

Secondary School Students' Socio Economic Status, Mathematics Self-concept and Achievement Goal Orientations: A Correlational Investigation

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Abstract

This study was aimed at finding relationship among students' mathematics Self-concept, Socio Economic Status (SES) and Achievement Goal Orientations (AGOs) at secondary level in Punjab. The population of study included secondary school students in the Punjab province. The sample was selected through multi-stage random sampling technique. An adapted questionnaire was used to get responses about achievement goal orientation of students. Mathematics Self-concept scale by Marsh (1948) was used to know students' academic self-concept. "Socio Economic" Status was assessed through different demographic variables. Through SPSS, Pearson correlation coefficient was run to calculate correlation among students' self-concept in mathematics, SES, and their AGOs. Results showed significant correlation between students' self concept in mathematics and their AGOs. Correlation between SES and AGOs of students was not significant. On the basis of findings, it was recommended that teachers should use instructional strategies which tend to improve students' mathematics "self concept" to make them mastery goal oriented.

Keywords: Self concept, socio economic status, achievement goal orientations

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Introduction

Achievement Goal Orientation (AGO) is one of the theories of motivation. Its basic notion is related to the fact that an individual's style of fulfilling a deed is significantly affected by the goals he does possess (Ames, 1992; Dweck, 1986). Many studies on AGOs and their related variables have been conducted during the last many years (Dinc, 2010). AGO theory throws light on pupils' two general patterns of goal orientations i.e., learning goal orientation, which also bears the name of mastery goal orientation (MGO), and performance goal orientation which also possesses two types namely performance-approach goal orientation (PAGO) and performance avoidance goal orientation (PAVGO) (Elliot & Harackiewicz, 1996). Mastery goal orientation has also been categorized into approach-avoidance dichotomy (Elliot, 1999; Elliot & McGregor, 2001; Pintrich, 2000a, Pintrich, 2000b). Pupils having MGO pay attention on achieving mastery on a task and are desirous of getting new skills. Contrary to this, students having MAVGO have a desire to get success through self-denial of the facts, having misunderstood information, or having a task completed inaccurately. Students having PAGO are concerned with presenting themselves as competent before others and want to have constructive feedback from others about their abilities. The students with PAVGO want to ignore critical opinions about their abilities and intentionally avoid doing hard deeds (Elliot & Harackiewicz, 1996).

Seaton (2013) has also pointed out the lack of research in finding the association between AGOs and academic "self-concept". Many studies have been conducted on exhibiting strong relationships between a number of motivational indicators and academic self-concept of students which seems to be systematically related to ratings of teachers about students' involvement level and diligence in activities of classrooms (Skaalvik & Rankin, 1996; Skinner, Wellborn & Connell, 1990), students' ratings of endeavour (Skaalvik & Rankin, 1996), help-mongering behaviors of students (Ames, 1983), and intrinsic motivation measures (Gottfried, 1990; Harter & Connell, 1984; Mac Iver, Stipek, & Daniels, 1991; Meece, Blumenfeld, & Hoyle, 1988; Skaalvik & Rankin, 1996). Items included in the "self-description" questionnaire (Marsh, 1990c), measure self-perceived capabilities and state of motivation. These items are strongly correlated (Skaalvik & Rankin, 1996; Tanzer, 1996).

Marsh and O'Neill (1984) found correlation between mathematics "self-concept" of students at secondary school level and their achievement in mathematics. Bandura (1997) reported about a person's actions and behaviors influenced by his perceptions about his ability of performing a particular task. He argued that besides being skilled in completing a specific task, an individual does possess a specific level of expectation for its completion before beginning it. He termed these perceptions as one's self-efficacy beliefs. People having self-efficacy beliefs on a higher level show better performance than those who have self-efficacy beliefs on a lower level (Jackson, 2002; Lane & Lane, 2001; Pajares, 1996; Pajares, 2003). It was also brought into light that a person's tendency in adopting the types of goals in completing a task is also influenced by his self-efficacy beliefs. The reasons behind goals, and students' goals in performing a certain task are called goal orientation (Elliot & Harackiewicz, 1996). A person's adoption of the type of goal orientation directs his actions, reactions, and level of motivation to complete a task (Shim & Ryan, 2005).

The connection between mastery and performance-avoidance goal orientations and students' actions and learning outcomes has been agreed upon by various researchers. Students with mastery goal orientation do possess a high level of self-efficacy, constructive ways of learning such as getting more involved in their class work, and understanding information in a better and significant way, and achieving high level of success (Middleton & Midgley, 1997; Midgley & Urdan, 1995).

"Socio-economic" status (SES) being a background variable signifies social construction in a society (Oakes & Rossi, 2003). There are a number of definitions as of SES including "differential access (realized and potential) to desired resources" (Oakes & Rossi, 2003), and "a shorthand expression for variables that characterize the placement of persons, families, households, census tracts, or other aggregates with respect to the capacity to create or consume valued goods in our society" (Hauser & Warren, 1997). Commonly, SES is supposed to be connected with money and education.

The studies indicating achievement as indirectly affected by SES rises the question of which outcomes are concerned with it. Much research has investigated the effects of SES on variables concerned with achievement such as academic skills, cognitive readiness, academic adjustment, capabilities, decisions about attending college, and decisions pertaining to college major (Anderson & Zeith, 1997; Davies & Guppy, 1997; Felner et. al., 1995; Leppel, Williams & Waldauer, 2001; Stipek & Ryan 1997). Longitudinal research has indicated family income which as one of the indicators of "socio-economic" status as interrelated with the cognitive zeal in

children of playgroup and kindergarten, and cognitive and educational competence in grade one (Stipek & Ryan, 1997; Stipek, 2001). Correlation between SES and psychological adaptation in students of middle school has also been found (Felner et.al., 1995). Furthermore, SES has also been investigated to be significantly related with self-esteem, perceived competence, behavior problems in classroom, depression, parental rejection, and family social support.

A study conducted on children of Brazil indicated a correlation between success motivation and SES, especially income of the family (Oakland et.al., 1994). Moreover, an effect of SES on academic aspirations of students was also reported. Obviously, the importance of studying SES in an educational setting was stressed by the research investigating correlations between "socio-economic" status and success and success-connected variables.

These research studies motivated us to find out factors which are affecting achievement goal orientations of secondary school students. The association between socio economic status and a number of success-connected variables has been explored, but achievement goal orientation has not been examined on a vast level. It is likely that an association between socio economic status and achievement goal implementation does exist, which would present more understanding of the role that socio economic status and "self-concept" play in the adoption of AGOs. A scarcity of research studies to identify the associations between AGOs and educational self-concept does exist. The present study was conducted to:

1. Determine a relationship of SES and mathematics self concept of students in the province of Punjab at secondary level.
2. To identify relationship of students' mathematics self concept and their AGOs in the province of Punjab at secondary level.
3. To find out relationship of students' SES and their AGOs in the province of Punjab at secondary level.

Research hypothesis

Following research hypotheses were developed for the study:

H₀₁: There is a significant association between "self-concept" and students' AGOs.

H₀₂: There is a significant association between students' SES and their AGOs.

H₀₃: A significant relationship exists between students' SES and their mathematics "self-concept"

Methodology

Population of the study consisted of students of class 9 enrolled in government high schools (boys and girls) in nine districts of the Punjab province. To get representative sample for SES the districts were selected according to Education Deprivation Index (EDI). Jamal (2012) presented a list of 36 districts of the Punjab province which were distributed among three strata considering Education Deprivation Indices (EDI). Pakistan Social and Living Standards Measurement Survey PSLM (2011) was followed in this regard. It was chosen to get information about the deprivation of public regarding education. A general question was asked accompanied by one question regarding the use of mathematic skills, i.e. "Can this person write and read in any language with understanding?" and "Can this person solve simple Mathematics Questions?"

Three strata divided on the basis of Education Deprivation Indices of districts i.e. High Education Deprivation Index (HEDI): Medium Education Deprivation Index (MEDI) and Low Education Deprivation Index (LEDI) were made. From each stratum, three districts (25%) were chosen randomly. Districts selected from LEDI stratum were Chakwal, Narowal and Lahore were taken from LEDI stratum. Kasur, Okara, and Jhung were chosen from MEDI stratum and Bakhar, Chiniot, and Bahawalnagar were selected from HEDI stratum.

From each Tehsil headquarter of randomly selected district, "two" government girls and two government schools for boys were taken randomly from each tehsil headquarter of the district which was randomly selected. From each school, 25 pupils were chosen randomly. Following the same process, 100 students were taken from each randomly selected district. From nine districts of three strata, 900 students were selected. For collecting data, 900 questionnaires were divided among these students. Out of 900 filled questionnaires, 26 were removed due to incomplete filling. The sample of the survey included 874 students (Boys = 428, Girls = 446) of class 9.

The Instrument of the study included three sets of questions. To measure mathematics "self-concept" the "Academic Self-Concept (Marsh 1990; 1993)" was used which had reliability index 0.88. Different demographic variables (father's and mother's qualification and profession, monthly income, ownership of home, technology, and transport etc.) were used to assess the SES level of students. An adapted questionnaire Achievement Goals Orientation Questionnaire, adapted from "Pattern of adaptive learning Scale" was used to determine the students' goal orientation in the subject of mathematics. The reliability index of this questionnaire was 0.84. Data was analyzed through SPSS. To identify the association between educational "self-concept", "socio-economic" status, and AGOs of students, the Pearson correlation co-efficient was run.

Results

The following tables present the results of the study:

Table 1

Descriptive statistics

Variables	Description	Details	Total
Gender	Male	428	874
	Female	446	
Age	Range	13-18	
Schools	Male	18	36
	Female	18	
Districts	Low EDI	Lahore	9
		Chakwal	
		Narowal	
	Medium EDI	Kasure	
		Okara	
		Jhung	
HighEDI	Bakhar		
	Chiniot		
	Bahawalnagar		

In order to find out relationship between self concept and AGO Pearson correlation coefficient was run. Results are given in table 2 below.

Table 2*Correlation between students' ASO and their mathematics self-concept*

Goal orientation factors	N	r. value	Sig
Mastery Goal Orientation	876	.440**	.000
Performance Approach Goal Orientation	876	.266**	.000
Performance Avoidance Goal Orientation	876	.030	.030
Learning Avoidance Goal Orientation	876	-.508**	.000
Total Goal Orientation Scale	876		

**Correlation is significant at .01 level (2-tailed)

*Correlation is significant at .05 level (2-tailed)

Table 2 showed that there was a noteworthy correlation between pupils' SES and pupils' mastery goal orientation ($r = .440$, $p < .05$). There was also a significant correlation between students' SES and students' mastery goal orientation ($r = .266$, $p < .05$). It showed that students who had good academic concept tend to adopt MGO instead of PGO. Little correlation existed between good self-concept and performance avoidance goal orientation. There was a strong negative correlation between self concept and mastery avoidance goal orientation. It showed that students who had good "self-concept" avoid adopting mastery avoidance goal orientation. Rather they had the tendency to master mathematics. So, it was concluded that pupils' GOs were positively associated with their self concept except mastery avoidance goal orientation. So, research hypothesis that "a significant correlation exists between self-concept and students' AGOs" was accepted. On the basis of these findings it was concluded that there was a noteworthy association between pupils' "self-concept" in mathematics and their achievement goal orientations.

Table 3*Correlation between students AGO and SES*

Goal orientation factors	N	r. value	Sig
MGO	876	-.030	.379
PAGO	876	.028	.410
PAVGO	876	.034	.318
MAVGO	876	.023	.499
Total GO Scale	876		

Table 3 showed no noteworthy association between students' SES and pupils' Achievement Goal Orientations ($p < .05$). Results revealed that weak negative correlation existed between students' mastery goal orientation and their SES ($r = -.030$, $p = .379$). The correlation between students' SES and performance approach goal orientation was not significant but it was positive ($r = .028$, $p = .410$).

The correlation among students' SES and performance and mastery avoidance goal orientation was also positive but not significant ($r = .034$, $p = .318$ and $r = .023$, $p = .499$). The research hypothesis that a significant association existed between students' SES and their AGO" was rejected. On the basis of these findings it was found that students who had high SES had less tendency of adopting mastery goal orientation. It also showed that students with high SES had a tendency to adopt PAGO, PAVGO and MAVGO. That is, they want to look smart as compared to others and tend to avoid unfavorable remarks. They are also unwilling to learn mathematics.

Table 4

Correlation between mathematics "self-concept" and SES of students

Variables	<i>N</i>	<i>r</i> -valu	Sig.
SES	871	-.042	.213
Mathematic "self-concept"			

Table 4 showed the correlation between mathematics "self-concept" and SES of students in the province of the Punjab. It is evident that the association between two variables was not significant statistically ($r = -.042$, $p = .213$). Based on these results, the research hypothesis that "there is significant relationship between students' SES and their mathematics self-concept" was rejected. It is noteworthy that there was weak negative correlation between two variables. So, it was concluded that students with higher SES had lower "self-concept" than the students with low SES.

Discussion and Conclusion

Results presented above showed that students who had good academic self concept in the subject of mathematics prominently tended to adopt mastery as well as performance goal orientation. Little correlation existed between good self-concept and performance avoidance goal orientation. Strong negative correlation existed between self concept and mastery avoidance goal orientation that showed that students who had good self concept avoid adopting learning avoidance goal orientation. So, it was concluded that students' goal orientations were positively correlated with their self concept except mastery avoidance goal orientation. Results have consistency with the results of studies which have time and again presented strong associations between pupils' educational self-concept and a number of indicators of motivation (Gottfried, 1990; Harter & Connell, 1984; Mac Iver, Stipek, & Daniels, 1991; Meece, Blumenfeld, & Hoyle, 1988; Skaalvik & Rankin, 1996).

Results also revealed that weak negative correlation existed between students' mastery goal orientation and their SES. It shows that students who had high SES have less tendency of adopting mastery goal orientation. Students with high SES had tendency to adopt PAGO, PAVGO and MAVGO. That is, they want to look smarter than others and tend to avoid unfavorable remarks. Additionally, they are also unwilling to learn mathematics. The findings showed consistency with the study conducted by Kaliski, Finney & Horst (2006), in which mastery-approach was endorsed more by students having lower income, whereas performance-approach was endorsed more by students whose income was high.

Recommendations

Secondary school level is very important and has a profound effect on students' future life. In order to make a strong foundation for future life, students need to be learning oriented. In the light of findings of the study the following recommendations are made:

- As results revealed that students with good "self-concept" tend to adopt learning /mastery goal orientation so teachers must try to develop good self concept through verbal persuasion.
- Vicarious experiences can also be helpful in improving students' self concept.
- There should be a strong community school relationship to guide parents with high SES
- Parents with high SES should set challenging targets for their children and give them incentives by relating with their success.
- Teachers must form students working groups on the basis of their interests.
- Teachers should appreciate students' efforts and improvement in their performance.
- Teacher should develop students' interest in the task by developing relevance with practical life.

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