



## MEASUREMENT OF GRIT OF B.ED. TEACHER TRAINEES AND ITS INFLUENCE TOWARDS THEIR ACADEMIC ACHIEVEMENT

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### ABSTRACT

To measure grittiness of B.Ed. Teacher Trainees and to assess its influence towards their academic achievement. The objective of the present study was to measure the Grit level among the students of B.Ed. Teacher Trainees. And also to find out whether B.Ed. Teacher Trainees differ significantly in their Grit level and Academic achievement with respect to Gender, Locality, Qualification of Parents, Occupation of Parents and Parents Monthly Income. In the present study Normative Survey Method was used. By using Stratified Purposeful Sampling Technique 275 samples were collected. Investigator used Grit Scale developed by Angela L. Duckworth in 2007 for the present study. It consists of 17 items with 5 point rating scale. Mean, Standard Deviation, t – test, F – ratio were used for analyzing the collected data. Results showed that the Grit level among B.Ed. Teacher Trainees is high. Grit Level of B.Ed. Teacher Trainees with respect to Occupation of Parents was found to be significant at 0.05 level. And Academic achievement of B.Ed. Teacher Trainees with respect to Gender, Occupation of Parents and Parents Monthly Income were found to be significant at 0.05 level.

**KEYWORDS:** Grit level, B.Ed. Teacher Trainees, Consistency of Interest (COI), Perseverance of Effort (POE), Academic Achievement, Gender, Locality, Qualification of Parents, Occupation of Parents and Parents Monthly Income.

### INTRODUCTION:

Grit plays a more important role than anything else for achieving one's goals in health, business, and life. Grit is the skills that a student develops by working hard in an academic setting, managing failure, and staying strong and focused are ones that will contribute to his/her future success. It provides importance for growth and character development.

In psychology, Grit is considered as a positive, non-cognitive trait, based on an individual's passion for a particular long-term goal or end state, coupled with a powerful motivation to achieve their respective objective. In every individual, perseverance of effort promotes the overcoming of obstacles or challenges that lie within their path to accomplish, and serve as a driving force in achievement realization. In the field of psychology, commonly it is associated with the concepts such as perseverance, toughness, flexibility, aspiration, strength of will, need for achievement and precision.

While Duckworth and other researchers (2007) have developed a series of psychometric scales measuring grit in children and adults, it is also important recent research into grit and how it can mean different things to different people. Researchers have recognized two main components of grit namely "Perseverance of Effort" and "Consistency of Interest". Perseverance of effort refers to the tendency to work hard even in the face of setbacks while consistency of Interest means sticking to a specific goal, for a long

period of time, without changing to a new goal that might seem more attainable. Both perseverance and consistency are essential elements of the drive to succeed.

In every area of life, from education to work and also to health, the amount of grit, mental toughness, and perseverance predicts the level of success more than any other factors. In other words, it is described as talent is overestimated and it is expressed in a word as consistency.

Teachers are the people who educate the young generations who in turn become the leaders of the next generation of people. So the future progress of any nation is in the hands of teachers. An effective teacher can have a positive impact on the career path of a student. Only he/she can motivate the student at every point of difficulties in and out of the classroom. Teacher only gives inspirations to the desires and aim in the mind of the student for future academic success. So the person with proper vision, professional competence, experience and one with the passion of teaching can enter the teaching profession.

Students select their courses and subjects according to their desire and interests. Then they get confused and become incapable of selecting the exact subject which they actually are interested and fail to do anything in life. While taking decision, they must have consistency of interest, strong aspiration, perseverance of effort etc. then only they become a successful person in academic, career or profession and life.

If once they entered into the teaching profession, their aspiration must be strong and they must possess the perseverance and consistency in their effort and interest. Then only they can be successful and happy in their career and life. So it is necessary to know the grit level of teacher trainees in order to predict their academic and professional success.

## REVIEW OF THE RELATED LITERATURE

Wolters & Hussain (2014) investigated grit and its relations with college students' self-regulated learning (SRL) and academic achievement. Results show that students' engagement in SRL may serve as a mediating pathway through which this aspect of grit is associated with improved academic outcomes. In contrast, consistency of interest showed no relation to achievement.

Bowman et.al (2015) explored grit dimensions to be differential predictors of educational achievement, satisfaction, and intentions. Results indicated that perseverance of effort predicted greater academic adjustment, college grade point average, college satisfaction, sense of belonging, faculty-student interactions, and intent to persist, while it was inversely related to intent to change majors. Consistency of interest was associated with less intent to change majors and careers, but it was not significantly associated with any other outcome in the expected direction when controlling for other variables.

Palisoc et al., (2017) conducted a study on Relationship between Grit with Academic Performance and Attainment of Postgraduate Training in Pharmacy Students. Results show that there was no significant correlation between Grit-S scores and variables related to academic success. However, students were more likely to pursue postgraduate training with higher academic success and higher Grit-S.

Pate et al., (2017) conducted a study on Measurement of Grit and Correlation to Student Pharmacist Academic Performance. The results indicated that the Grit-S total score was a significant and independent predictor for participants who reported a GPA  $\geq 3.5$ , and Consistency of Interest (COI) and Perseverance of Effort (POE) domain scores were significantly higher compared to participants with a GPA of 3.0-3.49.

Cosgrove, Chen and Castelli (2018) conducted a study on Physical Fitness, Grit, School Attendance, and Academic Performance among Adolescents. The results inferred that Adolescents with higher grit scores ( $r_s = 0.21, P < 0.001$ ) and less total absences ( $r_s = -0.35, P < 0.001$ ) performed better on AP. Hierarchical multiple regression indicated that grit and absences were associated with AP ( $\beta = 0.13, P < 0.01$  and  $\beta = -0.35, P < 0.001, \text{ resp.}$ ).

## NEED AND SIGNIFICANCE OF THE STUDY

Based on an examination of existing literature, no published research has established a correlation between grit and academic performance in B.Ed. Teacher Trainees to date. Because students admitted to

professional courses inherently have attained measures of academic success, it is unknown whether grit can predict academic success in this group. The majority of studies in professional courses have focused on grit and academic factors, and so the purpose of this study was to measure grit and determine if there is a correlation between grit and academic performance specifically among B.Ed. Teacher Trainees.

### OBJECTIVES OF THE STUDY

- ❖ To measure the level of Grit of B.Ed. Teacher Trainees
- ❖ To find out whether B.Ed. Teacher Trainees differ significantly in their Grit level and Academic achievement with respect to
  - Gender (Male / Female)
  - Locality (Rural / Urban)
  - Qualification of Parents (Illiterate / Schooling / Diploma / Graduate / Professional)
  - Occupation of Parents (Coolie / Government / Private / Business / Others)
  - Parents Monthly Income (Below Rs.30000 / Rs.30000-40000 / Above 40000)
- ❖ To find out the significant relationship between Grit level of B.Ed. Teacher Trainees and their academic achievement

### HYPOTHESES OF THE STUDY

- The level of Grit of B.Ed. Teacher Trainees is Moderate.
- There is no significant difference in Grit level and their academic achievement among B.Ed. Teacher Trainees with respect to
  - Gender (Male / Female)
  - Locality (Rural / Urban)
  - Qualification of Parents (Illiterate / Schooling / Diploma / Graduate / Professional)
  - Occupation of Parents (Coolie / Government / Private / Business / Others)
  - Parents Monthly Income (Below Rs.30000 / Rs.30000-40000 / Above 40000)
- There is no significant relationship between Grit and academic achievement of B.Ed. Teacher Trainees.

### METHODOLOGY

Normative Survey Method has been adopted in the present study.

### POPULATION & SAMPLE

The population of the present study was confined with B.Ed. Teacher Trainees in Coimbatore District. The researcher used simple random sampling technique and collected 275 samples for this study.

### Tools Used

Grit Scale developed by Angela L. Duckworth in 2007 was used for this study. It consists of 17 items with 5 point rating scale.

### Statistics Used

- ❖ Mean & Standard Deviation
- ❖ t-test & F-ratio

## Data Analysis, Interpretation and Discussion

**Table 1**  
**Frequency and Percentage of B.Ed. Teacher Trainees for Grit Level**

Variable	Range	Category	Frequency	Percentage
Grit Level	12 - 24	Low	0	0%
	25 - 36	Moderate	56	20.4%
	37 - 48	High	194	70.5%
	49 - 60	Very High	25	9.1%

From the Table 1, as the number of B.Ed. Teacher Trainees in the High category (194) is found to be more than Low, Moderate and Very High Grit level categories. Hence the Hypothesis is rejected and it is concluded that the Grit level among B.Ed. Teacher Trainees is High.

**Table 2**  
**Grit level and their academic achievement of B.Ed. Teacher Trainees with respect to Gender**

Variable	Gender	N	Mean	Std. Deviation	t - value	Result at 0.05% Level
COI	Male	99	16.32	4.600	1.242	Not Significant
	Female	176	17.03	4.475		
POE	Male	99	23.21	3.150	2.130	Not Significant
	Female	176	22.40	2.780		
Total Grit	Male	99	39.54	5.246	0.150	Not Significant
	Female	176	39.44	5.049		
Academic Achievement	Male	99	1.91	0.624	3.195*	Significant
	Female	176	2.15	0.580		

From the Table 2, it is observed that,

The Total Mean Grit with respect to Gender was higher for Male B.Ed. Teacher Trainees (39.54) than Female B.Ed. Teacher Trainees (39.44). Mean Grit Scores for both male (23.21) and female (22.40) B.Ed. Teacher Trainees were highest in the component of Grit namely Perseverance of Effort (POE).

The Male and Female B.Ed. Teacher Trainees did not differ significantly in the components of Grit namely Consistency of Interest (COI), Perseverance of Effort (POE) and Total Grit at 0.05 level.

Mean Academic Achievement Scores was higher for Female B.Ed. Teacher Trainees (2.15) than the Male B.Ed. Teacher Trainees (1.91). The t-values calculated for the Academic Achievement (3.195) revealed that Male and Female B.Ed. Teacher Trainees differed significantly at 0.05 level.

Therefore the null hypothesis, **“There is no significant difference between the Grit level of Male and Female B.Ed. Teacher Trainees”** is accepted. **“There is no significant difference between the academic achievement of Male and Female B.Ed. Teacher Trainees”** is rejected.

**Table 3**  
**Grit level and their academic achievement of B.Ed. Teacher Trainees**  
**with respect to Locality**

Variable	Locality	N	Mean	Std. Deviation	t - value	Result at 0.05% Level
COI	Rural	163	16.06	4.267	3.166*	Significant
	Urban	112	17.82	4.702		
POE	Rural	163	22.87	2.810	1.139	Not Significant
	Urban	112	22.45	3.113		
Total Grit	Rural	163	38.93	4.624	2.073	Not Significant
	Urban	112	40.27	5.676		
Academic Achievement	Rural	163	2.04	0.612	0.745	Not Significant
	Urban	112	2.10	0.600		

From the Table 3, it is inferred that,

The Total Mean Grit with respect to Locality was higher for Urban B.Ed. Teacher Trainees (40.27) than Rural B.Ed. Teacher Trainees (38.93). Mean Grit Scores for both Rural (22.87) and Urban (22.45) B.Ed. Teacher Trainees were highest in the component of Grit namely Perseverance of Effort (POE).

The Rural and Urban B.Ed. Teacher Trainees differed significantly in the component of Grit namely Consistency of Interest (COI) at 0.05 level. The Rural and Urban B.Ed. Teacher Trainees did not differ significantly in the components of Grit namely Perseverance of Effort (POE) and Total Grit at 0.05 level.

Mean Academic Achievement Scores was higher for Urban B.Ed. Teacher Trainees (2.10) than the Rural B.Ed. Teacher Trainees (2.04). The t-values calculated for the Academic Achievement (0.745) revealed that Rural and Urban B.Ed. Teacher Trainees did not differed significantly at 0.05 level.

Therefore the null hypothesis, **“There is no significant difference between the Grit level of Rural and Urban B.Ed. Teacher Trainees”** is accepted. **“There is no significant difference between the academic achievement of Rural and Urban B.Ed. Teacher Trainees”** is accepted.

This is similar to the findings of Wolters & Hussain (2014), whose results show, that students’ engagement in SRL may serve as a mediating pathway through which this aspect of grit is associated with improved academic outcomes. In contrast, consistency of interest showed no relation to achievement.

**Table 4**  
**Grit level and their academic achievement of B.Ed. Teacher Trainees**  
**with respect to Qualification of Parents**

Variable		Sum of Squares	df	Mean Square	F - ratio	Result at 0.05% Level
COI	Between Groups	288.345	4	72.086	3.658*	Significant
	Within Groups	5321.124	270	19.708		
	Total	5609.469	274			
POE	Between Groups	54.572	4	13.643	1.593	Not Significant
	Within Groups	2311.770	270	8.562		
	Total	2366.342	274			

<b>Total Grit</b>	Between Groups	124.910	4	31.228	1.199	Not Significant
	Within Groups	7033.635	270	26.051		
	Total	7158.545	274			
<b>Academic Achievement</b>	Between Groups	0.478	4	0.120	0.322	Not Significant
	Within Groups	100.343	270	0.372		
	Total	100.822	274			

From the Table 4, it is inferred that,

B.Ed. Teacher Trainees with different qualifications of parents (illiterate, schooling, diploma, graduate and professional) differed significantly in the component of Grit namely Consistency of Interest (COI) at 0.05 level.

B.Ed. Teacher Trainees with different qualifications of parents (illiterate, schooling, diploma, graduate and professional) did not differ significantly in the component of Grit namely Perseverance of Effort (POE) and Total Grit at 0.05 level.

The F-ratio calculated for the Grit level variable with respect to qualifications of parents revealed that they did not differ significantly with the dependent variable namely academic achievement at 0.05 level.

Therefore the null hypothesis, **“There is no significant difference among the Grit level of five different categories of qualifications of parents of B.Ed. Teacher Trainees”** is accepted. **“There is no significant difference among the academic achievement of five different categories of qualifications of parents of B.Ed. Teacher Trainees”** is accepted.

The findings of the present study fall in line with Bowman et.al (2015) findings, whose results indicated that perseverance of effort predicted greater academic adjustment, college grade point average, college satisfaction, sense of belonging, faculty–student interactions, and intent to persist, while it was inversely related to intent to change majors. Consistency of interest was associated with less intent to change majors and careers, but it was not significantly associated with any other outcome in the expected direction when controlling for other variables.

**Table 5**  
**Grit level and their academic achievement of B.Ed. Teacher Trainees**  
**with respect to Occupation of Parents**

Variable		Sum Squares	df	Mean Square	F - ratio	Result at 0.05% Level
<b>COI</b>	Between Groups	412.340	4	103.085	5.355*	Significant
	Within Groups	5197.129	270	19.249		
	Total	5609.469	274			
<b>POE</b>	Between Groups	34.243	4	8.561	0.991	Not Significant
	Within Groups	2332.099	270	8.637		
	Total	2366.342	274			
<b>Total Grit</b>	Between Groups	328.254	4	82.064	3.244*	Significant
	Within Groups	6830.291	270	25.297		
	Total	7158.545	274			
<b>Academic Achievement</b>	Between Groups	3.706	4	0.927	2.576*	Significant
	Within Groups	97.116	270	0.360		
	Total	100.822	274			

From the Table 5, it is revealed that,

B.Ed. Teacher Trainees with different occupations of parents (coolie, government, private business and others) differed significantly in the components of Grit namely Consistency of Interest (COI) and Total Grit at 0.05 level.

B.Ed. Teacher Trainees with different occupations of parents (coolie, government, private business and others) did not differ significantly in the component of Grit namely Perseverance of Effort (POE) at 0.05 level.

The F-ratio calculated for the Grit level variable with respect to occupations of parents revealed that they differ significantly with the dependent variable namely academic achievement at 0.05 level.

Therefore the null hypothesis, **“There is no significant difference among the Grit level of five different categories of occupations of parents of B.Ed. Teacher Trainees”** is rejected. **“There is no significant difference among the academic achievement of five different categories of occupations of parents of B.Ed. Teacher Trainees”** is rejected.

The findings of the present study fall in line with Cosgrove, Chen and Castelli (2018) findings, whose results inferred that Adolescents with higher grit scores ( $r_s = 0.21, P < 0.001$ ) and less total absences ( $r_s = -0.35, P < 0.001$ ) performed better on AP.

**Table 6**  
**Grit level and their academic achievement of B.Ed. Teacher Trainees**  
**with respect to Parents Monthly Income**

Variable		Sum Squares	df	Mean Square	F - ratio	Result at 0.05% Level
COI	Between Groups	113.145	2	56.573	2.800	Not Significant
	Within Groups	5496.324	272	20.207		
	Total	5609.469	274			
POE	Between Groups	5.237	2	2.618	0.302	Not Significant
	Within Groups	2361.105	272	8.681		
	Total	2366.342	274			
Total Grit	Between Groups	75.998	2	37.999	1.459	Not Significant
	Within Groups	7082.547	272	26.039		
	Total	7158.545	274			
Academic Achievement	Between Groups	3.162	2	1.581	4.403*	Significant
	Within Groups	97.660	272	0.359		
	Total	100.822	274			

From the Table 6, it is inferred that,

B.Ed. Teacher Trainees belonging to different parents monthly income category (Below Rs.30000, Rs.30000-Rs.40000 and Above Rs.40000) did not differ significantly in any components of Grit namely Consistency of Interest (COI), Perseverance of Effort (POE) and Total Grit at 0.05 level.

Further the analysis of the Grit level variable tested through Turkey HSD with respect to parents' monthly income revealed that they differ significantly with the dependent variable namely academic achievement at 0.05 level.

Hence the null hypothesis, **“There is no significant difference among the Grit level of three different categories of parents' monthly income of B.Ed. Teacher Trainees”** is accepted. **“There is no significant difference among the academic achievement of three different categories of parents' monthly income of B.Ed. Teacher Trainees”** is rejected.

The findings of the present study fall in line with Palisoc et al., (2017) findings, whose results show that there was no significant correlation between Grit-S scores and variables related to academic success.

However, students were more likely to pursue postgraduate training with higher academic success and higher Grit-S.

**Table 7**  
**Correlation Analysis for Grit and Academic Achievement of B.Ed. Teacher Trainees**

Variable	COI	POE	Total Grit	Academic Achievement
COI	1	-0.112	0.821**	0.166**
POE		1	0.476**	-0.183**
Total Grit			1	0.042
Academic Achievement				1

\*\* Correlation is significant at the 0.01 level.

From the Table 7, it is inferred that, the components of Grit show significant relationship with the Academic Achievement of B.Ed. Teacher Trainees. There existed significant positive relationship between Consistency of Interest (COI) and Academic Achievement (0.166) and significant negative relationship between Perseverance of Effort (POE) and Academic Achievement (-0.183) at 0.01 level.

It also shows significant positive relationship within the components of Grit such as Consistency of Interest (COI) and Total Grit (0.821) & Perseverance of Effort (POE) and Total Grit (0.476) at 0.01 level.

Correlation between the Grit variable and Academic Achievement (0.042) is negligible and has positive correlation.

Therefore the null hypothesis, **“There is no significant relationship existed between the Grit level of B.Ed. Teacher Trainees and their Academic achievement”** is accepted.

The findings of the present study fall in line with Pate et al., (2017) findings, whose results indicated that the Grit-S total score was a significant and independent predictor for participants who reported a GPA  $\geq 3.5$ , and Consistency of Interest (COI) and Perseverance of Effort (POE) domain scores were significantly higher compared to participants with a GPA of 3.0-3.49.

## CONCLUSION & RECOMMENDATIONS

A research activity in specific area is just the beginning of the exploration of the unidentified treasures in that area. This study was an attempt to extend the grit construct of Duckworth et al. (2007) to B.Ed. Teacher Trainees. There was no significant relationship found between grit and academic achievement of B.Ed. Teacher Trainees. The results showed grit was not a significant predictor of academic achievement in B.Ed. Teacher Trainees program. The above findings appear to be contrary to findings by Duckworth et al. (2007). Therefore, grit may be less effective in predicting academic achievement in a B.Ed. Teacher Trainees program. To resolve this, it is the collective responsibility of parents and teachers to develop a growth mindset and foster safe circumstances that encourage Grit among students which lead to success in their academic and professional life.

The present study supports earlier findings of Jaeger et al. (2010) who concluded that more research on grit is needed in order to better understand the effect of grit on academic performance or student success. And moreover, this is the first attempt to find out if there is a correlation between grit and academic performance with respect to various demographic variables specifically among B.Ed. Teacher Trainees. In future, it is necessary to conduct more researches among different populations and to find whether the grit had better relationship with achievement related factors and also about the roles they play in students' academic success.



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