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ACADEMIC PROCRASTINATION IN STUDENTS AT DIFFERENT
AGE

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Abstract

The present paper is devoted to the study of academic procrastination in university students. This work aims to indicate and analyze the academic procrastination in students of different years of education, including the correlation between the procrastination manifestation and state and trait anxiety, laziness and control over actions. The study involves students of different years of education in the Faculty of Psychology of Lomonosov Moscow State University. They fulfill a standardized test booklet: the General Procrastination Scale test (Lay & Silverman, 1996), the Action Control Scale test (Kuhl, 1994), the State-Trait Anxiety Inventory (Khanin, 1976) and the “Self-diagnostics of laziness” methodology (D.A. Bogdanova and S. T. Posokhova). To collect data during the educational process, 360 copies were given out to the subjects under test, 207 of which have been returned (the return rate is 57.5%). The main result of this study is a linear regression model of academic procrastination (adj. $R^2=0,469$; $p=0,000$). The academic procrastination is determined by laziness ($\beta=0,274$; $p=0,000$), state of anxiety ($\beta=0,191$; $p=0,025$) and action control in planning ($\beta=-0,329$; $p=0,000$). Statistical data analysis shows that the levels of state and trait anxiety increase from the first to the fourth year of education. It prospectively allows creating new programmes for developing efficient and positive type of coping strategy for students.

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Keywords: Procrastination; academic procrastination; state and trait of anxiety; laziness.



1. Introduction

“Don’t put off for tomorrow what you can do today” is a world-renowned saying associated with two American scientific and political figures - Benjamin Franklin and Tomas Jefferson. The phrase was on everyone’s lips and even now carries the same straightforward meaning, urging you to perform your tasks on time. Even though the phenomenon of procrastination has been actively studied for over 40 years, it is becoming increasingly relevant. J.W. Knaus, in his 2000 article “Procrastination, Blame and Change”, wrote, relying on historical evidence that a tendency to delay work existed even in primitive societies, should one mention notes made by Ancient Greeks (Kim & Seo, 2015). Despite the extensive history of procrastination, scientific studies into the phenomenon began fairly recently. Only in the 1970s did P. Riggenbach introduce the term itself, and in 1993 the Israeli psychologist N. Milgram and his colleagues put forward the first classification of the phenomenon’s various forms (Marishchuk et al., 1990, Milgram, Tenne, 2000). *Correlates of academic procrastination*. Journal of School Psychology). Initially, scientists allocated 5 types of procrastination. These included: (1) academic procrastination; (2) procrastination in decision-making; (3) neurotic procrastination affecting the most central and major stages a person’s life; (4) compulsive procrastination; (5) everyday procrastination involving routine problem-solving.

Seven years later, Milgram in collaboration with Tenne, revised the classification and united all the possible varieties of procrastination into two major types: (1) delaying of realization of tasks; (2) delaying of decision-making (Milgram et al., 1992).

In 2005, Chu & Choi suggested distinguishing active procrastinators from the so-called passive procrastinators, for whom breaking deadlines was a normal aspect of life due to their inability to make quick decisions. Active procrastinators, on the other hand, were able to work at a rapid pace and deliberately delay some tasks in favour of others. When an upcoming deadline was close and tasks were impossible to delay, they felt an emotional pressure and fresh influx of energy, activating all the necessary resources to execute the delayed task on time (Chu & Choi, 2005).

The definition of the term itself also differed from author to author, and whilst in ancient times procrastination could be considered in the context of positive behavior as a thoughtful, unhurried and balanced approach to decision-making, in our century of developing high-tech, procrastination was already perceived as a problem requiring work and resolution (Ferrari et al, 1995). However, opinions refuting any exclusively negative view of the phenomenon also existed. For example, J.W. Knaus pointed out that delaying the performance of a task did not necessarily lead to failure. Some people needed time to plan and structure a solution, whilst others could produce genius ideas in high-pressure situations and under extreme circumstances. In both cases the delay had a positive effect and helps produce the necessary result (Kim & Seo, 2015).

As mentioned above, according to relevant studies, the phenomenon of delaying tasks is widespread across the world. The situation is such that by the beginning of the 21st century the number of people who are more or less prone to delaying tasks comprised more than 60% of the population, whilst such behavior is chronic in 20% (Ferrari et al, 2005). It seems logical to assume that the first visible instances of procrastination appear in one’s life when one becomes responsible for the consequences of one’s actions and decisions, i.e. the during the period when one receives an education, especially at the higher level.

In the modern world, in which education plays a leading role in the establishment of one's life, research into academic procrastination is one of the major tasks facing psychologists. A future professional's education quality determines his or her competency at work, and thus their professional success and efficiency. This is why a search for the reasons behind the development of procrastination is a high-priority goal for our study. The term *academic procrastination* covers coursework or exam preparation being done at the very last minute (Hill et al., 1978) and delaying the execution or completion of academic tasks for subjective or irrational reasons (Senécal et al., 1995).

During the last 5 years, according to search results in the database of Elsevier publishing, the number of articles on academic procrastination is over 20, with two thirds of these having been published in the last 3 years, thus proving the increasing relevance of the topic.

Therefore, compared to the much wider scale of studies into other academic psychological topics such as stress, academic motivation and personal efficiency, the phenomenon of procrastination remains practically understudied, and the dynamics behind its shaping and development at the current stage of research is beyond our understanding. This fact also contributes to the relevance of the phenomenon and the necessity of turning more focused attention to the problem.

Research targeting American college students in the late 1970s revealed that 60-90% of scholars were prone to procrastination (Ellis & Knaus, 1977). In 1984, the results collected by Solomon and Rothblum showed that the majority of respondent students delayed academic work until it was critical in 50% of cases, whilst the remaining respondents did so from time to time (Sokolowska, 2009). It was indicative that more often major written works (theses, course papers, etc.) were postponed "for later", unlike exam preparation or current tasks. However, the research conducted by Onwuegbuzie using the same indexes in 2004 had a somewhat different outcome: more than a half of respondents experienced problems with weekly interim assignments (Anthony & Onwuegbuzie, 2004). In another study, it was discovered that 77.4% of students were procrastinators and nearly half of students often or always postponed their academic duties (Shapkin, 1997).

In recent times, the attention of researchers studying procrastination in general and academic procrastination in particular has mainly been focused on the search for predictors which assist the manifestation of procrastination.

Therefore, what are the reasons for the manifestation of procrastination in students?

First of all, among the major predictors of delaying tasks "for later", a set of individual qualities stands out (neuroticism, self-evaluation level, locus of control, extraversion, level of self-regulation, mood and performance), one's motivation to execute one or another task, as well as demographic component (age, gender, year of education's conduction) (Barabanshchikova et al., 2015; Solomon & Rothblum, 1984). Ferrari, as well as Solomon and Rothblum, claimed that avoiding the execution academic tasks is linked to the fear of making mistakes (Ferrari et al., 1992; Sokolowska, 2009). Moreover, some new studies detect the connection between procrastination-shaping and parental upbringing styles (Zakeri et al., 2013).

Each of the above-mentioned aspects has been studied all around the world on the samples of people of different nationalities, professions, genders, ages etc., with the goal of finding out as much as possible about what makes a person delay his or her tasks or decision-making.

If not everyone, then a great number of people are familiar with the feeling when even thoughts about the necessity of performing one or another task cause more tiredness than performing the task itself. In the present study, due to the absence of research that can fully clarify the nature of procrastination, including the link between the phenomenon itself and a set of factors associated with it that can predict its development, our attention is focused on students of the faculty of psychology at Lomonosov Moscow State University, aiming to detect how laziness, control over task planning and anxiety levels affect the development and manifestation of procrastination in students of different years in their regular study time.

1.1. Procrastination and anxiety

Anxiety as a manifestation of neuroticism is one of the most common reasons cited by authors in studies and included in the survey used. In most cases, anxiety is proved to contribute to procrastinators' behavior. For instance, a string of studies demonstrates the connection to the fear of making mistakes, or the fear of receiving an unsatisfactory grade (Sokolowska, 2009; Douglas, Buley, 1999). In addition, observations show that respondents whose test results display a higher tendency for delaying tasks, as well as lower mood, are equally anxious about and sensitive to unpleasant situations (Milgram et al., 1993). However, a different point of view also exists. According to the study, conducted on a selection of management students and aimed at detecting the connection between procrastination and anxiety level, there is no significant correlation between these two factors. It is noteworthy, that the study is carried out in two stages, before and after exams. This have no apparent effect on final results (Kuhl, 1994).

1.2. Procrastination, planning control and laziness

According to Kuhl's action control theory investigating why, under equal conditions one person performing a certain task achieves positive results and the other does not, procrastination is the main driver of unrealized intentions and orientations on state of mind that consequently affects the evolution of self-image (Knaus, 2000; Barabanshchikova et al., 2015).

A comparatively clear and formulated definition of procrastination as a form of laziness generally does not exist. Therefore, we often find these two subjects compared in publications on the topic. For example, J. Ferrari says that one way or another, procrastination is a tendency towards laziness and sloth (Ferrari, 2010). This is why consideration of the hypothesis that laziness may be a predictor of procrastination appears both interesting and feasible.

2. Problem Statement

No studies have determined the link between a set of individual qualities and the risk of academic procrastination in students of psychology faculty at different age.

3. Research Questions

1. Do personal characteristics, i.e. action control when planning, performance, failure, state anxiety, laziness and trait anxiety correlate with procrastination?;
2. Do personal characteristics predict the level of manifestation of procrastination?

4. Purpose of the Study

The goal of the present study is to indicate and analyze the academic procrastination in students of different years of education, including the correlation between the procrastination phenomenon and state and trait anxiety, laziness and control over actions.

5. Research Methods

The study involved students of the first-fifth years from the Faculty of Psychology of Lomonosov Moscow State University. The overall term of education was 6 years.

To collect data concerning the personal characteristics and procrastination level of the individuals during the educational process, 360 copies were given out to the students, 207 of which returned (the return rate stood at 57.5%). Thirty-nine forms were excluded due to a large number of blank spaces. As a result, the present article comprised data based on the assessment and analysis of 168 copies of the survey. Hard copies of the survey were given to all the respondents. The verbal instruction was presented and also included in the attached written instructions to fill in the survey within 6 days. After receiving the copies, they were categorized in the following way: on the 1st day, before the deadline (2-6th day) and after the deadline (after the 6th day).

Aside from a diagnostic survey, the form included questions addressing respondents' biographic data: gender, age and year of education (see Table 1).

Table 01. Sample demographic data

Year of education	Number of participants (people)	Average age (year)	Gender
1 year	35	17,71	Female – 30, male – 5
2 year	28	18,68	Female – 24, male – 4
3 year	33	19,88	Female – 31, male – 2
4 year	37	20,62	Female – 37, male – 0
5 year	35	21,74	Female – 31, male – 4
Σ	168	19,78	Female – 153, male – 15

5.1. Measures.

In order to reach the goals of the study, a diagnostic package included four surveys as presented below (see Table 2).

Table 02. Research methods

Survey	Scale (index)	Description
General Procrastination Scale (GPS), C. Lay, 1986, Russian version by Varvaricheva, 2010	Procrastination	Used to diagnose a propensity towards procrastination in students
«Action Control Scale» (ACS), J. Kuhl (Handlungskontrolle nach	«Prospective and decision-related action	Reflects an individual's ability to resist opposing intentions and other

Erfolg, Misserfolg und Prospektiv, Kuhl, 1986, Russian version by S. Shapkin, 1997)	orientation vs. hesitation (AOD)»	unsubstantial action information in the process of action initiation.
	«Action orientation during (successful) performance of activities (intrinsic orientation) vs. volatility (AOP)»	Reflects an individual's ability to remain within the process of the intention's execution for the necessary amount of time, ability to focus on the set goal and perform it with insistence.
	«Action orientation subsequent to failure vs. preoccupation (AOF)»	Reflects an individual's ability to begin the realization of the intended action despite relevant difficulties.
State-Trait Anxiety Inventory (STAI) Ch. Spielberger, Russian version by J. L. Khanin (Marishuk et al., 1990)	State anxiety (S-anxiety)	Reflects an individual's predisposition towards anxiety and predicts tendency to perceive multiple situations as threatening.
	Trait anxiety (T-anxiety)	Reflects an individual's present state of mind.
Methodology of "self-diagnostics of laziness" developed by D. A. Bogdanova and S. T. Posokhova (Ilyin, 2011)	Laziness	Used for self-assessment of laziness level

5.2. Experimental design.

In the present study, the index of procrastination level was a dependent variable whilst the personal characteristics - action control when planning, action control when performing, action control in case of failure, state anxiety, laziness and trait anxiety - were taken as independent variables.

6. Findings

Primary processing of data on the basis of the material collected was conducted using the Excel statistics package (version 15.28). Secondary processing of data was performed using the IBM SPSS Statistics package (version 22) and included following stages:

1. descriptive statistics through all the diagnostic scales;
2. comparing medium values via non-parametric criteria (Kruskal-Wallis, Mann-Whitney) to detect significant differences upon indexes researched in students of different years (first to fifth years of education) and students who returned the survey at different times;
3. correlation analysis (Spearman correlation criteria) for detection of links between procrastination and other personal characteristics of an individual;
4. linear regression analysis directed towards the search for academic procrastination predictors in students among personal characteristics of an individual.

6.1. Descriptive statistics.

Computation of the descriptive statistics was conducted on the general selection (168 people).

a. Analysis of data of *students of different years of education*. Analyzing the data obtained concerning different years of education it was detected that students of all years display a procrastination

level and subjective laziness assessment not exceeding the medium range. Second, third and fourth year students displayed a higher state anxiety level. However, the level of trait anxiety was moderate among all students. No students' results on the scales - "AOF" and "AOD" - exceeded the range of medium values, which indicates that it is characteristic for students to have a medium position between the state of mind orientation and action orientation (see Table 3).

Table 03. Descriptive statistics data

Scale	1 year (n=35)	2 year (n= 28)	3 year (n=33)	4 year (n=37)	5 year (n=35)	Chi-square d (n=16 8)	Asym p. Sig. (n=16 8)
	Mean score (Std.dev)	Mean score (Std.dev)	Mean score (Std.dev)	Mean score (Std.dev)	Mean score (Std.dev)		
Procrastination	49,23 (12,64)	52,43 (10,329)	52,94 (11,366)	52 (12,085)	50,23 (13,267)	3,651	0,455
Laziness	3,77 (1,308)	3,64 (1,339)	3,94 (1,368)	4 (1,291)	3,49 (1,337)	3,463	0,484
S-anxiety	44,03 (8,998)	46,36 (10,517)	47,55 (9,111)	48,11 (10,241)	43,60 (9,675)	5,786	0,216
T-anxiety	40,17 (10,371)	39,04 (9,807)	42,09 (10,048)	42,97 (10,364)	40,51 (13,185)	4,687	0,321
AOD	4,97 (2,561)	4,14 (2,103)	4,76 (2,222)	4,73 (2,755)	4,71 (2,63)	1,723	0,787
AOP	8,23 (1,987)	8,93 (2,124)	8,45 (2,293)	8,14 (2,75)	7,86 (2,851)	2,862	0,581
AOF	5,14 (2,39)	4,25 (3,002)	4,18 (2,994)	4,41 (2,682)	5,31 (3,037)	5,559	0,235

b. Data analysis of students *who returned forms at different times*. Based on the descriptive statistics' analysis of the collected data, it is feasible to say that procrastination and laziness levels are within the medium value range. All the students have high state anxiety level regardless of the day they returned the survey forms, but trait anxiety is in moderate level. Such results reflect the fact that students did not experience stress or anxiety at that moment in time, which is typical for students in their everyday life (see Table 4).

Table 04. Descriptive statistics data of the day of returned

Scale	The 1st day (n=68)	Before the deadline (n=68)	After the deadline (n=32)
	Mean score (Std.dev)	Mean score (Std.dev)	Mean score (Std.dev)
Procrastination	50,97 (12,547)	50,85 (12,178)	53 (10,51)
Laziness	3,69 (1,479)	3,79 (1,204)	3,91 (1,254)
S-anxiety	45,85 (9,809)	46,01 (9,715)	45,84 (10,106)
T-anxiety	39,62 (10,052)	41,47 (11,179)	43,19 (11,563)
AOD	5,04 (2,53)	4,72 (2,544)	3,84 (2,018)

AOP	8,37 (2,521)	8,29 (2,172)	8,13 (2,837)
AOF	4,81 (2,84)	4,62 (2,912)	4,53 (2,688)

6.2. Comparative data analysis.

a. Data analysis of *students of different years of education*: Comparative analysis with the use of non-parametric criteria of Kruskal-Wallis revealed no significant differences among students of different years of education on any of the research scales. Therefore, procrastination level and personal characteristics in students of different years of education did not differ (see Table 3).

b. Data analysis of *students who returned the surveys forms at different time*. Comparing all student groups in pairs did not show any significant variations, except for those students who returned forms on the first day after the deadline. Significant variations were detected upon indications of “AOD” ($U=790,5$; $p=0,027$). This is most likely related to the fact that students who returned forms on the very first day are better at organising their time.

6.3. Correlation analysis.

Correlation analysis was conducted among the indexes of procrastination, self-assessment of laziness, various scales of anxiety and action control scales in groups of students:

a. Data analysis of *students of different years of education*. Correlation analysis demonstrated that procrastination in students of all different years of education was connected to laziness and inversely connected to “AOD”. But in fourth and fifth-year students procrastination also correlated with state and trait anxieties, whilst fourth-year students showed procrastination correlating negatively with “AOF” (see Table 5).

Table 05. Correlation data analysis: year of education

Year of education	Laziness	S-anxiety	T-anxiety	AOD	AOP	AOF
1 year	0,586**			-0,620**		
2 year	0,414*			-0,632**		
3 year	0,350*			-0,404*		
4 year	0,543**	0,574**	0,620**	-0,636**		-0,368*
5 year	0,595**	0,531**	0,518**	-0,699**		

Note: * $p < 0,05$; ** $p < 0,01$

b. *Students who returned forms at different times*. Regardless of the day when forms were returned, procrastination in students was correlated with state and trait anxiety as well as laziness, and negatively correlated with “AOD”. However, in students who returned forms on the first day, procrastination was inversely correlated with “AOF”, and in students who returned forms after the deadline was inversely connected with “AOP” (see Table 6).

Table 06. Correlation data analysis: return day

Return day	Laziness	S-anxiety	T-anxiety	AOD	AOP	AOF
The 1st day	0,565**	0,414**	0,392**	-0,604**		-0,251**
Before the deadline	0,432**	0,383**	0,335*	-0,588**		
After the deadline	0,417*	0,505**	0,519**	-0,465**	-0,363*	

Note: *p <0,05; **p <0,01

6.4. Linear regression analysis.

Variations in correlations among procrastination and personal qualities in students of diverse groups formed a starting point for developing hypotheses regarding discrepancies in the set of predictors and their degree of influence on procrastination. Regression analysis results showed that major procrastination predictors in students (adj. R²=0,469; p =0,000) are: laziness (β =0,274; p=0,000), state anxiety (β =0,191; p=0,025) and action control in planning (β = -0,329; p=0,000).

7. Conclusion

Procrastination appears to be a major factor affecting students' performance, that is why one should point out the importance of detection and analysis of such behavior predictors and means of prevention. The absence of consolidated perspectives on academic procrastination predictors testifies to the relevance of studying the phenomenon (Khanin, 1976; Barabanshchikova, Marusanova, 2015).

The general percentage of the survey fulfillment by the students during the educational process stands at 57.5%. This supports the importance of the research for the respondents, as demonstrated by the fact that more than a half of the respondents became interested in the subject and wanted to find out their procrastination level. Not all the students return the forms on time (19.9%; n=41), which serves as an evidence of signs of procrastination in students' lives. In the research into procrastination in members of virtual project groups the return index reaches 30%, which, accounting for volunteering in participation, also testifies to a high level of interest and responsibility in students (Barabanshchikova & Kaminskaya, 2013).

For research into procrastination, it is not only the survey results that play a key role but the timing of the return of the forms itself. The students who return the forms on the first day can cope with the tendency towards procrastination and prevent its manifestation, recalling their tendency to procrastinate and returning forms quickly. If the students delay one or another task they can forget about it and either return forms late or not return them, at all. The students who return the forms on time demonstrate a better self-organization. Thus, we can assume that the manifestation of state anxiety does not interfere with their time management, whilst the students who return the forms after the deadline lack self-control during task performance.

Results of comparative data analysis show that the students who return the survey on the first day have a substantially higher score on the "action control in planning" scale compared to those who return the survey after the deadline, thus enabling us to suggest that they have a better time-management and planning skills.

It is interesting that procrastination during the earlier years of education (first, second and third) does not appear to be related to state and trait anxiety, whilst in later years of education (fourth and fifth) the reverse is true. One can assume that during the earlier years of education the delaying of tasks can be linked to poor organizational skills, laziness or an unfamiliar educational environment, whilst in the later years of education (fourth and fifth) procrastination becomes an unfavourable way of coping accompanying with negative mental states, such as anxiety and general tension brought on by the educational process. Procrastination as a negative coping strategy is therefore shaped during educational process.

As shown in linear regression analysis, academic procrastination predictors are laziness, state anxiety and low-level organization. The knowledge obtained about academic procrastination predictors allows for the creation of more effective preventive programs which will not allow forming of negative coping strategies in students. For example, to address laziness, motivational training could be introduced as a part of the educational process. Time management training could improve organizational skills and stress-resilience training can act as a tool to address state anxiety.

In the present study the phenomenon of academic procrastination in psychology students is analyzed. On the basis of the results obtained, we may draw the following conclusions:

1. The level of academic procrastination in the students of different years of all the courses remains within medium value range.
2. Data analysis revealed that state and trait anxiety levels marginally increase from the first to the fourth year of education. However, procrastination is considered as a negative strategy to overcome anxiety and general tension of the educational process only in the later years of education (fourth to fifth).
3. Linear regression analysis indicate that students with high levels of laziness, state anxiety and poor organizational skills are prone to the development of academic procrastination. It prospectively allows for the creation of programs for the negative coping strategy prevention.

7.1. Limitations

For a more precise understanding of the academic procrastination phenomenon, a further study could be conducted during the examination period, which is a key stress factor for students. To obtain clearer results and wider opportunities for their generalization, the sampling could be also leveled upon gender, age and specialization, if students from other faculties are invited to participate, thus extending the quantity of respondents under study.

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