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SELF-REGULATION OF GIFTED STUDENTS IN L2 LEARNING: PREDICTIVE VALUE OF VARIABLES IN THE COMPLEXITY OF THE SELF-REGULATION CONSTRUCT

Abstract: The aim of the research is to investigate the complexity of the self-regulation construct and the relationships of variables, as well as their impact on L2 learning success in gifted students. After three decades of intensive attention and research activities in this field, there are still many open questions. The starting point is the assumption that a wider range of variables creates the possibility for more space in terms of a holistic approach to the complexity of the phenomenon of self-regulation.

The problem that is still not investigated in the research refers to: how far the variables that are usually taken in the composite that observes the construct of self-regulation reach, and thus the issue of their relationship and range in terms of predictive value for incentives in L2 learning achievements, or language for specific purposes. It is especially observed in academically gifted students (those with an average grade above 9.00), and the question is: to what extent do academic students differ in terms of observed variables, or what is their predictive value for L2 learning achievements. It is assumed that a larger coverage of variables, in this case: personality traits, motivation for L2 learning, meta-cognition, self-confidence (competences for memory and reasoning), self-esteem will provide a clearer picture of the complex factors that self-regulate L2 learning of academically gifted and other students and influence their achievements. This is expected to provide a clearer overview of the impact of certain types of motivation on success in L2 in academically gifted and other students, i.e. to get a clearer insight in the structure of motivation in gifted and other students. and the type of motivation, as well as the significance of the other predicted variables. Variables. Predictors: types of motivation (intrinsic motivations, extrinsic motivations and amotivation subclasses: amotivation, external incentives, integrated incentives, identified regulation, internal motivation - knowledge, internal motivation - achievement, internal motivation - stimulation); meta-cognition, personality traits, self-confidence, memory and reasoning competencies; Criteria: success on L2 achievement test; average grade in studies above 9.00 as an indicator of giftedness. Moderators: gender. The research was organized according to a quantitative design, and performed by systematic non-experimental observation. The sample consisted of 504 students from two faculties, 144 students from the Teacher Education Faculty, University of Belgrade and 360 students from Faculty of Technical Sciences, University of Novi Sad. There were 360 (72.0%) female participants. It is a convenience sample comprising 195 academically gifted (with average grade of 9 or above). The following instruments were used in the research: The Big Five Inventories (Goldberg's Big Five Personality Traits from the International Personality Database; Goldberg, 2001); Inventory of Metacognitive Consciousness (Schraw & Dennison, 1994); Orientation scale in language learning - intrinsic motivation, subscales of extrinsic motivation and amotivation (LLOS; Noels, Pelletier, Clement & Vallerand, 2000); Inventory of memory and reasoning competence (MARCI; Stankov & Crawford, 1997); Rosenberg Self-Concept Scale, L2 Achievement Test developed for this research, and Questionnaire on general data: average grade at studies, L2 grade, gender, and faculty. The reliability of the instruments ranges from .62 to .93, which indicates that the reliability extends from acceptable to excellent.

The main findings relate to the following:

- Metacognition and other variables (personality traits, self-confidence, memory and reasoning competencies) are in significant correlative relationship with motivation, and their mutual relationship is also correlated;

- Academically gifted have higher grades on internal motivation, identified and introjected regulation, while other students had higher grades on emotional and external regulation. There is a difference in favour of academically gifted in intrinsic types of motivation and statistically significant impact on success on L2 achievement test.

- Velitzer's MAP achieved a minimum of 0.04 for the 5-component solution, indicating that 5 components should be retained. They explained 73.18% of the total variance of items, which speaks in favour of such concept of self-regulation and its significance, i.e. predictive contribution to the model and its impact on L2 success. Multiple variables allow for more versatile, holistic approach to the phenomenon and more efficient didactic work for personalized approach to the gifted.

Keywords: self-regulation, gifted, L2 learning, Language for Specific Purposes

Introduction

Self-regulated learning (SRL), according to many authors (Ziegler et al., 2021), has become attractive to researchers in the field of education in the last three decades, because it provides opportunities for closer observation of interrelationship among cognitive strategies, meta-cognition, motivation, and significance of the factors such as personality traits, self-confidence, self-esteem, etc., Therefore, it provides an opportunity for a holistic approach to observing motivation and other learning and teaching factors (Paris & Paris, 2001). The complexity of SRL attracts the attention of researchers due to the possibility that the findings of research have their examples of SRL in classrooms and there undergo empirical validation of the SRL construct. Both abovementioned opinions of researchers (Kleitman & Stankov, 2007) are basically the incentive for this research design. Thus, the research is based on the intention to consider the essential characteristics of SRL complex theoretical construct, and dimensions of holistic coverage of the mentioned factors, i.e. their interrelationship and contribution to self-regulation. This research deals with gifted students, because it is expected that SRL phenomenon is more pronounced in talented than in other students (Ziegler et al., 2021), and it is related to success or self-realization in L2 learning, or languages for specific purposes. Although this construct has been addressed by a large number of researchers in recent decades, there are still many disagreements or unresolved issues, such as: is SRL seen as a set of skills that can be explicitly taught, or developmental process of self-regulation that arises from experience with the help of the teacher, who provides information and opportunities for students of all ages to become strategically motivated and independent participants in discovering new knowledge. Another unresolved issue is the predictive range of certain variables for directing didactic procedures in the process of L2 learning and teaching, or languages for specific purposes, etc.

Self-regulation of learning is considered to be the ability to develop knowledge, skills and attitudes that support learning and that can be transferred to other learning situations (Baumert et al. 1998; according to Sorić, 2014). It is therefore in the focus of interest in theoretical approaches and models, as well as their practical validation in various types of research, from instrument construction and checking their adequacy in terms of coverage of phenomena, concepts, structures, etc. to finding ways to master. This is exactly the reason why it has been researched as a phenomenon of learning and teaching for decades. Zigler (Zigler et al., 2021) believes that effective learning is more important than high IQ, and the way of including the variables that best cover self-regulation is still being investigated. Thus, the same author believes that effective learning rooted in self-regulated learning is crutial for high achievement. It is also important to note that self-regulation of learning is not mental ability or skill to perform a certain task (Zimmerman, 2002), but a guiding process by which students transform mental abilities into learning skills. Therefore, it is necessary to keep in mind that self-regulation of learning is unlikely a characteristic, or an ability that someone has or does not have, and that it is expected that his achievements will be lower or higher accordingly. It is a change in learning style, which is reflected in the success of self-regulation, and recognized in the field of meta-cognition and learning motivation. For learning languages for specific purposes, or L2, this is important, because the forces of learning and teaching are directed towards ways to develop the mentioned mechanisms of self-regulation. The mentioned characteristics of the phenomenon of self-regulation are the subject of attention of researchers who are engaged in encouraging the development of the gifted. Thus, several significant conclusions of Ziegler (2021) that describe the core of self-regulation in the field of giftedness can be accepted. Ziegler believes that giftedness cannot be reduced exclusively to a high IQ, and that it would be a mistake to assume that intelligence is a constant that remains the same, thinking that giftedness in any field, therefore, in the field of L2 learning, can be seen as high probability that someone could (later in life) achieve extraordinary achievements with appropriate support (Ziegler et al., 2017). Thus, giftedness does not remain the same as IQ, nor grows as intelligence during individual´s development, and if there is no adequate support, it leaves consequences in development, i.e. for the success of the gifted, which is not uncommon

in practice (Gojkov, 2014; 2018). Thus, it is considered that in L2 learning, or the language for specific purposes, giftedness fades away and disappears, if the gifted is left without adequate support (Gojkov-Rajić, 2021a; Šafranj et al., 2021a; Ziegler, 2005).

Therefore the issue of encouraging the development of giftedness has increasingly turned to didactics, and as stated (Zigler et al., 2021), learning widens the existing gap in achievements and this is especially true for those with higher achievements. As there is already almost complete agreement today about the importance of learning for the development of giftedness, and especially for the ability to learn, we accept the statement that applies to L2 learning, or languages for specific purposes, that the more gifted people learn, the more gifted they become. Ziegler (2021) considers several confirmatory facts of previous research (Bloom, 1985), from which the following stands out: crucial importance of mentoring since the findings indicate that achievements are closely related to expert incentives and improvement of learning skills; successful gifted people (experts) are seen internationally, and their learning differs from the average in that they spend much more time studying than others. In addition, their learning is more successful because they use different learning strategies, meta-cognitive monitoring and they adopt a large amount of content on their own (Ericsson et al., 2018; Macnamara et al., 2014).

Ziegler (Ziegler et al., 2012) also states that research has confirmed that successful students perform significantly better than their peers in the whole spectrum of learning aspects, and this superior effect can be illustrated by a process model of learning, i.e. self-regulated learning, during which learning strategies represent a significant part but not the only component among other key processes. In support of the practice of using the previously mentioned statements, the same authors summarize the stages of self-regulated learning in a seven-step cycle (Gojkov-Rajić et al., 2021b) and offer sophisticated self-regulation methods of perfecting the steps in the cycle, emphasizing that effective learning is the key for high achievement and it is is woven into self-regulated learning (Zigler et al, 2021).

The study deals with a wide range of variables, holistically, because the research findings indicate the importance of all variables selected here for observing self-regulation of gifted students in L2 learning. The findings of some rely more on individual variables, so they are not given the same value. Thus, the focus is on assessing the predictive value of variables in the complexity of self-regulation construct and thus, further validate them in practice. Several findings of the research and understanding of the core of the variables that were taken into account in this research will be listed below.

The findings of Kleitman (Kleitman et al, 2012) points out the importance of self-confidence as a factor of self-regulation. Their results suggest that beliefs merge in order to define the factor of self-belief, which defines the core of self-confidence. They also note that in their research at primary school age there are significant positive correlations between memory and reasoning and self-perception and academic self-efficacy (ranging from .46 to .68, $p < .01$), as well as that the factor defined by self-confidence explains about 70 % of total variance in these measures. Therefore, it can be concluded that higher metacognitive beliefs in one's own cognitive abilities also have strong beliefs in one's own academic self-efficacy (Kleitman, 2008; Kleitman & Gibson, 2011). The same authors also suggest that metacognitive beliefs in one's own cognitive abilities can be viewed both as important predictor of self-confidence and key mediator in predicting other variables about self-confidence. In addition, metacognitive beliefs in one's own cognitive abilities, as a factor of self-confidence, may be safer for predictions regardless of intelligence, gender, and other variables (Gillet et al., 2012; Kleitman & Gibson 2011). Thomas and Gadbois (2007) found negative correlation between self-confidence and self-handicapping behaviour, which appears as a strategy, and involves delays in performing tasks, excuses, etc. It is negatively reflected in weaker self-regulation and thus in achievement. This points to a conclusion important for practice that strong beliefs in oneself can act as possible protection against harmful self-handicapping behaviour.

It could be concluded that self-confidence is considered a significant internal factor of self-regulation, and this term implies a psychological trait, which is considered a stable factor based on personality in confidence assessments (Kleitman, 2008; Stankov 1999; Stankov & Lee, 2008; Lee & Stankov, 2013). However, Stankov (1999) emphasizes that mentioned stability does not mean a secure connection with personality traits, so it is not strongly connected with personality constructs. The question is what is the basis of stability of self-confidence, and the answer is given by the authors investigated self-esteem in a broader context, bringing it in connection with other examples of the construct of self-belief. One of them is meta-cognitive beliefs, which refer to the aspect of meta-

cognitive knowledge, stating that meta-cognitive belief is a specific subset of these beliefs, and it refers to individual´s perception of the competence of his basic cognitive abilities, memory and reaction. memory competence, or reasoning competence. One of the beliefs related to self-confidence is academic self- concept, which Marsh (1988) considers multidimensional, with hierarchical structure and it is acquired through achievements within school progress. This contributes to the fact that academic efficiency includes students´ belief that by learning they will achieve the expected outcomes (Bandura, 1993), i.e. the feeling of faith in the possibility of achieving self-realization. Research notes that in adults (Efklides & Tsiora 2002; Kroner & Biermann 2007) also meta-cognitive beliefs about reasoning competencies were predictive after the outcome control (Kleitman 2008; Kleitman & Stankov 2007; Stankov & Lee, 2008). This was also confirmed for children by the findings of the same authors, who conclude that meta-cognitive beliefs in their own reasoning competencies and memory abilities, together with academic self-perception and self-efficacy assessments, are good predictors of students' confidence in their cognitive abilities (Kleitman 2008; Kleitman & Gibson, 2011). This is important for practice and encouraging goal achievement and teacher´s self-efficacy.
Thus, it could be concluded from the abovementioned that in accordance with the understandings of the theory of self-perception and the theory of self-efficacy, metacognitive beliefs can be viewed both as a predictor and as mediating variable predictions that other variables have on self-confidence. Self-belief is recognized as a key role in academic environment, because they predict a positively higher level of self-confidence according to the findings of the previously mentioned research, and reduce learning avoidance behaviors which also significantly mediate predictions of other self-confidence variables. Thus, as a confirmation of the previous statements about the predictive value of self-confidence, the authors state the importance of the role of internal student variables in predicting academic achievements.
Lee (2009) cites the conclusion of research that confirmed a significant correlation between self-concept, self-efficacy, emotional concepts, anxiety, and self-confidence. It defines self-confidence as a common factor that has a significant correlation with the accuracy of cognitive performance and self-confidence as the best individual predictor of cognitive performance accuracy.
Other authors also find that in most of the data available so far, self-confidence absorbs the predictive variance of the previously mentioned self-constructions in cases when they are considered as special predictors of accuracy (Stankov & Crawford, 1997). This finding suggests that the method of measuring self-confidence used by these authors is adequate, and that other self-efficacy, self-perception, and anxiety scales are optional. It is true that they are specific for the domain, area, subject, and the measure of self-confidence obtained in one area (mathematics), can be used as an assessment of self-confidence for L2 success, etc. This feature of psychological constructs, as the authors state, is still valid only for some psychological constructs, such as intellectual abilities. The previously mentioned property of the width of the self-confidence construct, i.e. the ability to absorb predictive variance as a special predictor of accuracy was prevailing to include this factor into this research, i.e. checking the predictive value of variables in the complexity of self-regulation construct. Previous research emphasizes personality traits as important for self-determination, and this factor is included in the set of variables in order to adopt a holistic approach to self-determination and investigate the importance of included variables to explain the complexity of the phenomenon.
In outlining several basic characteristics relevant to understanding self-regulation in theoretical classifications, Bandura (1997) briefly but effectively described a pattern of self-efficacy and outcome expectations, including personality significance. He notes that individuals prone to depressive pattern of self-regulation fall into the group with a low sense of self-efficacy, but high expectation of outcome, if the task were performed correctly. The same author also finds (Bandura, 1996) that these individuals feel that they cannot complete the task and thus, they fail to activate a proactive pattern of self-regulation. However, they would like to achieve the desired goals and be rewarded, and know that the environment will respond positively to their achievements. In that way, they lack the possibility of reinterpreting the situation, attributing possible failure to negative factors from the environment, and they cannot diminish the values of academic activities and achievements, and therefore they fail to activate even the defensive pattern of self-regulation of learning aimed at protecting the ego, and self-esteem. Research findings prove that there are few empirical investigations that consider distinctiveness and relationships among the aforementioned patterns of self-regulation of learning. Empirically obtained results support the discriminative nature of the proactive and defensive

pattern of self-regulation and some, model-implied connections between the components of these patterns, and their connection with learning outcomes (Lončarić, 2008, 2011). On the other hand, as Lončarić (2014) states, further research is yet to be carried out on a more detailed conceptualization and measurement of the depressive pattern of self-regulation of learning, which is considered to be closely related to personality traits, and those directly related to academic achievements in L2, or languages for specific purposes. Therefore, it is considered that personality structure, i.e. personality traits, represent a significant factor by which are chosen the ways in self-regulation that both suit the situation, and individual´s personality as well (Šafranj et al., 2021b).

The literature cites a large number of studies that confirm the connection between personality traits, self-regulation and academic success (Nikčević-Milković and Tatalović Vorkapić, 2020), but also indicates the complexity of these relationships and their importance in the predictor explanation of self-regulation for academic achievement. A five-factor model of personality (McCrae & Costa, 1985; Costa and McCrae, 1992) is structured by the following basic factors: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Some authors believe that the great five-factor model of personality is the most empirically confirmed (Tatalović-Vorkapić & Lončarić, 2014) and mostly used in research of personality around the world, as well as it is one of the most important theories of personality in the last century (Mlačić, 2002).

The previous statements are the reason why personality traits are found in the composite variables of this research, which intends to test the predictive value of variables in the complexity of the self - regulation construct. The research findings inform that personality traits (except Neuroticism), as well as adaptive strategies of self-regulation of learning and strategies of coping with school failure are moderately positively related to both objective and subjective academic achievement. It is also important to note that neuroticism is negatively associated with adaptive strategies of learning and coping with school failure, so that with its increase, objective and subjective academic success decreases. Tatalović-Vorkapić (2014) remarks that Conscientiousness is an important positive predictor of objective academic success, and Agreeableness of school satisfaction. All predictors explain 29% of objective and 18% of subjective academic success. Tatalović-Vorkapić (2014) notes that greater objective academic success is associated with greater satisfaction with school. Openness to experience, Conscientiousness, Extraversion, and Agreeableness are positively associated with adaptive learning strategies and coping with school failure, as well as strategies for seeking instrumental and / or emotional support from friends, parents, or teachers.

Motivation for L2 learning in gifted and other students was found in the composite of variables which in this research in the field of L2, or languages for specific purposes intend to see the predictive value of the observed variables, to better understand their relationships, as well as the place and role of each of them. Motivation is one of the observed variables that has attracted the attention of researchers in many areas of learning and teaching in recent decades, which is the same in glottodidactics as well, because it has an important role in the velocity and success of L2 learning. The research findings state its importance in the primary incentive to start L2 learning, and later the role of the driving force for maintaining a long and often tedious learning process (Dornyei, 1998). Therefore, it represents a great incentive for researchers defined as a complex and multiple construct (Gardner et al., 1985), i.e. made of multiple factors, such as task value, the level of learner´s expected success, self-confidence, and understanding the reason for their success or failure on the task (Dorniei & Ushioda, 2011). It is significant for its complexity, and types of motivation and motivational strategies are at the first place which should facilitate students to adopt positive attitudes towards language learning, and develop learning motivation. This implies knowledge of the types of motivation that are related to the procedures of encouraging motivational level of an individual. Although gifted people learn easily and quickly and have a high level of internal motivation, the discrepancy around these claims should still be checked, so that L2 teachers can harmonize the relationship between the type of motivation and didactic instructions for the expected achievements.

Dorniei and Ushioda (2011) presented a new approach to L2 learning called "L2 motivational self-respect" that links L2 learning and personal identity. This approach has implications for L2 learning in the sense that the student develops self-maturity and thus, self-motivation in language acquisition. Dorney believes that teachers could help him/her if there was a greater need for a more pragmatic education, focused approach, exploring reality in the classroom, identifying and examining motives for L2 learning in the classroom (Dorniei and Ushioda, 2011). This is what teachers should keep

in mind and it is important to consider motivational orientations for comparing didactic instructions when influencing academic efficiency of L2 students in accordance with the characteristics of motivation they possess, so that teachers can have more certainty in recognizing the core of types of motivation and design instructions. They can recognize amotivation when they notice that students fail to see a connection between their actions and their consequences, and believe that they are wasting time learning L2. However, it is important to recognize the difference between demotivation and amotivation. In that sense, the finding of Dornyei (2001) is important for teachers, which indicates that when the outcomes are believed to be unrealistic and unreasonable, it leads to amotivation, because the learner realizes that this goal is unachievable and is beyond his capabilities. So amotivation is understood as a lack of motivation.

Previous research uses several instruments, such as the Academic Motivation Scale - AMS 28 or 32, Foreign Language Motivation Questionnaire (LLOS-IEA; Noels, Pelletier, Clement & Vallerand, 2000, etc.) based on Self-Determination Theory (SDT) and which in statistical analyzes in several countries of the world received confirmations of metric characteristics of factor analysis, dimensionality, reliability and constructive validity. The hypothetical model of 7 factors was also confirmed: Internal motivation - knowledge; Internal motivation - achievement; Internal motivation - stimulation; External motivation - identified regulation; external motivation - introjected regulation; External motivation - external regulation; Amotivation.

However, the authors (Harvei,1997; Herzog, 2005) find that there is a need for further revisions of the scales, because in predicting success, it was stated that amotivation and identified regulation seemed stronger as internal motivational variables. Since this is one of the questions in this research, i.e. in order to check the significance of the motivating factor among the other observed variables for the overall self - regulation, several findings will be briefly explained while trying to shed light on this issue.

Šarčević (2015) used AMS to check academic motivation in adolescents measuring seven aspects of motivation according to Self-Determination Theory and made several conclusions. In the first version of this questionnaire, four factors were selected on a sample from Serbia, and based on that version, a second one was formed with 32 items on a sample of 1106 respondents. In addition, four factors such as Internal, External, Introjected motivation and Amotivation were defined. The continuum of self-determination has not been fully confirmed. So, some dimensions are, as the author states a different status of self-determination than expected, and it is also stated that the metric characteristics of the scale are good, so that the second version has better psychometric characteristics, more clearly depicts the theoretical assumption about aspects of academic motivation but it was only partially confirmed. The author believes that the AMS questionnaire is a good enough indicator of academic motivation for the age for which it is intended. However, the issue of the continuum and structure of such a construct remains open, i.e. seven-factor structure, which is used and confirmed in many studies. It is one of the questions that this paper seeks to answer. In this research the seven-factor structure is tested, and it will be briefly defined, in order to have a clearer overview of the research findings. Theoretical basis of this question is in Self-Determination Theory, which seeks to explain motivational aspects of academic success, because it integrates the starting points of the theory of basic psychological needs, causality orientation, cognitive evaluation and integration. Therefore, different theoretical approaches are merged into one theoretical framework for a more complex picture of the phenomenon of academic motivation (Deci et al., 2001; Deci & Ryan, 2000), which is the intention of this research to approach the motivational factors of academic achievement in L2 learning or languages for specific purposes.

In addition, significant findings for L2 teachers are that aspects of motivation are lower along the continuum depending on internalization of behaviour (Deci & Ryan, 1985), and that in practice there are usually three types of motivation: internal and external motivation, with amotivation at the extreme left of the continuum. For amotivation, in addition to the above, it is characteristic that the locus of control is indeterminate and individuals with this motivational characteristic fail to see the reasons for schooling or purpose of L2 learning (Deci et al., 1992; Niemiec et al., 2009). Most researchers find that behaviour driven by external stimuli (pressure or reward of the social environment to learn a language) is characterized by extrinsic motivation, which appears within four narrow aspects as regulation with short effects (Ryan et al., 2008; Hagger & Chatzisarantis, 2007) It is important for practice because interruption of external stimuli can cause a situation to disrupt

L2 learning (Noels et al., 2001). Recent research emphasizes that extrinsically motivated students acquire knowledge for better career opportunities. Therefore, their behaviours are means by which they set off towards certain goal, and not for the sake of interest or satisfaction while learning. Thus, behaviour is stimulated by external stimuli, and this is a significant finding that there are (Ryan et al., 1990; Deci & Ryan, 1985) different types of external motivation along the continuum of self-determination (external regulation, introjection, and identification). It is necessary to recognize the mentioned levels and use incentives, which facilitates learning, and affects achievements. The next step important for practitioners in L2 is introjected regulation which occurs when individuals begin to internalize the reasons for their actions. It happens when the behaviour is valued and assessed as important, and especially when it is perceived as if the individual has adopted opinions and feelings taken from the environment, but has not fully included them in the personal value system. A new step on the way to higher levels of motivation and self-regulation in L2 learning is identified regulation, which is recognized as consequence of understanding the importance and contribution to self-realization. Thus, identified regulation is a behaviour that student accepts because of its importance, and not just out of benefits and contributions in future. It should be noted that the identified regulation is unlikely initiated by an internal need, and the outcomes of regulation of this aspect are lower degree of self-determination (Jang et al., 2010). Adopted or introjected regulation is the next significant step on the scale of the motivational hierarchy, and it means accepting behaviour from the environment. Along with the previous level these behaviours have not yet been fully internalized (Deci & Ryan, 2000). While going to higher levels of the continuum of self-regulation, the next type of self-regulation is integrated regulation. It is considered to be closest to intrinsic motivation, and is associated with positive outcomes such as prosocial development and psychological well-being (Ryan et al., 2008). Integrated regulation refers to the behaviours that are in line with the values of the individual, for L2 learning and teaching, or language for specific purposes. It occurs most often in student´s system of self-regulation (Gojkov-Rajic et al., 2021a). On average, students show relatively low levels of amotivation and moderate levels of various aspects of motivation, with the highest scores for intrinsic (Knowledge, Achievement, and Stimulation) and identified regulation. This indicates the fact that students are well motivated, i.e. with good motivational orientation and types of motivation which is an important predictor of self-regulation, It is also recognized as an indicator of success in L2 achievement test. Intrinsic motivation is at the right end of the visulized ladder, i.e. the continuum of described aspects of self-regulation. It is characterized by intrinsic locus of control reflecting natural propensity for mastery, spontaneous interest, and research essential for cognitive development (Deci & Ryan, 1985). Valerand and his associates (Vallerand et al, 2003) noted that intrinsic motivation consists of three dimensions that describe natural inclination towards cognition, stimulation, and achievement. The main characteristic of internal motivation is when student learns language for himself, which is stimulating for further research, for a clearer picture of the possibility of personalization of didactic instructions in L2 teaching, or languages for specific purposes.

Basic characteristic of internal motivation is a behaviour in which the student learns second language out of the pleasure he/she feels while learning, exploring or understanding something new (Vallerand et al., 1992). According to some authors (Deci and Ryan, 2000; Deci & Ryan, 2008), intrinsic motivation originates from an innate psychological need for competence and self-determination. Therefore, while encouraging student´s efforts towards higher levels of motivational self-regulation, L2 teacher should create learning situations in which student is as autonomous as possible, determine the goals and ways to achieve them. It should be mentioned that most research results confirm the existence of global intrinsic motivational construct, but there are also opposing opinions that intrinsic motivation could differ in more specific motives (Deci, 1975). This has been accepted as a tripartite taxonomy of intrinsic motivation investigated on independent basis (Vallerand et al., 1992). This research is interesting because it is indirectly a part of the issue of the predictive value of variables in the complexity of the construct of self-regulation and the issue of the structure of motivational variable. The limited space of this paper hinders broader observation of these issues, but for a clearer understanding of the findings of this research it will be mentioned that there is an internal motivation for achievement as a special type of motivation, which is noted in pedagogical psychology and didactics as motivation for mastery, motivation of efficiency and task orientation. It is recognized by the willingness of students to communicate with the environment in order to feel competent and create unique achievements (Deci & Ryan, 1991). It is, therefore, defined as an ori-

entation towards achievement, or engaging in activity for pleasure after mastering complex training techniques and it creates a feeling of personal satisfaction, i.e. communication in second language, participation at scientific meetings and speaking languages of specific purposes.
The third type of internal motivation is the experience of stimulation, which appears through special stimulating occurrence (aesthetic experience, fun, excitement). The previous taxonomy of motivational regulation is explained by (Deci & Ryan, 2000), according to which intrinsic motivation is characterized by a sense of satisfaction arising from a sense of competence, autonomy and connection. Also, in relation to external motivation it is considered more self-determined and refers to internal factors such as enjoying and satisfying oneself in situations related to researching new ideas and developing knowledge, trying to master a task or achieving a goal, etc.
The previously presented types of motivation are also important for teachers of L2, or languages for specific purpose at tertiery level, in order to clearly understand the ways in which the teacher can facilitate students in self-regulation of learning, i.e. stimulating their motivational potentials. This is especially important today, because technological advances have changed the way nowadays generations are motivated. A significant number of young people are amotivated, therefore, they fail to perceive unforeseen situations between the outcome and their own actions. They are neither essentially nor externally motivated. They attend classes without understanding importance of learning. It is a useless effort and a waste of time for them. Gillet and his associates (2012) researched youth motivation; what is acceptable and what are the opportunities to address complexity of learning, educational system, and determining positive outcomes of educational efforts. He recomended that didactic approaches should be changed and different learning environments given to meet the needs of students. In addition, he thinks that students may not be academically motivated because they feel left out. These and similar conclusions brought under the need for greater automation in learning and teaching, are also found by other authors (Gojkov-Rajić et al., 2020). The findings that are in line with the previous conclusion point out the following:
- Identified regulation stands out as a positive predictor, which indicates that motivation through identified regulation is associated with a higher L2 grade and general success;
- It was noted that there are differences in motivational orientations, or types of motivation between gifted students and others, which is an indicator of self-regulation in L2 learning, as well as that types of motivation determine L2 achievements.
- Years when L2 learning began, years of studying L2 language, gender, faculty at which they study are insignificant factors for the relationships of the observed variables (Gojkov-Rajic et al., 2021a).
The findings of the research, based on the synthesized conclusions of meta-analysis of teacher´s motivational role (Mastoor, 2013) emphasize the importance of responsibility for initiating motivation and its maintenance throughout the learning process. The results of other researchers (Dorniei, 2003; Dorniei & Ushioda, 2011) also point out that integrative component has a significant part in variance when it comes to motivational mood and persistence in L2 learning, which led to a turnaround in the acceptance of motivation model, i.e. the transition from socio-educational model to psychological model. Gardner´s model is directed towards integrative nature of multifactorial complexity of L2 learning, and in contrast, further applied research in the field of L2 learning finds that instrumental orientation has greater impact on language learning. In addition, the research on L2 motivation (Dorniei, 2001a, 2001b;, Dorniei & Ushioda, 2011; Gojkov-Rajić et al., 2021b) identified the need for more pragmatic education, focused approach, exploring reality in the classroom, and identifying motives for learning in the classroom.
The complexity of the construct of self-regulation and relations in motivational orientations are observed from several aspects. Crnjak (2019) researched the relationships of different motivational orientations with different aspects of adaptation to studies that include faith in oneself and one's abilities, perceived social support and the experience of stress among students at the University of Zagreb. Significant findings for this study indicate that higher levels of self-determined motivational orientation, or types of motivation, have positive correlation with stress responses in adaptation to studies. It is concluded that perception of stress is significant motivating factor, and those with higher levels of stress have higher levels of motivation and introjection, which is further related to lower new faith in themselves and their abilities and further affects the mechanisms of adjustment to studies. The findings also point to potential gender differences in adapting to change as student´s life and learning are organized in a different way.

The abovementioned findings are an additional incentive for our research, because they indicate the possibility that self-determined motivational orientation as a phenomenon is insufficiently observed by simplified divisions into basic motivational orientations. It is necessary to dive deeper into multidimensionality, the complexity of the motivational construct and more motivational orientations, i.e. types of motivation. Contrary to the findings of the aforementioned research (Crnjak, 2019), Jandrić and his associates (2018) in search of an answer to the question of gender differences in intrinsic and extrinsic motivation, self-efficacy, test anxiety and learning strategies remarked that there are no gender differences in obtained results. However, they found statistically significant age differences in all the above variables. Also, weaker motivation and self-regulatory learning in older students are confirmed by previous research, which is a significant indicator for glottodidactics, i.e. L2 teaching practice.

Ramos and Habig (2019), encouraged by the great interest in the concept of academic motivation, find that gender and age lack significant impact on any of the subscales of Academic Motivation Scale (AMS). Thus, the findings concluded that gender lack significant impact on academic motivation, which is not in line with the findings of other researchers. The same was noted for age as a predictor of motivation which is explained by small sample size. Ramadhan Dwi Marvianto & Wahyu Widhiarso (2018) supported the use of Academic Motivation Scale (AMS), which showed satisfactory metric characteristics. The findings confirmed seven-factor structure of AMS, thus giving another confirmation of multifactor structure of motivation phenomenon and challenges simpler models based on basic types of motivation (internal, external, amotivation). Suggestions for practical pedagogical implications of the findings addressed to teachers, administrators and creators of educational policy, relate to the need to provide students more direct information for their easier orientation in self-regulation, more closely connected curricula with students´ future careers, greater practical efficiency, etc.

Utvær and Gørill (2016) in their study also started from Self-Determination Theory (SDT) distinguishing types of motivation according to the types of self-regulation along the continuum of internalization, which are otherwise used as types of motivation for quality and outcomes. In the research, the variables: learning, performance, engagement and persistence are mentioned as predictors of educational outcome. The Academic Motivation Scale (AMS), which is based on SDT, obtained confirmations of metric characteristics and confirmation of hypothetical seven - factor model by statistical analysis. However, the authors find that there is a need for further revisions of the scale, because in predicting success, it was found that amotivation and identified regulation seemed stronger than internal motivational variables. This was another incentive to explore the relationship between types of motivation and academic success, which is the basis for defining methodological framework of the research.

The aim of our research is to approach the complexity of the self-regulation construct and the relationship of variables, in order to investigate their impact on L2 learning success, and thus in self-regulation of gifted students, because it is assumed that a wider range of variables creates holistic approach in observing the complexity of the phenomenon of self-regulation. For now, after three decades of intensive attention and research activities in this field, it is still with a lot of open questions, i.e. contradictory or incomplete findings.

The problem refers to the following: how far do the variables that are usually taken in the composite that observes the self-regulation construct reach, in terms of sufficiency for satisfying the holistic approach to the phenomenon of self-regulation? This is also a question of their mutual relationship and scope in terms of predictive value for the possibility of encouragement in L2 learning achievement, or language for specific purposes. Previously, it is especially observed in academically gifted students (those with an average grade above 9.00), so the question is: to what extent do students differ in terms of observed variables, or what is their predictive value for their L2 learning achievement?

It is assumed that a larger coverage of variables, in this case: personality traits, motivation for L2 learning, meta-cognition, self-confidence (competences for memory and reasoning), self-esteem will provide a clearer picture of factors that self-regulate L2 learning of academically gifted and other students, i.e. they affect achievements in this area. It is expected to provide a clearer picture of the impact of certain types of motivation for L2 success in academically gifted and other students, i.e. to get a clearer picture of the structure of L2 motivation as well as the significance of the other predicted variables.

Working hypotheses:
- The prominence of the seven-factor model of motivation for L2 learning is expected, as well as the difference in favour of academically gifted in intrinsic types of motivation and statistically significant impact in success on L2 achievement test
- Metacognition and other variables (personality traits, self-confidence, self-esteem, memory and reasoning competencies) are significantly correlated with motivation, and their mutual relationship is also correlated with the explanation of high percent variance.
- The influence of the observed variables on L2 success is equally pronounced.
In addition, the following information should be obtained:
- What types of motivation for L2 learning are shown and whether and in what way academically gifted differ from others? In what relation are the types of motivation with general success and L2 success? Accordingly, it could be concluded about the importance of motivation as a factor of self-regulation, and structure of motivation as a construct important for self-regulation and practical glottodidactic interventions. Then, what are the relations between the types of motivation and metacognition, self-confidence (competences for memory and reasoning) and self-esteem?
- To what extent such a conceptualized model with the variables contributes to a clearer picture of self-regulation and its impact on L2 success with such structured variables?
- What are the personality traits expressed in all respondents? Are there differences between academically gifted and other respondents? What are they reflected in and how they relate to motivation, general success, L2 success, metacognition, and self-confidence (competences for memory and reasoning)?
- What is the relationship between all observed variables? What is the percent of the variance of the whole, and how many in particular the variables explain?
- Variables:
Predictors: types of motivation (intrinsic motivations, extrinsic motivations and amotivation subclasses: amotivation, external incentives, integrated incentives, identified regulation, internal motivation - knowledge, internal motivation-achievement, internal motivation - stimulation); metacognition, personality traits, self-confidence, memory and reasoning competencies;
Criteria: success on L2 achievement test; average grade in studies above 9.00 as an indicator of giftedness.
Moderators: gender

Method

The research was organized according to a quantitative design, and performed by systematic non-experimental observation.

Sample

Sample consisted of 500 students from two faculties, 144 students from Preschool teacher training college from Vršac and 356 from Faculty of Technical Sciences, Novi Sad. There were 360 (72.0%) female participants. It is a convenience sample comprising 195 academically gifted (with average grade of 9 or above).

Instruments

Big five inventory (Goldberg's Big Five Personality Traits from International Personality Item Pool; Goldberg, 2001). A 50-item questionnaire intended to assess the big five personality traitsi.e., Extraversion, Emotional stability, Intellect, Agreeableness and Conscientiousness.
Metacognitive awareness inventory (Schraw& Dennison, 1994) consists of 52 items of binary response format (True / False) which make up two scales: Knowledge of cognition and Regulation of cognition.
Language Learning Orientations Scale - Intrinsic Motivation, Extrinsic Motivation and Amotivation Subscales (LLOS; Noels, Pelletier, Clement & Vallerand, 2000). The questionnaire consists of 21 items on the five-point Likert scale intended to measure 7 types of motivation for learning foreign language. Previous research indicates that 7 factors might be too much for this questionnaire so its latent structure was assessed in this research (see Data analysis and Results section)
The Memory and Reasoning Competency Inventory (MARCI; Stankov & Crawford, 1997) consists of 16 items measured by a six-point Likert scale. The instrument has two subscales intended to measure memory competences and reasoning competences.

Rosenberg society and adolescent self-image (Rosenberg, 1965) is a 10-item questionnaire which measures the global level of self-esteem (self-image) by assessing the positive and negative feelings a person has about themselves. The items were given using the four-point Likert scale.
L2 Achievement Test was developed for this research. It comprised of 40 items; 10 items were intended for each language skill. Questionnaire on general data comprised of average grade at studies, L2 grade, gender, and faculty.

Data analysis

In order to assess the latent space of the scale LLOS,Principal ComponentAnalysis using the Promax rotationwas performed. In order to identify the optimal number of factors/components to keep, the Velicer's Minimal Average Partial (MAP) was used as it is shown to be better factor number identification technique compared to Scree diagram and Gutman-Kaiser criteria (Ziegler & Hagemann, 2015).
For all the instruments used, the average summation scores were calculated in order to reduce them to the answering scale of that instrument for easier interpretation and comparison. T-test for independent samples was used in order to check for possible differences on motivation scales between academically gifted (average grade of 9 and higher) compared to other students. In order to assess the relationships between other trait variables (personality traits, metacognitive awareness, memory and reasoning competency, and self-image) and motivation multiple regression analyses were run. One regression analysis was run for each motivation scale with motivation being the criterion variable and other trait variables being the predictors. In order to assess the relationships between trait variables, motivation and grade in L2 multiple regression was run with grade being the criterion variable and all other variables being the predictors.
In order to assess the moderation role of Gender between the motivation types and L2 grade, PROCESS macro for SPSS was used. PROCESS macro performs the moderation analysis by testing the moderation between one predictor, one moderator and one criterion per analysis.

Results

Velicer's MAP achieved minimum of 0.04 for 5-component solution indicating that 5 components should be kept (Table 1). The five components explained 73.18% of total item variance. Pattern matrix of the Promax rotated solution is presented in Table 2. The first component comprises of all items originally associated with intrinsic motivation subscales and it was named Intrinsic motivation.Second component comprised of all items in original amotivation scale so it was named Amotivation. Third component was made up from 3 items originally belonging to the so the Identified regulation name was kept. Fourth component consisted of three items which form the component of Introjected regulation, same as in original questionnaire formulation. Last component comprised of only two items which originally belonged to the External regulation subscale so this name was kept. Compared to the original questionnaire formulation with 7 scales, Extrinsic motivation subscales stayed mostly the same, while all Intrinsic motivation scales now made up one, joined component.

Table 1. Velicer's MAP for LLOS items for 1 to 8 factors

Number of components	MAP
1	.057
2	.049
3	.045
4	.045
5	**.041**
6	.044
7	.043
8	.048

Table 2. Pattern matrix of LLOS items

Item	PC1	PC2	PC3	PC4	PC5
For the satisfaction I feel when I am in the process of accomplishing difficult exercises in the second language.	.92				
Because I enjoy the feeling of acquiring knowledge about the second language community and their way of life.	.90				
For the "high" I feel when hearing foreign languages spoken.	.80				
For the enjoyment I experience when I grasp a difficult construct in the second language.	.80				
For the pleasure that I experience in knowing more about the literature of the second language group.	.74				
For the "high" feeling that I experience while speaking in the second language.	.72				
For the pleasure I get from hearing the second language spoken by native second language speakers.	.70				
For the pleasure I experience when surpassing myself in my second language studies.	.68		.52		
For the satisfied feeling I get in finding out new things.	.66				
Honestly, I don't know, I truly have the impression of wasting my time in studying a second language.		.93			
I cannot come to see why I study a second language, and frankly, I do not give a damn.		.92			
I don't know; I cannot come to understand what I am doing studying a second language.		.62			
Because I choose to be the kind of person who can speak more than one language.			.84		
Because I choose to be the kind of person who can speak a second language.			.79		
Because I think it is good for my personal development.		-.54	.57		
Because I have the impression that it is expected of me.			.40		
Because I would feel ashamed if I couldn't speak to my friends from the second language community in their native tongue.				.95	
Because I would feel guilty if I didn't know a second language.				.79	
To show myself that I am a good citizen because I can speak a second language.				.52	.47
In order to get a more prestigious job later on.					.90
In order to have a better salary later on.					.78

Descriptive statistics

Descriptive statistics and Cronbach alpha reliability coefficients for research variables are presented in Table 3.All research variables had values of skewness and kurtosis in suggested range of ±2 (George & Mallery, 2010) indicating that there were no significant deviations from univariate normal distributions. It is important to note that for Metacognitive awareness scales 1 is the maximum possible score as agreements with the items was coded 1 and disagreement was coded 0. Reliabilities of the scales range from .62 up to .93 indicating that reliabilities were acceptable up to excellent. Correlations between variables is presented in Appendix A.

Table 3. Descriptive statistics

Variable	Min	Max	Mean	SD	Sk	Ku	α
Personality							
Extraversion (Ex)	1.40	4.90	3.28	.72	-.03	-.54	.78
Em. Stability (EmS)	1.00	4.80	3.21	.79	-.24	-.52	.84
Intellect (Int)	2.20	5.00	3.66	.50	.03	-.53	.65
Agreeableness (Ag)	2.40	4.90	3.87	.54	-.59	.20	.68
Conscientiousness (Con)	2.20	5.00	3.76	.53	-.18	-.21	.62
Metacognitive awareness							
Knowledge (MAK)	.41	1.00	.76	.15	-.46	-.72	.63
Regulation (MAR)	.34	1.00	.75	.14	-.38	-.27	.78
Motivation							
Intrinsic motivation (IM)	1.00	5.00	3.32	1.05	-.32	-.93	.93
Amotivation (Am)	1.00	3.67	1.44	.76	1.62	1.53	.83
Identified regulation (IdR)	1.75	4.75	3.88	.83	-.61	-.65	.62
Introjected regulation (InR)	1.00	5.00	2.60	1.08	.26	-.68	.72
External regulation (ER)	1.00	5.00	3.38	1.31	-.40	-1.04	.85
Memory and Reasoning Competency							
Memory (MC)	1.00	6.00	4.01	.94	-.41	-.01	.86
Reasoning (RC)	1.63	6.00	4.15	.79	-.21	.29	.82
Self-image							
Rosenberg's self-image (RSI)	1.00	4.00	1.98	.67	.77	.16	.87
Grade							
L2 Grade	5	10	8.48	1.36	-.55	-.70	

Differences in motivation between academically gifted and other students

Results of t-tests for independent samples is presented in Table 4.Statistically significant differences were found for all motivation types. Academically gifted had higher scores on Intrinsic motivation, Identified and Introjected regulation, while other students had higher Amotivation and External regulation scores.

Table 4. T-tests, differences in motivation between academically gifted and others

	t	p	Gifted - M	Gifted - SD	Others - M	Others - S
IM	-10.28	.000	3.84	.84	2.95	1.03
Am	1.96	.050	1.36	.63	1.49	.83
IdR	-4.08	.000	4.05	.86	3.75	.78
InR	-2.37	.018	2.73	1.12	2.50	1.03
ER	3.53	.000	3.13	1.38	3.54	1.23

Relations between traits and motivation types

Regression analyses between traits as predictors and motivation types as criterions are presented in Table 5. For all motivation types traits were significant predictors.For Intrinsic motivation, F (10, 489) = 15.21, p < .001, R2 = .24, traits explained around 24% of criterion variance. Significant positive predictors were Agreeableness, Metacognitive awareness – knowledge, Reasoning competency and Rosenberg self-image indicating that higher scores on these variables are associated with higher intrinsic motivation, while Emotional stability was negative predictor of intrinsic motivation. In case of Amotivation scale, F (10, 489) = 12.87, p < .000, R2 = .20, predictors explained around 20% of the criterion variance. Significant negative predictors were Memory competency and Intellect, while Reasoning competency was a positive predictor. For Identified regulation, F (10, 489) = 6.47, p < .000, R2 = .12, predictors explained around 12% of the criterion variance with significant predictors being Intellect, Agreeableness, Metacognitive awareness – reasoning (positive) and Conscientiousness (negative). In case of Introjected regulation, F (10, 489) = 3.60, p < .000, R2 = .07, predictors explained around 7% of the criterion variance. Significant negative predictors were Intellect and Conscientiousness, while Metacognitive awareness – knowledge was a positive predictor. Predictors explained about 7% of the External regulation's variance, F (10, 489) = 3.58, p < .000, R2 = .07, with significant positive predictor being Memory competence and negative being Agreeableness, Metacognitive awareness – knowledge and Reasoning competency.

Table 5. Partial contributions of predictors in explaining motivation

	IM	Am	IdR	InR	ER
	β	β	β	β	β
Ex	.01	-.05	-.08	-.07	.05
EmS	-.16**	-.04	-.02	-.07	.07
Int	.04	-.17**	.11*	-.11*	.10
Ag	.21**	.01	.10*	.04	-.15**
Con	.02	.03	-.10*	-.18**	-.04
MAK	.21**	-.08	-.03	.14*	-.13*
MAR	-.03	-.05	.18**	.01	.08
MC	-.02	-.50**	.11	-.04	.27**
RC	.17**	.29**	.08	.10	-.21**
RSI	.32**	-.08	-.06	.04	-.07

Relations between traits, motivation and L2 grade

Multiple regression analysis with personality traits, metacognitive awareness, motivation, memory and reasoning competency and self-image as predictors showed that these traits significantly predict L2 language scores/grades, F (15, 484) = 13.83, p < .000, R2 = .22. Predictors explained around 22% of the variance of the L2 grade. Significant positive predictors (Table 6) were Extraversion, Intrinsic motivation, Identified regulation and self-image indicating that higher scores on these variables are related to higher average L2 grade. On the other hand, Emotional stability and Conscientiousness were negative predictors of L2 grade.

Table 6. Partial contributions of predictors in L2 grade

	β	t	p
Ex	0.21	4.65	0.000
EmS	-0.12	-2.71	0.007
Int	0.04	0.88	0.377
Ag	0.03	0.65	0.515
Con	-0.10	-2.18	0.029
MAK	0.09	1.60	0.111
MAR	0.02	0.38	0.704
IM	0.12	2.27	0.024
Am	0.01	0.21	0.834
IdR	0.22	4.34	0.000
InR	0.02	0.35	0.730
ER	0.01	0.23	0.814
MC	-0.06	-0.94	0.346
RC	-0.04	-0.64	0.524
RSI	0.12	2.66	0.008

Moderation analyses, moderation between motivation and L2 grade by gender

In total, 5 moderation analyses were run, one for each motivation type as a predictor. Introducing moderation term to the model significantly improved the model for two motivation types, Intrinsic motivation, F (1, 496) = 14.93, p < .001, and Identified regulation, F (1, 496) = 4.93, p = .026. In order to better interpret the moderation effect, significant interaction effects are presented on figures. Moderation between intrinsic motivation and gender is presented in Figure 1. Males have similar L2 grade regardless of level of the Intrinsic motivation. On the other hand, for females the rise in the L2 grade is associated with higher Intrinsic motivation scores. Moderation between Identified regulation and gender is presented on Figure 2. Both males and females have lower L2 grades on lower levels of Identified regulation. With rise of the motivation levels, bigger increase in L2 grades is evident for females compared to male participants.

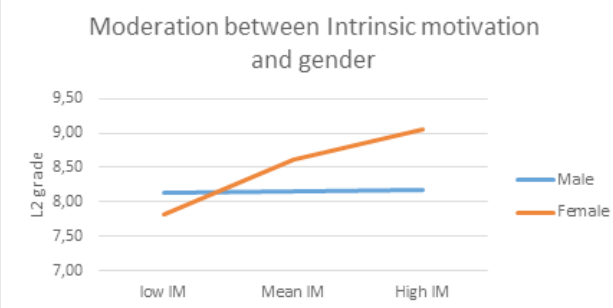

Figure 1. Moderation between Intrinsic motivation and gender

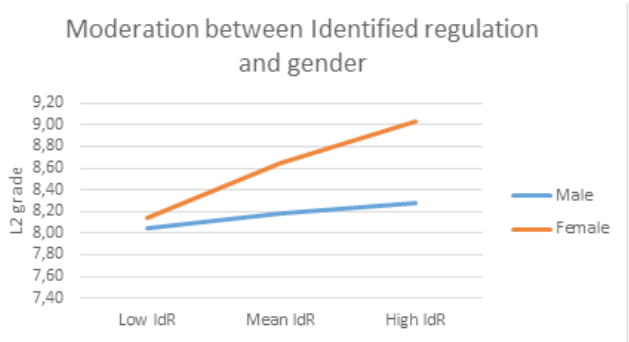

Figure 2. Moderation between Identified regulation and gender

Discussion

The fact that five components were found in Velicer's Minimal Average Partial (MAP) analysis suggests that the motivational continuum did not extend to seven degrees, as found in other studies (Ramos and Habig, 2019; Šarčević, 2015). This refutes the part of the first hypothesis that refers to the assumption of a seven-factor model). It is significant that these five components could explain 73.18% of the motivational space with a high percentage. It is also significant that the component of external regulation consisted of only two items that originally belonged to the subscale of external regulation, so this name was retained. Hence the extrinsic motivation of the subspecies, but all the scales of internal motivation now form one, that is, connected component, which has reduced the number of motivational scales on the continuum from seven to five components; internal regulation, amotivation, identified regulation and extrinsic motivation. Thus, the subscales of intrinsic motivation are merged into one component, which is different from the original taxonomy (Šarčević, 2015; Deci & Ryan, 2000).

Analysis of multiple regression with personality traits, metacognitive consciousness, motivation, memory and inference competence, and self-image as predictors showed that these traits significantly predict L2 language achievements / grades. Predictors explained about 22% of the variance in the L2 score. Significant positive predictors were extraversion, intrinsic motivation, identified regulation, and self-image, suggesting that higher scores on these variables were associated with a higher mean L2 score. On the other hand, emotional stability and conscientiousness were negative predictors of L2 grade, confirming parts of the second and third hypotheses about the importance of personality traits for self-regulation and L2 success.

The previous statements call into question the seven-factor model of motivation in the field of L2 learning, which fails to confirm a part of the general and a part of the first working hypothesis which predicted that the seven-factor model will appear, creates the impression of the sufficiency of the five-factor model. (Ramos & Habig, 2019).

Differences in motivation between academically gifted and other students was one of the issues observed in the research, and part of the first hypotheses. The results of t-tests for independent samples indicate statistically significant differences, which were found for all types of motivation. It is important to note that academically gifted had higher scores on internal motivation, identified and introjected regulation, while other students had higher scores on emotional stability and external regulation, so a marked difference in favour of academically gifted was shown in intrinsic types of motivation and had a statistically significant impact on success on L2 achievement test. This confirmed the second part of the first hypothesis, which assumed a statistical difference in intrinsic motivation in the gifted, which is in line with the findings of other researchers. But the question remains related to the number, i.e. the subtypes of internal motivation that failed to show, but were merged into one type. This could be interesting for new research designs that would deal deeper with the nuances of internal motivation, i.e. its subtypes or types and whether it relates to the gifted or other students.

The findings of the regression analysis of personality traits as predictors and motivational types state that personality traits were important predictors for all types of motivation. For intrinsic motivation, personality traits explained about 24% of the variance of the criteria. Significant positive predictors were agreement, metacognitive awareness - knowledge, reasoning competence and Rosenberg's self-image, which indicate that higher scores on these variables were associated with higher intrinsic motivation, while emotional stability was a negative predictor of intrinsic motivation. In the case of the amotivation scale, the predictors explained about 20% of the variance of the criteria. Significant negative predictors were memory ability and intellect, while reasoning competence was a positive predictor. For Identified Regulation, the predictors explained about 12% of the variance of the criteria, and the significant predictors are Intellect, Complexity, Metacognitive Consciousness - Inference (positive) and Conscientiousness (negative). In the case of introjected regulation, the predictors explained the variance, about 7% of the criteria, and the significant negative predictors were Intellect and Conscientiousness, while the Metacognitive Consciousness - Knowledge was a positive predictor. Predictors explained about 7% of the variance of external regulation, with a significant positive predictor of memory competencies, and a negative predictor, metacognitive awareness - knowledge and reasoning competence. It could be concluded that these findings confirm the second hypothesis, because metacognition and other variables (personality traits, self-confidence competence of mem-

ory and reasoning) are significantly correlated with motivation. Their relationship is also correlated, which explains the obtained percent variance which is not high (total amount 49%), and shows that the observed variables explain almost half of the total impact on students´ achievements. Since they clearly relate to the internal sphere of self-regulation and regarding its relationship with the observed variables, self-regulation of gifted in L2 learning can be estimated reliably, and thus encouraged based on the predictive values of variables found in this complex construct, because it remains the part related to external factors, which were not observed in this research and can play a significant role in self-regulation. This confirms the second hypothesis which refers to the significant relationship of metacognition and other variables (personality traits, self-confidence, memory and reasoning competencies) with motivations and their mutual correlation between the relationship with high percent variance. This confirms the general assumption and purpose of this research, which refers to the fact that more variables better explain self-regulation and create a basis for a holistic approach to understanding its construct, which is further important for teaching practice as a guide for understanding the complexity of gifted students' needs. Analysis of the relationship between intrinsic motivation, which has been shown a significant predictive variable, and gender helps to discern significant effects of interaction, which is part of the second hypothesis. The finding on the influence of the observed variables on L2 success with equal expression can be taken as confirmation of the same, as well as the next one which confirms the high correlation between motivation and L2 success, which gives a more complete picture of the importance of internal motivation on L2 learning outcomes. Other researchers have similar findings (Crnjak, 2019; Jandrić et al., 2018).

Conclusions

Metacognition and other variables (personality traits, self-confidence, memory and reasoning competencies) are in a significant correlative relationship with motivation, and their mutual relationship is also correlated with the explanation of high percent variance.

The influence of the observed variables on L2 success is equally pronounced.

The high percentage of explanation of variance speaks in favour of such a conceptualized model of self-regulation and significance, i.e. their predictive contribution to the model and its impact on L2 success variables. Thus, it could be argued that more variables allow for a more versatile approach to the phenomenon and more efficient didactic work in personalized access to the gifted;

The fact that the analysis found five components instead of seven, as found in other studies, and that these five components could explain 73.18% of the motivational space with a high percentage, requires further re-examination of this construct. This came about by the fact that the external regulation component consisted of only two items that originally belonged to the external regulation subscale. This leads to the conclusion that extrinsic motivation, i.e. its subtypes, as well as all scales of internal motivation, now form one, i.e. merged component, which has reduced the number of motivational scales on the continuum from seven to five components; internal regulation, amotivation, identified regulation and extrinsic motivation. Thus, the subscales of intrinsic motivation are merged into one component, which is different from the original taxonomy.

Findings of regression analysis of personality traits as predictors and motivational types show that personality traits are important predictors for all types of motivation; Metacognition and other variables (personality traits, self-confidence, memory and reasoning competencies) with motivations have a positive correlation, and their mutual significant contribution to a high percent explanation of variance. This leads to the conclusion that the variables observed in this model contribute to the complexity of the phenomenon of self-regulation and the predictive power of their interrelationship.

Pedagogical implications

After the foregoing it could be added that it is important for teachers to know the widest possible range of variables that have a motivating effect on students, and thus ensure L2 success. This is especially true for gifted students, who, as can be seen in this research, have a strong intrinsic motivation, which ensures their L2 success, but it is the teacher's responsibility to maintain it throughout the learning process, because in the complexity of the phenomenon of self-regulation it takes a little to slip the motivational mood and persistence in L2 learning. Significant relationships between personality traits, motivation and L2 grade, especially the importance of identified regulation in L2 learning and its close connection with instrumental regulation support the conclusion that instrumental orientation should be borne in mind in L2 learning. The research has found (Dorniei & Ushioda,

2011; Gojkov-Rajić et al., 2021b) the need for a more pragmatic education, focused approach, research of reality in the classroom and identification of motives for learning in teaching.

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Appendix A. Correlations between variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ex (1)	1	-.00	.25**	.29**	.08	.17**	.09*	.11**	.11**	.00	-.06	.01	.10*	.14**	-.08	.22**
EmS (2)		1	-.07	.04	.22**	.11**	.15**	-.18**	-.03	.02	-.08	.06	.12**	.16**	-.23**	-.19**
Int (3)			1	.20**	.31**	.29**	.27**	.16**	-.25**	.21**	-.10*	.07	.39**	.45**	-.18**	.10*
Ag (4)				1	.22**	.20**	.32**	.21**	-.08	.13**	-.01	-.10*	.05	.02	-.13**	.13**
Con (5)					1	.34**	.19**	.06	-.15**	.03	-.18**	.01	.34**	.23**	-.26**	-.11**
MAK (6)						1	.54**	.24**	-.25**	.15**	.05	-.03	.45**	.41**	-.17**	.10*
MAR (7)							1	.15**	-.11**	.24**	.04	-.02	.15**	.32**	-.12**	.10*
IM (8)								1	-.26**	.40**	.23**	-.08	.12**	.17**	.25**	.30**
Am (9)									1	-.38**	.24**	-.18**	-.38**	-.18**	.05	-.11**
IdR (10)										1	.07	.28**	.19**	.22**	-.11**	.26**
InR (11)											1	.19**	-.03	.01	.09**	.09**
ER (12)												1	.12**	.02	-.10**	.03
MC (13)													1	.71**	-.26**	-.03
RC (14)														1	-.18**	.01
RSI (15)															1	.16**
L2 Grade (16)																1

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