

## The relations between personality types and academic achievement: A comparative study of formal and distance education

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**Abstract:** The problem of this study is determined by using the psychological personality models and the background of numerous studies on various aspects of the educational achievements of students conducted based on different theoretical approaches. By examining the correlation of cognitive and personality traits and their individual-typical characteristics in the inseparable structure of individuality, and the correlation of these with the educational achievements of students in formal and distance education institutions, the purpose of the study is to examine the effects of personality types on students' academic achievement. Therefore, a correlation design has been employed in the study. The population of the study is composed of students studying in higher educational institutions in Turkey. The sample of the study, on the other hand, consists of students who receive face-to-face and online education. The data required for the study has been collected by sending survey forms via the Internet. Students from 46 different universities in Turkey participated in the study. To solve the determined tasks and check the initial assumptions, a series of pedagogical research methods were used by utilizing the SPSS program: theoretical analysis of psychological literature in terms of the problem being studied and testing by statistical methods. As a result of these analyses, it has been observed that academic achievement has relations with personality types and students' success has increased in distance education.

**Keywords:** Academic achievement, Big-five personality model, Distance education, Formal education, Higher education, Online learning.

### 1. Introduction

The rapidly changing living conditions impose higher demands on the modern expert, whether it is in terms of preparedness and competence or professional and personal qualities. Due to the lifelong nature of education ("lifelong learning"), there is a need to consider personal factors both in career choice and personalizing the learning process, to maximize the outcomes and enhance personal development. Despite numerous sociological, psychological, and pedagogical studies dedicated to exploring predictors of learning efficiency, this problem remains unsolved. Factors such as financial status, health condition, age of students, educational format, type of educational institution, and the presence of tuition fees, as well as parents' socio-economic status, are examined. Additionally, modern research indicates that specific personality traits, such as those related to volitional and cognitive domains; serve as stable predictors of educational success.

An urgent problem in modern psychology is the investigation of methodological approaches aimed at identifying personal qualities that are closely related to the characteristics of the learning process and learning outcomes. Studies in psychology are traditionally conducted based on factorial personality theories, particularly the Big Five personality model. A comparative examination of volitional and cognitive personality traits, considered simultaneously based on the Big Five and system-function

models, corresponds to an integrated approach in personality studies that meets modern requirements, in our opinion. Combining the intuitive potentials of different theoretical models will not only allow for a more thorough analysis and interpretation of data obtained using diagnostic methods corresponding to these models but also contribute to the further development and improvement of these theories. The results of a comprehensive comparative study of volitional and cognitive personality traits as predictors of students' academic achievements enable the development of practical recommendations that are particularly sought after in practice, allowing for an individualized approach to learning, termed "targeted" practices.

The problem of this study is determined by the backdrop of numerous studies related to various aspects of students' academic success conducted under different theoretical approaches, along with complex studies utilizing the potential of leading psychological personality models, as well as comparative studies.

In line with the mentioned, the subject of the research is to examine the correlation between volitional and cognitive characteristics, personality traits, and the individual-typical features within the inseparable structure of individuality, as well as their connections with the academic achievements of students in formal and distance education institutions.

The study aims to examine the impact of personality types on students' academic achievements. Therefore, the study aims to investigate the influence of personality types on academic success among students in both formal and distance education settings. The population of the study is composed of students studying in educational institutions in Turkey. The sample of the study, on the other hand, consists of students who receive face-to-face and online education.

In line with the research objective, the following tasks have been determined:

1. To generalize and systematize the voluntary and cognitive personality traits as factors of students' academic achievements to identify the personal qualities most closely related to learning success.
2. To compare the quantitative characteristics of curiosity and perseverance as systemic and functional features of personality, as well as the factors of the "Big Five," and to examine the nature of their relationships within the structure of individuality.
3. To determine and compare the ratio of volitional and cognitive personality traits with the academic achievements of students in different discipline groups.
4. Based on the obtained results, develop practical recommendations for aligning an individual's voluntary and cognitive domains (using perseverance and curiosity as examples) to enhance students' educational success.

To solve the determined tasks and check the initial assumptions, a series of pedagogical research methods were used by utilizing the SPSS program: theoretical analysis of psychological literature in terms of the problem being studied, statistical methods, regression and correlation analysis.

## 2. Literature Review

The problem of identifying psychological factors related to educational success has long captured the attention of teachers and psychologists. As a result, the initial psychological theories and methods for diagnosing intelligence were developed specifically in the context of educational achievements. In modern psychology, intelligence, abilities, and motivation are primarily considered predictors of academic performance and success, while personal characteristics in this context have been less explored.

Individuals demonstrate a multitude of variations in their physical, mental, and emotional characteristics, leading to diverse interpretations of events and reality. These distinctions constitute the fundamental basis of an individual's personality. Multiple definitions of personality can be found in the relevant works of literature. The roots of the term "personality" can be traced back to its Latin root "persona." In Latin, the word "persona" originally denoted the "mask" used by actors in theater. Throughout the performance, the mask was fitted on the face, and dialogues or melodies would emanate

from behind the mask. Therefore, the term "persona" was coined to elucidate the differentiation between the mask and the individual (Yanbasti, 1990).

The [Cambridge Dictionary \(2020\)](#) defines personality or character as the unique blend of attributes that sets an individual apart from others, manifested via their actions, emotions, and cognitive processes. [Bovee, Houston, and Thill \(1995\)](#) defined personality as the enduring patterns of an individual's behavior in reaction to different circumstances. [Morgan \(1986\)](#) defines it as the behavioral characteristics that distinguish an individual from others. [Berens \(1999\)](#) presented an expansive interpretation of personality, defining it as the distinctive attributes and inclinations that account for variations in individuals' ideas, emotions, and behaviors. These distinctions cannot be fully attributed to either the present biological condition or the social surroundings.

These definitions indicate that our personalities have a pervasive impact on all aspects of our life, including our interactions with the environment. They also play a crucial role in shaping our emotions, thoughts, and behaviors by influencing our viewpoints. Over the course of history, precise classifications have been established to comprehend the complexity of human nature and attributes. The Epic of Gilgamesh, originating from the Sumerians, has some of the first representations of heroism, hubris, and rebellion ([Segal, 2006](#)). Hippocrates, in the 5<sup>th</sup> century, established a correlation between personality traits and the hues of physiological fluids, whereas Freud, in the 20<sup>th</sup> century, recognized a link between personality and the initial five years of childhood ([Taymur & Türkçapar, 2012](#)).

According to the [American Psychological Association \(2020\)](#) personality can be defined as a lasting pattern of traits and behavioral configurations that encompass an individual's unique adaptation to life, including fundamental characteristics, interests, impulses, values, self-concept, abilities, and personal talents.

[Allport \(1937\)](#) who has conducted numerous studies in the field of personality psychology, defined personality as the dynamic organization of psychophysical systems that determines an individual's unique adaptations to their environment. In his definition, he emphasized that both the individual and their environment collectively contribute to shaping their personality. [Cattell \(1950\)](#) argued that personality is a concept that allows for predicting what an individual will do in a specific situation. He also emphasized the importance of the environment and situation in personality. According to him, psychological research on personality should be based on laws regarding the types of responses individuals would exhibit under specific time and environmental conditions.

Finally, [Mischel, Shoda, and Ayduk \(2008\)](#) argue that personality research should not only focus on behavioral tendencies but also psychological processes such as a person's learning, thinking, and motivation.

In a study undertaken by [Jessee, O'Neill, and Dosch \(2006\)](#), the objective was to align student personality types and learning preferences with appropriate teaching approaches. The aim of this study was to ascertain instructional methodologies that optimize the standard of patient care while being relevant with the learning preferences of undergraduate students. The study aimed to accomplish three specific objectives: 1) to ascertain the prevailing personality types among first and second-year undergraduate dental students in the Dentistry Department at the University of Texas in Houston, utilizing the Myers-Briggs Type Indicator (MBTI®); 2) to identify the learning preferences linked to these personality types; and 3) to establish a more efficient methodology for clinical dental education based on the personality types and learning preferences of the students. The findings of this study highlight the importance of faculty members comprehending and embracing diverse student personality types and their corresponding learning preferences to facilitate enhancements in undergraduate dental education, thereby boosting student motivation and enabling the expression of learning style preferences.

In a study undertaken by [Larenas, Rodríguez Moran, and Poblete Rivera \(2011\)](#), the teaching techniques and Personality Types of EFL (English as a Foreign Language) instructors in the public and private sectors were compared. This study conducted exploratory research to compare the pedagogical approaches employed by a cohort of thirty English instructors in Chile, who were employed in either

public or private secondary schools. The essential data was collected using two instruments: a teaching style assessment and a personality type index established by Grasha. The findings revealed that individuals employed in the public sector displayed a teaching approach that promoted ease of learning and possessed a personality characterized by being outgoing. Conversely, individuals working in the private sector exhibited a teaching style that emphasized authority and had a personality characterized by being reserved.

### *2.1. The Five-Factor Personality Approach*

The Five-Factor Model is regarded as a recent and highly effective model in the realm of personality and is one of the most priceless models. Based on this paradigm, personality can be defined by five grouped characteristic descriptors. The five primary personality traits are Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience (Wolfgang, 2005).

Each of these Five Factors can be characterized using diverse terminology. Extraversion, as defined by John and Srivastava (1999), encompasses the qualities of being outgoing, active, ambitious, and exhibiting a positive emotional state approach toward the material and social world. Agreeableness is described as being selfless, compassionate, trustworthy, and humble, with a cooperative orientation towards others in contrast to antagonism. Conscientiousness is defined as the individual's socially controlled orientation towards goals and tasks, promoting a responsible attitude. Neuroticism is described as the presence of negative emotions such as tension, anxiety, and sadness, as opposed to emotional stability, calmness, and tranquility. Openness is defined as the breadth, depth, creativity, and complexity of one's spiritual and experienced life.

John and Srivastava (1999) claim that the Five-Factor Model offers a systematic classification system for personality research, which was previously inadequate organization. The Big Five model's theoretical orientation is ambiguous as it is based on the natural language descriptors individuals employ to characterize themselves and others (John & Srivastava, 1999).

Consequently, researchers started using the names "Big Five" and "Five-Factor Model (FFM)" interchangeably in their investigations and scholarly work on personality characteristics. The name "Big Five" has been widely used as a taxonomy or framework by personality trait researchers (De Raad & Perugini, 2002; John & Srivastava, 1999). The model gained prominence due to its comprehensive coverage of personality psychology (De Raad & Perugini, 2002). Later on, researchers in the field of personality traits created and employed their own tools. However, they ensured the accuracy and credibility of their findings by establishing a connection between their instruments and either Costa and McCrae's NEO-PI-R (Revised NEO Personality Inventory for Neuroticism-Extraversion-Openness) or Goldberg's instrument.

The Big Five personality traits define the central dimensions of an individual's personality. There is a common understanding of what they represent, in addition to their content. The trait of extraversion is primarily characterized by being social, energetic, and active, contrasting with introversion. Individuals who score high on agreeableness are known to be trusting, cooperative, and considerate. Conscientious individuals are often described as organized, resilient, persistent, and reliable. The opposite of neuroticism, emotional stability, is characterized by being calm, unemotional, and stable. The final dimension, openness to experience, as described by Mount, Barrick, Scullen, and Rounds (2005) is characterized by being creative, intellectual, artistic, and receptive.

### *2.2. The Concept of Academic Achievement*

Academic achievement is a crucial factor in reflecting the success of a national education system. The academic achievements of nations showcase their accomplishments to the world. In recent years, societies have placed significant importance on the academic achievements of their individuals (Dambudzo, 2009). Academic achievement also provides us with insights into students' adaptation to academic life (Coetzee, 2011). Academic achievement is considered very important for families and their

environment as it shapes the personality and future of children. Generally, the expectation of families and society is solely the academic achievement of individuals.

The Greenwood Educational Dictionary defines academic achievement as follows: "Academic achievement is the acquisition of knowledge, ability, and higher status, as reflected in grades, degrees, and other forms of credentialing or generally accepted". It is viewed as a result of education. Academic achievement is believed to indicate how well a student has accomplished their tasks. Therefore, academic achievement is typically measured through tests, exams, and other mental performances (Ward, Stoker, & Murray-Ward, 1996). Furthermore, Howcroft (1991) defines academic achievement as grades and scores obtained from an examination or test. Success is the progress made toward achieving the desired outcome (Baymur, 1993). Academic achievement refers to the level of competence in reaching goals and objectives as a result of the curriculum (Demirel, 2003). In this context, 'academic achievement' refers to the test scores determined by teachers to assess the skill and knowledge level in school subjects (Carter & Good, 1973).

Baadjies (2004) states that the primary objective of a teacher is to achieve high levels of success from students. Brennen argues that success is perceived as an action that leads to students' progress in academic environments (Baadjies, 2004). Additionally, Harackiewicz, Barron, and Elliot (1998) mention that academic achievement reflects the scores students obtain in exams. Being successful is defined based on the grades received in educational contexts.

According to McCoach and Siegle (2001) underachievement can be described as a discrepancy between students' abilities, talents, and achievements. Therefore, a student who appears to be capable of success in school but lacks effort is often referred to as academically underachieving.

### 3. Methods

The fall and spring semesters of the 2019-2020 academic years are periods during which respectively traditional and online education were implemented. The research aims to reveal the changes in success levels in terms of grade point averages during these periods and the personality traits that influence them.

The population of the study consists of students attending higher educational institutions in Turkey. The sample of the study, on the other hand, consists of students who receive face-to-face and online education. The participants of the study are individuals who were university students in Turkey during the 2019-2020 academic years. The dataset includes participants' gender, age, and grade point averages for the respective academic years. All grade point averages have been converted to a 4-point grading system by the participants.

The data necessary to conduct the analyses in line with the purpose of this study was obtained through a written survey method. For this research conducted during the period of remote education, a survey form was sent to students via the Internet.

Due to the unavailability of collecting information through another method, resorting to this method has provided many advantages in reaching individuals via the Internet. Answering survey questions in a digital environment has ensured more accurate data collection as it takes less time. Additionally, another advantage of reaching participants through the Internet is that students from 46 different universities in Turkey, not just Istanbul, have participated.

To determine the changes in student achievement during the remote education process and investigate their significance, descriptive statistics were initially examined, followed by hypothesis testing and advanced analyses. In addition, the relationship between the overall achievement obtained by averaging the grade averages of the fall and spring semesters and age and gender was examined. The 27-item section of the questionnaire used in the study was created to determine personality types. The correlation and regression were used to examine the relationship between the 5 factors obtained and success while investigating the reasons behind the increase in the achievement of students who experienced both formal and remote education in the 2019-2020 academic year based on personality types. Before all mentioned analyses, a reliability analysis was performed.

#### 4. Findings

Data was collected by internet. The incorrect answers provided in the survey data obtained through Google Forms were not included in the analyses. Responses from 306 participants who were completely responded to the personality items were included in the analysis. There are some missing values in the grades and age questions. We kept them as are. We used pairwise deletion in the analyses. This procedure cannot include a particular variable when it has a missing value, but it can still use the case when analyzing other variables with non-missing values. Pairwise deletion allows us to use more of the data. Therefore, the number of data in the analyses may differ in the study. Out of 306 participants whose information was consulted, 156 of them were male and 150 were female. When examining the universities attended by the participants, it was found that the three universities with the highest participation were Istanbul Technical University (100 students), Bogazici University (27 students), and Istanbul University (20 students), all located in Istanbul. Out of the units included in the sample of the relevant research, 139 of them are individuals studying engineering at universities.

The mean value of the age for the participants (303 respondents) who were students in the 2019-2020 academic year is 22.84, ranging between 19 and 31. According to the average grade in the fall semester of the relevant academic year, the average grade in the spring semester of the same year is higher for all students. The average grade for the spring semester, where distance education was implemented, is 3.004, while the average grade for the fall semester, where face-to-face education was implemented, is 2.801. Table 1 shows these values.

**Table 1.**  
Grade averages for each semester.

Semester	N	Average	Min.	Max.	S.D
2019-2020 fall semester grade	272	2.801	0.34	4.00	0.542
2019-2020 spring semester grade	277	3.004	1.21	4.00	0.517

In Table 2, the correlation between the grade of the spring semester of 2019-2020 and the grade of the fall semester of 2019-2020 is shown. The resulting correlation value is 0.688, indicating a strong positive linear relationship between the spring and fall semesters.

**Table 2.**  
Paired samples correlations.

Semesters	N (Listwise)	Correlation	Sig.
2019-2020 spring semester grades - 2019-2020 fall semester grades	270	0.688	0.000

Increase in achievement in the spring semester was analyzed using a pairwise t-test, and it was found to be statistically significant ( $p < 0.05$ ). The results are presented in Table 3. As can be seen from the table there is a positive effect of remote education on achievement. Average grade in fall semester increased by 0,206 which means that 7.4% increase.

**Table 3.**  
T-test for the difference between spring and fall semester grade averages.

Semesters	Mean dif.	Std. err	95% con. int. of the dif.		t	Sig. (2-tailed)
			Low	Up		
2019-2020 spring semester grades - 2019-2020 fall semester grades	-0.206	0.0255	-0.257	-0.156	-8.11	0.000

When a reliability analysis was applied to the questions measuring personality traits (27 questions), it was found that Cronbach's Alpha coefficient was 0.748. It can be said that the obtained value of 0.748 is acceptable in terms of the reliability of the data. These values are provided in Table 4. Based on the analysis, we can interpret the obtained table as follows: the test is homogeneous, free from errors, and unidimensional, meaning the questions are homogeneous. The applied group is heterogeneous.

**Table 4.**  
Reliability statistics.

Cronbach's alpha	N of items
0.748	27

When we examine the impact of age and gender on academic achievement, we found that age has a negative significant correlation with students' achievement, as shown in Table 5. The Pearson correlation coefficient indicating the strength and direction of the relationship between age and the fall and spring semester average grades are -.148 and -.145 respectively. A negative relationship indicates that as students' age increases, their academic performance decreases. When examining whether there is a difference in the achievements of spring semester grades and fall semester grades between gender groups, it was found that there is no statistically significant difference in achievements between male and female students ( $p > 0.05$ ). These results are shown in Table 6 and 7.

**Table 5.**  
Age and achievement correlation.

		2019-2020 fall semester grade	2019-2020 spring semester grade
Age	Pearson corr.	-0.148	-0.145
	Sig. (2-tailed)	0.015	0.016
	N	269	274

**Table 6.**  
Group statistics for gender.

	Gender	N	Mean	Std. dev.
2019-2020 fall semester grade	Woman	122	2.768	0.6017
	Man	150	2.828	0.4888
2019-2020 spring semester grade	Woman	128	2.982	0.5574
	Man	149	3.022	0.4825

**Table 7.**  
Independent samples test for gender.

		Levene's test for eq of var.	Sig.	t	T-test for eq of means
		F			Sig. (2-tailed)
2019-2020 fall semester grade	Equal variances assumed	4.518	0.034	-0.916	0.360
	Equal variances not assumed			-0.897	0.371
2019-2020 spring semester grade	Equal variances assumed	2.094	0.149	-0.644	0.520
	Equal variances not assumed			-0.637	0.525

The amount of items in the questionnaires used to test the Big Five personality traits might vary. For instance, Johnson (2014) developed a comprehensive assessment tool called “International Personality Item Pool (IPIP-NEO-120)” consisting of 120 items. On the other hand, John and Srivastava (1999) created the “Big Five Inventory (BFI)” which is a personality inventory comprising 44 items. Additionally, they also developed an updated version called BFI-2, which has 60-items. Furthermore, there is a condensed version of BFI-2 consisting of 30 elements, designated to as “BFI-2-S,” and an extra short version with 15 items called “Big Five Inventory-2-Extra-Short (BFI-2-XS)”. These abridged versions not only lower the assessment duration of the complete BFI-2, but they also maintain much of the reliability and validity of the full BFI-2 (Soto & John, 2017). Within the scope of our research, the short version, “Big Five Inventory-2-Short (BFI-2-S),” due to its time-saving benefits for participants, its ability to assess without significant reliability concerns, and its status as one of the most up-to-date inventories available. But 3 items at the end were removed from the analysis because they had high relations with other factors and so decreasing the reliability of the factors. These are: “I consider myself as temperamental and getting emotional easily”, “I consider myself as adventurous, doing whatever comes to mind, open to risks and dangers, and a bit crazy”, “I consider myself tends to find fault with others”. As a result, 27 items aimed at determining personality types constitute 5 factors. These factors can be named extraversion (measured by 5 items), agreeableness (5 items), conscientiousness (6 items), neuroticism (5 items) and openness (6 items). Table 8 shows 5 factors with the items and their descriptive measures.

**Table 8.**  
Dimensions of big five personality traits and the items these factors.

Factors	Items	N	Mean	S. D
Extraversion	I consider myself as talkative, cheerful, lively, friendly, and someone who enjoys being in a group.	306	3.86	1.08
	I consider myself as competitive and dominant.	306	3.19	1.14
	I consider myself to be an outgoing person	306	3.51	1.17
	I consider myself social, comfortable, and unconcerned about drawing attention.	306	3.89	1.03
	I consider myself as shy, and quiet, someone who enjoys solitude, is distant, and individualistic. (R)	306	3.74	1.03
Agreeableness	I consider myself to be sensitive, delicate, and kind-hearted.	306	3.98	0.88
	I consider myself to be calm and composed in the face of events.	306	3.32	1.24
	I consider myself as open to criticism.	306	3.79	1.03
	I consider myself to be unbiased.	306	3.38	1.21
	I consider myself as stubborn, resentful and argumentative. (R)	306	2.53	1.11
Conscientiousness	The goals I set for myself require regular work and a long time to achieve.	306	3.64	0.98
	There have been many times when I didn't realize how time flew while learning something.	306	4.03	1.01
	I consider myself to be rule-abiding and cautious.	306	3.45	1.06
	I consider myself to be purposeful and highly motivated for success.	306	3.5	1.03
	I consider myself to be organized, careful, and meticulous.	306	2.61	1.31
	I consider myself to be responsible and trustworthy	306	3.73	1.11
Neuroticism	I consider myself to be emotionally stable. (R)	306	2.61	1.31



Factors	Items	N	Mean	S. D
	I consider myself to be anxious, tense, and in need of others' approval.	306	2.33	1.1
	I consider myself indecisive, insecure, and sensitive.	306	2.92	1.3
	I consider myself someone who is not content with me.	306	2.41	1.22
	I consider myself to be patient even in the most difficult situations. (R)	306	2.73	1.27
	Openness	I consider myself to be analytical, inquisitive, and investigative.	306	3.74
I consider myself to be open to change, accepting different thoughts, and having free thinking.		306	4.23	0.88
I consider myself to be intelligent.		306	2.85	1.08
I consider myself to be artistic and emotional.		306	3.28	1.1
I consider myself to be considerate, compassionate, understanding, giving, accommodating, and tender-hearted.		306	3.47	1.04
When I have a choice, I usually enjoy challenging assignments.		306	2.8	1.2

We regress personality factors on both fall (face-to-face education) and spring (online education) grades in Model 1 on the [Table 9](#) and [10](#). And we repeat the analysis by adding the demographic factors; age and gender for the robustness check in the model 2.

Two separate regression models were attempted to be created for the fall and spring semesters using a statistical software package. The average grades for each semester were used as the dependent variable, and the 5 factors of personality were included as independent variables in the regression models. When we examine the results of the regression analyses, we see that there is no significant relationship between the factors named “neuroticism” and “openness” and the grades of both face-to-face education in fall semester and online education in spring semester. This result was confirmed by the second model in which age and gender were included. While 'Agreeableness' has a significant negative relation, “Conscientiousness” has significant positive relations with both of the grades in face-to-face education and online education. ‘Extraversion’ has significant positive relation with the grades in face-to-face education, but no relation has found in online education during the spring semester. Same results are obtained in the second model when age and gender were included in the model. Age has a negative effect on success in both of the semesters.

**Table 9.**  
The regression model for the fall semester.

Variables	Model 1			Model 2		
	B	Std. error	Sig.	B	Std. error	Sig.
Constant	2.583	0.351	0.000	3.167	0.451	0.000
Agreeableness	-0.169	0.056	0.003	-0.155	0.056	0.006
Conscientiousness	0.248	0.061	0.000	0.258	0.061	0.000
Extraversion	0.097	0.042	0.021	0.082	0.042	0.050
Neuroticism	-0.039	0.048	0.418	-0.037	0.048	0.437
Openness	-0.093	0.064	0.143	-0.102	0.064	0.114
Age	-	-	-	-0.027	0.012	0.021
Gender	-	-	-	0.087	0.065	0.183
	F=6.51	P=0.000	R-Sq=0.11	F=5.60	P=0.000	R-Sq=0.13

**Table 10.**  
The regression model for the spring semester.

Variables	Model 1			Model 2		
	B	Std. error	Sig.	B	Std. error	Sig.
Constant	2.664	0.332	0.000	3.259	0.428	0.000
Agreeableness	-0.127	0.053	0.017	-0.118	0.053	0.026
Conscientiousness	0.274	0.058	0.000	0.280	0.058	0.000
Extraversion	0.033	0.039	0.393	0.021	0.039	0.599
Neuroticism	-0.035	0.045	0.440	-0.036	0.045	0.427
Openness	-0.063	0.060	0.293	-0.071	0.061	0.244
Age	-	-	-	-0.027	0.011	0.019
Gender	-	-	-	0.072	0.062	0.247
	F=6.85	P=0.000	R-Sq=0.11	F=5.79	P=0.000	R-Sq=00.13

In terms of academic achievement at the university level, it has been observed that being purposeful, organized, and attentive (conscientiousness) offers advantages, while being compassionate, sensitive, selfless and humble have disadvantages (agreeableness).

When comparing the spring semester, where education is conducted remotely, with the fall semester, where face-to-face education takes place, the factor of 'Extraversion' shows differences in terms of its correlation with grades. While individuals being outgoing, social, and friendly are significantly positively related to the average grades of the fall semester (face to face education), their impact on the average grades of the spring semester (distance education) is not significant.

## 5. Conclusions and Recommendations

This study aimed to measure the impact of personality traits on exam grades in both online and face-to-face education. It is observed that in online education students' average grades were increased compared to face-to-face education.

The elimination of non-academic activities, such as meeting personal needs, when students return to their families during the online period, may have an impact on explaining this positive increase in online education. Students do not spend much time on daily tasks such as cooking, washing clothes, cleaning the house, as they stay with their families. So, they found more time to study. In the transition to distance education during the 2019-2020 spring semester due to the impact of the coronavirus pandemic, factors such as the improved efficiency of course materials in video format, the accessibility of resources without time and location constraints, the opportunity for individuals who cannot attend school to benefit from this system and pass their courses, as well as the administration of exams in the form of assignments and the limited supervision of exams, can be considered among the reasons for the positive increase. Due to the effect of the pandemic, out-of-home activities were limited, so students had more time on classes. While conscientiousness and extraversion type of personality have positive relations with success agreeableness has a negative relationship with success. Therefore, families and elementary school teachers can consider this fact in growing and educating children to have successful persons. An additional survey can be conducted to uncover the reasons for the greater increase in positive grades in distance education compared to face-to-face education.

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### Competing Interests:

The authors declare that they have no competing interests.

### Authors' Contributions:

Both authors contributed equally to the conception and design of the study. Both authors have read and agreed to the published version of the manuscript.

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