

Comparison of Meaning of Education and Delay of Gratification in Students with High and Low Levels of Self-destructive Behaviors

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Abstract

Background: The present study aimed to compare the academic meaning and delay of gratification among students with high and low levels of self-defeating behaviors.

Objectives: Educational meaning and delayed gratification have a significant role in the development and manifestation of learning problems in students with self-defeating behaviors.

Methods: The current research was conducted based on a causal-comparative design. The statistical population for this study included all undergraduate students at Gilan University during the 2022-2023 academic year. Students were selected according to a three-level cluster sampling process in each faculty, discipline, and course of the university. The data collection tools were the Self-Defeating Behavior and Cognition Scale (SDBCS), Delay of Gratification (DOG), and Meanings of Education (MOE). To investigate the research hypotheses, the data were analyzed in SPSS software (version 26) using univariate and multivariate analysis of variance (MANOVA).

Results: Based on the results, the main effect of behavior with and without self-defeating behaviors after controlling gender had a significant effect on the delay of gratification and subscales of meaning of education ($P > 0.001$). According to the average, the amount of delay of gratification variable and meaning of education subscales was higher in subjects without self-defeating behaviors.

Conclusion: Therefore, in modern learning programs (schools and universities), the role of the meaning of education, delay of gratification, self-defeating behaviors, and the relationship between them should be seriously considered.

Keywords: Delay of gratification, Meaning of Education, Self-defeating behaviors, Students

1. Background

School years are a period of life in which rapid cognitive and social changes occur. Therefore, educational researchers have turned their focus to adaptation to educational opportunities and challenges. Education professionals always seek to provide the best conditions to facilitate and improve the learning process (1). Nonetheless, a significant part of life challenges pertains to the student life, which is accompanied by academic challenges, such as poor grades, high-stress levels, educational self-defeating behaviors, negative self-evaluative thinking, and decreased motivation. On the other hand, in today's advanced world, the sign of a person's success is educational progress, without which the development and progression of any country will not be possible. Therefore, one of the most significant challenges during education, which has been emphasized and investigated in the current study, is the challenge related to self-defeating academic behaviors in which learners are involved in their studies. Self-defeating behaviors are the actions that initially bring short-term benefits, such as happiness or self-respect, but ultimately exert a negative effect on the ultimate well-being and are among the problems that exist in educational situations and have long been the focus of learning psychology researchers (2).

Self-defeating academic behaviors is a behavior

displayed consciously and intentionally (3). People who perform these actions are always looking for positive consequences of their behavior. Paying too much attention to the positive responses of long-term behavior is associated with numerous negative results. Consequently, self-defeating behaviors are initially used as a countermeasure; nonetheless, they turn into annoying habits after a while. In the short term, these behaviors offer many benefits, such as increased self-confidence; however, in the long run, they lead not only to academic problems but also to psychological consequences, such as anxiety, low self-esteem, feelings of helplessness, depression, and stress (4). Renn (5) introduced five self-defeating academic behaviors, including procrastination, self-disempowerment, increased commitment, false and invalid self-evaluations, inability to delay rewards (impulsive attention), and delaying decisions as components of self-defeating behavior. On the other hand, students' learning process at different stages of physical, mental, and social development requires a positive attitude toward the field of study and strong motivation. The same attitude is expressed in the meaning of education and postponement in satisfaction. Students with self-defeating academic behaviors demonstrate a slight interest in progress and therefore leave education, which is accompanied by a sense of emptiness, as well as academic and post-educational consequences (6).

According to Astin (7), learners' perception of

education starts from school; therefore, the subject of education provides some of them with the experience of maintaining coherence and purpose in life and a sense of hope in facing worries. In addition, meanings related to education can be affected by cultural and social factors, such as parental expectations, cultural values, and significant cultural changes. Education has been shown to give some experiences a sense of order, purpose in life, and hope in the face of anxiety. The new findings also suggest that educational implications are related to students' perceptions of stress, optimism, and coping styles (8). learners' perception of education also expresses the type of interpretation and its expectations and may differ from the viewpoints of teachers, parents, and peers (9).

The meaning of education, in a simple view, comprises "present-oriented" and "future-oriented" expectations along with the goal or goals that each person seeks to achieve from education. The utilitarian view of education, along with professional opportunities and benefits, as well as the economic usefulness of studying in a boarding school, has a higher priority. The specific meanings that students have about education may also be different among specific student samples, such as the popular terms of "first year" and "final year" academics or students with "high average" and "low average," evoking the comparison between students with high and low self-destructive behaviors (10). Among the components mentioned regarding the formation of a special meaning of studying at the university, researchers in learning psychology believe that the first impression of the university can have a powerful effect on students' all mental dimensions. Students are in a better state of arousal with an initial positive perception and meaning. According to the researchers, forming an impression of studying in a university should be considered in three dimensions: student, institution, and governmental-cultural.

According to the interactionism model, the normative student environment, i.e., departments and the attitudes of friends within the institution, can significantly affect students' perception of the educational environment. Therefore, the meaning of education for students can have a particular pattern because of having different pleasant or unpleasant educational experiences. These experiences will be effective in the formation of self-esteem and students' overall impressions. For instance, the similarity that students observe between themselves and the university where they study lies in their satisfaction, success, or failure, even during their probation (11).

The following factor was investigated in this study to compare students with high and low levels of conservative learning behavior. Moreover, its major role in the "psychology of learning", which has attracted the attention of contemporary researchers, is delayed gratification. The concept of delayed academic gratification was formed through the

application of delayed academic gratification. One researcher who has performed valuable research in this area in the last century is Walter Michel, an Australian-American theorist and psychologist. Delayed academic gratification means delaying short-term learning goals with immediate reinforcement and pursuing longer-term, more valuable goals (12).

Apart from the long-held view of the importance of delayed gratification for a well-functioning society, the notion is also embraced that delayed gratification has vital causal effects on academic achievement, positive self-esteem, self-discipline, and self-control and has a negative association with delinquency and deviant behavior. Delayed gratification refers to "the act of resisting an impulse to take an immediate reward hoping to obtain a more-valued reward in the future"(13). A growing research group has linked the ability to delay gratification to a host of other positive outcomes, including academic achievement, physical health, mental health, and social competence. One's ability to delay gratification is tied to other similar skills, such as patience, impulse control, ego control, and willpower, all of which are involved in self-regulation. In general, self-regulation refers to an individual's ability to adapt as necessary to meet the demands of the environment (14).

Delay in inverse gratification, on the other hand, is an alleviation of delay, which is "priority for an immediate smaller reward over a larger but delayed reward." It refers to the fact that the subjective value of the reward decreases as the delay in receiving the reward increases." It is hypothesized that delayed gratification selection is the cognitive-emotional system of the personality (15). Of course, it is no exaggeration to say that delaying academic gratification is an unexplored area of psychological research, and there is a research gap in this area (16).

2. Objectives

Because of the lack of research on potential learning pathway variables (such as educational significance, delayed gratification, and self-destructive behavior), researchers have sought to compare the meaning of learning and delayed gratification among students with high and low levels of self-defeating behaviors.

3. Methods

The current research was conducted based on a causal-comparative design. The statistical population of this study included all undergraduate students of Gilan University in the 2022-2023 academic year. Students were selected according to a three-level cluster sampling process in each faculty, discipline, and course of the university. A design-based descriptive cross-sectional study was performed to identify and screen students for self-defeating behavior. In this

study, the maximum standard deviation obtained from the study by Hadadranjbar et al. (4) taken from a sample of students with $SD = 6.24$ (Mean = 101.27) based on the formula for estimating the ratio of qualitative characteristics, the sample size was calculated at 396 cases via cluster sampling.

Thereafter, students with a standard deviation higher than the mean were selected using Cunningham's (3) scale of self-defeating behavior. During the implementation of the study, groups of students with high and low self-defeating behavior were matched. The inclusion criteria were as follows: age range of 18-22 years, academic degree (bachelor's degree), and informed consent to participate in the study. In addition, after applying the final criterion to screen students for self-defeating behavior, subjects with comorbid psychiatric disorders (such as major depression) and those with manic-depressive episodes (based on their clinical history) were excluded from the study. The data obtained from implementing questionnaires on two groups of students with high and low self-defeating behaviors were analyzed using descriptive statistical methods (frequency, mean and standard deviation) and multivariate analysis of the variance test. The questionnaires used in the present study are as follows:

Self-Defeating Behavior and Cognition Scale (SDBCS): This 21-item questionnaire evaluates six types of self-defeating behavior: procrastination, self-incapacitation, increased commitment, invalid evaluation, impulsive behavior (inability to delay reward), delay, and inability to make decisions. (3) Mohammadi et al. (17) investigated the psychometric properties of this questionnaire. To determine validity, the principal component factor analysis method with varimax rotation was used. Based on the slope of the scree curve, the eigenvalue is higher than one or two factors, and it has been confirmed by the factors mentioned by the manufacturer of the scale. The coefficient of Kaiser-Meyer-Olkin (KMO) index was equal to 0.32871 ($P=0.001$). Cronbach's alpha coefficients were obtained at 0.62 and 0.69 for procrastination and self-incapacitation, respectively (17). The internal consistency of the other four scales of this questionnaire has been investigated in this research. The Cronbach's alpha coefficients show the following results for increased commitment (0.69), invalid assessment (0.71), impulsive behavior (0.62), and inability and delay in decision-making (0.62), respectively. (4) The internal consistency of this study was confirmed, rendering a Cronbach's alpha of 0.87.

Delay of gratification (DOG): Bembenuy (1997) developed the 10-item Academic Delay of Gratification Scale (ADOGS) to assess procrastination in academic satisfaction [14], Each question has two opposite parts. One part is related to no delay in academic satisfaction and the other part pertains to

postponement in academic satisfaction. All questions are scored from 1 to 4, except for questions 2 and 7, which are reversely scored. A high score indicates a greater tendency to postpone academic satisfaction. Bembenuy (14) reported the retest reliability of this scale between 0.69 and 0.87 and its Cronbach's alpha coefficient between 0.68 and 0.85. Moreover, construct validity of this tool was confirmed using exploratory analysis and correlation with other motivational scales. In particular, self-directed learning and goal orientation have been confirmed. (18) Arabzadeh & Kadivar (18) reported the retest reliability coefficient of the questionnaire as 0.75. The internal consistency of this scale was confirmed, rendering a Cronbach's alpha of 0.9.

Meanings of education for university students: It was designed by Henderson-King Smith (10) in order to measure academic meaning, and it is still used in recent years due to its good validity and reliability. This questionnaire consists of 86 items and 10 components. Each component shows a specific meaning, and getting a higher score in each component indicates the greater importance of that meaning for the individual. These components are: "Independence", which has 5 items and means the priority of studying at the university to gain independence and realize growing up. "Future" has 3 items and means the priority of studying in the university to discover a path in life and a plan for the future. "Learning" has 10 items and shows priority for learning and encountering new ideas. "Self" has 11 items, and the priority of studying in the university is to develop oneself and understand oneself better. "The next step" has 3 items and displays that studying at the university is a normal stage of life. "Social" has 12 items and signifies that studying at university promotes social life, making friends, and extracurricular activities. "Surrounding World" has 8 items and demonstrates that studying at the university means a change in the surrounding world. "Psychological pressure" also has 12 items and signifies that studying at university is a source of psychological pressure in life. "Emancipation" has 11 items and means that studying at the university is an opportunity to get rid of the responsibilities of adulthood or to escape from the stressful situation of life. "Profession" also has 11 items and shows the priority of education to reach a profession and job. The items are rated on a Likert scale from very little=1 to very much=5. Getting a higher score means more academic meaning for the learners. The reliability of this questionnaire was reported as 0.77, and in the Iranian population, its Cronbach's alpha was reported from 0.77-0.91. (19).

To investigate the research hypotheses, univariate and multivariate analysis of variance (MANOVA) was used. In the following, first, the assumptions and then the findings of the analysis are reported. Skewness and kurtosis tests were used to check the normality

of the distribution of delay of gratification variables and the meaning of education subscales. According to the test results, the research variables had a normal distribution. Based on the results of the Box's M test, the assumption of matrix-covariance homogeneity in the group of students with and without self-defeating behavior was not confirmed in the scores of the meaning of education variable subscales and pointed to a significant difference in the assumption of matrix-covariance homogeneity in the two groups ($P > 0.001$; Box's M test = 21.580). That is, hypothesis H_0 , which refers to the homogeneity of the covariance matrices of the variables in question, is not meaningful and confirmed. Therefore, the null hypothesis is not accepted, signifying that we detect the inequality of the observed covariance matrices under the variable scales of the meaning of education between the two groups of people. Since the latter assumption was not fulfilled, Pillai's trace multivariate test was used to investigate the effects of

the independent variable. The significance levels of the tests ($P < 0.001$, $F = 35.79$ and Pillai's effect = 0.483) demonstrated a difference between the group of people with and without self-defeating behavior in terms of the scores of the meaning of education subscales.

4.Result

In this study, 396 undergraduate students were assigned to two groups: with self-defeating behavior ($n = 96$) and without self-defeating behavior ($n = 300$) with Mean \pm SD age of 20.15 ± 1.27 and 20.01 ± 1.33 , respectively.

Table 1 presents the demographic characteristics of participants in the research. According to the results of chi-square statistics and the significance level ($P < 0.05$), the demographic characteristics of the two groups are like each other (Table 1).

Table 1. Demographic characteristics

Variables	With self-defeating behavior (n=96)		Without self-defeating behavior (n=300)		X ²	df	P-Value	
	Frequency	Percent	Frequency	Percent				
Gender	Female	66	68.8	178	59.3	2.73	1	0.099
	Male	30	31.3	122	40.7			
Age	18 years	12	12.5	52	17.3	1.69	4	0.79
	19 years	18	18.8	60	20			
	20 years	26	1.27	69	23			
	21 years	24	25	71	23.7			
	22 years	16	16.7	48	16			

Table 2 illustrates two groups of people with and without self-defeating behavior regarding the age variable. According to the results of independent

groups Student's t-test, there is no age difference between the two groups of subjects with and without self-defeating behaviors.

Table 2. Comparison of two groups of people with and without self-defeating behavior

Groups	N	Mean \pm SD	df	t	P-Value
Without self-defeating behavior	300	1.33 ± 20.01	394	0.888-	0.379
With self-defeating behavior	96	1.27 ± 20.15			

As illustrated in Table 3, the mean score of delay of gratification and meaning of education subscales is higher in subjects without self-defeating behavior; nonetheless, the significance of these differences requires inferential statistical analysis, which will be

investigated further. Moreover, in terms of skewness and Kurtosis, delay of gratification variables and meaning of education subscales are normal, and their distribution is normal.

Table 3. Descriptive statistics of research variables

Variables	Groups	Mean \pm SD	Skewness	Kurtosis	
Delay of gratification	with self-defeating behaviors	23.42 ± 8.37	0.062	-1.25	
	without self-defeating behaviors	36.5 ± 1.86	-1.28	0.399	
	Independence	with self-defeating behaviors	8.49 ± 2.34	0.74	0.37
	without self-defeating behaviors	16.94 ± 6.09	-0.49	-0.99	
Future	with self-defeating behaviors	6.45 ± 2.23	0.88	1.21	
	without self-defeating behaviors	11.46 ± 2.90	-1.17	0.61	
	Learning	with self-defeating behaviors	19.55 ± 4.50	0.53	1.35
	without self-defeating behaviors	34.69 ± 11.98	-0.52	-1.32	
Meaning of education	Self	with self-defeating behaviors	22.29 ± 4.52	0.23	1.49
	without self-defeating behaviors	38.56 ± 13.10	-0.57	-1.22	
	The next step	with self-defeating behaviors	5.91 ± 1.42	-0.01	-0.36
		without self-defeating behaviors	10.55 ± 3.38	-0.59	-0.85
	Social	with self-defeating behaviors	22.55 ± 4.86	-0.45	-0.68
		without self-defeating behaviors	41.82 ± 12.76	-0.55	-1.25

the surrounding world	with self-defeating behaviors	15.26±3.39	0.55	0.25
	without self-defeating behaviors	26.82±10.12	-0.58	-1.30
psychological stress	with self-defeating behaviors	20.63±4.86	0.21	-0.22
	without self-defeating behaviors	45.31±14.76	-0.68	-1.27
Liberation	with self-defeating behaviors	18.69±5.38	0.62	0.76
	without self-defeating behaviors	41.68±13.38	-0.68	-1.29
Profession	with self-defeating behaviors	17.60±4.07	0.85	1.16
	without self-defeating behaviors	39.44±13.88	-0.59	-1.28

Based on the obtained results (Table 4), after controlling the gender variable, the main effect (with and without self-destructive behavior) had a significant effect on the delay of gratification. Moreover, there was a statistically significant difference between the two groups of students with and without self-defeating behaviors in the delay of gratification (F=205.03; P<0.001). Therefore,

students with self-defeating behavior had a significantly lower score in the delay of gratification variable. In addition, the interaction between gender and self-defeating behaviors was not significant; therefore, the research variables were not affected by gender. Accordingly, there was no significant difference between male and female students in self-defeating behaviors.

Table 4. Results of univariate analysis of variance comparing delay of gratification

Source of changes	The dependent variable	SS	Df	MS	F	P- Value	Eta
with and without self-defeating Behaviors	Delay of Gratification	11070/80	1	11070/80	205/03	0/001	0/343
Gender	Delay of Gratification	1/46	1	1/46	0/03	0/870	0/0001
Error	Delay of Gratification	21165/08	392	53/99			

Table 5 presents the effects between the subjects, the significance of the whole MANCOVA model, and also the separate effect of each independent variable after adjusting the gender variable on the subscales of the variable of the academic meaning of education. According to the results, after controlling the gender variable, the main effect (with and without self-defeating behaviors) had a significant effect on the subscales of the academic meaning of education, and there was a statistically significant difference between the two groups of subjects with and without self-

defeating behaviors in independence (F=150.53; P>0.001), future (F=210.46; P>0.001), learning (F=123.63; P>0.001), self (125.99= F; P>0.001), the next step (F=145.92; P>0.001), social (F=126.73; P>0.001), the surrounding world (F=112.06; P<0.001 P< 0.001), psychological stress (F = 228.95; P < 0.001), liberation (F = 150.53; P < 0.001), and profession (F= 201.96; P< 0.01). Therefore, students without self-defeating behaviors had a significantly higher score in the subscales of academic meaning.

Table 5. Results of the multivariate analysis of variance (MANCOVA) test comparing the subscales of academic meaning after controlling the gender variable

Source of changes	The dependent variables	SS	Df	MS	F	P- Value	Eta
The main effect (with and without self-defeating behaviors)	Independence	.364429	1	.364429	150.53	0.001	0.277
	Future	.431605	1	.431605	210.46	0.001	0.349
	Learning	87.14113	1	87.14113	123.63	0.001	0.240
	self	76.17083	1	76.17083	125.99	0.001	0.243
	The next step	43.1336	1	43.1336	145.92	0.001	0.271
	social	.7016419	1	.7016419	126.73	0.001	0.244
	the surrounding world	.059027	1	.059027	112.06	0.001	0.222
	psychological stress	99.39349	1	99.39349	228.95	0.001	0.369
	Liberation	.1633385	1	.1633385	233.02	0.001	0.373
	profession	64.30438	1	64.30438	201.96	0.001	0.340
	The dependent variables	.629	1	.629	0.33	0.568	0.001
Gender	Independence	57.0	1	57.0	0.08	0.784	0.0001
	Future	22.0	1	22.0	0.01	0.965	0.0001
	Learning	74.62	1	74.62	0.46	0.497	0.001
	self	.261	1	.261	0.14	0.710	0.0001
	The next step	880.	1	880.	0.01	0.934	0.0001
	social	.85125	1	.85125	1.56	0.212	0.004
	the surrounding world	20.59	1	20.59	0.12	0.729	0.0001
	psychological stress	.2518	1	.2518	0.13	0.721	0.0001
	Liberation	64.21	1	64.21	0.14	0.705	0.0001
	profession	50.011534	392	.4329			
	The dependent variables	22.2990	392	63.7			
Error	Independence	47.44750	392	114.16			
	Future	93.53155	392	.60135			
	Learning	.123590	392	.169			
	self	11.50790	392	.57129			
	The next step	55.31576	392	55.80			
	social	02.67374	392	87.171			
	the surrounding world	.56163	392	27.143			
	psychological stress	73.59080	392	150.72			

5. Discussion

The present study aimed to compare academic meaning and delay of gratification among students with high and low levels of self-defeating behaviors. The results pointed out that the group with self-defeating behaviors had significantly lower scores in academic meaning. This finding is in line with the results of a few studies conducted in this field, for instance, with the research by Clair & Hackett [20] on the role of academic meaning in academic success, as well as Pestka [8] and Senobar & Raeisi (21) on the importance of academic meaning in motivating progress and academic success (all of which are related to committing self-defeating behaviors).

In explaining this finding, it can be stated that the cognitive and emotional factors involved in education are very effective in the progress and scientific improvement of learners. One of these variables, which is the product of emotional and cognitive entanglements, is academic meaning. Students who intend to continue their education have a special meaning for this purpose and pursue specific goals in line with it. Academic meaning reflects a part of the learners' cognitive system before entering the university, and learners with high academic meaning are stronger in information processing and motivational orientation for studying, which increases the probability of their academic success. (21) Therefore, in addition to the optimistic view of education, the meaning of education and its hidden purpose are among the very important variables that play a role in progress and being steadfast in the path of educational goals. Therefore, it is unsurprising that the academic meaning of students with low self-defeating behaviors is higher than that of other students. Therefore, the cognitive and emotional issues related to education are very effective in students' progress and academic advancement, and increasing the emotional dimensions involved in education can positively affect learners' cognitive dimensions. Therefore, along with education, the emotional dimensions of growth should also be considered.

On the other hand, the results of multivariate variance analysis pinpointed that the group with self-defeating behaviors had significantly lower scores in the delay of gratification components. These findings are in agreement with those reported by Van Gelder et al. (22), Ainslie (6), and Bembenuddy (23). In explaining this finding, it can also be stated that postponing gratification is the control of motivation for immediate gratification, which requires cognitive control. During adolescence and early adulthood, the prefrontal cortex grows and matures to become more complex and connected to the rest of the brain. For this

reason, older children and adults find delayed gratification tasks easier than younger children. Nevertheless, the relative ability to delay gratification remains stable throughout development. On the other hand, unless they are under pressure to complete a task, procrastinators divert their attention from its components and show more activity-related errors when working due to the pressure caused by the volume of activity and the presence of others (13,14).

Therefore, children who can better control their impulses become adults who also have better control. Practicing delayed gratification is quite beneficial for cognitive abilities throughout life. Personality behaviorists focus on acquiring and training procrastination and have developed therapeutic techniques to increase the ability to procrastinate. Behavior analysts capitalize on the effective principles of reinforcement when shaping behavior by making rewards conditional on the individual's current behavior, resulting in delayed gratification learning (13). It is important to note that for a behavior modification regimen to be successful, the reward must be of value to the participant. Without a meaningful reward, offering delayed or immediate gratification serves little purpose since the reward is not a strong reinforcement of the desired behavior. Behavioral theorists view delaying gratification as an adaptive skill. All these findings are indicative of the marked effect of delay in consent on the prevention of self-destructive behaviors (3).

Learning to delay gratification has also been shown to promote positive social behaviors, such as sharing and positive interactions with peers. For example, students who learn to delay gratification are better able to complete the assigned activities. Simply put, if a person performs an activity with the promise of a delayed reward, they are more likely to complete the task(2). On the other hand, self-control has been called a major virtue by clinical and social psychologists, suggesting that the ability to delay gratification plays an important role in a person's overall psychological adjustment. People with a better ability to delay gratification report greater well-being, self-esteem, and openness to experience, as well as more effective ways of responding to anger and other stimuli. (14).

Early delayed ability has been shown to protect against the development of a variety of emotional vulnerabilities later in life, such as aggression and features of borderline personality disorder. Meanwhile, many of the maladaptive coping skills that characterize mental illness are associated with difficulty delaying gratification. The tendency to choose short-term rewards at the expense of long-term benefits permeates many forms of

psychopathology (24). Among the notable limitations of the current research, we can refer to the use of self-report questionnaires, which may have led to bias in the responses of the participants. Therefore, it is suggested that in future research, a larger sample size should also be used in addition to using other methods of obtaining information, such as observation and interviews (structured and semi-structured). Moreover, this study failed to investigate the disturbing mental variables since they were out of the researcher's control. Another limitation of this study was that the participants refused to do the homework for any reason. Therefore, it is recommended that in future studies, the tasks should be coordinated with participants' age conditions and accompanied by fun.

6. Conclusion

As evidenced by the obtained results, students with self-defeating behaviors had significantly lower scores in the meaning of education and delay of gratification. According to the present research, it should be necessary to pay more attention to the meaning of education and the delay of gratification in students with self-defeating behaviors, which requires the attention of school and university leaders. Therefore, in modern learning programs (schools and universities), the role of the meaning of education, delay of gratification, self-defeating behaviors, and the relationship between them should be seriously considered.

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Conflicts of interest

The authors of the article declared no conflict of interest.

References

- Viana J, Gonçalves SP, Brandão C, Veloso A, Santos JV. The challenges faced by higher education students and their expectations during COVID-19 in Portugal. *Educ. Sci.* 2023;**13**(4):372. doi:10.3390/educsci13040372
- Baumeister RF, Bushman BJ. Social psychology and human nature (Annotated instructor's ed.). 2008 doi:10.1037/0022-3514.75.1.219
- Cunningham, Christopher, "Need for Recovery and Ineffective Self-Management" (2007). Psychology Ph.D. Dissertations. 115. https://scholarworks.bgsu.edu/psychology_diss/115
- Hadadranjbar S, Sadipour E, Delavar A, Ebrahimi Qavam S. Effectiveness of Training Program based on Cognitive-Behavior Approach on Academic Emotions in Students with Academic Self-Defeating Behaviors. *ESMS*. 2018;**11**(1):108-17. doi 10.29252/edcbmj.11.01.14
- Renn RW, Allen DG, Fedor DB, Davis WD. The roles of personality and self-defeating behaviors in self-management failure. *J Manage.* 2005;**31**(5):659-79. doi: doi:10.1177/0149206305279053
- Ainslie G. Behavioral construction of the future. *Psychol. Addict. Behav.* 2022. <https://doi.org/10.1037/adb0000853>
- Astin AW. An empirical typology of college students. *JCS.D.* 1993;**34**(1), 36-46.
- Pestka DB. Meaning and meaninglessness of education for convicts. Selected aspects of education for convicts in Poland and in Europe. *SSH.O.* 2020;**2**(1):100053. doi: 10.1016/j.ssaho.2020.100053
- Farazi F, Asgari A. Presenting the Causal Model of Academic Avoidance in Relation to Meaning of Education and Academic Self-Efficacy: The Mediating Role of Educational Hope. *RISVL*, 2020; **8**(1): 9-20. doi: 10.30473/etl.2020.52638.3209
- Henderson-King D, Smith MN. Meanings of education for university students: Academic motivation and personal values as predictors. *Soc. Psychol. Educ.* 2006; **9**:195-221. doi: 10.1007/s11218-006-0006-4
- Owens RL, Allan BA, Maslowski AK, Murphy PK. Strengths Use, Environmental Factors, and Academic Outcomes in Newly Matriculated College Students. *Int. J. Appl. Posit. Psychol.* 2021;**3**(6):277-299. doi: 10.1007/s41042-020-00049-1
- Gloster AT, Walder N, Levin ME, Twohig MP, Karekla M. The empirical status of acceptance and commitment therapy: A review of meta-analyses. *J. Context. Behav. Sic.* 2020; **18**:181-92. doi: 10.1016/j.jcbs.2020.09.009
- Bembenutty H. Sustaining motivation and academic delay of gratification: Analysis and applications. *Theory Pract.* 2022;**61**(1):75-88. doi: 10.1080/00405841.2021.1955555
- Bembenutty H. Self-Regulated Learning, Core Properties of Human Agency, and Systematic Pedagogies. In *Remembering the Life, Work, and Influence of Stuart A. Karabenick: A Legacy of Research on Self-Regulation, Help Seeking, Teacher Motivation, and More.* 2023; **22**:159-177. doi: 10.1108/S0749-742320230000022012
- Zhang S, Li K. The cognitive mechanism and neural substrates enabling self-control to reduce the decision to procrastinate. *Adv. Methods Pract. Psychol. Sci.* 2023;**31**(9):1560. doi: 10.3724/SP.J.1042.2023.01560
- Bowles D, Sharkey G, Day C. Psychological predictors of National Student Survey course satisfaction. *JPAAP.* 2020;**8**(2):7-15. <https://doi.org/10.14297/jpaap.v8i2.423>
- Mohammadi Z, Jowkar B, Chari MH. The anticipation of self-defeating behaviors by goal orientation: the meditational role of shame and guilt feelings. *JDP.* 2014; **11**(41): 83-103.
- Arabzadeh M, Kodivar P. Examination Of Reliability, Validity, And Factor Analysis Of Academic Delay Of Gratification Scale. *J Educ Meas*, 2012; **3**(9): 1-18.
- Issazadegan, A., Hassani, M., Ahmadian, L. University Students and Meanings of Education. , 2009; **2**(7): 147-165.
- Clair KL, Hackett PM. Academic challenge: Its meaning for college students and faculty. *J.Educ. Teach.* 2012;**4**.
- Senobar A, Raeisi E. The role of achievement goals and academic meaning in predicting academic success of girl students. *RRJ.* 2018;**7**(3):37-52. doi: 20.1001.1.2383353.1397.7.3.5.8
- Van Gelder JL, Cornet LJ, Zwalua NP, Mertens EC, van der Schalk J. Interaction with the future self in virtual reality reduces self-defeating behavior in a sample of convicted offenders. *Sci. Rep.* 2022;**12**(1):2254. doi:10.1038/s41598-022-06305-5.[PubMed: 35145177].
- Bembenutty H. Homework completion: The role of self-efficacy, delay of gratification, and self-regulatory processes. *Int. J Sch. Educ. Psychol.* 2010 Dec.
- Mischel W, Ayduk O, Berman MG, Casey BJ, Gotlib IH, Jonides J,

Kross E, Teslovich T, Wilson NL, Zayas V, Shoda Y.
Willpower over the life span: decomposing self-regulation.

Soc.Cogn.Affect. Neurosci. 2011;**6**(2):252-6. doi:
10.1093/scan/nsq081.[PubMed: 20855294].