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# UNIVERSITY STUDENTS GRIT LEVEL AND GRIT ACHIEVEMENT RELATION

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**Abstract**

Grit is explaining in Dictionary of the Turkish language Association as determination and desire to have identified the level of long-term goals. Duckworth, Peterson, Matthews, and Kelly (2007) are definiting it as, perseverance and passion for Long-Term Goals. In addition to stating that grit is an important factor in measuring the intelligence and the success. At the same time they have stressed that the grit is much more important predictors of success. Even Duckworth and Quinn (2009) argued that grit is more effective than intelligence scores for explainig the success. There are some studies that they are advocating grit is closely associated with self-discipline, self-regulation and goal orientation, and grit is the main factor for exlaining that concpts(Duckworth & Quinn, 2009; Peterson & Seligman, 2004). In this study, university student success and their grit's are analysed. Therefore, determining the relationship between success and grit is used for descriptive screening model. This study was conducted with 451 students in Education Faculty at Necmettin Erbakan



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University in 2015-2016 academic year spring semester. In order to data collecting "Grit-S scale", developed by Duckworth and Quinn (2009) and adapted to Turkish by Sarıcam and others (2015), was used. Datum were analysed by SPSS 16 soft ware and frequency, mean, standard deviation and regresion test were used as statistical techniques. The achievement scores of students have found a significant correlation between the grit scores.

**Keywords:** Grit, Achievement, descriptive model, Correlation, Regression

**JEL classification**: I10, Z10, A1

## 1 INTRODUCTION

Grit and achievement which are one of the research area of educatiors are substantially a learning process (Beyhan&Dilmaç, 2016). Grit can be defined as a determination and desire to have identified the level of long-term goals in Dictionary of the Turkish language Association. In other words, Duckworth, Peterson, Matthews, and Kelly (2007) are describing it as, perseverance and passion for Long-Term Goals. In addition to stating that grit is an important factor in measuring the intelligence and the success. Even Duckworth and Quinn (2009) argued that grit is more effective than intelligence scores for explaining the success.

There are studies defending the grit's relation with self-arrangement, self-discipline and goal tendency and the grit's importance in explaining these concepts (Duckworth&Quinn, 2009; Peterson&Seligman, 2004). In these researches the grit means that whatever happens, the goal activity is continued. Also Duckworth, Peterson, Matthews and Kelly (2007) defined the grit as continuity in attitudes and determination for long time goals. Even is a person faces to troubles and stressful situations, this resistance carries on as a personal power and an effort puts forward to reach goals (Singh & Jha, 2008). Despite difficulties and unwanted judgements, the



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grit goes on as a continual energy. The person with high grit never feels tired and has a tendency to struggle with situations given up by others. Determined people can behave more flexible and tolerant and also they can deal with problems with analytical view (Wilis, 2008). The grit seen as a necessary feature to pass over difficulties is defined also as a continual effort against complex missions (Ayres, Cooley & Dunn, 1990; Rudkin, 2003).

When we examine the studies in literature, it is seen that there is a relation between the grit and the academic success (Dubey, 1982, Duckworth and others, 2007, Duckworth and Quinn, 2009). For example, when we exam a student academic life to check relation between the grit and academic success, it is found that the students with higher grit are more successful in their academic life than the students with lower grit (Dubey, 1982). When students want to specialize in a new knowledge area or develop new problem solving strategy, they face to short term difficulties or their courage are broken. Despite these difficulties and broken courage, the undetermined people usually become unsuccessful (Ayres and others, 1990; Torgesen& Licht, 1983). When we look similar studies, it is seen that there is a relation between the grit and academic difficulty. The people getting the success in their tasks catch the others' because of their patient characteristic (Duckworth and others, 2007). Henry and Smith made a conclusion that the people successful in their life are more determined than unsuccessful ones and the environmental factors have an important effect on decisions about the grit. Akın and Arslan (2014) also tried to put forward the relation between success tendency and determination.

As it is known, acceleration of achievement of students is important for the school and academic area in order to increase individual and organizational performance. It is because many researchers today indicate that the grit levels of students have an important positive effect on the achievement of students.



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The measurable aims of the research that analysing relation of university student grit level and achievements are as below;

1. What is the level of university students' grit points?

2. Is there a relationship between the grit and achievement of university students?

3. To what extent do the grit levels of university students predict their achievement?

## 2 METHOD

### 2.1. Research Design

According to the views of students, this research tries to determine the level of university student grits and examine the relationship between the grit and achievement levels of university students. This research is designed in descriptive method.

### 2.2. Research Population and Sampling

The target population of the research consists of 451 students who teach in NEÜ education faculty in Konya. In the research, "stratified sampling" technique one of the sampling techniques based on probability is chosen in order to represent the target population. The target population of the research is divided into nine stratums at the teaching brance. The list of teaching branch in nine central districts was prepared and the sampling represents the sub groups based on the rate of sub population in the general population. With the stratified sampling technique, the student numbers teach in NEÜ education faculty were taken into consideration and the calculations of sampling size, It was decided to make (Balcı, 2013) an application for sampling 451 people.

### 2.3. Data Collection Tools

In this study, in order to determine the grit and achievement of university students, Sarıçam and the others' (2015) "Short Grit Scale", was adapted to Türkish



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by Akın and others (2011) before, was used because of better reliability score. This scale consists of 8 items. And this scale, has two dimension, these are: First "The perseverance of effort" (four items, example item: I often make a goal for myself but then I prefer to run after another one.) and second "the consistency of interest" (four items, example item: Whatever job I started , I do my best to finish). The Short Grit Scale form is a five point Likert type scale (1-deffinitely disagree, 2-disagree, 3-decisive, 4-agree, 5- deffinitely agree). In linguistic equivalence study of the scale, the correlation coefficient between Turkish and English forms were determined as 89 (p=00). As a result of explanatory factor analysis the KMO sample coefficient was determined as 83, and as a result of Barlett Sphericity test was determined as $\chi 2$= 503,877 (p<.001, sd=24). The result of verifying factor analysis consisted of 8 items, two dimensions ($\chi 2$/sd=2.06, RMSEA= .046, CFI=.95, GFI=.94, AGFI=.93, SRMR=.047) and factor loads of items were seen between 42 and 77. The coefficient of repetition and reliability of test was 69 and coefficient of corrected total item correlation was between 33 and 65. After the scale , the datar were analysed by Wing degree scale. The scale has five options. The interval coefficient for four intervals in fivefold scale were (4/5) 0,80, these are; I deffinitely don't agree (1-1,79), I don't agree (1,80-2,59), I am indecisive (2,60-3,39), I agree (3,40-4,19), I deffinitely agree (4.20- 5).

The means of university entry scores and the end-of-term grades of the students were used to represent student achievement

**2.4.The Analysis of Datas:**

In this research statistical tecniques, frekans, percentage, average, standard deviation, correlation and regression were used to analyse datas. The datum were analyzed with SPSS. The existence of relationships between grit and achievement was examined with the use of correlation analysis. A regression analysis was performed to predict achievement (dependent variable) using grit scores as independent variables.



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# 3 FINDINGS

### 3.1. First sub-Problem:

The first sub-question sentence is "What is the level of university students' grit points". In table 1, the means and Standard deviation values of students' grit points are given;

Table: 1. The descriptive statistical data about students' grit points.

| Items | n | M | SD |
|---|---|---|---|
| 1.New ideas and new projects confuse my mind about old ones | 451 | 2,96 | 1,12 |
| 2.Difficulties can never daunt me. | 451 | 3,81 | 1,10 |
| 3.For short time, I concern about | 451 | 2,58 | 1,01 |
| 4.I am hardworking | 451 | 3,54 | 1,05 |
| 5.I often make a goal for myself, but then I prefer to run after another one. | 451 | 2,46 | 1,15 |
| 6. I have difficulties about focusing on long time Project to complete | 451 | 2,75 | 1,27 |
| 7.Whatever job I started, I do my best to finish | 451 | 4,22 | 0,94 |
| 8. I am persevering and skillful | 451 | 4,03 | 0,97 |
| Total | 451 | 3,30 | 0,42 |

Students showed highest participation on the question 7 with 4,22 mean and lowest participation on the question 5 with 2,46 mean. When we examine the average of total grit points, it is seen that 3,30 mean score is obtained. The opinions of students generally came together on option "I'm indecisive" (2.60-3.39). Students did not display a determined attitude.



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**3.2. Second sub-Problem**:

The second sub-question sentence is "Is there a relationship between the grit and achievement of university students?" The means of university entry scores and the end-of-term grades of the students were used to represent student achievement. İn order to answer the question, method of simple correlation has been done and the values of the analysis are given in Table 2.

Table 2. Correlations matrix of grit for student achievement

| | | student achievement |
|---|---|---|
| Student grit | *r* | ,42** |

** Correlation is significant at the 0.002 level (2-tailed).

According to the results on Table 1, it is observed that there is moderately a positive significant relation between university student achievements and their grits (r=0,42, p<.01). In other words, the more their grit develops, the more their achievement affects in positive way.

**3.2. Third sub-Problem:**

The third sub-question sentence is "To what extent do the grit levels of university students predict their achievement?". İn order to answer the question Linear Regression method (simple linear regression) has been done and the values of the analysis are given in Table 2.

Table 2. Prediction of grit for student achievement

| | B | Std. Error | β | t | Sig. |
|---|---|---|---|---|---|
| (Constant) | 1,328 | ,112 | | 11,825 | ,000 |
| Azim | ,076 | ,069 | ,42 | 1,096 | ,002 |

Note: R= .42, R2= .17, F(1-451)=1,202, p= .002



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On Table 2, the results of regression analysis are given which are related to predicting student achievement of their grit's sub-dimension. When analyzing correlations between dependent variable and predictor variable, it has been estimated that there is a positive and moderat relation (r= .42) between university student achievements and their grits (R= 0,42, $R^2$= 0,17, p<.05). Student grits predict approximately the 17% of student achievement's total variance.

## 4 CONCLUSION

When students want to specialize in a new knowledge area or develop new problem solving strategy, they face to short term difficulties or their courage are broken. Despite these difficulties and broken courage, the undetermined people usually become unsuccessful (Ayres and others,1990; Torgesen& Licht, 1983). Dubey(1982) revealed that the students with higher grit are more successful in their academic life than the students with lower grit. When we exam similar studies, it is seen that the researchers found a relation between the grit and academic difficulty. The people getting the success in their tasks catch success more than the others' because of their patient characteristic (Duckworth and others, 2007). Henry and Smith (1994) made a conclusion that the people successful in their life are more determined than unsuccessful ones and the environmental factors have an important effect on decisions about the grit. Akın and Arslan (2014) also tried to put forward the relation between success tendency and determination.

According to this, the results of our study are consistent with the conclusions reached in the study mentioned above. in academic life of a student, as the grit level increases, achievement also increases. Regression analysis indicates that grit is important predictors of achievement. Beyhan (2016) stated that the time span and experiences have an important role in developing and continuity of the grit. This result and findings indicate that if a student demands own to be achieved better, then his/her



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grit should be taken into consideration seriously. For sure, this achievement involves both the development of knowledge, skills and understanding and the learning process as a basis of adaptation to academic life.

As a result, there is a moderate positive significant relation between university student grits and their achievements. Student grits (predictor variables) explain approximately 17% of variability in student achievements (predicted variables). According to these results, these suggestions can be given for practitioners and researchers. Reordering on standards of curriculum to increase their grits and the Standards in reordering can be determined higher than present standards. The struggler areas can be made for increasing students' grits and new researches can be made according to new factors.

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