learning process, i.e. the steps and

phases during the whole procedure. In order to develop a model of self-regulated learning, the scientists have to analyse and define the relationship among aspects of motivation, learning strategies, metacognition, academic achievement, etc. (Chung, 2000; Bošnjak Terzić, 2016). Panadero (2017) lists the most prominent models in his analysis of the literature: Winne and Hadwin's SRL Model (1998), Zimmerman's Cyclical Phases Model (2000), Pintrich's SRL Model (2000), and Boekaerts' Dual Processing Model (2011). All of these models explain self-regulated learning differently because they define it according to the field of research and interest of the scientist. However, some similarities among models can be found. For example, the majority of models share three main phases. The first phase is planning; in this phase learners set their learning goals and choose the appropriate strategies. The second phrase involves performance and monitoring; here learners use their learning strategies and adapt them in order to achieve their set goal. Lastly, the models share the third phase which includes evaluation of the learning process (Bošnjak Terzić, 2016).

Furthermore, contemporary education encourages self-regulated learning. Firstly, due to the fact that the learner is placed in the center of the learning process, and secondly, because the learner is able to acquire autonomy and confidence in learning. Many experts believe that being a self-regulated learner means "being able to develop knowledge, skills, and attitudes which can be transferred from one learning context to another and from learning situations in which this information has been acquired to a leisure and work context" (Boekaerts, 1999: 446). Self-regulated learning is perceived as a relevant tool not only for academic purposes, but also for any other upcoming life situation where one needs to adapt and manage on one's own. Although a strong development of self-regulation does start in school, it is not restricted to the classroom. Namely, self-regulated learning has become a means of survival. Therefore, educational psychologists highlight the importance of self-regulation and highly recommend to the parents and teachers to encourage self-regulated learning in classrooms in a sense of providing a welcoming environment for learners to explore their self-regulatory skills and strategies (Zimmerman, 1986; Boekaerts, 1999; Zimmerman, 2002; Schunk, 2005; Bjork et al., 2013; Sorić, 2014; Abdulhay, 2015).

There is a considerable amount of literature on the nature of a self-regulated learner. Self-regulated learner is often described as an expert, strategic, and reflective learner (Ertmer and Newby, 1996). It is argued that self-regulated learners are individuals who are "metacognitively, motivationally, and behaviourally active participants in their own learning process" (Zimmerman, 1986: 308). To put it another way, this definition introduces several

significant aspects of self-regulation: metacognition, motivation, and behaviour. Zimmerman suggests that the metacognitive aspect of learning includes planning, organizing, self-instructions, self-monitoring, and self-evaluation in learning process. The motivational aspect is described as the perception of a learner who identifies him-/herself as a competent, independent, and an effective individual. The behavioural aspect is argued to be a learner's ideal learning milieu, which he/she creates in order to have suitable learning conditions. These aspects were accepted by the other scientists and subsequently broadened their scope. For instance, the following definition of self-regulation by Pintrich (2000) gives an insight into the complexity and variety of aspects concerning the self-regulated learning. Namely, he defines a self-regulated learning as "an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior, guided and constrained by their goals and the contextual features in the environment" (ibid: 453). In other words, self-regulated learners can be recognized by their organization and following of the learning steps, setting their learning goals, awareness of their weak and strong points, usage of self-regulated learning strategies etc. Those are just some of the characteristics of a successful, self-controlled learner, there are many more to be added to the list. However, it must be noted that self-regulation is neither a skill nor a talent; it is an active process of a learner who does necessary actions in order to achieve their learning goals. Thus, it can be concluded that learners who possess self-regulatory skills have much better chances of succeeding in academic settings (Bandura, 2001; Zimmerman, 2002; Sorić, 2014; Abdulhay, 2015).

To conclude, all of the theories can be summarized into a definition of self-regulated learning as a proactive process that consists of five most prominent learning facets: the motivational, behavioural, cognitive, metacognitive, and emotional aspect of learning. Self-regulated learner uses these aspects to shape their learning process in order to achieve their academic goal (Boekaerts, 1999; Cleary and Zimmerman, 2004; Tseng et al., 2006; Panadero, 2017). Having defined self-regulation, the next section of this paper addresses the most prominent components of self-regulation.

2.2. *Self-regulation components*

Many attempts have been made to define self-regulation and its components; however, it is evident that different theories consist of many similar aspects and traits. A recent review of the literature (Tseng et al., 2006) summarized the findings on self-regulation and its aspects.

It is argued that self-regulation consists of many complementary microprocesses which include "goal setting, action plans and action schemata, monitoring and metacognition, action control and volition control mechanisms, strategic tactics and operations, effective time management, self-motivational beliefs, […] evaluation and self-reflection, receiving and processing feedback, experiencing pride and satisfaction with one's efforts, and establishing a congenial environment" (ibid: 81). All of the aspects of self-regulated learning along with their microprocesses will be briefly addressed in this section.

The cognitive aspect of learning was mostly in focus in prior studies on self-regulated learning. The research on cognitive strategies is crucial because it enables us to understand how learners process and memorize new information. It is evident that learners who use various cognitive strategies are academically more successful than their peers who do not use them (Sorić, 2014). According to Weinstein and Mayer's taxonomy of learning strategies (1986), cognitive strategies include: rehearsal, elaboration, and organizational strategies. Rehearsal strategies are "repeating the material aloud, copying the material, taking selective verbatim notes and underlining the most important parts of the material" (Weinstein and Mayer, 1986: 318). Learners connect their previous knowledge and new information in the elaboration phase. Elaboration strategies include summarizing, note-taking, paraphrasing, explaining what is learnt to others, and self-examination. The last process is organization, where learners organize and systematize new information. Organizational strategies include: underlining the key words, outlining the main idea, making mind maps, diagrams, etc. (Weinstein and Mayer, 1986; Bošnjak Terzić, 2016).

The following most researched component of self-regulated learning is metacognition. Metacognitive strategies include active control over cognitive strategies. The main purpose of metacognition is to enhance the quality of learning. According to Weinstein and Mayer (1986), metacognitive strategies consist of: planning, monitoring, and regulating strategies. Planning involves various preparations for learning, such as goal setting and skimming the material. Monitoring and regulating strategies are a part of both cognitional strategies as well as the whole learning process. Learners use these strategies in order to check themselves for comprehension of the new material. If a learner realizes that the learning material is not understood, then he/she adapts the strategies in order to achieve better understanding and learning (Weinstein and Mayer, 1986; Abdulhay, 2015; Bošnjak Terzić, 2016).

Motivation is probably the most studied aspect of self-regulation because it plays a great part in the process of self-regulated learning. The importance of motivational strategies is explained

in the following quote: “it is one thing to possess metacognitive knowledge and skill but another thing to be able to self-regulate its use in the face of fatigue, stressors, or competing attractions” (Zimmerman, 1995: 217). Previous studies on this topic argued that the motivational aspect explains “*why* people decide to do something, *how hard* they are going to pursue it and *how long* they are willing to sustain the activity” (Dörnyei, 2001: 8). It is important to point out that motivation is a fluid process rather than a state, which changes according to learners’ motivational beliefs. Motivational beliefs influence the choice of learning strategies, which has a further impact on academic achievement. Besides motivational beliefs, motivation includes many other aspects, such as: goal orientation, task value, control of learning, test anxiety, and self-efficacy (Dörney, 2001; Sorić, 2014; Bošnjak Terzić, 2016). When discussing goal orientation, it is relevant to mention that there are two directions: intrinsic and extrinsic goal orientation. This theory was developed by Pintrich (2000). He argues that learners who use intrinsic goal orientation are more focused on learning and comprehending of the learning material, whereas learners who use extrinsic goal orientation are more focused on the outcome of learning. The core difference between intrinsic and extrinsic goal orientation is in the appreciation of the result and ways to achieve it. Learners who use intrinsic goal orientation are more interested in being personally satisfied with the effort and the results, whereas learners who use extrinsic goal orientation seek appreciation from others, e.g. teachers, colleague students, parents. Both intrinsic and extrinsic goal orientation are used by self-regulated learners. However, intrinsic orientation is a more common characteristic of a self-regulated learner because it includes the usage of more adequate learning strategies, which learners combine in order to comprehend learning material long-term (Pintrinch, 2000; Sorić, 2014; Bošnjak Terzić, 2016). Another aspect of motivation is self-efficacy. The findings documented that self-efficacy is closely connected to the learners’ choice of cognitive strategies and to their academic achievement. Self-efficacy refers to the learners’ belief in their own ability of fulfilling the set goals. It is rooted in the social-cognitive theory developed by Bandura (1986). In this theory, he argues that human functioning is a result of personal, behavioural, and environmental aspects. Bandura (1986) states that self-efficacy influences behaviour and environment and vice versa. Therefore, confident learners are more likely to succeed, in comparison to insecure and skeptical learners who often see no point in trying. Confident learners believe in themselves and do not give up at the first obstacle, but rather adapt their learning strategies in order to achieve their goal. (Zimmerman, 1995; Bandura, 1986; Bandura, 2001; Abdulhay, 2015). It is evident that self-regulated learning is practically impossible

without motivation due to the fact that all of these aspects control the outcome of learning (Sorić, 2014; Abdulhay, 2015; Bošnjak Terzić, 2016).

Another important component of self-regulated learning is the environment. This aspect is already mentioned as a part of the social-cognitive theory, which states that the learning environment and behaviour influence self-regulated learning and vice versa. This view is supported by Boekaerts (1999), who also portrays the relationship between the learning environment and self-regulatory skills as reciprocal. The learning environment is conceptualized as comprising two components: a physical and a social component. The physical component refers to classroom arrangement, equipment, materials, accommodation, etc. The social component includes learning aspects, such as learner-centred way of learning, autonomy support, self-evaluation, etc. It has been established that both of these components have an unquestionable impact on the development of self-regulated learning. Thus, it is recommended by many educational psychologists to establish a better learning environment by giving autonomy support to learners, putting learners in the centre of learning process, arranging a better sitting arrangement in the classroom, etc. (Cleary and Zimmerman, 2004; Abdulhay, 2015). Commenting on the learning environment, Boekaerts (1999) claims that learning environments are powerful and truly stimulate the use of self-regulatory skills. Self-regulated learners will recognize the necessity of a good learning environment and use it in order to enhance their learning process. Also, it is advised to the teachers to promote the importance of a good learning environment (ibid).

Furthermore, the emotional aspect has been neglected by educational psychologists in comparison to other aspects of self-regulation. In the learning context, we talk about academic emotions. The term ‘academic emotions’ refers to emotions that are triggered by the learning process. It involves a variety of task-related, self-referenced, and social emotions which occur during classroom instructions, academic learning, academic achievement, etc. They include a whole spectrum of emotions, e.g. pride, joy, hope, anxiety, disappointment, boredom, shame, guilt, anger, etc. This diversity of emotions in academic settings can be grouped in positive and negative emotions (Pekrun et al., 2002). A recent overview of literature on this topic (Pekrun et al., 2002) reveals that academic emotions have mostly been studied within the motivational and cognitive aspect of self-regulated learning. Educational psychologists have proved that academic emotions affect learners’ cognitive processes and performance, motivation, learning strategies, but also physical and psychological health. Scholars claim that positive academic emotions promote self-regulated learning and that they positively affect motivation and

metacognitive strategies. A combination of these three aspects leads to a successful self-regulated learning. It is relevant to mention that this relationship goes in both directions, i.e. self-regulated learning also affects emotions. Negative academic emotions are negatively connected with motivation and learning strategies. Learners who experience negative emotions are not self-regulated and tend to use other, less successful ways of learning. Evidently, the inappropriate way of learning leads to unfavourable academic achievement. For example, scientists proved that test anxiety often negatively affects academic achievement. The main cause behind it is the reduction of working memory resources, which impairs learners' performance in complex learning tasks (Pekrun et al., 2002; Sorić, 2014). Scholars claim that negative emotions have not been studied enough due to their complexity and causal relationship with learning, even though other academic emotions have not attracted almost any attention. Thus, it is recommended to study both positive and negative academic emotions in order to better the process of learning.

In sum, all of the above listed aspects are closely interrelated and all of them influence the academic achievement. Scientists may argue about the importance of each aspect, however, it is evident that each aspect plays a great role in self-regulated learning. This section has reviewed the most important self-regulation components, while the following section will discuss the relationship between self-regulation and foreign language learning.

2.3. *Self-regulation and foreign language learning*

Prior research on language learning was focused on language learning strategies to a great extent. Dörnyei (2005) criticized the concept of language learning strategies. Other scientists (Tseng et al., 2006) supported Dörnyei's (2005) critique by claiming that language learning strategies research still has not developed fitting theoretical and methodological properties (Bilican and Yesilbursa, 2015). Nowadays, language learning has started shifting its focus from language learning strategies to self-regulated learning due to 'definitional fuzziness' and lack of valid instruments (Tseng et al., 2006; Ranalli, 2012; Bansaeid, 2013). However, scholars still argue whether language learning strategies should or should not be marginalized in language learning research (Tseng et al., 2006; Gao, 2007; Rose, 2012). It has been noted that language learning strategies should not be abandoned as a research area but rather be observed as a component of self-regulated learning (Gao, 2007). Recent research has shown that language learning strategies alone are insufficient for successful language learning. It is

argued that "the most important aspect of strategic learning is not the exact nature of the specific techniques that students employ but rather the fact that they choose to exert creative effort in trying to improve their own learning" (Tseng et al., 2006: 95). Even though it is argued that self-regulated learning also suffers from similar problem, the language learning field has accepted the concept of self-regulated learning as a part of language learning research (Gao, 2007; Rose, 2012). For example, the distinguished language scientist Rebecca Oxford, who studied language learning strategies has introduced the term self-regulation in her recent work (Bošnjak Terzić, 2016). Oxford (2011, as cited in Bošnjak Terzić, 2016) defines self-regulation as a process in which learners use language strategies in order to manage their learning process and vice versa.

Ma Ping and Siraj (2012) claim that the idea of self-regulation has been present in the field of second language acquisition since the 1970s but in different terms, such as learner autonomy, self-directed language learning, self-instruction, etc. On the other hand, it is evident that self-regulated learning in language learning has not been explored as much as in other fields of educational psychology (Hardi, 2017). Language experts urge others to explore self-regulated learning in language context more in order to make it more accessible and achievable for learners. For instance, a research area that needs more attention is the methodology of self-regulated language learning. Collett (2014) draws our attention to the scientists who proposed instruments for this particular type of language learning, such as Oxford (2011), Benson (2011), and Larsen-Freeman and Cameron (2008). They suggest qualitative instruments, such as self-report, think aloud protocols, student assessment, portfolios, etc. However, there is still no agreement on an instrument that can serve as a predictor of language learner's self-regulation (Collett, 2014).

Positive effects of self-regulated learning in language acquisition are undeniable. Influential educational psychologists argue that "learners with strategic knowledge of language learning, compared with those without, become more efficient, resourceful, and flexible, thus acquiring a language more easily" (Tseng et al., 2006: 78). Evidently, language learning is complex due to its numerous aspects, such as vocabulary learning, speaking, reading comprehension, writing, etc. Thus, it is crucial to become a self-regulated learner and learn a language proactively in order to achieve learning goals (Zimmerman and Martinez-Pons, 1986; Bošnjak Terzić, 2016). In other words, learners who want to become more efficient and successful in various aspects of learning a language, have to use learning strategies regularly, set their learning goals, supervise and assess their learning process (Bošnjak Terzić, 2016). Moreover,

it is argued that learners who use learning strategies adequately and frequently, can observe improvement in the language learning process (Oxford, 2011, as cited in Bošnjak Terzić, 2016). However, it is relevant to point out that learners firstly need assistance from teachers, peers, and parents to develop their self-regulated learning skills (Ma Ping and Siraj, 2012). Self-regulated learning is perceived as a 'developable aptitude' that can be influenced by experience and suitable assistance (Winne, 1996, as cited in Tseng and Schmitt, 2008). Oxford (2011, as cited in Bošnjak Terzić, 2016) emphasizes in her studies the development of self-regulation in language learning due to various aspects, such as behavioural, metacognitional, motivational, and emotional, which lead to successful language acquisition.

Zimmerman (2008) claims that self-regulation is not only a very important aspect of learning but also the key to academic success. Recent studies support Zimmerman's (2008) assertion by finding a positive correlation between self-regulated learning and successful language learning (Bošnjak Terzić, 2016). Bošnjak Terzić's (2016) review of literature on self-regulated learning in language acquisition reveals that not only learning strategies but also self-efficacy has a great impact on the academic success. Studies have shown that self-regulated learners use more learning strategies and are more confident in their efficacy. Other than self-efficacy beliefs, motivational beliefs, attitude towards English, and their perception of difficulty of the task play a great role in shaping the learning process as well as the success (ibid). Therefore, it is of great importance for language learners to develop their learning as self-regulated in order to promote their language knowledge. This chapter has demonstrated the significance of self-regulation in language acquisition. It is now necessary to explain the connection of self-regulation and one of the most important aspects of language learning, i.e. vocabulary learning.

2.3.1. *Self-regulation and vocabulary learning*

Vocabulary is considered to be one of the most important components of a language system. In the field of language acquisition, vocabulary learning and vocabulary knowledge are perceived as multidimensional and complex. Acquiring a word implies knowledge of various word dimensions, e.g. meaning, pronunciation, collocation, translation, synonyms, register, word form, etc. In other words, FL learners need to acquire sufficient depth and size, which enables them to use word items in different contexts correctly. In order to master all of these dimensions, a language learner needs time, motivation, and volition. Evidently, the process of

vocabulary acquisition is complex in its nature, and therefore, difficult to define (Tseng et al., 2006).

According to Bansaeid (2013), vocabulary knowledge is viewed as a necessary competence for communicating in a foreign language. Effective communication is one of the main goals in language learning. FL learners with limited vocabulary knowledge will have difficulties expressing themselves; while their interlocutors will have difficulties understanding them. Insufficient lexis is an obstacle for FL learners, especially when they are confronted with unfamiliar words or phrases. Thus, large vocabulary knowledge is essential for FL learners in order to use a foreign language successfully (Liu et al., 2014; Bilican and Yesilbursa 2015). Tseng et al. argue that "acquiring sufficient lexis is a key aspect for developing language skills" (Tseng et al., 2006: 86). Vocabulary knowledge is truly relevant for all of the language skills, not only for productive language skills, i.e. speaking and writing, but also for receptive skills, i.e. reading and listening. For instance, knowing a sufficient lexis plays an important role in reading authentic materials, daily communication, listening to or watching authentic TV program, etc. (Tseng et al., 2006; Liu, et al., 2014).

It is inclined that learners' motivation to learn vocabulary will vary during the learning process due to its complexity and length of time that is needed to acquire sufficient lexis (Tseng and Schmitt, 2008). Thus, scholars recognized the need to introduce self-regulation as a component of successful vocabulary learning process. As Tseng et al. (2006: 86) state: "Given English large lexicon, acquiring a vocabulary large enough to cope is probably the mayor hurdle facing EFL learners and clearly good self-regulation would be an important asset in this task". Data from several studies established that strategic vocabulary learning, as well as any other type of strategic learning, depends on both the teacher and the learner with an emphasis on the learner. The teacher's sole role in vocabulary acquisition is to present new lexical items, but it is the learner who needs to use fitting learning strategies that correspond to the task, their time, previous knowledge, and competence (Bansaeid, 2013). Nevertheless, Tseng and Schmitt (2008) demonstrated the importance of teaching materials in L2 vocabulary learning. Adequate teaching materials motivate learners and raise their interest which increases acquisition of lexical items (ibid).

To better understand vocabulary acquisition, language experts developed several taxonomies of vocabulary learning strategies. Bansaeid (2013) draws our attention to significant taxonomies, such as Ahmed's (1989), Stoffer's (1995), Schmitt's (1997), and Kudo's (1999). The most extensive vocabulary learning taxonomy is established by Schmitt (1997, as cited in

Bansaeid, 2013). This particular taxonomy consists of "strategies for the discovery of a new word's meaning (consists of determination and social) and strategies for consolidating a word once it has been encountered (consists of social, memory, cognitive and metacognitive)" (Bansaeid, 2013: 81-82). Evidently, vocabulary learning taxonomies are closely related to self-regulated learning. What is more, these taxonomies were developed in order to promote strategic learning. It is clear that self-regulated learning has become one of the purposes of the educational systems (ibid). The next chapter describes an instrument that is developed specifically for measuring EFL vocabulary learning.

2.3.2. *SRCvoc*

Tseng et al. (2006) argued that many traditional self-regulatory instruments appear to be psychometrically problematic. The main issue lies in the properties of their scales, which is often in conflict with the purpose of instruments. Therefore, Tseng et al. (2006) developed a new instrument, SRCvoc, which is proved to be valid and reliable. Several studies have been conducted in order to prove the validity of the instrument, e.g. Mizumoto and Takeuchi (2012), Ziegler (2015), etc.

'Self-regulating capacity in vocabulary learning scale' or SRCvoc is a psychometrical instrument in the form of self-report questionnaire. The main purpose of SRCvoc is to measure the learners' self-regulating capacity in second language vocabulary learning. The instrument was developed in order to include the phenomenon of self-regulation in the field of second language acquisition. Also, it was developed to operationalize learning strategies as a self-regulatory capacity. SRCvoc is based on Dörnyei's (2001) theoretical construct, which includes Kuhl's (1987) and Corno and Kanfer's (1993) taxonomy of action and volitional control strategies. These strategies help learners achieve their learning goal as well as protect them against distractions by regulating emotions, motivation, and cognition. Dörney (2001) adapted these strategies and developed self-regulatory control strategies for language learning (Tseng et al., 2006; Mizumoto and Takeuchi, 2012; Hardi, 2017). SRCvoc consists of five control facets (Tseng et al., 2006):

> 1) *Commitment control*, which helps to preserve or increase the learners' original goal commitment (e.g. keeping in mind favourable expectations or positive incentives and rewards; focusing on what would happen if the original intention failed).

> 2) *Metacognitive control*, which involves the monitoring and controlling of concentration, and the curtailing of any unnecessary procrastination (e.g. identifying recurring distractions and developing defensive routines; focusing on the first steps to take when getting down to an activity).
>
> 3) *Satiation control*, which helps to eliminate boredom and to add extra attraction or interest to the task (e.g. adding a twist to the task; using one's fantasy to liven up the task).
>
> 4) *Emotion control*, which concerns the management of disruptive emotional states or moods, and the generation of emotions that will be conducive to implanting one's intention (e.g. self-encouragement; using relaxation and meditation techniques).
>
> 5) *Environmental control*, which helps to eliminate negative environmental influences and to exploit positive environmental influences by making environment an ally in the pursuit of a difficult goal (e.g. eliminating distractions; asking friends to help and not to allow one to do something). (pp. 85-86)

An average of five control facets provides one's self-regulatory capacity. Many scientists agree that a higher level of self-regulatory capacity is closely connected to the academic achievement. In this particular case, learners with a higher level of self-regulatory capacity are more capable to regulate their vocabulary learning, which has a further influence on their language fluency, and finally on their academic achievement. It is evident that self-regulatory capacity in vocabulary learning is crucial to language learning. The creators of the instrument claim that self-regulating capacity is of great importance due to its mediation between learning strategies and motivation. SRCvoc, like many other self-regulatory instruments, provides also a distinction between a self-regulated and non-self-regulated learner, which enables scientists and teachers to be one step closer to understanding successful language learning and help other less successful learners in achieving their goal (Tseng et al., 2006; Tseng and Schmitt, 2008; Mizumoto and Takeuchi, 2012).

Furthermore, the main limitation of the instrument lies in the learners' honesty and their comprehension of the task. Learners can sometimes try to impress researchers or their teachers by giving desired answers and to show themselves in a good light. Additionally, it can be difficult for a learner to remember his/her exact course of learning. Another limitation is that this instrument cannot provide answers as to why some learners are better in regulated learning and the others are not, however, it provides the beginning of research in that direction. Also, the creators hope that SRCvoc is adaptable in other language learning aspects; unfortunately, there has not been development in this direction to date (Tseng et al., 2006).

3. Development of self-regulation in EFL vocabulary learning: research report

3.1. *Aim and research questions*

The main aim is to explore the development of self-regulated vocabulary learning in Croatian EFL learners. Previous research has not thoroughly explored the role of age, gender, and other individual differences on the self-regulatory capacity (Sadeghi and Kherzlou, 2011; 2012). Thus, this study sets out to fill a small part of this void. In particular, it examines if learners' self-regulatory capacity differs in terms of their gender and level of education. This paper also seeks to investigate the role of learners' attitude towards vocabulary learning and their perception of difficulty of English in the self-regulated vocabulary learning. These two factors are included in the study because prior research has shown that previous learning experience may influence learners' positive or negative attitude and perception of learning (Duckworth, et al., 2009).

The present study seeks to answer the following questions:

1) What is the relationship among level of education, gender, and self-regulatory capacity in vocabulary learning between participants?

2) What is the relationship between learners' attitude towards vocabulary learning and their self-regulating capacity in vocabulary learning?

3) What is the relationship between learners' perception of difficulty of English and their self-regulating capacity in vocabulary learning?

3.2. *Participants*

A total of 368 learners participated in the study. Their first language was Croatian. They were all studying English as a foreign language. The sample included three levels of education. There were 112 primary school learners, 155 secondary school learners, and 100 university undergraduates. Data was collected in two primary schools in Osijek - Tin Ujević and Grigor Vitez, in two secondary schools - Grammar School Matija Antun Reljković in Vinkovci and Grammar School of Natural Sciences and Mathematics in Osijek, and at the Faculty of Humanities and Social Sciences in Osijek. There were 138 male and 219 female participants, however, 11 participants did not state their gender. The primary school sample consisted of 50 sixth graders and 62 eighth grader. The secondary school sample comprised 21 participant in

the first class, 88 participants in the second class, 23 participants in the third class, and 23 participants in the fourth class. The university sample included 63 freshmen, 20 sophomores, and 17 juniors majoring in Croatian language and literature, History, Hungarian language and literature, Philosophy, Psychology, and Information Sciences. Only one participant did not state his/her level of education. On average, learners had been learning English for 9 years (M=9.74, SD=2.56). Their years of learning English ranged from 4 to 16. Learners' average perception of difficulty of English was 2.4 (M=2.41, SD=0.92), which implies that they find difficulty of English between easy and medium.

Participants' attitude towards vocabulary learning, elicited by means of the demographic questionnaire showed that the participants liked *learning vocabulary* on an average of 4 (M=3.56, SD=1.05). The participants considered *knowing lots of words* as a very important aspect of English (M=4.36, SD=0.74). As far as perception of difficulty of vocabulary aspects is concerned, they rated *memorizing new words* (M=3.84, SD=0.95), *recalling a word* (M=3.39; SD=1.00), *writing a word correctly* (M=3.58, SD=1.02), and *pronouncing a word* (M=4.00, SD=0.96) as very easy.

3.3. *Instrument*

The main instrument for the present study was SRCvoc (see Appendix B). It consists of 20 items which are grouped into five control facets (see chapter 2.3.2). Each of the facets includes four items: commitment control (items 4, 7, 10, and 13), metacognitive control (items 5, 9, 11, and 16), satiation control (items 1, 8, 18, and 19), emotion control (items 2, 6, 12, and 15), and environmental control (3, 14, 17, and 20). The items are positively worded and defined in a form of general declarations or conditional relations, except for items 1 and 12 which are negatively worded. The instrument was based on 7-point Likert scale ranging from *1 - strongly disagree* to *7 - strongly agree*. The values of scale for negatively worded items was reversed. The participants had to circle the appropriate number on 20 different statements, which corresponded to their vocabulary learning experience. A Croatian version of SRCvoc is used in the present study.

The reliability of the scale in the present study was computed using the Cronbach's Alpha. It was 0.81, which indicated highly focused scales and homogeneity. That means that the instrument is reliable and adequate for the study. The reliability of each subscale was also

calculated: commitment control α = 0.57, metacognitive control α = 0.68, satiation control α = 0.57, emotion control α = 0.65, and environmental control α = 0.68. The internal consistency of commitment and satiation control was lower than other controls, but it was accepted because it was close to 0.6, which is an acceptable value.

A demographic questionnaire (see Appendix A) was also used to collect additional data about participants. It was divided into two parts. The first part contained questions on learners' age, gender, starting age of learning English, and perception of difficulty of English. The second part consisted of 24 items and it was based on 5-point Likert scale. The 24 items were divided into three tables. The first table consisted of six items, which contained questions on learners' preference of different aspects of learning English. The participants had to circle the appropriate number, ranging from *1 - do not like at all* to *5 - like the best*. The second table contained questions on learners' opinion on the importance of various aspects of English, which included six items in the questionnaire. The answers ranged from *1 - not important at all* to *5 - the most important*. The third table addressed learners' opinion on the importance of aspects of English and it included the last eight items in the questionnaire. The scale of the third table ranged from *1 - the most difficult* to *5 - the easiest*. After each table, there was an additional empty line where learners could write other aspects of learning English, which they either liked or considered important or difficult, and rank them.

3.4. *Procedure*

The data was collected in 2016 and 2017 during regular English classes. At the beginning of the survey, the participants were given clear instructions in their mother tongue to clarify the manner of filling out the questionnaire. They were assured of the confidentiality of their responses and that their answers would be used for academic purposes. The time allotted was 10 - 15 minutes, even though there was no actual time limit. Firstly, the participants had to fill in the demographic questionnaire (see Appendix A). Secondly, they had to fill in SRCvoc (see Appendix B). Both questionnaires were administered in the Croatian language.

The collected data was entered into IBM Statistical Package for the Social Sciences (SPSS) version 20 for personal computers. Before performing any tests or statistics, the value of two SRCvoc items (items 1 and 12) were reversed due to its negative sentence structure. Also, five variables from the demographic questionnaire that were associated with vocabulary learning were transformed into one computed variable. To answer the main research question, two-way

between-groups analysis of variance (ANOVA) was conducted. ANOVA was administered to explore the impact of gender and level of education on self-regulatory capacity. It included gender (male/female) and level of education (primary school/secondary school/university) as independent and self-regulatory control facets as dependent variable. Significance was set at $p<0.05$. Separate analysis were conducted for each self-regulatory control facet. Pearson product-moment was used to compare learners' attitude towards vocabulary learning and their perception of difficulty of English with self-regulatory capacity. Significance was set at $p<0.05$ and $p<0.01$.

3.5. *Results*

What follows is the quantitative analysis of the data. First, the descriptive statistics on participants' use of the self-regulatory facets and vocabulary learning strategies in SRCvoc is presented. Then, the relationship between self-regulating capacity and the variables of level of education and gender is examined. Also, the relationship between self-regulating capacity and learners' attitude towards learning vocabulary as well as their perception of difficulty of English is analyzed.

Results of the descriptive statistics regarding five self-regulatory control facets for the whole sample (see Table 1) indicate that the strongest facet is environmental control, while metacognitive control is used the least. Environmental control is followed by commitment control, emotion control, and satiation control. It is evident that scores of the most used and the least used control facet differ moderately.

Table 1: *Scores on Self-regulatory Control Facets*

	Metacognitive control	**Commitment control**	**Satiation control**	**Emotion control**	**Environmental control**
M	4.33	4.96	4.46	4.56	**5.24**
SD	1.21	1.11	1.14	1.25	1.19

Further analysis of descriptive statistics revealed the scores of vocabulary learning strategies use based on the whole sample, gender, and level of education (see Table 2). According to the results, the most used vocabulary learning strategies are items 3, 14, and 17. This result is

expected because these items belong to the environmental aspect of vocabulary learning. Item 3 (*When I am studying vocabulary and the learning environment becomes unsuitable, I try to sort out the problem*) had the highest score in male participants, secondary school learners, and in the total sample. Item 14 (*When learning vocabulary, I know how to arrange the environment to make learning more efficient*) had the highest score in the primary school learners, while item 17 (*When learning vocabulary, I am aware that the learning environment matters*) had the highest score in the female participants and in the university learners. The item 17 had the highest score in the university subgroup (M=5.68, SD=1.41). Surprisingly, all six subgroups share item 11 (*When it comes to learning vocabulary, I have my special techniques to prevent procrastination*) as the strategy with the lowest score. This result is also expected due to the fact that item 11 belongs to the metacognitive aspect of vocabulary learning. The lowest score for item 11 was found in the secondary school subgroup (M=3.77, SD=1.85).

Table 2: *Scores on individual items in SRCvoc*

item	Gender				Level of education						Total	
	Male		Female		Primary school		Secondary school		University			
	M	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
1. Impatience when novelty is gone	4.41	1.69	4.58	1.58	4.72	1.81	4.39	1.59	4.46	1.47	4.52	1.64
2. Stress reduction	4.52	1.70	4.41	1.74	4.79	1.72	4.35	1.71	4.19	1.71	4.45	1.73
3. Solving problems in unsuitable environment	**5.13**	1.64	5.42	1.57	5.40	1.67	**5.18**	1.59	5.39	1.52	**5.30**	1.60
4. Special techniques for achieving goals	4.41	2.09	4.92	1.77	4.96	1.88	4.48	1.98	4.91	1.75	4.75	1.90
5. Special techniques for maintaining concentration	4.29	1.75	4.41	1.71	4.77	1.75	4.08	1.71	4.45	1.64	4.39	1.72
6. Satisfaction with stress reduction methods	4.46	1.95	4.58	1.65	4.88	1.74	4.35	1.86	4.44	1.57	4.54	1.76
7. Belief in quicker goal achieving	5.09	1.54	4.73	1.52	5.20	1.52	4.91	1.50	4.45	1.49	4.87	1.52
8. Satisfaction with boredom elimination	4.28	1.86	4.30	1.69	4.44	1.93	4.26	1.74	4.12	1.53	4.28	1.75
9. Effectiveness of concentration controlling methods	4.64	1.61	4.66	1.49	5.06	1.42	4.46	1.63	4.54	1.41	4.67	1.53
10. Persistence until reaching goals	4.86	1.69	5.25	1.66	5.19	1.59	5.05	1.69	4.97	1.76	5.06	1.69
11. Procrastination prevention	3.83	1.92	4.09	1.79	4.26	1.82	3.77	1.85	4.00	1.79	3.99	1.83
12. Giving up while being stressed	4.75	1.95	4.89	1.99	4.82	1.91	4.86	2.05	4.77	1.91	4.83	1.97
13. Belief in overcoming difficulties	5.10	1.64	5.18	1.52	5.38	1.64	4.98	1.57	5.13	1.44	5.14	1.56
14. Arrangement of efficient environment	4.96	1.71	5.37	1.58	**5.51**	1.49	4.97	1.75	5.23	1.56	5.20	1.63
15. Immediate coping with the problem	4.29	1.77	4.49	1.67	4.68	1.74	4.27	1.64	4.40	1.74	4.44	1.71
16. Effective procrastination controlling methods	4.36	1.71	4.26	1.67	4.68	1.69	4.04	1.63	4.21	1.73	4.28	1.69
17. Awareness of learning environment	5.03	1.67	**5.44**	1.66	5.38	1.75	4.98	1.70	**5.68**	1.41	5.29	1.66
18. Confidence about overcoming boredom	4.54	1.87	4.46	1.82	4.59	2.14	4.38	1.68	4.57	1.69	4.50	1.84
19. Mood regulation for invigorating the learning process	4.33	1.76	4.65	1.61	4.75	1.84	4.43	1.64	4.43	1.51	4.52	1.67
20. Looking for good learning environment	5.02	1.82	5.31	1.72	5.45	1.90	4.92	1.75	5.36	1.51	5.19	1.75

The results presented in Table 3 show the descriptive statistics and analysis of variance for five self-regulatory control facets. The results indicate that primary school learners rated themselves significantly higher than secondary and university learners on the metacognitive, commitment, emotion, and environmental control. As can be seen in Table 3, interactions between level of education and gender were not statistically significant.

On the other hand, there was a statistically significant main effect for level of education in the following self-regulatory control facets: metacognitive ($F(2,338)=.883$, $p=.000$), commitment ($F(2,342)=3.270$, $p=.039$), emotion ($F(2,337)=3.005$, $p=.051$), and environmental ($F(2,341)=5.595$, $p=.004$). Also, there was a statistically significant main effect for gender in environmental control facet ($F(1,341)=7.044$, $p=.008$). The statistical significance of emotion control was marginal. Other main effects did not reach statistical significance.

Table 3: *Descriptive Statistics and Analysis of Variance for Self-regulatory Control Facets*

		Self-regulatory control facets														
		Metacognitive control			**Commitment control**			**Satiation control**			**Emotion control**			**Environmental control**		
		M	**SD**	**F**	**M**	**SD**	**F**	**M**	**SD**	**F**	**M**	**SD**	**F**	**M**	**SD**	**F**
Level of education	**Primary school**	4.68	1.12		5.20	1.06		4.65	1.30		4.82	1.22		5.44	1.08	
	Secondary school	4.08	1.28	**8.418***	4.87	1.18	**3.270***	4.37	1.09	2.163	4.44	1.20	**3.005***	5.00	1.27	**5.595***
	University	4.30	1.14		4.87	1.05		4.39	.98		4.46	1.32		5.40	1.14	
Gender	**Male**	4.27	1.27	.883	4.87	1.17	2.520	4.39	1.22	.950	4.51	1.27	1.003	5.03	1.16	**7.044***
	Female	4.35	1.18		5.03	1.08		4.50	1.07		4.59	1.24		5.38	1.20	
Level of education X Gender				.467			.711			.577			.870			.902

*p < .05

Post-hoc comparisons using the Tukey HSD test for level of education in metacognitive control (see Figure 1) indicated that there was a statistically significant difference between primary school subgroup (M=4.68, SD=1.12) and the secondary school subgroup (M=4.06, SD=1.28). The university subgroup did not differ significantly from either of the other subgroups. Gender analysis indicated that there was no statistically significant difference between males and females in metacognitive control.

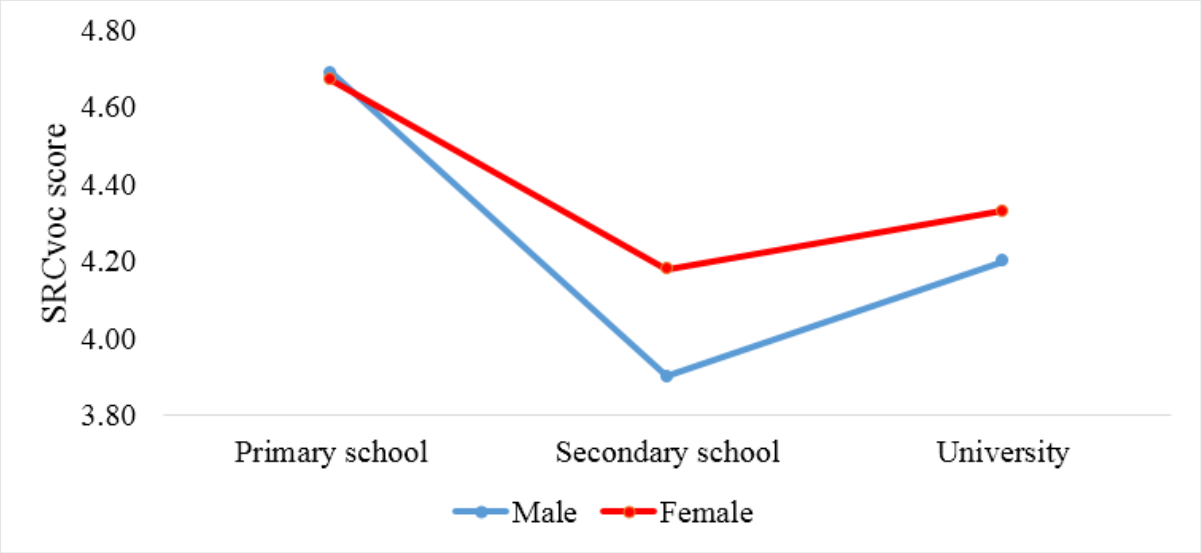

Figure 1: *Gender and Level of Education Interaction in Metacognitive Control*

Similarly, the results for level of education in commitment control (see Figure 2) indicated that the mean score for primary school subgroup (M=5.20, SD=1.06) was higher than in secondary school subgroup (M=4.87, SD=1.18). Again, the university subgroup did not differ significantly from either of the other subgroups. The analysis of gender in commitment control indicated that there was no statistically significant difference.

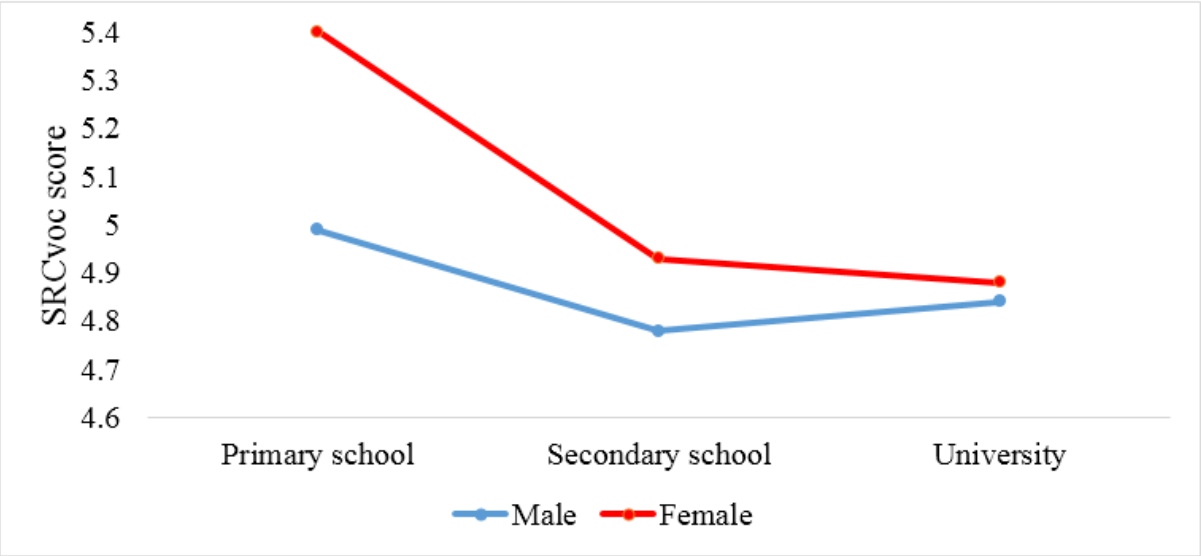

Figure 2: *Gender and Level of Education Interaction in Commitment Control*

Satiation control results (see Figure 3) for both level of education and gender showed no statistically significant difference.

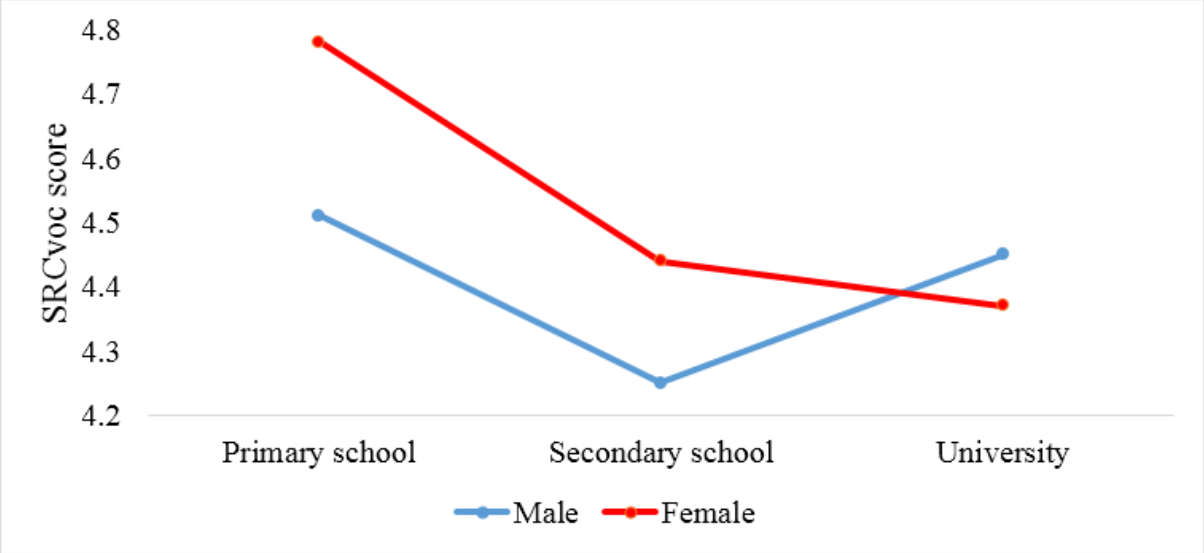

Figure 3: *Gender and Level of Education Interaction in Satiation Control*

Level of education analysis in emotion control indicated that there was a statistically significant difference between the primary school subgroup (M=4.82, SD=1.22) and the secondary school subgroup (M=4.44, SD=1.20). The difference between the university and the other two subgroups did not reach statistical significance. Gender analysis also indicated that there was no statistically significant difference.

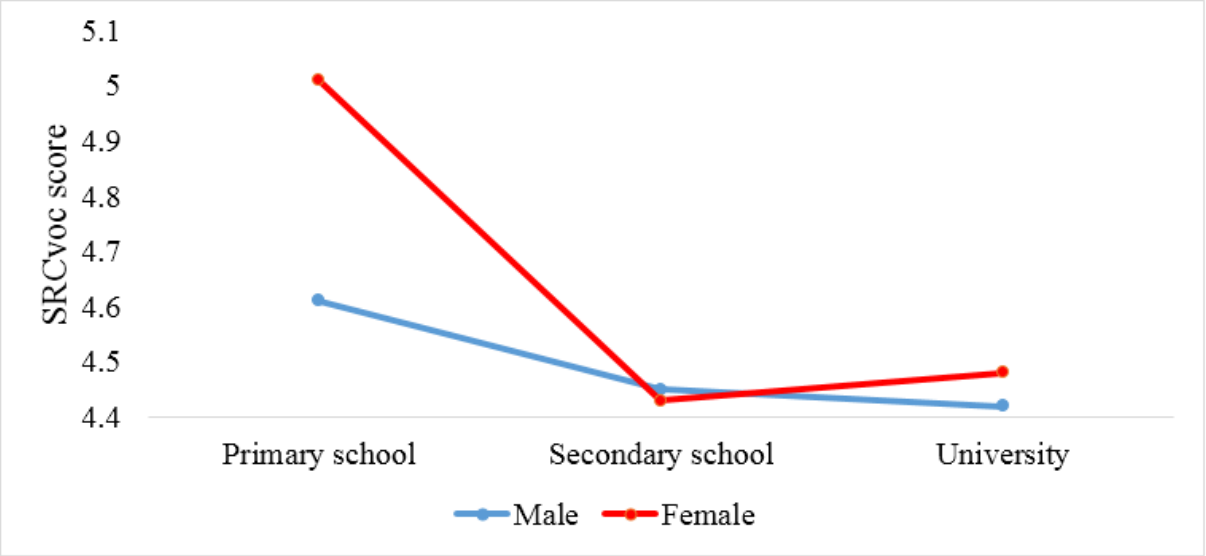

Figure 4: *Gender and Level of Education Interaction in Emotion Control*

As for environmental control (see Figure 5), the results indicated that there was a statistically significant difference in both level of education and gender variable. The primary school subgroup (M=5.44, SD=1.08) had a higher mean score than the secondary school subgroup (M=5.00, SD=1.27). Also, there was a statistically significant difference between the secondary school subgroup and the university subgroup. The university subgroup (M=5.40, SD=1.14) had a higher mean score than the secondary school subgroup. Also, females (M=5.38, SD=1.20) had a higher mean score than males (M=5.03, SD=1.16) on environmental control.

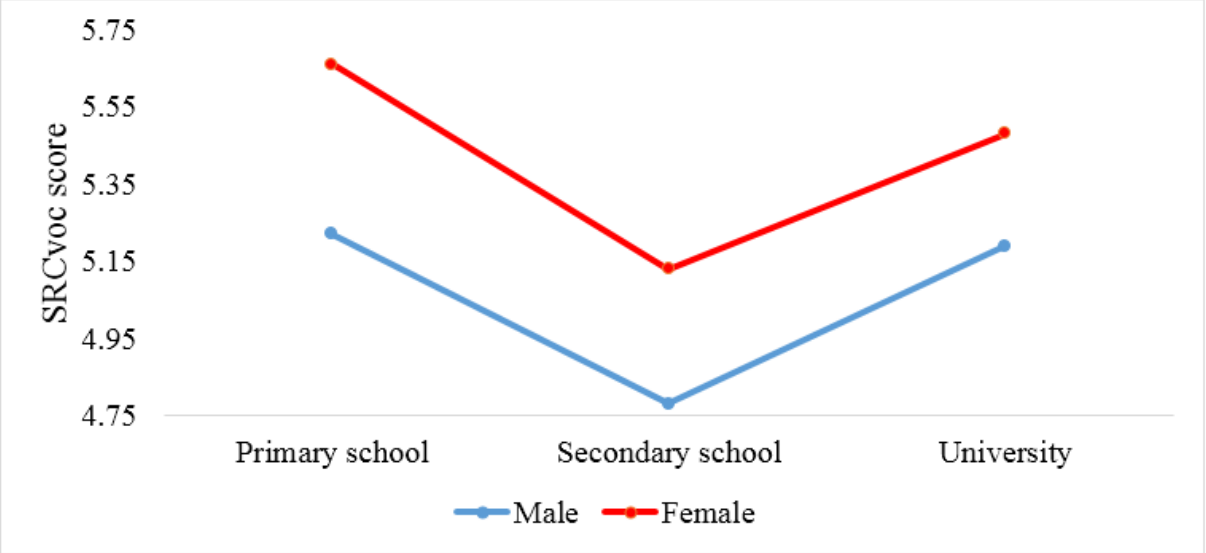

Figure 5: *Gender and Level of Education Interaction in Environmental Control*

A Pearson-product-moment correlation was run to assess the relationship among learners' attitude towards vocabulary learning and the five self-regulatory control facets (see Table 4). There was a statistically significant medium positive correlation between commitment control

and attitude towards vocabulary learning (r(339)=.317, p=.000); that is, learners become more self-regulated in the aspect of commitment of vocabulary learning as their attitude towards vocabulary learning control increases. There were also small significant correlations between learners' attitude towards vocabulary learning and the following four control facets: metacognitive (r(337)=.207, p=.000), satiation (r(340)=.266, p=.000), emotion (r(335)=.243, p=.000), and environmental control (r(339)=.157, p=.004). It can be concluded that there is a weak relationship among other control facets and learners' attitude towards vocabulary.

Table 4: *Pearson Correlation between Learners' Attitude towards Vocabulary Learning and Self-regulatory Control Facets*

	Attitude towards vocabulary learning
Metacognitive control	.207**
Commitment control	.317**
Satiation control	.266**
Emotion control	.243**
Environmental control	.157**

***. Correlation is significant at the 0.01 (2-tailed).*

The relationship between self-regulatory control facets and participants' perception of difficulty of English was also investigated using Pearson product-moment correlation coefficient (see Table 5). There were statistically significant but small negative correlations between perception of difficulty of English and the following control facets: commitment control (r(355)=-.214, p=.000), satiation control (r(355)=-.114, p=.032), and emotion control (r(350)=-106, p=.047). In other words, the less learners perceive English as being difficult, the more they are self-regulated in the commitment, satiation, and emotion aspects of vocabulary learning. The other correlations did not reach statistical significance.

Table 5: *Pearson Correlation between Learners' Perception of Difficulty of English and Self-regulatory Control Facets*

	Perception of difficulty of English
Metacognitive control	-.034
Commitment control	-.214**
Satiation control	-.114*
Emotion control	-.106*
Environmental control	-.030

***. Correlation is significant at the 0.01 level (2-tailed).*

**. Correlation is significant at the 0.05 level (2-tailed).*

3.6. *Discussion*

The first research question in this study sought to determine the relationship among learners' level of education, gender, and their self-regulating capacity in vocabulary learning. The findings suggest that there is no statistically significant relationship among these three factors. This finding was rather unexpected and suggests that a combination of gender and level of education might not be a relevant factor for self-regulation in vocabulary acquisition. A possible explanation may be that there are other individual differences, such as academic success (Bilican and Yesilbursa, 2015) that may play a more important role. Previous studies explored mainly the relationship between gender or age/level of education and learners' self-regulating capacity in vocabulary learning; however, no data was found on the interaction among these three factors. The current study also explored the individual effect of gender and level of education on self-regulating capacity in vocabulary learning. Both relationships proved to be significant. The findings suggest that there is a relationship between gender and environmental control facet. Also, the results show that female participants have significantly higher self-regulating capacity in the environmental aspect. These results are partially in line with those obtained by Sadeghi and Khezrlou (2012) whose findings also indicated that females used more self-regulated strategies in general than males. The fact that gender difference was detected only in the environmental control facet, implies that gender as a factor does not have a very relevant role as far as self-regulation in vocabulary learning is involved. Previous studies that included gender as a variable in self-regulated learning also showed inconsistent results. The findings of the current study do not support the belief which explains learning success

differently in terms of learners' gender: "girls do well because they work hard and boys because they are naturally able" (Duckworth et al., 2009: 23). In their overview, Duckworth et al., (2009) list several authors, such as Salisbury et al., (1999) and Jacob (2002), who suggest that gender is relevant in self-regulation due to boys' and girls' different learning styles. They argue that girls are more cooperative in collaborative learning, have better organizational skills, are more inclined to ask for help, and get bored less as opposed to boys (ibid). Evidently, future research should be undertaken to investigate the role of gender in self-regulated learning more thoroughly.

The most interesting finding to emerge from this study is the significant relationship between the level of education and self-regulating capacity in vocabulary learning. The results suggest that there is a difference between levels of education and the self-regulating capacity. Contrary to expectations, it was found that primary school learners have rated themselves significantly higher than secondary school learners in four control facets. This result is rather unexpected because self-regulation is supposed to develop in proportion to an increase of levels of education. However, this result has not previously been described. In reviewing the literature, no data was found on the association between self-regulating capacity and level of education. Previous research has mostly focused on learners' age, where young and adult learners' self-regulated learning was compared. These results are similar to Hardi's study (2017), which observed learners in the primary school and found that self-regulatory capacity decreases with age. Hardi (2017) argues that the reason behind these findings is the fact that learners appear to be the most motivated at the beginning of language learning. Therefore, the youngest learners show the highest self-regulating capacity. Also, the youngest ones use many self-regulatory control strategies and get more assistance and guidance from teachers and parents than the older learners. All of these factors result in young learners developing high self-regulating capacity (ibid). Additionally, Chung (2000) suggests that learners' self-confidence is the greatest during the primary school, therefore the youngest learners tend to have more self-regulatory capacity, which also positively influences their academic achievement. Another reason behind this unanticipated finding might be the inability of primary school learners to evaluate their capability objectively (Paris and Newman, 1990, as cited in Chung, 2000). Furthermore, several studies (Zimmerman and Martinez-Pons, 1990; Chung, 2000) also observed the decline of self-regulated learning with learners' age. They concluded that the most significant period for the development of self-regulated learning is in the middle school. It is argued that academic learning has a tendency of becoming more complex for the adolescent learners. The guidance

and assistance from teachers and parents diminishes and learners need to figure out how to manage learning on their own (Duckworth et al., 2009; Bilican and Yesilbursa, 2015). If learners do not develop self-regulatory skills during primary and secondary school, they are inclined to have difficulties during postsecondary education. Bembenutty (2011) claims that many students lack self-regulatory skills which negatively influence their academic success. Self-regulatory skills such as "exercis[ing] control of their conduct, maintain[ing] motivation, develop[ing] plans for the future, exercise[ing] delay for gratification, and put[ing] into effect goals and learning strategies" (ibid: 4) frequently appear to be of greater significance than learners' high intelligence or their previous knowledge on the subject. Therefore, Duckworth et al. (2009) and Bilican and Yesilbursa (2015) advise schools to enhance the importance of self-regulatory skills not only in language learning but in various academic domains.

Furthermore, the results indicate that the score of university level corresponds with the score of secondary school in almost all control facets, except for the environmental facet where the university level learners had a higher score. The difference in the environmental control facet may be explained by the fact that learners become more able to regulate their behaviour and environment as they mature cognitively (Duckworth et al., 2009). It seems possible to attribute these results to motivation and volition, which are rooted in the learners' ability of learning something they are truly interested in (ibid).

With respect to the second research question, it was found that there was a relationship between learners' attitude towards vocabulary learning and their self-regulating capacity in vocabulary learning. The findings suggest that the attitude rises proportionally with the self-regulating capacity. This means that the more positive attitude learners have, the higher their self-regulating capacity is. This result might be attributed to previous successful learning experience which affected the development of self-regulating capacity (Tseng and Schmitt, 2008). Learners who achieve better test scores confirm the efficacy of their learning process which has a further impact on their motivation and attitude. It can be concluded that academic feedback is a relevant part of the attitude towards not only vocabulary learning but also learning in general. Similarly, Rifai (2010) proved that learners who have a positive attitude towards learning English benefit more from the whole course of learning. This type of learners tends to adapt their learning strategies and habits in order to make learning English easier and more successful (ibid). This result is in line with Elley's (1989, as cited in Tseng and Schmitt, 2008) and Gardner and MacIntyre's (1991, as cited in Rifai, 2010) studies which provide evidence on the connection

between learners' motivational beliefs and strategic vocabulary learning that increased learners' vocabulary knowledge.

The third question in this research was to investigate the relationship between learners' perception of difficulty of English and their self-regulating capacity. The results show that there was a negative relationship between these factors. It means that the more learners perceive English as being easy, the better their self-regulating capacity becomes, and vice versa. Perception of difficulty belongs to learners' motivational beliefs, more precisely self-efficacy beliefs. Learners' self-efficacy is rooted in their confidence, goal challenges, and outcome expectations (Zimmerman, 2000; Bandura, 2001). It can therefore be assumed that learners, who perceive learning English as easy, will use more self-regulated strategies, i.e. have a better self-regulated capacity. In other words, higher self-efficacy leads to the higher use of self-regulated strategies, which results in a successful academic achievement (Zimmerman and Martinez-Pons, 1990; Bandura, 2001; Ziegler, 2014; Bošnjak Terzić, 2016). This finding broadly supports the work of other studies in this area linking self-efficacy with self-regulated language learning.

4. Conclusion

There has been a small number of studies on the self-regulation in language learning which incorporate various individual differences. This study set out to investigate the development of self-regulation in EFL vocabulary learning. This paper has mainly focused on the relationship among learners' self-regulating capacity, level of education, and gender. The additional aims of this study were designed to determine the relationship between learners' self-regulating capacity and attitude towards learning vocabulary, as well as their perception of English.

This study has shown that there is no relationship among self-regulating capacity in vocabulary learning, level of education, and gender. It seems that an interaction of these two factors does not have an impact on the self-regulating capacity in vocabulary learning. However, there were small statistically significant correlations between self-regulating capacity and level of education and gender variables, respectively. The results have also shown that gender is relevant in the environmental control facet only, which indicates that language learners do not differ very much in terms of their gender. Nevertheless, participants' self-regulating capacity does differ in the aspect of language learning, where the primary school learners demonstrated a higher capacity than the secondary school learners and university students. This research confirmed that the primary school learners are the most motivated language learners. It implies that learners have a higher self-regulating capacity at the beginning of their lengthy vocabulary learning process only when they are assisted by the teachers and parents. The findings suggest that self-regulating capacity does not develop with the levels of education. It also implies that self-regulated learning is not taught adequately in schools. Moreover, the results have shown that self-regulating capacity rises with the attitude towards vocabulary learning. Also, the findings have demonstrated that self-regulating capacity declines with the perception of difficulty of English. Taken together, these results suggest that motivational beliefs play an important role in vocabulary learning, i.e. the more positive attitudes learners have, the higher their capacity is.

This study has provided a deeper insight into the factors which influence self-regulation in vocabulary learning. However, some limitations can be recognized and used for future research recommendations. The major limitation of this study is the instrument, which depends on the veracity of participants' answers. The scope of this study was limited in terms of the additional habits and skills in vocabulary learning which could have been elicited by means of other

instruments, such as learning diary, self-report, portfolio, etc. Lastly, the study did not include other potentially relevant variables, such as participants' academic achievement and an objective measure of their vocabulary knowledge. These factors could have contributed to a better understanding of the self-regulation development. Future research has to be undertaken to investigate more factors that have an impact on the self-regulation in vocabulary acquisition.

The importance of self-regulated learning in EFL vocabulary learning has been acknowledged in this study. Therefore, it is highly recommended to the teachers to include the concept of self-regulation in all of the aspects of language learning, as well as any other subject in school, in order to help learners adopt it and become more successful in reaching their long-term educational and life goals (Bilican and Yesilbursa, 2015).

5. Bibliography

1. Abdulhay, H. (2015). Self-regulated Learning: A Narrative Review. *Journal for Studies in Management and Planning*, 1(10), 107-122.
2. Bansaeid, M. (2013). The Relationship between Self-regulated Learning Strategies and Strategy-based Vocabulary Acquisition of Iranian EFL Learners. *The Iranian EFL Journal*, 81(3), 80-91.
3. Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
4. Bandura, A. (2001). Social-cognitive theory: An Agentic Perspective. *Annual Review of Psychology*, 52, 1-26.
5. Bembenutty, H. (2011). Introduction: Self-Regulation of Learning in Postsecondary Education. *New Directions for Teaching and Learning*, 126, 3-7.
6. Bilican, R., Yesilbursa, A. A. (2015). Self-regulated capacity for vocabulary learning in Turkish high school students: An experimental study. *Procedia- Social and Behavioral Sciences*, 197, 83-87.
7. Bjork, R. A., Dunlosky, J., Kornell, N. (2013). Self-Regulated Learning: Beliefs, Techniques, and Illusions. *Annual Review of Psychology*, 64, 417-444.
8. Boekaerts, M. (1999). Self-regulated learning: where we are today. *International Journal of Educational Research*, 31, 445-457.
9. Bošnjak Terzić, B. (2016). Socijalno-kognitivni pristup samoreguliranom učenju inog jezika. *Strani jezici*, 44(2), 129-145.
10. Chung, M.-K. (2000). The Development of Self-Regulated Learning. *Asia Pacific Education Review*, 1(1), 55-66.
11. Cleary, T. J., Zimmerman, B. J. (2004). Self-regulation empowerment: A school-based program to enhance self-regulated and self-motivated cycles of student learning. *Psychology in the Schools*, 41(5), 537-550.
12. Cleary, T. J., Callan, G. L., Zimmerman, B. J. (2012). Assessing Self-Regulation as a Cyclical, Context-Specific Phenomenon: Overview and Analysis of SRL Microanalytic Protocols. *Education Research International*, 2012, 1-19.
13. Collett, P. (2014). Researching self-regulated learning and foreign language learning. *Studies in Self-Access Learning Journal*, 5(4), 430-442.
14. Dörnyei, Z. (2001). *Motivational strategies in the language classroom*. Cambridge: Cambridge University Press.

15. Dörnyei, Z. (2005). *The Psychology of the Language Learner: Individual Differences in Second Language Acquisition*. Mahwah, NJ: Lawrence Erlbaum.

16. Duckworth, K., Akerman, R., MacGregor, A., Salter, R., Vorhaus, J. (2009). *Self-Regulated Learning: A literature review*. London: Centre for Research on the Wider Benefits of Learning Institute of Education.

17. Ertmer, P. A., Newby, T. J. (1996). The expert learner: Strategic, self-regulated, and reflective. *Instructional Science*, 24, 1-24.

18. Gao, X. (2007). Has Language Learning Strategy Research Come to an End? A response to Tseng *et al.* (2006). *Applied Linguistics*, 28(4), 615-620.

19. Hardi, J. (2017). Self-regulation in young learners' vocabulary learning. *Gradus,* 4(1), 165-173.

20. Liu, S.-H.-J., Lan, Y.-J., Ho, C.-Y.-Y. (2014). Exploring the Relationship between Self-Regulated Vocabulary Learning and Web-Based Collaboration. *Educational Technology and Society*, 17(4), 404-419.

21. Ma Ping, A., Siraj, S. (2012). Exploring self-regulatory strategies for vocabulary learning among Chinese EFL learners. *Procedia- Social and Behavioral Sciences*, 47(1), 1211-1215.

22. Mizumoto, A., Takeuchi, O. (2012). Adaptation and Validation of Self-regulating Capacity in Vocabulary Leaning Scale. *Applied Linguistics*, 33(1), 83-91.

23. Panadero, E. (2017). A Review of Self-regulated Learning: Six Models and Four Directions for Research. *Frontiers in Psychology*, 8, 1-28.

24. Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning. In: M. Boekaerts, P.R. Pintrich, M. Zeidner (Eds.), *Handbook of self-regulation* (452-502). San Diego: Academic Press.

25. Pekrun, R., Goetz T., Titz, W., Perry R. P. (2002). Academic Emotions in Students' Self-Regulated Learning and Achievement: A Program of Qualitative and Quantitative Research. *Educational Psychologist*. 37(2), 91-106.

26. Ranalli, J. (2012). Alternative Models of Self-regulation and Implications for L2 Strategy Research. *Studies in Self-Access Learning Journal*, 3(4), 357-376.

27. Rifai, N. A. (2010). Attitude, motivation, and difficulties involved in learning the English language and factors that affect motivation in learning it. *Procedia- Social and Behavioral Sciences*, 2, 5216-5227.

28. Rose, H. (2012). Reconceptualizing Strategic Learning in the Face of Self-Regulation: Throwing Language Learning Strategies out with the Bathwater. *Applied Linguistics*, 33(1), 92-98.
29. Sadeghi, K., Khezrlou, S. (2011). Self-regulated Vocabulary Strategy Use: Implications for CALL and Individual Variables. *MEXTESOL Journal*, 36(1), 1-17.
30. Sadeghi, K., Khezrlou, S. (2012). Glossing Mode in Self-regulated Vocabulary Learning, and its Relationship with Gender, Age, and Field of Study. *The Journal of Asia TEFL*, 9(3), 51-74.
31. Schunk, D. H. (2005). Commentary on self-regulation in school contexts. *Learning and Instruction*, 15, 173-177.
32. Sorić, I. (2014). *Samoregulacija učenja. Možemo li naučiti učiti?* Jastrebarsko: Naklada Slap.
33. Tseng, W.-T., Dörnyei, Z., Schmitt, N. (2006). A New Approach to Assessing Strategic Learning: The Case of Self-Regulation in Vocabulary Acquisition. *Applied Linguistics*, 27(1), 78-102.
34. Tseng, W.-T., Schmitt, N. (2008). Toward a Model of Motivated Vocabulary Learning: A Structural Equation Modeling Approach. *Language Learning*, 58(2), 357-400.
35. Weinstein, C., Mayer, R. (1986). The Teaching of Learning Strategies. In: Wittrock, M., (Eds.), *Handbook of Research on Teaching* (315-327). Macmillan: New York.
36. Winnie, P. H., Perry, N. E. (2000). Measuring self-regulated learning. In: Boekarts, M., Pintrich, P. R., Zeidner, M. (Eds.), *Handbook of self-regulation* (532-564). San Diego.
37. Ziegler, N. A. (2014). Fostering Self-Regulated Learning Through the European Language Portfolio: An Embedded Mixed Methods Study. *The Modern Language Journal*, 98(4), 921-936.
38. Ziegler, N. (2015). The Predictive Value of the Self-regulating Capacity in Vocabulary Learning Scale. *Applied Linguistics*, 36(5), 641-647.
39. Zimmerman, B. J. (1986). Becoming a Self-Regulated Learner: Which Are the Key Subprocesses? *Contemporary Educational Psychology*, 11, 307-313.
40. Zimmerman, B. J., Martinez-Pons, M. (1986). Development of a Structured Interview for Assessing Student Use of Self-Regulated Learning Strategies. *American Educational Research Journal*, 23(4), 614-628.

41. Zimmerman, B. J., Martinez-Pons, M. (1990). *Journal of Educational Psychology*, 82(1), 51-59.
42. Zimmerman, B. J. (1995). Self-regulation Involves More than Metacognition: A Social Cognitive Perspective. *Educational Psychologist*, 30(4), 217-221.
43. Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P.R. Pintrich, M. Zeidner (Eds.), *Handbook of self-regulation* (13-39). San Diego: Academic Press.
44. Zimmerman, B. J. (2002). Becoming a Self-Regulated Learner: An Overview. *Theory into Practice*, 41(2), 65-70.
45. Zimmerman, B. J. (2008). Investigating Self-Regulation and Motivation: Historical Background, Methodological Developments, and Future Prospects. *American Educational Research Journal*, 45(1), 166-183.

6. Appendices

6.1. Demographic questionnaire

Molimo te da čitko popuniš ovaj upitnik i da ne izostaviš niti jedno pitanje.

1. Šifra:_____ Spol (zaokruži): m – ž
2. Razred_____
3. S koliko godina si počeo/počela učiti engleski jezik? _____
4. Engleski je po tvom mišljenju (zaokruži):
   a) vrlo lagan b) lagan c) srednje težak d) težak e) vrlo težak

5. U kojoj mjeri voliš sljedeće zadatke iz engleskog jezika? Zaokruži ocjenu od 1 do 5:
   1-uopće ne volim 2-ne volim 3-ponekad volim 4-prilično volim 5-najviše volim

Čitati tekstove	1	2	3	4	5
Razgovarati	1	2	3	4	5
Učiti nove riječi	1	2	3	4	5
Pisati	1	2	3	4	5
Učiti gramatiku	1	2	3	4	5
Slušati tekstove	1	2	3	4	5
Nešto drugo - napiši što i ocijeni:	1	2	3	4	5

6. Koliko je tebi važno na engleskom jeziku ... (ocijeni ocjenom od 1 do 5)
   1-uopće mi nije važno 2-nije važno 3-pomalo važno 4-vrlo važno 5-najvažnije mi je

Znati gramatiku	1	2	3	4	5
Znati puno riječi	1	2	3	4	5
Razumjeti pročitane tekstove	1	2	3	4	5
Znati pisati	1	2	3	4	5
Razumjeti ono što čujemo	1	2	3	4	5
Znati razgovarati	1	2	3	4	5
Nešto drugo - napiši što i ocijeni:	1	2	3	4	5

7. Koliko je Tebi lako u engleskom jeziku (ocijeni ocjenom od 1-5):
   1-najteže 2-teško 3-lako 4-vrlo lako 5-najlakše mi je

Pisati sastave	1	2	3	4	5
Zapamtiti riječi	1	2	3	4	5
Govoriti	1	2	3	4	5
Sjetiti se riječi kad mi zatreba	1	2	3	4	5
Razumjeti što čitam	1	2	3	4	5
Pravilno napisati riječi	1	2	3	4	5
Gramatika	1	2	3	4	5
Razumjeti što slušam	1	2	3	4	5
Izgovarati riječi	1	2	3	4	5
Nešto drugo - napiši što i ocijeni:	1	2	3	4	5

6.2. Self-regulating Capacity in Vocabulary Learning Scale (SRCvoc)

Ovo je upitnik kojim želimo saznati kakva su tvoja iskustva u učenju riječi. Zanima nas tvoj osobni stav. Nema 'točnih' i 'netočnih' odgovora i ovaj upitnik neće utjecati na tvoju ocjenu pa te molimo da budeš iskren/a. Na ponuđenoj skali zaokruži samo jedan broj od 1 do 7 koji najbolje opisuje tvoj pristup učenju:

1 uopće se ne slažem	2 ne slažem se	3 djelomično se ne slažem	4 niti se slažem niti ne slažem	5 djelomično se slažem	6 slažem se	7 u potpunosti se slažem

1	Kada mi učenje riječi više ne predstavlja ništa novo, postajem nestrpljiv/a.	1	2	3	4	5	6	7
2	Znam kako smanjiti napetost kada sam pod stresom jer moram učiti riječi.	1	2	3	4	5	6	7
3	Pokušavam riješiti problem ako okolina u kojoj učim nije prikladna za učenje.	1	2	3	4	5	6	7
4	Za učenje riječi imam posebne načine učenja kako bih ispunio/la svoje ciljeve.	1	2	3	4	5	6	7
5	Za učenje riječi imam posebne načine za održavanje svoje koncentracije.	1	2	3	4	5	6	7
6	Zadovoljan/na sam načinima na koje smanjujem stres kada učim riječi.	1	2	3	4	5	6	7
7	Kada učim riječi vjerujem da mogu ispuniti ciljeve brže od očekivanog.	1	2	3	4	5	6	7
8	Zadovoljan/na sam načinom kojim smanjujem dosadu kada učim riječi.	1	2	3	4	5	6	7
9	Kada učim riječi smatram da su moji postupci kojima kontroliram koncentraciju učinkoviti.	1	2	3	4	5	6	7
10	Kada učim riječi ustrajem sve dok ne ispunim cilj koji sam si postavio/la.	1	2	3	4	5	6	7
11	Za učenje riječi imam svoje posebne postupke kojima sprječavam oklijevanje i odgađanje učenja.	1	2	3	4	5	6	7
12	Kada sam pod stresom jer moram učiti riječi jednostavno odustanem od učenja.	1	2	3	4	5	6	7
13	Smatram da mogu savladati sve probleme koji su vezni za postizanje mojih ciljeva u učenju riječi.	1	2	3	4	5	6	7
14	Kada učim riječi znam kako urediti svoju radnu okolinu kako bi mi učenje bilo učinkovitije.	1	2	3	4	5	6	7
15	Ako se osjećam nervozno zbog učenja riječi odmah rješavam taj problem.	1	2	3	4	5	6	7
16	Kada učim riječi smatram da su načini na koje kontroliram odgađanje učenja učinkovite.	1	2	3	4	5	6	7
17	Kada učim riječi svjestan/svjesna sam da je radna okolina važna.	1	2	3	4	5	6	7
18	Siguran/a sam da mogu savladati dosadu za vrijeme učenja riječi.	1	2	3	4	5	6	7
19	Kada mi je dosadno dok učim riječi, znam kako mogu utjecati na svoje raspoloženje da poboljšam učenje.	1	2	3	4	5	6	7
20	Kad učim riječi, tražim dobro radno okruženje.	1	2	3	4	5	6	7