



Hardiness and achievement motivation as factors of academic achievement

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GCE 20-d/Chd.

ARTICLE INFO

Article history:

Received: 26 November 2014;

Received in revised form:

25 December 2014;

Accepted: 10 January 2015;

Keywords

School related Hardiness Achievement Motivation, Academic Achievement.

ABSTRACT

The present study was undertaken to examine the influence of School related Hardiness and Achievement Motivation on Academic Achievement of Secondary School students. Descriptive survey method was employed to conduct it. Statistical techniques of product moment method of correlation and analysis of variance were employed to analyse data. There was no significant relationship found between Academic Achievement and school related Hardiness but a significant relationship was found between Academic Achievement and Achievement Motivation. Significant main effect of Achievement Motivation was revealed on the Academic Achievement of students at .05 level but there was no significant main effect of school related Hardiness on Academic Achievement. Results also indicated statistically significant interaction at .05 level between school related Hardiness and Achievement Motivation with regard to Academic Achievement. Overall, these findings provide new insights about a comprehensive understanding of School related Hardiness and Achievement Motivation as correlates of Academic Achievement.

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Introduction

Academic Achievement is one of the most important goals of education in the present socio-economic and cultural context. Therefore, it has always been a crucial point and main focus of educational research. "Among the various aims of education, academic development of the pupil continues to be the primary concern and most important goal of education – Secondary Education Commission (1952, 53)". Academic Achievement refers to what a student has achieved in different subjects of studies during the course of academic year. At each stage in the school, some measures of achievement are used as determinant of the student's success and as a basis of decision about the further opportunities for learning to be provided in subsequent stages.

Academic Achievement depends upon a number of personal, psychological and environmental factors. Knowledge of the level of correlation between different factors and Academic Achievement is therefore, necessary for a teacher in ascertaining the factors that contribute to high and low achievement of students. Development of all these in desirable direction will maximize their achievement in a worthwhile manner.

Some students have a need to achieve in all that they do. Their desire for success drives them to accomplish every task, no matter what the task is, or the difficulties involved in completing it. Other students also feel a need for success, but consider the value or worth of the task before attempting it. Therefore there are certain factors like determination related to the task, motivation level, Hardiness, etc. which affect the accomplishment of the task.

Hardiness is a personality construct formed of three interrelated beliefs about oneself in interaction with the world, namely, commitment, control, & challenge. Psychological Hardiness is a trait possessed by some persons that involves resistance to the negative effects of psychological stress. Ranganathan (1988) in a study found that there was negative relation between stress and Academic Achievement. Therefore

school related Hardiness may contribute towards reducing stress of students in turn improving their achievement.

Achievement Motivation can be understood simply as the tendency to strive for success or the attainment of desired goal. Thus, the development of school related Hardiness and academic motivation may have significant implications for Academic Achievement. The present study was undertaken by keeping such objectives in mind.

Objectives

The study has been undertaken keeping in view the following objectives:

- To study the Academic Achievement in relation to Hardiness.
- To study the Academic Achievement in relation to Achievement Motivation.
- To study the influence of Hardiness on the mean scores of Academic Achievement.
- To study the influence of Achievement Motivation on the mean scores of Academic Achievement.
- To study the interaction effect between psychological Hardiness and Achievement Motivation on the mean scores of Academic Achievement.

Hypotheses

H₀₁ There is no significant relationship between Academic Achievement and Hardiness.

H₀₂ There is no significant relationship between Academic Achievement and Achievement Motivation.

H₀₃ There is no significant difference in the mean scores of Academic Achievement between students with high Hardiness and low Hardiness.

H₀₄ There is no significant difference in the mean scores of Academic Achievement between students with high Achievement Motivation and low Achievement Motivation.

H₀₅ There is no significant interaction between Hardiness and Achievement Motivation with regard to Academic Achievement.

Methodology

Design of the study

The present study was conducted employing descriptive survey method. The independent variables were Hardiness and Achievement Motivation and dependent variable was Academic Achievement. Correlation analysis was done to find the relationship of Academic Achievement with school related Hardiness and Achievement Motivation. To study the main effects and interaction effects of Hardiness and Achievement Motivation on the Academic Achievement of secondary school students, statistical techniques of analysis of variance was employed.

Population for the study

All the students studying in class ninth of different secondary schools of Chandigarh formed the population for the present study.

Sample of the study

A sample of 250 students studying in ninth class from different schools was taken for collection of data. The technique employed was multistage randomization of clusters at school and section levels. Out of 56 senior secondary schools in Chandigarh, five schools were randomly selected. Then one section of class ninth was randomly selected from each school.

Tools used

The following tools were employed for the collection of the data:

- Scale of School Related Hardiness Measure by Cole et al. (2004).
- (N-Ach) scale by Deo Mohan (1985).
- Academic Achievement scores as obtained by students in class 8th were taken from office record of the school.

Procedure adopted for data collection

A sample of 250 students studying in class ninth of different government schools of Chandigarh was taken for study. The investigator visited the school with the prior permission of principals of various schools. Then both the questionnaires used for collection of data were submitted to the principals. After getting approval of the principals the actual procedure of data collection was started. Both the tests i.e., School Related Hardiness Measure by Cole, Field & Harris (2004) and Deo Mohan Achievement Motivation (n- ach) Scale by Dr. (Mrs.) Pratibha Deo and Asha Mohan (1985) were administered in one sitting. Firstly the scale of Achievement Motivation was administered and after that scale of school-related Hardiness was administered to the students. Rest of five minutes was given in between the two tests. Academic Achievement Scores were obtained on the basis of the marks secured by students in the previous examinations (class VIII). The data consisted of the scores on Academic Achievement, Hardiness and Achievement Motivation.

Results And Discussion

Section I: Correlational Analysis

This section deals with the product moment coefficient of correlation between Academic Achievement, Hardiness and Achievement Motivation. In order to test hypotheses no. 1 and 2 coefficient of correlation were computed. Results are shown in Table 1

Interpretation And Discussion

Hardiness

Table 1 shows that calculated value of r between Academic Achievement and Hardiness is 0.060 which is less than the table value of 0.138 and hence not significant at 0.05 level of significance.

Therefore null hypothesis H_{01} stating "There is no significant relationship between Academic Achievement and Hardiness" is accepted. Hence there exists no significant relationship between Academic Achievement and Hardiness.

This finding is supported by studies conducted by Maddi and Khoshaba (1994), Kelley (1999), Riccio (2000), Baramée and Blegen (2003), Crawford (2007).

Maddi and Khoshaba (1994) studied the relationship between hardiness (the sense of self that emphasizes commitment, control, and challenge) and mental health among 157 undergraduates aged 18-42 years. The pattern of results suggested that hardiness is a general measure of mental health and that this is not an artifact of negative affectivity.

Kelley (1999) explored the relative contribution of affect, self-esteem, and hardiness to success probability of learning disabled college students and it was found that self-esteem in comparison to affect and hardiness was a critical determinant in academic performance.

Riccio (2000) in his study of relationship among academic achievement motivation, motivation orientation and ability achievement, differences in reading, found that motivational and achievement variables were generally found to be significantly positively correlated.

Baramée and Blegen (2003) conducted a study to test relationships among variables hypothesized to affect new graduate perceptions of clinical competence on a sample of 468 new graduates from six baccalaureate nursing programmes in Thailand. Path analysis indicated the student effort, perception of clinical learning environment and programme grade point average had direct effects on perception of clinical competence whereas hardiness had an indirect and positive impact on the outcome variables through its impacts upon student effort, perception of clinical learning environment and perception of student-faculty relationship. The results of the study supported the indirect effect of hardiness on academics rather than a direct effect.

Crawford (2007) conducted a series of multiple regression analyses using three outcome variables: a rating of students' resilient behavior, number of behavior referral in the students records, and standardized reading achievements scores. Examination of qualitative data revealed that teacher characteristics were important to students' motivation to succeed, and information collected reiterated the importance of family structure and cohesion in students' resilient status.

Thus it may be concluded that Hardiness may have a direct impact on perception of teacher student relationship and perception of teaching learning environment but indirectly related to Academic Achievement.

Achievement Motivation

Table 1 shows that calculated value of r between Academic Achievement and Achievement Motivation is 0.225 which is more than the table value of 0.181 and hence significant at 0.01 level. Therefore the null hypothesis H_{02} stating "There is no significant relationship between Academic Achievement and Achievement Motivation" is rejected. Hence there exists a significant relationship between Academic Achievement and Achievement Motivation.

The finding is supported by studies conducted by Atkinson and Feather (1966), Devanesan (1990), Rani (1992), Gottfried & Gottfried (1996), Gottfried and Gottfried (2004) Verma & Sheikh (1998) and Eisenberg (2010).

Atkinson & Feather (1966) in their 'Theory of Achievement Motivation' stated that a person's achievement oriented behavior is based on three parts: the first part being the individual's

predisposition to achievement, the second part being the probability of success, and third, the individual's perception of value of the task.

Devanesan (1990) found a significant positive relationship between the Achievement Motivation and scholastic achievement of higher secondary mathematics /science students.

Rani (1992) in her study found that girls were higher than boys in Achievement Motivation and there exists a significant positive relationship between Academic Achievement and Achievement Motivation.

Gottfried and Gottfried (1996) found that Academic intrinsic motivation has been shown to be positively and significantly related to students' achievement and perception of their academic competence, and inversely related to their academic anxiety. Gottfried and Gottfried (2004) tested gifted children in the Children's Academic Intrinsic Motivation Inventory (CAIMI) as well as looking at additional academic and intellectual measures such as IQ, GPA, SAT scores, and dropout rate. Participants were measured at 6 month intervals from infancy through high school. The results found saw that motivation had a more positive relationship with achievement than IQ; achievement including GPA and standardized test scores. Additionally, the ratings of academic intrinsic motivation remained stable during adolescents.

Verma & Sheikh (1998) found that n-ach and n-aggression have been significantly related to Academic Achievement. Achievement Motivation is important for Academic Achievement at every moment because students form self-concepts, values, and beliefs about their abilities. Effortful control, which refers to the ability to monitor and regulate the impact of emotions and motivational states on one's performance, is important aspect inherent in meta-cognition. Research suggests that effortful control among preschool- and elementary-age children is associated with better social relationships at school, higher academic engagement, and improved achievement (Eisenberg, 2010). An optimum level of Achievement Motivation is necessary to make significant contribution for Academic Achievement of the students.

Section II: Analysis Of Variance

To evaluate the main effects and interaction effects of variables of Hardiness (high and low) and Achievement Motivation (high and low) on the dependable variable Academic Achievement, 2×2 analysis of variance was employed.

Following assumptions for applying analysis of variance of data were tested :

- The observations within sets should be drawn from normally distributed population.
- The observations with in sets must be randomly and mutually independent.
- The variance with in sets must be approximately equal.

The first assumption of normality of distribution of variables of Academic Achievement, Hardiness and Achievement Motivation in the population where sample was drawn, was tested by working out mean, median, skewness and kurtosis for these variables for $N=250$ (for academic achievement $M=64.75$, $Md=65.00$, $Sk=0.009$, $Ku= 0.0004$; for hardiness $M=70.34$, $Md=69.00$, $Sk=0.051$, $Ku=-0.212$; for Achievement Motivation $M=91.88$, $Md=94.00$, $Sk=0.752$, $Ku=0.127$)

The values confirmed the distribution to be normal. Thus, it fulfills the first basic assumption. The second assumption of assigning mutually exclusive cases to each cell of 2×2 factorial design of analysis of variance was satisfied by assigning exclusive cases in each cell. The third assumption of equal

variation in cells in terms of homogeneity of variance was assumed because of equal number of cases in each cell.

To carry out the analysis of variance, the independent variables Hardiness and Achievement Motivation were divided into high Hardiness and low Hardiness; high Achievement Motivation and low Achievement Motivation, respectively on the basis of 27% criterion. Table 2 shows the calculated F-ratios.

Interpretation And Discussion

Main Effects

As evident from Table 2, F-value for the two groups namely high and low Hardiness on the variable of Academic Achievement is 3.745 which is less than the table value of 3.96 at 0.05 at 1/76 degree of freedom. Hence the hypothesis H_{03} , "There is no significant difference in the mean scores of Academic Achievement between students with high Hardiness and low Hardiness" is accepted. So, there exists no significant difference in the mean scores on Academic Achievement between groups with high Hardiness and groups with low Hardiness.

Table 2 shows that F-value for the two groups' namely high and low Achievement Motivation on the variable of Academic Achievement is 5.252 which is more than the table value of 3.96 at 1/76 degree of freedom. Hence, it is significant at 0.05 level. Hence the hypothesis H_{04} , "There is no significant difference in the mean scores on Academic Achievement between groups with high Achievement Motivation and low Achievement Motivation" is rejected.

So, there exists a significant difference in the mean scores on Academic Achievement between groups with high Achievement Motivation and groups with low Achievement Motivation.

Interaction Effect

F-value for interaction between Hardiness and Achievement Motivation on the variable of Academic Achievement is 4.929 for 1/76 degree of freedom and is more than the table value of 3.96 (Table 2), therefore significant at 0.05 level.

Hence the hypothesis H_{05} "There is no significant interaction between Hardiness and Achievement Motivation with regard to Academic Achievement" is rejected. This finding can be supported by Kenyon (2006) and Gottfried & Gottfried (1996). Kenyon (2006) in his study found that locus of control (dimension of Hardiness) and Achievement Motivation influence the ways in which the child approaches school related tasks, interpret the outcome of tasks and persists in activities. Gottfried & Gottfried (1996) also found that Academic intrinsic motivation has been shown to be positively and significantly related to students' achievement and perception of their academic competence, and inversely related to their academic anxiety. Hardiness may contribute towards better Academic Achievement by reducing academic anxiety among students.

So, there exists a significant interaction between Hardiness and Achievement Motivation on the variable of Academic Achievement at 0.05 level of significance.

Educational Implications

- From the present study it was found that Academic Achievement is significantly related to Academic Achievement. This result indicates that Academic Achievement and Achievement Motivation are significantly correlated, so efforts should be made by teachers and parents to enhance Achievement Motivation level of students. It will also have implications for the teachers to improve classroom practices, organizational management and personality development strategies to increase student motivation so that they can perform better academically also.

Table 1. Showing coefficient of correlation between academic achievement, achievement motivation and hardiness

S. No.	Variables	Academic Achievement	Achievement Motivation	Hardiness
1	Academic Achievement	1	0.225**	0.060
2	Hardiness	0.060	0.152*	1
3	Achievement Motivation	0.225**	1	0.152*

Note

1. $r = 0.181$ to be significant at 0.01 level.
2. $r = 0.138$ to be significant at 0.05 level.
3. *means significant at 0.05 level.
4. ** means significant at 0.01 level.

Table 2. Showing summary of analysis of variance

S. No.	Variables	df	Sumof Squares	MeanSumof Squares	F ratio	Significance	Level of Significance
1	Hardiness (A)	1	375.414	375.414	3.745	0.051	Not Significant
2	Achievement Motivation (B)	1	526.108	526.108	5.252*	0.025	Significant
3	Interaction (A*B)	1	493.764	493.764	4.929*	0.030	Significant
4	Error: Within Treatment	76	6711.073	100.165			

Note

- 1 Table values for df (degree of freedom) 1/76 at 0.05 level of significance is 3.96.
- 2 Table values for df (degree of freedom) 1/76 at 0.01 level of significance is 6.96.
- 3 *means significant at 0.05 level.
- 4 ** means significant at 0.01 level.

This result also has implications for researchers who should strengthen action research on the methods which enhance achievement motivation of students; it will ultimately help and support teacher's efforts in this direction.

- The present study revealed that Hardiness and Academic Achievement are not related and Hardiness does not influence Academic Achievement. The implication of this finding is that teachers should evaluate students irrespective of their hardiness and avoid logical error while rating their students.

- There was significant interaction found between Achievement Motivation and Hardiness on the Academic Achievement. Teachers, principals and parents can have some suggestive penetration on these interactive processes. The combined effect of being highly motivated and hardy would act as a buffer against acute periods of depression. Hardiness interacted with Achievement Motivation to decrease depression for students. Educators also need to be proactive (rather than reactive) and take additional steps to prevent stressors and student depression. Besides this long term institutional support should be provided to increase students' Hardiness.

- The present study will therefore, provide an added dimension to the empirical base for a comprehensive understanding of the correlates of Academic Achievement.

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