The relation between types of extrinsic motivation, learning strategies and academic achievement among educational students

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Abstract

The aim of the study was to test the relation between extrinsic motivation – identified (EMID), extrinsic motivation – introjected (EMIN), extrinsic motivation – external regulation (EMER), deep strategy of learning, surface strategy of learning and academic achievement. Participants were 310 randomly sampled university students (Mage = 20.23, SD = 1.85) from the faculty of education in pre-school program. We applied descriptive, Pearson correlational and regression analysis. Multiple regression analysis showed that academic achievement was positively related to extrinsic motivation – external regulation (EMER) and deep strategy of learning, but negatively related to surface strategy of learning. Academic achievement was not related to extrinsic motivation – introjected (EMIN) and extrinsic motivation – identified (EMID). Results show that the higher is extrinsic motivation – external regulation (EMER) and deep strategy of learning, the higher is academic achievement, and the higher is surface strategy of learning the lower is academic achievement. The findings of this study shed light on the necessity of applying intervention plans in raising the awareness of relevant parties such as; policy makers, as well as all staff who populate an educational environment, for the impacts they may have the academic motivation, specifically types of extrinsic motivation, learning strategies in academic achievement during the academic activities of educational students.

Keywords: academic achievement, extrinsic motivation, educational students, learning strategies.

INTRODUCTION

Academic achievement and assessment are considered as the main factors that have the impact in process of learning among students of university education; academic achievement fosters students' learning by regulated them with awareness of their learning progress, as well as information about their expected learning aims and how they can be achieved (Watkins et al., 2005).

According to Ganai and Mir (2013) academic achievement can be inferred from objective performance (e.g., grade point average) and can be defined as mastery in academic, curricular disciplines as well as extra-curricular activities.

Based on research of educational psychology one of the most factors that have impact on academic achievement is academic motivation (Bedel, 2015; Clark et al., 2014; Wigfield & Eccles, 2002) and learning strategies as well (Soenens & Vansteenkiste, 2005).

Many researchers who have dealt with motivation studies have opposed the fact that human motivation should be considered as very pure and only extrinsic or intrinsic factors, but more as a balanced view that allows a combination of intrinsic and extrinsic factors (Deci, 1975; Hidi & Harackiewicz, 2000; Rigby et al., 1992). Moreover, self-determination theory has been part of a "Copernican turn" in this area, as unlike behaviourist approaches, which seek to

promote and control external motivation, self-determination theory places its emphasis on natural tendencies, motivating people to learn and the need to grow personally, and how they can be supported by others (Ryan & Deci, 2020). For instance, many students during their academic life may recall cases when they voluntarily read a book because of the deep satisfaction they felt during this activity and the other occasion when the student read a book to get the professor's approval, a good grade or to perform an academic obligation. Hence, in the first case we are talking about intrinsic motivation, while the other case is about extrinsic motivation. The idea of dividing motives into two groups: intrinsic derived from the inside and extrinsic derived from the outside has existed since long time, but in education settings the self-determination theory is one of the most used theories lately.

According to the self-determination theory the academic motivation of students can be oriented by intrinsic motivation and extrinsic motivation (Deci & Ryan, 2000, Ryan & Deci, 2020).

When it comes to being intrinsically motivated, people engage in activities for their inner satisfaction and they experience their activity as self-generated and self-organized (Deci, 1975) while extrinsically motivated actions are performed instrumentally for achieve any particular consequence and should therefore be driven by other external stimuli or pressures (Deci & Ryan, 2002).

Extrinsic motivation stimulate performance when rewards are present as positive reinforces for the convenient behaviour (Bénabou & Tirole, 2003). The drawback is that extrinsic motivators can often put away the persistent of independent learning of students and as the result they might do not work constant during all the time of studying (Adamma et al., 2018).

Despite the fact that many studies have shown that extrinsic motivation can reduce or undermine intrinsic motivation (Deci, 1971; Deci & Ryan, 1980, 1985; Rummel & Feinberg, 1988) in general this type of motivation is very important especially in terms

of education (Krause et al., 2006). Given the fact that not all activities are desirable for everyone and consequently in the absence of intrinsic motivation, we can rely on extrinsic motivation to complete a job even better if we have knowledge of which of the types of extrinsic motivation it comes down to (Deci & Ryan, 2000).

Based on self-determination theory, the types of extrinsic motivation are:

1) external extrinsic motivation - indicate to the behaviours of the person for which the locus of initiation is external, for example reward or punishment; 2) Introjected extrinsic motivation - includes rules or requirements that pressure someone to behave in a certain way and are backed by threatening sanctions or promised rewards; 3) Identifying extrinsic motivation - represents the behaviour with which the person identifies with it and the adjustment process has become more fully part of themselves, therefore the person makes the behaviour more willingly or voluntarily, so identification refers to those behaviours that one values as important personally, but still need to be fully integrated with the repertoire of other person behaviours.

Learning strategies mean how students learn to understand study material versus meaningless memorization of study material (Biggs et al, 2001)

The students that used the deep learning strategy are preoccupied and involved on creating of new ideas and using previous information to improve and advance their knowledge (Byrne et al., 2002). According to Entwistle and McCune (2004) the deep learning strategy is very closely related to motivation, personal interest and self-regulation, factors that play a crucial role in academic achievement.

Students who used the surface learning strategy tend to learn only those materials that they expect to be valued for, focusing on the rehearsing and memorization of information rather than their reproduction (Byrne et al., 2002; Entwistle & McCune, 2004).

Thus, self-determination theory has been evaluated as one of the most notable theoretical frameworks to explain academic motivation and variations among students in accordance with learning strategies and academic achievement (Vallerand et al., 1992; Vansteenkiste et al., 2006) and the relation of motivation with educational settings as well (Opdenakker et al., 2012; Vansteenkiste et al., 2004).

Differences between students' academic achievement depending on the type of academic motivation and learning strategy used among education students may provide sufficient reasons to further explore the interrelationships between these variables in context of Kosovan students' community. Therefore, the aim of the study was to test the relationship between external motivation - identified (EMID), external motivation - introjected (EMIN), external motivation - external regulation (EMER), deep strategy of learning, surface strategy of learning and academic achievement.

Research questions:

If any types of extrinsic academic motivations and learning strategies are related to academic achievement?

If any types of extrinsic academic motivations and learning strategies predict an academic achievement?

According to these questions, the hypothesis was raised:

Hypothesis:

There is a positive correlation between academic achievement and types of extrinsic motivation (EMID, EMIN, EMER)

There is a positive correlation between academic achievement and deep learning strategy

There is a negative correlation between academic achievement and surface strategy

The three types of extrinsic motivation (EMID, EMIN, EMER) are predictors of academic achievement

The two types of learning strategies (deep strategy, surface strategy) are predictors of academic achievement

Literature Review

Motivation and academic achievement. According to Sternberg (2005) motivation has a crucial role to succeed in studies, otherwise if motivation is lacking, the student will never make the effort to learn. Also, Pajares and Urdan (2002) had emphasized that academic motivation is necessary in order for students to be able to succeed in performing academic tasks, to perceive studies as valuable, to be oriented towards an academic goal-oriented future, to have positive feelings of self-esteem and academic confidence, take into account that these elements are necessary to have high academic achievements.

Similarly, other studies have shown that motivation is a central factor not only in student academic achievement but also has a positive impact on student engagement in academic activities, in arousing interest in attending lectures and teaching, social competence as well as in developing the student's high academic self-concept (Izuchi & Onyekuru, 2017; Wentzel & Wigfield, 2007).

Extrinsic motivation. Eckblad (1981) describe an activity motivated in extrinsically way as an activity where there is a clear differentiation in awareness between means and ends. In line with this researchers Deci and Ryan (2002) emphasized that actions with extrinsic motivation are performed instrumentally to achieve any particular consequence and therefore should be driven by other external stimuli or pressures. Based on the above definitions, there are many illustrative examples of extrinsic motivation in everyday life, such as a student studying to please his parents, or a child doing homework to earn a reward, or an employee who works overtime to receive bonuses.

According to self-determination theory (Deci & Ryan, 2002), there are four types of extrinsic motivation between amotivation and intrinsic

motivation, starting with external extrinsic motivation - it refers to the person's behaviours for which the locus of initiation is external, for example reward or punishment. This regulation represents the least self-determination form of externally motivated or may also be considered the type that is most in contrast to intrinsic motivation and is called the least self-determination type. While the other three types of extrinsic motivation result according to the process of internalization in the development of motivational behaviours described by Deci and Ryan (1991).

According to self-determination theory, although a behaviour can be initiated by external motivating factors, if this behaviour is internalized it can be transformed into internal behaviour. Internalization as a comprehensive term in self-determination theory refers to three different processes: introjection, identification, integration. Hence the other three types of extrinsic motivation are named after this division of behavioural regulatory processes. In continuation of external extrinsic motivation, there is extrinsic introjected motivation - it includes rules or requirements that force someone to behave in a certain form and are backed by threatening sanctions or promised rewards. Introjected behaviours are those behaviours done in order to calm the ego or avoid guilt or anxiety. These behaviours are not considered self-determined, although introjected regulation is found within the person but is not part of the integrated self, so these behaviours are made simply to maintain or enhance a sense of self-worth (Deci & Ryan, 1995).

The most autonomous forms of extrinsic motivated behaviour include identification and integration. Both of these forms of regulation are perceived to stem from the self and seem to be self-directed and self-valued. Extrinsic motivation identified - represents the behaviour by which the person identifies with it and the regulation process has become more fully part of themselves, therefore the person makes the behaviour more willingly or voluntarily, so identification refers to those behaviours that someone considers very important personally but still need to be fully integrated with the

repertoire of the person behaviours. Integrated extrinsic motivation - is the most advanced type of extrinsic motivation, where the regulatory process of behaviours is fully integrated and consistent with the coherent sense of the individual's self and its core values. The behaviours of the individual in this case represent what the person deems important to him. Behaviours regulated by integrated processes are completely self-determined or autonomous, although they differ from intrinsic motivation, as intrinsic motivation is defined by interest in the activity itself, while integrated extrinsic motivation is defined by activity that becomes personally important to a valued outcome (Deci & Ryan, 2000).

Research based on self-determination theory shows that internalized forms of extrinsic motivation predict a range of positive outcomes at different levels of education and cultural contexts as well as their improvement when students' basic psychological needs for autonomy, competence and relatedness are supported (Ryan & Deci, 2020).

Deep and surface learning strategies. According to Baeten et al. (2008) defined learning strategies as follows: "Deep learning strategy is characterized with the student's intention to understand and derive meaning from the content to be learned…Surface strategy is associated by the student's intention to handle course requirements" (pp. 359-360). These strategies tend to be characteristic of students over time, but situational pressures can exert considerable impact at any time (Dinsmore & Alexander, 2016).

Usually, such pressures are accompanied by adaptations to the surface approach. The pressure of time, difficult tasks, ways of behaving of the type of teachers that encourage cynicism in students, can happen to encourage students towards immediate completion of the task by used surface strategy, even those who have a strong preference for deep learning strategy (Dinsmore & Alexander, 2012).

According to Morena and Vista (1991) the students will use a deep or surface strategies based on a different factor such as their

perception of task requirements, motives and values, methods of teaching assessment and classroom climate, although according to Biggs and Rihn (1984) emphasized that it is possible to induce deep learning strategy through interventions, and the implications, will be extremely important for teachers.

Methodology

Sample and procedure

This study was conducted with the 310 students (Mage = 20.23, SD = 1.85) during the academic year 2021/22, with the four faculties of education (Prishtina, Prizren, Gjakova, Gjilan) in Republic of Kosova. Based on the gender distribution the most of the participants were females (98.7%). The students were in second (56.5%) and third year (43.5%) of studies. The selection of sample was randomly and the participation of students in this study were voluntarily. The Ethical Council of the Faculty of Education, University of Prishtina, has given permission for ethical approval.

Data collection tool

A self-administered anonymous questionnaire comprised of socio-demographic variables and academic achievement (GPA) was applied.

To measure the types of academic motivation there is Academic Motivation Scale AMS-C 28 (Vallerand et al., 1992). For the purposes of this study were used 3 subscales: external motivation - identified; external motivation – introjected; external motivation - external regulation. The items are measured with Likert scale of 1-7 (1= Does not correspond at all; 2=Does not correspond; 3= Corresponds a little; 4= Corresponds on average; 5= Corresponds over the average; 6= Corresponds a lot; 7= Corresponds exactly).

The Revised two-factor study process questionnaire: R-SPQ-2F (Biggs et al., 2001) was employed to measure the deep learning strategy and the surface learning strategy. The items are measured with Likert scale of 1-5 (1=Never true of me; 2=Sometimes true of me;

3=true of me about half the time; 4=frequently true of me; always true of me).

The reliabilities (Cronbach's alpha model) of the two instruments used in this study are shown in Table 1.

Academic achievement (M = 8.09, SD = .80), was measured with GPA (average grade). Based on system of grading in level of university in Kosovo, the grade 6.00 is the lowest and 10.00 is the highest grade.

Data analysis

The data was analysed through the SPSS Version 21. For analysing the data, we applied descriptive statistics for calculated the socio-demographic variables, Cronbach Alpha coefficient to test the reliabilities for the instruments used in this research, Pearson correlational to test the relation between the main variables and multiple regression analysis to test if exist any causal relation between types of extrinsic motivation, learning strategies and academic achievement.

Results

Table 1

Reliabilities of different instruments used

Variables	(Cronbach's alpha)	Number of items
Extrinsic motivation – identified (EMID)	.79	4
Extrinsic motivation – introjected (EMIN)	.81	4
Extrinsic motivation – external regulation (EMER)	.78	4
Deep learning strategy	.82	10
Surface learning strategy	.87	10

Table 2

Mean, standard deviations of the study variables

Variable	Mean	SD
Extrinsic motivation –	6.20	1.06

identified (EMID)		
Extrinsic motivation – introjected (EMIN)	5.77	1.36
Extrinsic motivation – external regulation (EMER)	6.09	1.15
Deep learning strategy	3.98	.78
Surface learning strategy	2.66	.86
Academic achievement (GPA)	8.09	.80

Note. N = 310

As indicated in Table 2, the most leading type of extrinsic motivation show to be extrinsic motivation - identified (EMID) (M = 6.20, SD = 1.06), followed by extrinsic motivation - external regulation (EMER) (M = 6.09, SD = 1.15) and extrinsic motivation - introjected (EMIN) (M = 5.77, SD = 1.36). While in terms of the most used type of learning strategy, deep learning strategy appears to be more dominant (M = 3.98, SD = .78), compared to surface strategy (M = 2.66, SD = .86).

Table 3

Correlations between types of extrinsic motivation, types of learning strategies and academic achievement

	1	2	3	4	5	6
1. Extrinsic motivation – identified (EMID)	-					
2. Extrinsic motivation – introjected (EMIN)	.61**	-				
3. Extrinsic motivation – external regulation (EMER)	.73**	.63**	-			
4. Deep learning strategy	.61**	.50**	.47**	-		
5. Surface learning Strategy	-.36**	-.09	-.20**	-.28**	-	
6. Academic Achievement	.26**	.20**	.28**	.28**	-.33**	-

Note. For all variables, higher scores indicate higher values of the given construct (e.g., higher extrinsic motivation – identified).

**$p < .01$.

We found that Extrinsic motivation – identified (EMID) was positively correlated to Extrinsic motivation – introjected (EMIN), r = .61, p < .01, Extrinsic motivation – external regulation (EMER), r = .73, p < .01, deep learning strategy, r = .61, p < .01, and academic achievement, r = .26, p < .01, but was negatively related to surface learning strategy, r = -.36, p < .01. Extrinsic motivation – introjected (EMIN) was positively correlated to Extrinsic motivation – external regulation (EMER), r = .63, p < .01, deep learning strategy, r = .50, p < .01, and academic achievement, r = .20, p < .01, but was not correlated to surface learning strategy, r = -.09, p = .87. Extrinsic motivation – external regulation (EMER) was positively correlated to deep learning strategy, r = .47, p < .01, and academic achievement, r = .28, p < .01, but was negatively correlated to surface learning strategy, r = -.20, p < .01. Surface learning strategy was negatively correlated to academic achievement, r = -.33, p < .01 (see Table 3).

Table 4.

Linear Regression Analysis Predicting Academic Achievement

	B	t	Sig.
Extrinsic motivation – identified (EMID)	-.083	-.1.203	.230
Extrinsic motivation – introjected (EMIN)	.013	.297	.767
Extrinsic motivation – external regulation (EMER)	.151	2.634	.009
Deep learning strategy	.166	2.369	.018
Surface learning strategy	-.261	-4.858	.000

Multiple regression analysis showed that academic achievement was positively related to Extrinsic motivation – external regulation (EMER), B = .151, p = .009, deep learning strategy, B = .166, p = .018, and negatively related to surface learning strategy, B = -.261, p = .000. Academic achievement was not related to Extrinsic motivation – introjected (EMIN), B = .013, p = .767, and Extrinsic motivation – identified (EMID), B = -.083, p = .230 (see Table 4). These results indicate that the higher is Extrinsic motivation – external regulation (EMER) and deep learning strategy, the higher is academic achievement, and the higher is surface strategy, the lower is academic achievement.

Discussion and conclusion

Based on the descriptive statistics of the sample in this study the mean age was 20.23. Among the participants, the female gender dominated over 98%, this can be explained by the fact that the education profession has not yet broken the barriers of gender roles, dedicating this profession as the most suitable for the female gender. As well as other similar studies sampled by education students, the female gender has dominated compared to the male students (Erten, 2009).

In this study we found a significant relationship between academic achievement and extrinsic motivation – external regulation (EMER).

However, the relationship between academic achievement and extrinsic motivation – introjected (EMIN) and extrinsic motivation – identified (EMID) was not significant among educational students. These results corroborate with previous research (Amrai et al., 2011; Ayub, 2010; Erten, 2014; Trevino & DeFreitas, 2014). The fact that among three types of extrinsic motivation only extrinsic motivation - external regulation is a predictor of academic achievement, can be related to the fact that these students mainly find the motivation to go to university and fulfil academic obligations in external motivator, as can to be, for example, eventually finding a job as a teacher in the future. In line with these findings, researchers Kilinc and Mahiroglu (2009) reported that new teachers' employment opportunities were reported as external motivation.

Further, consistent with past studies (Dinsmore & Alexander, 2016; Soenens & Vansteenkiste, 2005) we found a significant relationship between academic achievement, deep and surface learning strategy among educational students.

The findings of this study shown that the more students use deep learning strategy the higher is their academic achievement and the more they use surface learning strategy the lower is their academic achievement. The fact that both deep and surface learning strategies are predictors of academic achievement can be explained by the fact that not all students use only one learning strategy, but occasionally may use one or the other strategy (Dinsmore & Alexander, 2012) to achieve their academic goals, which in the case of students the university grades can be pure extrinsic rewards (Lin et al., 2003).

Given the fact that types of academic motivation as well as types of learning strategies are among the dominant factors used to predict academic achievement, therefore, researching the most dominant factors that have an impact on academic achievement can help education practitioners and policy makers take the necessary actions to improve students' academic achievement towards the successful completion of their studies.

Practical implications

The findings of this study shed light on the necessity of applying intervention plans in raising the awareness of relevant parties such as; policy makers, as well as all staff who populate an educational environment, for the impacts they may have the types of extrinsic motivation, learning strategies in academic achievement during the academic activities of educational students.

Limitations of study and recommendations for future research

The fact that the teaching profession is considered more as a female profession, the high participation of female students in this study, making it impossible to generalize the results for both genders, can be considered a limitation of this study. Similar with this research can be done with other study profiles with more equal gender distribution.

Author Contributions

The authors contributed equally in this study.

Funding

The authors declare that they have no financial support for this research by any organization or institution.

Conflict of interest

The authors declare that they have no conflicts of interest.

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