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Impact of Self Concept on Scholastic Achievement of 10th Class Students

Dr. S. Siddi Raju

Professor, Department of Civil Engineering
Siddharth Institute of Engineering & Technology, Chittoor District, A.P., India

Abstract:

Education is training and preparation for life. It should bring innate talents in the individual and help them to be proper in their future life. Mere acquisition of knowledge and information does not assist child in anyway. Present youth need self confidence, optimistic view of life values and discipline along with self-awareness of their strength and weakness, to stand in critical movements of life. The present attempts to examine the relationship between self concept of 10th class students in relation to gender, and locality study looked at the relationship between students self – concept and how it affects their academic achievement in mathematics in some selected secondary schools in Chittoor District, Andhra Pradesh. The sample consisted of randomly selected 1444 students from 10th class. Self- concept scale developed by Dr. (Miss) Mukta Rani Rastogi (1974) was administered on the sample to assess their self-concept. F test and regression analysis were used to analyze the data. The result of the findings showed that students have good self – concept of themselves by performing well in mathematics to please themselves, their parents and to get admission into higher institution of their choice. Better Self – Concept is associated with better scholastic achievement in mathematics. It is possible to predict the scholastic achievement of 10th class students in mathematics with Psychological variables like Self – Concept.

Key words: Self-concept, Education

1. Introduction

The term self – concept can be built up within or interrogated into different theoretical frameworks like those of subjective theories or belief systems. The researcher would like to view self – concept within the framework of attitude. According to Minefield, (1988), the concept “attitude” is a lasting, permanent stable orientation and readiness or intention to action of an individual towards a social object. The classroom teachers should teach students good habits and self - management skills together with appropriate self – attribution strategies which would result in education is the process of developing the capacities and potentials of the individual to be successful in a specified society or culture. From this perspective, education is serving primarily as an individual development function.

Education begins at birth and continues throughout life. It is constant and ongoing. The self – concept is the mental and conceptual awareness and persistence regard that sentient begins from them. The self – concept is an organized one which has a generally stable quality that is characterized by orderliness and harmony. Each person maintains countless perception regarding one’s personal existence and each perception is orchestrated with all others. It is this generally stable and organized quality of self – concept that gives consistency to the personality”. (Wikipedia Encyclopedia, 2003).

2. Review of Related Literature

The self – concept is a person’s total internet view of self in relation to the experience of being and functioning within the environment. It includes value attached to such a view” (Gilliand, 1998). Self concept has been variously defined as “The self as known to the self” (Murphy, 1947). The term self –concept has come into common use, to refer to the second meaning, gives rise to the phenomenological approach and “The pictures or images a person has himself” (Taneja, 1991).

Allport (1961) has described self–concept as “Something of which we are immediately aware. We think of it as the warm, central, private region of our life. As such it plays a crucial part in our consciousness (a concept broader in itself), in our personality (a concept broader than consciousness), and in our organism (a concept broader than personality). Thus it is some kind of core of our being.

The studies conducted in this area which are relevant to the Indian context are Manger and Eikeland (2006), Thomas and Robert (2006), Siddiraju (2013), Thomas (2005), Carlos & Rodrgvez (2009), Philius Qulatunde (2010)etc... The details of the studies are as follows.

Manger and Eikeland (2006) studied that the effect of mathematics self concept on girls and boys' mathematical achievement found that Norwegian elementary school boys showed significantly higher mathematics self concept than girls. The boys also had a significantly higher mathematical achievement score than girls.

Thomas and Robert (2006) found that self concept of academic ability and to a lesser extent, students study activity was positively associated with student achievement. Students self concepts of academic ability ratings were also linked to student engagement in generative, proactive study activities.

The findings of the above studies show that self-concept is dominant in personality pattern in understanding the personality of an individual, predicting his life adjustment, his success and failure are based on the self concept which is an essential one.

3. Need for the study

In our society academic achievement is considered as a key criterion to judge one's total potentialities and capacities also in the learning process. Academic achievement also denotes the knowledge attained and skill developed in the school subject, usually designed by test scores and influenced by several factors like personality, motivation, opportunities, education, social economic status and also self – concept. 10th class is the most important phase in the life of the students. The adolescent at this stage are in a transitional phase. Psychological changes, academic stress, emotional disturbances are quite common during this stage. Great expectations of the parents and teachers create anxiety and stress. To handle such a situation children should have positive self concept where the individual evaluates every experience in relation to his self concept who learns to discriminate between those thoughts and actions that are considered worthy and those that are not. Self concept can either be positive or negative which boosts up the self confidence and helps to solve the problems of life in career planning to take up challenges and failures of life in a balanced way. Here an attempt was made to find out the relationship between sex, locality, about self concept of 10th class students of Chittoor district.

In view of the above, an attempt has been made in the study to find out the Impact of Self – Concept on Academic Achievement of 10th class students in mathematics. To be specific the objectives of the study are as follows:

4. Objectives of the Study

- To study the impact of Self - Concept on scholastic achievement of X class students in mathematics.
- The study whether it is possible to predict the achievement in mathematics with the help of Self - Concept.

5. Hypothesis of the Study

Keeping in view of above objectives the following hypothesis were formulated.

- Self - Concept would not have any significant influence on scholastic achievement of X class students in mathematics.
- It would not be possible to predict the achievement mathematics with the help of Self - Concept.

6. Sample of the Study

The aim of the study is to identify the role of different factors on the achievements in mathematics of X class students. The District has 849 High schools under four educational divisions. For the purpose of the present study, the stratified proportionate Random sampling method was adopted for selecting the schools, for educational divisions. However while selecting the student sample purposive sampling method was adopted wherein all the students of X class of selected schools were chosen as a sample. Thus the total 1444 samples of the study include 22 schools under four educational divisions which were conducted in Chittoor District, a Rayalaseema region of Andhra Pradesh.

7. Research Tool

Keeping in view of the objectives of the study and review of related literature, the investigator has chosen the self-concept scale (Scs) developed by Dr. (Miss) Mukta Rani Rastogi (1974) which is more suitable for the purpose of the present study. This scale consists of 51 items, divided into 10 (ten) areas. Out of these 51 items, 23 are positive and 28 are negative. It is a five-point attitude scale with alternatives, Strongly Agree (SA), Agree (A), Doubtful (D), Disagree (DA), and Strongly Disagree (SDA). The ten areas are:

- Health and sex appropriateness
- Abilities
- Self-confidence
- Self- acceptance
- Worthiness
- Present, past and future
- Beliefs and convictions
- Feeling of shame and guilt
- Sociability
- Emotional maturity

Further in order to study the achievement of the students in mathematics, the investigator found that there is no standardized tool in the physical sciences for 10th class students in Telugu. Hence the investigator has developed and standardized an objective achievement test and utilized for studying the achievement in mathematics of 10th class students. The test consists of 100 multiple choice items, where the student is supposed to check the correct item. The test yields 100 marks.

8. Results and Discussion

The collected data were analyzed keeping in view of the objectives of study based on the students relating to self-concept has been segregated into 10 areas. Mean and standard deviation were calculated for each area as a whole further the mean scores of each area have been classified into 3 groups as a low, moderate and high, based on qualities. The impact of self-concept scale of the scholastic achievement of 10th class students is observed from the Table-1. It is clear from the Table-1 that the computed values of 'F' for the areas of SCS namely SC₂, SC₃, SC₄, SC₅, SC₁₀ and SC_T are far greater than the critical value of 'F' (4.63) for 2 and 1441 def at 0.01 level of significance. Hence the Hypothesis-8 is rejected for the above areas of SCS at 0.01 levels. The computed values of 'F' for the areas of SCS namely SC₆, SC₇, and SC₈ are greater than the critical value of F (3.00) for 2 and 1441 def at 0.05 level of significance. Hence the Hypothesis-8 is rejected for SC₆, SC₇ and SC₈ at 0.05 levels. It is observed that the computed values, of 'F' for areas SC₁ and SC₉ are less than the critical value of F (3.00) for 2 and 1441 def at 0.05 level of significance. Hence the Hypothesis-8 is accepted for the areas SC₁ and SC₉ at 0.05 levels.

Hence it is concluded that Self concepts like,

- Abilities (SC₂),
- Self confidence (SC₃),
- Self Acceptance (SC₄)
- Worthiness (SC₅),
- Present Past and Future (SC₆),
- Beliefs and convictions (SC₇)
- Feeling of shame and Guilt (SC₈).

Emotional maturity (SC₁₀) and self-concepts total SC_T has significant influence on the achievement of 10th class students in mathematics. From the above table, it is clear that the students who scored better in the above self-concepts have also significantly better scholastic achievement in mathematics. The areas 1. Health and sex appropriateness and 2. Sociability (SC₉) does not have significant influence on the scholastic achievement in mathematics.

Sl. No.	Self Concept	No. of Observations			Mean			S.D. Values			F values	Level of Significance
		I	II	III	I	II	III	I	II	III		
1.	SC ₁	393	773	278	43.98	45.46	45.00	16.04	16.85	16.21	1.05	@
2.	SC ₂	409	703	332	41.16	44.32	51.04	15.03	16.11	17.42	35.54	**
3.	SC ₃	378	770	296	42.43	45.33	47.27	15.70	16.32	17.60	7.59	**
4.	SC ₄	476	666	302	42.48	45.68	47.31	15.83	16.82	16.41	9.19	**
5.	SC ₅	466	637	341	43.16	44.70	47.95	15.93	16.73	16.50	8.56	**
6.	SC ₆	479	694	271	43.80	44.90	47.32	16.05	16.86	16.33	3.73	*
7.	SC ₇	490	618	336	43.43	45.10	46.97	16.34	16.87	15.89	4.62	*
8.	SC ₈	395	792	257	43.30	45.39	46.25	15.20	16.90	17.06	3.07	*
9.	SC ₉	452	720	272	44.69	44.90	45.62	16.43	16.54	16.60	0.29	@
10.	SC ₁₀	390	821	233	42.10	45.45	48.06	14.64	16.96	17.17	10.45	**
11.	SC _T	374	726	344	40.50	44.39	51.03	15.16	16.02	17.16	39.34	**

Table 1: Impact of Self-Concepts on the Scholastic Achievement

9. Prediction of Scholastic Achievement in Mathematics with the Help of Self-Concepts

Scholastic Achievement of X class students in mathematics is predicted (Dependent variable,) with the help of 10 areas of Self – concepts and Self – Concepts Total scores (Independent variables, variable numbers 1 to 11 in Table - 1) using stepwise multiple regression analysis. The results of the regression analysis are presented in Table – 2. It is evident from the Table-2 the most important independent variable that entered first into the step-wise regression analysis is 'self concepts total' (SC_T). The multiple correlations are obtained is 0.255. It indicates that the strength of the relationship between the two variables ATS and SC_T is about 25.5 percent. It

could be seen that R is significant ($F = 100.54$) beyond the 0.01 level of significance for 1 and 1443df. The coefficient of R^2 is 0.065. This shows that 6.5 percent of variance in ATS is accounted by SC_T .

The standard error of estimation (SER) is 15.97. From this it can be inferred that nearly 68% of the actual ATS value would lie within the $M \pm 15.97$ of ATS value predicted with the help of this variable (SC_T).

The partial regression coefficient (b) presented in column 7 of Table – 52 is 0.275. This value indicates that the ATS value would change by 0.275 units for every unit of change in SC_T . The 't' value for 'b' (col 8) is 10.027 which is significant beyond the 0.01 level of significance for 1 and 1442 def. The value of constant that could be written to predict ATS at this stage is -0.15. The multiple regression equation at the end of this step could be written as:

$$ATS = -0.15 + 0.275 (SC_T)$$

The second important predictor variable that entered in the step-wise regression analysis is SC_2 (VN 43). The values of R and R^2 at this stage from the Table – 5.33 are 0.265 and 0.070 respectively. Thus the amount of variation in ATS contributed by these two variables in combination is 7.00 percent out of which SC_T has contributed 5.17 per cent of variance and the remaining 1.84 per cent of variance is contributed by SC_2 (VN 43).

The multiple regression equation with these two predictor variables SC_T and SC_2 could be written as

$$ATS = 0.71 + 0.219 (SC_T) + 0.301 (SC_2)$$

There are six steps in this regression analysis. The value of R^2 in the 6th step from the Table – 52 is 0.079. This shows that these six variables put together could explain 7.90 percent of variance in the dependent variable (ATS). The regression equation at the end of 6th step could be written as:

$$ATS = 4.02 + 0.330 (SC_T) + 0.219 (SC_2) - 0.356 (SC_9) \\ - 0.296 (SC_1) - 0.305 (SC_8) - 0.310 (SC_6)$$

With the help of the above six variables namely

- Self concept Total score
- Abilities,
- Sociability
- Health and sex Appropriateness
- Feelings of shame and Guilt and
- Past, Present and future, it is possible to explain 7.87 percent of variance in the dependent variable.

10. Conclusion

It is found that self-concepts namely (i) Abilities (SC_2), (ii) Self confidence (SC_3), (iii) Self Acceptance (SC_4), (iv) Worthiness (SC_5), (v) present-past-future (SC_6), (vi) Beliefs and convictions (SC_7), (vii) Feelings of Shame and Guilt (SC_8), (viii) Emotional Maturity (SC_{10}) and (ix) Self-concepts total score (SC_T), have significant influence on the achievement of 10th class students in mathematics. Better Self-concepts are associated with better scholastic achievement in mathematics.

The areas of self-concepts namely (i) Health and sex appropriateness (SC_1) and (ii) Sociability (SC_9) does not have significant influence on the achievement of 10th class students in mathematics.

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Step No.	IV (VN)	R	R ²	SER	F value For R	b (VN)	't' value for b	Constant	B	r	% of variance
1	2	3	4	5	6	7	8	9	10	11	12
1.	SCT (52)	0.255	0.065	15.97	100.54** (1,1442)	0.275	10.027** (1442)	-0.15	0.255	0.111	6.52
2.	SC ₂ (43)	0.265	0.070	15.93	54.36** (2,1441)	0.219 (52) 0.301 (43)	6.39** 2.78** (1441)	0.71	0.203 0.088	0.085	5.17 1.84
3.	SC ₉ (50)	0.268	0.072	15.92	37.09** (3,1440)	0.231 (52) 0.278 (43) -0.271 (50)	6.59** 2.54* 1.56@ (1440)	2.33	0.215 0.081 -0.041	0.209	5.49 1.70 0.01
4.	SC ₁ (42)	0.270	0.073	15.91	28.53** (4,1439)	0.251 (52) 0.265 (43) -0.288 (50) -0.211 (42)	6.77** 2.42* 1.65@ 1.65@ (1439)	3.99	0.233 0.078 -0.043 -0.045	0.069	5.95 1.62 -0.01 -0.21
5.	SC ₈ (49)	0.276	0.076	15.90	23.64** (5,1438)	0.292 (52) 0.238 (43) -0.321 (50) -0.267 (42) -0.261 (49)	6.87** 2.15* 1.84@ 2.05* 1.96* (1438)	3.07	0.271 0.069 -0.048 -0.057 -0.058	0.046	6.91 1.45 -0.01 -0.26 -0.49
6.	SC ₆ (47)	0.281	0.079	15.88	20.47** (6,1437)	0.330(52) 0.219(43) -0.356 (50) -0.296(42) -0.305(49) -0.310(47)	7.14** 1.98* 2.03* 2.26* 2.27* 2.09* (1437)	4.02	0.306 0.064 -0.054 -0.063 -0.068 -0.059	0.255	7.82 1.34 -0.02 -0.29 -0.57 -0.41

Table 2: Prediction of Scholastic Achievement in Mathematics with the Help of Self Concepts