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## Motivation, learning strategies, and satisfaction of online students: A comparison of low and high achievers

**Abstract:** This paper aims to analyse how low and high achievers differ in their motivation, learning strategies, and satisfaction with online learning. The empirical study was carried out among online students at DOBA Business School, and a total of 365 respondents were included in the study sample. The survey questionnaire was composed of five segments: motivational scales, learning strategies scales, satisfaction with study programme implementation, study success, and demographic variables. The data were collected in June and July 2019 using an online survey questionnaire. Based on three self-reported measures of study success, respondents were classified into two groups: low achievers and high achievers. The results revealed that high achievers scored significantly higher on all motivational scales. They also scored significantly higher on some learning strategy scales, such as elaboration, metacognition, and managing time and study environment. On the other hand, no significant difference between low and high achievers was found regarding satisfaction with online study programme implementation. Finally, the paper discusses the study limitations and the implications of the main findings for further improvements in the design and implementation of online learning.

**Keywords:** learning motivation, learning strategies, students' satisfaction, study success, online learning

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## Theoretical Background

Many studies (Linnenbrink-Garcia et al. 2018; Muenks et al. 2018; Steinmayr et al. 2018; Steinmayr et al. 2019) and meta-analyses (Möller et al. 2009; Hulleman et al. 2010; Huang 2011) support the hypothesis that students' motivational beliefs are significantly related to their academic achievement. Students generally have different levels of motivation. Active and highly motivated students will become involved in study activities without expecting any external rewards (Skinner and Belmont 1993). The sense of pleasure and satisfaction experienced by students is a defining factor for their intrinsic motivation (Ryan 1982). Various research results connect intrinsic motivation to the pleasure felt during the lesson and the increased desire for participation, which leads to positive study results (Todorova and Karamanska 2015). Specifically, in online environments, high levels of academic motivation and self-regulation were found to be due to the autonomous nature of online learning compared to traditional classroom contexts (Artino and Stephens 2009). Cho and Shen (2013) claim that intrinsic motivation positively influences students' persistence and success in an online course.

Previous studies (Martínez-Fernández and Galán 2000; Kanlisi Kaba 2016) found that cognitive processes, such as learning strategies, are important in explaining students' academic success. Learning strategies are defined as a sequence or combination of goal-directed learning activities that individual use on their own initiative and change them according to the requirements of the situation. Weinstein and Mayer (1986) classified learning strategies into five major groups: rehearsal strategies, elaboration, organisation, metacognition, and motivation. *Rehearsal strategies* are based on activities that identify and repeat important segments of the study material. Examples of rehearsal strategies include memorizing, loud reading, listing, highlighting, marking, underlining, and taking personal notes. *Elaboration* extends rehearsal strategies with additional information coming from the student, such as using new words in a sentence, paraphrasing information, summarizing, matching, applying analogies, generating metaphors, making comparisons, writing questions, and forming mental images. *Organisation* includes activities that review and restructure the study material. In this learning strategy, a student finds the

existing structure of the study material inappropriate and adapts its structure to better fit it to their own needs by outlining, creating tables, classifying, re-grouping, connecting pieces, and generating concept maps. *Metacognition* usually deals with a student's self-awareness of their own capability. The student evaluates their own performance and tries to come up with better ways of learning. Some examples of metacognitive strategies are critiquing one's self, taking responsibility, reflecting on personal issues, monitoring one's self, and changing study habits. *Motivation* includes the student's perceptions and conscious efforts to perform and feel better. These strategies include focusing attention, directing anxiety, effectively managing time, reducing stress, developing interest, encouraging internal motivation, and setting meaningful ideals (Simsek and Balaban 2010).

Researchers are not unanimous in classifying learning strategies. O'Malley and Chamot (1990), for instance, differentiate three types of strategies: metacognitive strategies, cognitive strategies (rehearsal, organization, elaboration, etc.), and social strategies (cooperation, questioning for clarification, and self-talk). This classification is similar to the approach of Pintrich et al. (1991), who differentiated cognitive and metacognitive strategies from the strategies for managing and organizing learning, such as effort regulation, peer learning, and help-seeking. Unlike Simsek and Balaban (2010), O'Malley and Chamot (1990) and Pintrich et al. (1991) do not consider the motivational aspects to be an integral part of the learning strategies, but rather as another independent construct that is relevant for learning and study success. This is the approach that we have followed in implementing the current study.

In general, successful students employ more complex learning strategies than unsuccessful students (Cho and Ahn 2003; Cho and Shen 2013). Learning strategies interact with the personal characteristics of students. There is no ideal strategy that generates success in all learning situations (Simsek and Balaban 2010). Wang et al. (2013) examined students enrolled in online courses, and found that those who had taken online courses before reported using more learning strategies compared to those students who were new to online learning. This would suggest that the use of learning strategies increases with years of study or experience with online study. The use of more learning strategies led to increased motivation to learn, which was then related to improved performance in online courses. Stark (2019) found that the motivation variables were more relevant to course success than the learning strategy variables.

Astin (1991) presented the Inputs-Environments-Outcomes (I-E-O) model of study or academic success. In this model, academic success is a function of three sets of elements: inputs (demographic variables, family backgrounds, and academic and social experiences prior to college); environment (people, programmes, policies, cultures, and experiences that students encounter during college); and outcomes (students' characteristics, knowledge, skills, attitudes, values, beliefs, and behaviours after college). Kuh et al. (2006) define student success »[...] as academic achievement, engagement in educationally purposeful activities, satisfaction, acquisition of desired knowledge, skills, and competencies, persistence, attainment of educational outcomes, and post-college performance.« Interestingly, York et al.

(2015) do not agree with this definition: they see academic achievement only as a threshold assessment – grades are intended to measure learning or knowledge and are such proxy measurements intended to capture the attainment of learning objectives and the acquisition of skills and competencies. In their opinion, it is conceptually helpful to separate academic achievement from the attainment of learning objectives and the acquisition of skills and competencies because of its nature as a proxy and because it is almost always referenced in an aggregate form (grade). A literature review on measuring study success (York et al. 2015) showed that it is mostly measured in the form of academic achievement, accomplishment of learning objectives, and acquisition of skills and competencies. Moreover, academic achievement was measured most frequently, which is not surprising, as academic achievement is almost entirely measured with grades that are by far the most readily available. However, the authors also stated that there are measures available to measure other components of study success (York et al. 2015).

Student satisfaction is a vital variable that covers the students' subjective experience in the school environment and »perceptions of the value of educational experience« (Astin 1993). There are various scales that measure academic satisfaction or satisfaction with academic life, such as the Academic Life Satisfaction Scale (ALSS) and the Satisfaction Scale with Academic Experience (SSAE). The latter is divided into »course satisfaction«, »development opportunity«, and »institution satisfaction«. Satisfaction with academic studies is related to many other constructs, such as stress tolerance, retention, and academic achievement (Spörer and Brunstein 2005). Trapmann et al. (2007) insist that, despite being an indicator of academic success, satisfaction has often been neglected; it has no generally accepted definition and is theoretically not well founded (Apenburg 1980; Benjamin and Hollings 1997). Previous studies (Nauta 2007) found that students' average grades were moderately associated with students' academic satisfaction. The findings of other studies (Apenburg 1980) report that causal relationships are higher in the opposite direction: higher grades cause higher study satisfaction levels. Although a relationship exists, there seem to be many other variables connected to study success on top of satisfaction (Wach et al. 2016).

Due to the lack of research investigating the performance and characteristics of higher education online students in Slovenia, the objective of this paper was to analyse how the motivation, learning strategies, and satisfaction of students with online learning differ according to their self-reported study success. Based on the theoretical review, we propose the following hypotheses:

- H1: High achievers demonstrate higher levels of learning motivation than low achievers.
- H2: High achievers demonstrate more frequent use of learning strategies than low achievers.
- H3: High achievers are more satisfied with online learning than low achievers.

## Methods

### *Target population and sampling*

The empirical study was carried out among online students at DOBA Business School (further referred to as DOBA). In June 2019, there were 1.295 students officially enrolled in DOBA's accredited bachelor and master study programmes. They were invited to participate in the research study. A total of 365 students responded to our invitation, resulting in a convenient, self-selective sample and a response rate of 28,2%.

Two-thirds of participants in the sample were female (66,3%). More than half of the participants came from Slovenia (54,2%), two-fifths from Croatia (40,0%), and around 6 percent from Serbia (5,8%). The age of participants ranged from 19 to 60 years old, with a mean age of  $M = 37,6$  years ( $SD = 8,9$  years). More than half of the respondents were employed in the private sector (54,0%) and a quarter of respondents were employed in the public sector (22,7%). Among employed participants, more than 40 percent occupied managerial positions (44,2%), while (39,2%) were experts and expert associates. A large majority of participants were enrolled in bachelor study programmes (70,7%), while others were taking part in master study programmes (29,3%).

The self-reported average grade in the study sample, which is one of the indicators of study success, ranged from 6,50 to 10,0 with a mean value of  $M = 9,00$  ( $SD = 0,57$ ). A total of 193 respondents (52,9% of the study sample) provided their student identification number and agreed to look up their actual average grade in the student information system. The actual average grade for half of the study sample ranged from 7,33 to 9,89 with a mean value of  $M = 9,04$  ( $SD = 0,46$ ). The self-reported and actual average grades are almost identical; the two variables are highly correlated with a correlation coefficient of  $r = 0,824$ . The actual average grade for the whole target population is unavailable; due to practical constraints, it was impossible to isolate all the students who were addressed by this study at the time of data collection, and consequently, we were not able to obtain the data about their actual average grades and calculate the population's parameter.

### *Questionnaire*

The survey questionnaire was composed of five segments: motivational scales, learning strategies scales, satisfaction with study programme implementation, study success, and demographic variables. Measures of study motivation and learning strategies were adapted on the basis of the Motivated Strategies for Learning Questionnaire (MSLQ), which was designed by Pintrich et al. (1991). The original items were meaningfully adjusted to the specifics of online learning and to the characteristics of the online study programme implementation model that was pursued at DOBA.

The first part of the MSLQ originally included 31 items that converged into six motivational scales. All the scales proved to be sufficiently reliable with Cronbach alpha values above 0,6; thus, all the items were kept in a database for further data analysis. A brief description, together with scale-reliability data, is given below:

- Intrinsic goals: the degree to which a student perceives participation in the study programme due to intrinsic reasons, such as challenge, curiosity, mastery ( $\alpha = 0,62$ ).
- Extrinsic goals: the degree to which a student perceives participation in the study programme due to extrinsic reasons, such as grades and rewards ( $\alpha = 0,68$ ).
- Task value: a student's perception of the study programme, courses, and topics in terms of interest, importance, and utility ( $\alpha = 0,83$ ).
- Control beliefs: a student's belief that their efforts to learn will result in positive outcomes ( $\alpha = 0,66$ ).
- Self-efficacy: judgments about one's ability to accomplish a task, as well as one's confidence in one's skills to perform that task ( $\alpha = 0,80$ ).
- Test anxiety: one's cognitive concern and preoccupation with test performance, as well as affective and physiological arousal in times of test-taking ( $\alpha = 0,75$ ).

The second part of the MSLQ originally contained 49 items that converged into nine learning strategy scales. Prior to the data analysis, the reliability analysis revealed a few challenges. Consequently, one scale (effort regulation) and a total of seven items were removed from the database. The reliability of the effort regulation scale was low ( $\alpha = 0,50$ ), below the cut-off value of 0,60, thus we decided not to interpret the results of that scale. Additionally, three single items were also removed to increase the reliability of the elaboration, organization, and help-seeking scales. A brief description of each scale, together with scale reliability data, is provided below:

- Rehearsal: reciting or naming items from a list to be learned ( $\alpha = 0,60$ ).
- Elaboration: integrating and connecting new information with prior knowledge by paraphrasing, summarizing, creating analogies, and note-taking ( $\alpha = 0,66$ ).
- Organization: active and effortful endeavours, such as clustering, outlining, and selecting the main idea in reading passages ( $\alpha = 0,62$ ).
- Critical thinking: the degree to which students apply previous knowledge to new situations or make critical evaluations with respect to standards of excellence ( $\alpha = 0,64$ ).
- Metacognition: planning, monitoring, and regulating cognitive activities while learning ( $\alpha = 0,72$ ).
- Managing time and study environment: managing and regulating the time and the environment for studying ( $\alpha = 0,70$ ).
- Peer learning: the degree to which students collaborate with their peers in the process of learning ( $\alpha = 0,78$ ).

- Help-seeking: the degree to which students ask for help in the process of learning, both from peers and teachers/instructors ( $\alpha = 0,64$ ).

The items for the motivational and learning strategies scales were assessed with a five-point Likert scale with the following extremes: »does not apply to me at all« (score 1) and »totally applies to me« (score 5).

The third segment of the survey questionnaire was constructed to assess students' satisfaction with various aspects of the study programme implementation. Six items were created to measure the general satisfaction with online study implementation, as well as to measure students' satisfaction with the following: the practical nature of the study programme, modes of knowledge evaluation and assessment, the student support system during studying, the work of professors, and the work of online tutors. Although the reliability of the satisfaction scale was high with Cronbach alpha above 0,80, the results were analysed and interpreted for each single item. The items were assessed with a five-point Likert scale with the following extremes: »fully dissatisfied« (score 1) and »fully satisfied« (score 5).

Finally, the fourth segment of the survey questionnaire was composed of three measures of study success. Participants had to assess their perceived study success according to the study success of the majority of students (score 1 – significantly worse than average, score 5 – significantly better than average) and according to their own prior expectations (score 1 – significantly below my expectations, score 5 – significantly above my expectations). Participants were also required to report their average grade (10-point scale), taking into account all the courses of the study programme they had successfully passed before surveying.

### *Data collection*

The data were collected through an online survey questionnaire, which was constructed on the 1ka platform. The questionnaire was distributed to students via their official school email addresses and was followed by two additional reminders. The online survey was available in three languages: Slovene, Croatian, and Serbian. The decision to participate was totally voluntary, and the complete anonymity of the respondents was assured. Data collection took place between 21 June and 18 July 2019. On average, it took around 13,5 minutes for a respondent to complete the questionnaire.

### *Data analysis*

First, the TwoStep cluster method was introduced to define two homogeneous groups of participants whose answers exhibited distinct patterns with respect to the study success measures. Then, these two groups were compared in terms of differences in study motivation, learning strategy usage, and satisfaction with the study programme implementation using the Mann-Whitney U test, a nonparametric test for two independent samples.

## Results

Based on three independent measures of study success, the TwoStep cluster method revealed two distinct groups of students: low achievers and high achievers. A total of 305 respondents in the study sample (83,6%) were classified into groups. The rest were removed from the analysis because they failed to report their average grade. Among the valid respondents, 40,7% of them were classified as low achievers and 59,3% of respondents were classified as high achievers (Table 1). The group of low achievers reported significantly lower scores on both measures of perceived study success than the group of high achievers. Low achievers also reported a significantly lower average grade (Table 2).

There are only a few differences between the two groups in terms of their demographic profiles, which means that potential low achievers would be difficult to identify in advance. High achievers appeared to be significantly older than low achievers ( $U = 12.516,5$ ;  $p = 0,006$ ). Also, participants occupying managerial positions were significantly overrepresented in the group of high achievers, while experts and expert associates were significantly overrepresented in the group of low achievers ( $\chi^2(5) = 18,849$ ;  $p = 0,002$ ). On the other hand, there are no significant differences between the two groups in terms of gender ( $\chi^2(1) = 1,708$ ;  $p = 0,191$ ), market segment ( $\chi^2(2) = 4,202$ ;  $p = 0,122$ ), and study program degree ( $\chi^2(1) = 0,373$ ;  $p = 0,542$ ).

Respondents	f	%	Valid %
Low achievers	124	34.0	40.7
High achievers	181	49.6	59.3
Excluded	60	16.4	0.0
Total	365	100.0	100.0

Table 1: Classification of respondents into groups of low achievers and high achievers

Study success measures	Group	f	M	SD	Sig.
Perceived study success compared to other students	Low achievers	124	2.97	0.46	0.000
	High achievers	181	3.93	0.65	
Perceived study success compared to prior expectations	Low achievers	124	3.02	0.64	0.000
	High achievers	181	3.89	0.77	
Average grade	Low achievers	124	8.57	0.51	0.000
	High achievers	181	9,30	0,38	

Table 2: Study success measures of low achievers and high achievers

The scores on motivational scales for the two groups of students are summarised in Table 3. It is evident that high achievers scored significantly higher on all the motivational scales except on the test anxiety scale, where their score was significantly lower than the score of low achievers. Scoring low on the test anxiety scale is in fact a positive outcome; higher scores indicate that students experience more anxiety while taking tests. Apart from experiencing less test anxiety, high achievers are more intrinsically and extrinsically motivated; they have stronger beliefs about their efforts to learn, resulting in positive outcomes (control beliefs); and they are more confident in their abilities and skills to perform tasks (self-efficacy). Also, high achievers report stronger perceptions of the importance and utility of the study programme (task value).

Motivational Scales	Group	f	M	SD	Sig.
Control beliefs	Low achievers	124	4.00	0.63	0.041
	High achievers	181	4.16	0.58	
Self-efficacy	Low achievers	124	4.08	0.46	0.000
	High achievers	181	4.35	0.39	
Intrinsic goals	Low achievers	124	4.13	0.58	0.018
	High achievers	181	4.29	0.49	
Extrinsic goals	Low achievers	124	3.32	0.74	0.002
	High achievers	181	3.57	0.86	
Task value	Low achievers	124	4.36	0.45	0.032
	High achievers	181	4.00	0.63	
Test anxiety	Low achievers	124	3.10	0.85	0.006
	High achievers	181	2.82	0.83	

Table 3: Differences in motivational scales between low achievers and high achievers

Next, the extent of utilisation of particular learning strategies in each group of students is summarised in Table 4 below. It is evident that high achievers scored higher on all the scales; however, the differences across the two groups proved to be statistically significant only in the cases of elaboration, metacognition, and managing time and study environment. High achievers appear to demonstrate more elaboration while learning (connecting new knowledge to prior information), and they plan, monitor, and regulate their cognitive activities while learning (metacognition) more often than low achievers. Also, high achievers seem to be better at managing and regulating time for studying and study environments.

Learning Strategy Scales	Group	f	M	SD	Sig.
Rehearsal	Low achievers	124	3.84	0.58	0.366
	High achievers	181	3.91	0.62	
Elaboration	Low achievers	124	3.97	0.55	0.002
	High achievers	181	4.20	0.48	
Organization	Low achievers	124	3.91	0.75	0.087
	High achievers	181	4.06	0.75	
Critical thinking	Low achievers	124	3.63	0.64	0.184
	High achievers	181	3.74	0.57	
Metacognition	Low achievers	124	3.63	0.48	0.011
	High achievers	181	3.80	0.45	
Managing time and study environment	Low achievers	124	3.72	0.59	0.000
	High achievers	181	4.01	0.48	
Peer learning	Low achievers	124	2.96	0.99	0.428
	High achievers	181	3.06	0.99	
Help seeking	Low achievers	124	3.06	0.93	0.119
	High achievers	181	3,22	0,93	

*Table 4: Differences in learning strategies scales between low achievers and high achievers*

The average scores of students' satisfaction with various aspects of the study programme implementation were all very high, above 4. It is evident from Table 5 that there is no significant difference between low achievers and high achievers in terms of their satisfaction with any of the study programme implementation aspects.

Satisfaction Measures	Group	f	M	SD	Sig.
General satisfaction with online study implementation	Low achievers	124	4.34	0.73	0.083
	High achievers	181	4.49	0.62	
Satisfaction with the practical nature of the study programme	Low achievers	124	4.10	0.86	0.084
	High achievers	181	4.28	0.74	
Satisfaction with modes of knowledge evaluation and assessment	Low achievers	124	4.11	0.76	0.315
	High achievers	181	4.19	0.76	
Satisfaction with the student support system during studying	Low achievers	124	4.27	0.76	0.329
	High achievers	181	4.37	0.64	
Satisfaction with the work of professors	Low achievers	124	4.03	0.85	0.402
	High achievers	181	4.13	0.73	
Satisfaction with the work of online tutors	Low achievers	124	4.20	0.70	0.700
	High achievers	181	4.16	0.73	

Table 5: Differences in students' satisfaction between low achievers and high achievers

## Discussion

The aim of this study was to investigate how study motivation, learning strategies, and satisfaction of online students at DOBA relate to their study success. The relevance of the research is justified by the specifics of the target population. The participants in the study consisted of fully online students who had no direct physical contact with peers and staff, and on top of that, most of them were part-time students. In other words, they had to balance their study obligations with job and family obligations, which might present additional pressure for their academic performance and study success.

The results have revealed that study motivation and motivational beliefs are significantly related to study success, which is in line with the findings of previous research (Linnenbrink-Garcia et al. 2018; Muenks et al. 2018; Steinmayr et al. 2018; Steinmayr et al. 2019; Möller et al. 2009; Hulleman et al. 2010; Huang 2011). In fact, high achievers scored significantly higher than low achievers on all the motivational scales, which supports hypothesis H1. The research design of this study was cross-sectional, but in spite of its correlational nature, we may propose the existence of causal relations. In other words, it seems highly likely that study motivation is one of the factors that impacts study success. A similar conclusion was reported by Stark (2019), but he also claimed that the influence of study motivation is even more relevant for study success than the adoption of learning strategies. These findings provide the opportunity for DOBA to think about the possibility of further enhancing the study motivation of online students to facilitate

their study success. Influencing students' intrinsic or extrinsic goals is rather demanding; however, reshaping their beliefs seems more manageable. Designing the online courses to develop the learning outcomes at higher taxonomy levels, with an emphasis on developing applicable knowledge and skills required in the labour market, could further strengthen students' task value, namely their perception of the importance and utility of the study programme. Another possibility is to enhance students' beliefs that the effort invested in learning pays off and results in study success (control beliefs). This could be achieved by clearly structuring the online courses, providing detailed instructions and relevant study materials, and giving continuous feedback and support. In fact, these are all the elements of high-quality online learning, which are already incorporated in DOBA's online learning implementation model.

According to the results of this study, the adoption of learning strategies also seems to be important in explaining students' study success, which is consistent with the findings of Martínez and Galán (2000) and Kanlisi Kaba (2016). High achievers reported more frequent adoption of all the learning strategies, while significant differences in adoption frequency were detected only for the following strategies: elaboration, metacognition, and managing time and study environment. Due to somewhat mixed results, hypothesis H2 has only partially been supported. The strategy of managing time and study environment appears to be particularly important in online learning, which is highly autonomous in its nature, especially among part-time students who are required to fit the study obligations in their busy daily schedules. Significant differences in the adoption of metacognition were expected, as self-awareness, self-monitoring, self-regulation, and flexibility in adjusting one's learning endeavours all seem highly relevant for achieving the intended learning outcomes. As no learning strategy guarantees success in every learning situation (Simsek and Balaban 2010), the development and adoption of metacognition sounds even more important because it enables and empowers the learner's flexibility in the learning process. Metacognition can be considered as part of advanced and more complex learning strategies, and it has already been documented that more successful students generally employ more complex learning strategies (Cho and Ahn 2003; Cho and Shen 2013). This should also be the case for critical thinking, but here, however, no significant difference has been reported with respect to study success. One possible explanation could be that higher levels of critical thinking have so far not been required to that extent in the assessment and evaluation of knowledge and skills. Maybe DOBA should think about investing even more effort into the development and encouragement of students' critical thinking, which provides the backbone for achieving the higher taxonomy levels of knowledge (analysis, synthesis, evaluation, creation). In that respect, it would be necessary to first teach the students how to develop and use critical thinking and, later on, to include critical thinking in the assessment and evaluation strategy. DOBA should also reconsider how to enhance the adoption of other learning strategies, such as help seeking. In particular, online students have the full support of professors and online tutors guaranteed throughout the study process, but the results show that students rarely seek help.

Finally, the results of this study failed to support hypothesis H3 about high achievers being more satisfied with online learning than low achievers. Opposite to the findings of previous research (Spörer and Brunstein 2005; Nauta 2007), we found no evidence that satisfaction with online study implementation played a significant role for study success. This could mean that participants managed to »fairly« evaluate the aspects of study programme implementation (such as the work of the student support, the work of professors, the work of online tutors, etc.) independent of their own performance and academic achievements.

To a certain extent, the findings of this research could have been influenced by the choice of the study success measures, which is one of the study's major limitations. Having three single items to produce an aggregated measure of study success could be considered an advantage; however, all three items were based on self-reported data and could thus be biased. A suggestion for further research would be to link students' study motivation, learning strategies adoption, and satisfaction with their actual grades or with other objective measures of study success, such as the attainment of learning objectives and acquisition of skills and competencies, as proposed by York et al. (2015). In this case, one should tackle the challenge of merging the data from various datasets and, consequently, how to assure data confidentiality and respondent anonymity while surveying.

Due to sampling restrictions, the research findings could only be applied to the online students at DOBA, and they cannot be simply generalised beyond the context of this research. In spite of this, other higher education institutions could use these findings as a rough indication of the importance of learning strategy adoption and study motivation for students' study success.

## References

- Apenburg, E. (1980). *Untersuchungen zur Studienzufriedenheit in der heutigen Massenuniversität [Studies on Students' Satisfaction at Modern Mass Universities]*. Frankfurt am Main: Peter D. Lang.
- Artino, A. R. Jr. and Stephens, J. M. (2009). Academic motivation and self-regulation: a comparative analysis of undergraduate and graduate students learning online. *Internet and Higher Education*, 12, pp. 146–151.
- Astin, A. W. (1991). *Assessment for excellence: The philosophy and practice of assessment and evaluation in higher education*. New York: Macmillan.
- Astin, A. W. (1993). *What matters in college? Four critical years revisited*. San Francisco: Jossey-Bass.
- Benjamin, M. and Hollings, A. (1997). Student satisfaction: test of an ecological model. *Journal of College Student Development*, 38, pp. 213–228.
- Cho, S. and Ahn, D. (2003). Strategy acquisition and maintenance of gifted and non-gifted young children. *Council for Exceptional Children*, 69, issue 4, pp. 497–505.
- Cho, M. and Shen, D. (2013). Self-regulation in online learning. *Distance Education*, 34, issue 3, pp. 290–301.

- Huang, C. (2011). Self-concept and academic achievement: a meta-analysis of longitudinal relations. *Journal of School Psychology*, 49, issue 5, pp. 505–528.
- Hulleman, C. S., Schrager, S. M., Bodmann, S. M. and Harackiewicz, J. M. (2010). A meta-analytic review of achievement goal measures: different labels for the same constructs or different constructs with similar labels? *Psychological Bulletin*, 136, issue 3, pp. 422–449.
- Kanlisi Kaba, S. (2016). The Effect of Student Learning Strategies on Performance and Career Development: The Case of University for Development Studies, Wa Campus. *Education Journal*, 5, issue 6, pp. 174–182.
- Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K. and Hayek, J. C. (2006). *Commissioned Report for the National Symposium on Postsecondary Student Success: Spearheading a Dialog on Student Success. National Postsecondary Education Cooperative*. Retrieved from [https://nces.ed.gov/npece/pdf/kuh\\_team\\_report.pdf](https://nces.ed.gov/npece/pdf/kuh_team_report.pdf) (Accessed 1. 6. 2021).
- Linnenbrink-Garcia, L., Wormington, S. V., Snyder, K. E., Riggsbee, J., Perez, T., Ben-Eliyahu, A. and Hill, E. N. (2018). Multiple pathways to success: an examination of integrative motivational profiles among upper elementary and college students. *Journal of Educational Psychology*, 110, pp. 1026–1048.
- Martínez-Fernández, J. R. and Galán, F. (2000). Estrategias de aprendizaje, motivación y rendimiento académico en alumnos universitarios. *Revista Espanola de Orientacion y Psicopedagogia*, 11, issue 19, pp. 35–50.
- Möller, J., Pohlmann, B., Köller, O. and Marsh, H. W. (2009). A meta-analytic path analysis of the internal/external frame of reference model of academic achievement and academic self-concept. *Review of Educational Research*, 79, issue 3, pp. 1129–1167.
- Muenks, K., Yang, J. S. and Wigfield, A. (2018). Associations between grit, motivation, and achievement in high school students. *Motivation Science*, 4, issue 2, pp. 158–176.
- Nauta, M. M. (2007). Assessing college students' satisfaction with their academic majors. *Journal of Career Assessment*, 15, issue 4, pp. 446–462.
- O'Malley, J. M. and Chamot, A. U. (1990). *Learning strategies in second language acquisition*. Cambridge, UK: Cambridge University Press.
- Pintrich, P., Smith, D., García, T. and McKeachie, W. (1991). *A manual for the use of the motivated strategies for learning questionnaire (MSLQ)*. Ann Arbor, MI: University of Michigan.
- Ryan, R. M. (1982). Control and information in the intrapersonal sphere: An extension of cognitive evaluation theory. *Journal of Personality and Social Psychology*, 13, issue 3, pp. 450–461.
- Simsek, A. and Balaban, J. (2010). Learning Strategies of Successful and Unsuccessful University Students. *Contemporary Educational Technology*, 1, issue 1, pp. 36–45.
- Skinner, E. and Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effect of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, 85, issue 4, pp. 571–581.
- Spörer, N. and Brunstein, J. C. (2005). Strategien der Tiefenverarbeitung und Selbstregulation als Prädiktoren von Studienzufriedenheit und Klausurleistung [The influence of deep-processing learning and self-regulation on academic satisfaction and achievement]. *Psychologie in Erziehung Und Unterricht*, 52, pp. 127–137.
- Stark, E. (2019). Examining the Role of Motivation and Learning Strategies in the Success of Online vs. Face-to-Face Students. *Online Learning*, 23, issue 3, pp. 234–251.
- Steinmayr, R., Weidinger, A. F. and Wigfield, A. (2018). Does students' grit predict their school achievement above and beyond their personality, motivation, and engagement? *Contemporary Educational Psychology*, 53, pp. 106–122.

- Steinmayr, R., Weidinger, A. F., Schwinger, M. and Spinath, B. (2019). The Importance of Students' Motivation for Their Academic Achievement – Replicating and Extending Previous Finding. *Frontiers in Psychology*.
- Trapmann, S., Hell, B., Hirn, J.-O. W. and Schuler, H. (2007). Meta-analysis of the relationship between the big five and academic success. *Journal of Psychology*, 215, issue 2, pp. 132–151.
- Todorova, M. and Karamanska, D. (2015). A study of motivation and satisfaction of students in e-learning environment. *Applied Technology and Innovations*, 11, issue 2, pp. 82–89.
- Wang, C., Shannon, D. H. and Ross, M. E. (2013). Students' characteristics, self-regulated learning, technology self-efficacy, and course outcomes in online learning. *Distance Education*, 34, pp. 302–323.
- Wach, F. S., Karbach, J., Ruffing, S., Brünken, R. and Spinath, F. M. (2016). University Students' Satisfaction with their Academic Studies: Personality and Motivation Matter. *Frontiers in Psychology*.
- Weinstein, C. and Mayer, R. (1986). The Teaching of Learning Strategies. In: M. Wittrock (ed.). *Handbook of Research on Teaching*. New York: Macmillan, pp. 315–327.
- York, T. T., Gibson, C. and Rankin, S. (2015). Defining and Measuring Academic Success. *Practical Assessment, Research, and Evaluation*, 20, issue 5.

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## MOTIVACIJA, UČNE STRATEGIJE IN ZADOVOLJSTVO ONLINE ŠTUDENTOV: PRIMER-JAVA BOLJ IN MANJ USPEŠNIH ŠTUDENTOV

**Povzetek:** Prispevek analizira razlike med bolj in manj uspešnimi študenti v njihovi učni motivaciji, učnih strategijah in zadovoljstvu z online izobraževanjem. Empirična raziskava je bila opravljena med online študenti DOBA Fakultete; v vzorec je bilo vključenih 365 študentov. Anketni vprašalnik je bil sestavljen iz petih segmentov: motivacijskih lestvic, lestvic učnih strategij, zadovoljstva z online izvedbo študijskih programov, učne uspešnosti in demografskih spremenljivk. Podatki so bili zbrani v juniju in juliju 2019 s pomočjo spletnega anketnega vprašalnika. Na podlagi treh postavk samo-poročane učne uspešnosti smo udeležence razvrstili v skupini bolj in manj uspešnih študentov. Rezultati so pokazali, da so bolj uspešni študenti dosegli pomembno višje rezultate na vseh motivacijskih lestvicah. Prav tako so dosegli pomembno višje rezultate pri rabi nekaterih učnih strategij, npr. pri elaboraciji, metakogniciji ter pri upravljanju časa in prostora za učenje. Po drugi strani se je izkazalo, da se bolj in manj uspešni študenti med seboj ne razlikujejo v zadovoljstvu z online izvedbo študijskih programov. Na koncu avtorja diskutirata o omejitvah raziskave ter o implikacijah ključnih ugotovitev raziskave za nadaljnje izboljšave načrtovanja in izvajanja online izobraževanja.

**Ključne besede:** učna motivacija, učne strategije, zadovoljstvo študentov, učna uspešnost, online izobraževanje

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