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PERCIEVED POWER STRUCTURE IN CLASSROOM AS A CORRELATE OF ACHIEVEMENT IN MATHEMATICS OF SECONDARY SCHOOL STUDENTS

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ABSTRACT

This paper is an attempt to study the perceived power structure in classroom as a correlate of achievement in mathematics of secondary school students. The study was conducted in Adra, a small town in Purulia District, West Bengal, India. Using Stratified Cluster sampling technique 366 secondary school students were selected for the study. Two newly constructed instruments entitled ' Perception scale for Power Structure in class room' and 'Achievement in Mathematics test' were used for the collection of data. Statistical technique used for the study include Mean, Median, Mode, Standard deviation, Kurtosis, Skewness, Analysis of variance(ANOVA), Test of significance of difference between means,Pearson's product moment coefficient of correlation and Test of significance of difference between two correlations was also used. Findings of the study shows significant and not significant relationship between the variables under the study for the total sample for the sub-samples.

Introduction

Education is an opening of door to the world of liberation and development. Without education, man, as it were, is shut up in a windowless room. With education, he finds himself in a room with all its windows open to the outside world. In other words, people who are not educated have less opportunity to do what they want to do. When child first time steps in school's desks, he tries to make relationship with people around him especially the teachers. If teacher start to understand his students there will be a good relationship, because when students have problems on school they can speak freely with their teachers and they can find solution together that is good for everyone. If that relationship and communication between student - teacher is good, student will have more respect to the teacher and he will pay more attention on his classes. But if that relationship is bad, then going to school and classes of teachers will be the biggest nightmare for the student. School is the place where children spend most of the day. So students have to have respect to the teachers and teachers have to had toleration to students for good relationship between them.

Education system has been undergoing rapid change in the last several years. New modes of teaching and learning techniques and strategies have been introduced and are being

encouraged as alternative methods to the traditional classroom model. However, traditional view of education holds that learners must submit themselves to teache (Menges, 1977, p.5). As Menges further suggests, this view means that the teachers' autho is not to be questioned. The underlying assumption is that without the communication power by the teacher over the student, the student cannot learn. Hurt, Scott, and McCrosk (1978) suggest that in a classroom setting "a certain degree of teacher power is alwa present" (p. 125). They continue by suggesting that the more power is employed by teacher as a means of control, the more likely it will be required as a means of control. other words "the more it is used, the more it will need to be used''.

The classroom has long been recognized as a critical milieu for students' educatio achievement (Anderson & Burns, 1989; Borich, 1988; Fraser &Walberg, 1991; Walbe 1968). Most educators and researchers believed that the classroom played an important r in students' cognitive and affective development. The theoretical framework understanding the importance of environmental influences on individuals was roo historically in the Lewin's formula. Lewin (1936) believed human behavior as b determined by the complex interaction of an individual and his/her environment. introduced the formula B = f (P, E) to describe human behavior (B) as the result of Interdependent influences, the person (P) and the environment (E). Based on the formul Lewin, Murray (1938) suggested a Needs-Press Model of interaction between personal n and the environmental press where they live. The concept of environmental press was a essential to Murray's model. In his model, the press was used to describe a 'direction tendency in an object or a situation'.

The teacher student relationship is one of the most powerful factors within learning environment. This is regarded as the most powerful weapon affecting studen development (Hughes & Chen, 2011; Roorda et al., 2011; Spilt, Koomen&Thijs, 201 Teacher student interactions are not only influenced by a number of aspects including gen but in turn also influence a student's academic outcomes and behaviour. Supportive positive relationships between teachers and students ultimately promote a "sense of s belonging" and encourage students to "participate cooperatively in classroom activ (Hughes & Chen, 2011, p.278).

more, not less, power. A power structure is the distribution of power among individuals, among social categories or entire social systems such as groups, organizations, communiti or societies. The students have different perceptions about the power structure in the scho these perceptions about power structure influences the student's critical thinking a achievements.

Power, stated in its simplest form, is the ability to exercise control or influence ov another person or organization. The primary task of teaching is to gain and maintain t cooperation of students, without that cooperation, the school or individual classroom cann function. It's necessary that the teacher should help the students in molding there behavio which will be beneficial for both the students and teachers. School is also a part of the soci and as there are hierarchy everywhere in the society, so in the case of schools also. Many the students think that the teachers have more power as compared to them, at the same ti some thinks that these powers of the teachers are essential for the growth and developmen the teaching learning process in a harmonious way.

Power refers to a teacher's ability to affect in some way the students well-be beyond the students own control. Students perception about power structure plays important role in their achievements, which makes them to analyze, synthesize and ap things critically. If the relationship between students perceived perception about po structure and achievement is established, then it can be known that how and to which ex their learning and consequently academic excellence and achievement is influenced by perception of power structure. The primary purpose of the present research is to study students' perceptions of power structure in the classroom. The secondary purpose is to st the correlation between the use of power strategies and the efficiency of student achieven in the classroom.

The present study will help to understand and analyze the influence of Perce Perception of Power Structure of students on their Achievement in Mathematics.

HYPOTHESIS

The investigator formulated following hypothesis for guiding the investigation:

1) There will be significant relationship between secondary school students's Perc Power Structure in class room and their Achievement in Mathematics for the sample and sub samples based on gender, community and occupation of father

Improving students' relationships with teachers has important, positive and lo lasting implications for students' academic and social development. Solely improv students' relationships with their teachers will not produce gains in achievement. Howe those students who have close, positive and supportive relationships with their teachers attain higher levels of achievement than those students with more conflictual relationship a student feels a personal connection to a teacher, experiences frequent communication wi teacher, and receives more guidance and praise than criticism from the teacher, then student is likely to become more trustful of that teacher, show more engagement in academic content presented, display better classroom behavior, and achieve at higher lev academically. Positive teacher-student relationships draw students into the process learning and promote their desire to. Teachers who foster positive relationships with th students create classroom environments more conducive to learning and meet stude developmental, emotional and academic needs.

Secondary education is a pre-requisite of any kind of development be it for individual or for the nation as a whole. India is a land of religion. Many individuals believ unnecessary superstitions and dogmas and the primary reason of believing these dogma the lack of sufficient amount of education. It is noticeable that educated individuals do believe in such superstitions and dogmas and thus refuse to accept them at all. importance of effective student teacher relationship in the classroom cannot be overstat Power in the classroom and learners achievement is closely interrelated

NEED AND SIGNIFICANCE OF THE STUDY

The general purpose of education is the full development of the potential of e individual. Society, of which teachers are a part, establishes the goals of education and organizational framework within which formal education occurs. In its broadest sen teaching is a process which facilitates learning. A teacher has professional knowledge a skill gained through formal preparation and experience. A teacher provides personal car service to pupils by diagnosing their needs and by planning, selecting and using methods a evaluation procedures designed to promote learning. Some of students feel that they had li power and influence in class. Students did not have any formal power or authority in school and class. Many of the students feel that teachers held ultimate power. An impor concept for teachers to understand is that by helping to empower students, teachers en

more, not less, power. A power structure is the distribution of power among individuals, or among social categories or entire social systems such as groups, organizations, communities or societies. The students have different perceptions about the power structure in the school these perceptions about power structure influences the student's critical thinking and achievements.

Power, stated in its simplest form, is the ability to exercise control or influence over another person or organization. The primary task of teaching is to gain and maintain the cooperation of students, without that cooperation, the school or individual classroom cannot function. It's necessary that the teacher should help the students in molding there behaviors which will be beneficial for both the students and teachers. School is also a part of the society and as there are hierarchy everywhere in the society, so in the case of schools also. Many of the students think that the teachers have more power as compared to them, at the same time some thinks that these powers of the teachers are essential for the growth and development in the teaching learning process in a harmonious way.

Power refers to a teacher's ability to affect in some way the students well-being beyond the students own control. Students perception about power structure plays an important role in their achievements, which makes them to analyze, synthesize and apply things critically. If the relationship between students perceived perception about power structure and achievement is established, then it can be known that how and to which extent their learning and consequently academic excellence and achievement is influenced by the perception of power structure. The primary purpose of the present research is to study the students' perceptions of power structure in the classroom. The secondary purpose is to study the correlation between the use of power strategies and the efficiency of student achievement in the classroom.

The present study will help to understand and analyze the influence of Perceived Perception of Power Structure of students on their Achievement in Mathematics.

HYPOTHESIS

The investigator formulated following hypothesis for guiding the investigation:

1) There will be significant relationship between secondary school students's Perceived Power Structure in class room and their Achievement in Mathematics for the total sample and sub samples based on gender, community and occupation of father

2) The correlations between Perceived Power Structure& Achievement in Mathematics obtained for the comparable sub samples based on gender, community and occupation of father will not differ significantly.

Objective of the study

The present study has the following objectives:

1) To estimate the relationship between secondary school student's Perceived Power Structure in class room and their Achievement in Mathematics for the total sample and sub samples.

2) To test whether the correlation obtained between Perceived Power Structure and Achievement in Mathematics of the secondary school student's based on the sub samples differ significantly.

Procedure

The independent variable of the present study is "Secondary school Student's Perception of Power Structure in class room'' and the dependent variable of the study is '' Achievement in Mathematics of Secondary school students''. The Gender, Community and Fathers Occupation were treated as criterion variables for identifying sub samples.

The sample selected for the study was based on random cluster sampling, the secondary school students of Adra; Dist- Purulia (W.B) was taken as the sample for the study. The final sample of the study consisted of three hundred and sixty six students. Due representation was given to gender, community and occupation of father.

Two instruments were used for the collection of data. They were Perception scale for Power Structure in class room and Achievement test in mathematics. Perception scale for Power Structure in class room was developed based on the guidance and supervision of the experts and was thus standardized. The items in Perception scale for Power Structure in class room are indicative for the Perceived Power Structure in the class room. Provision was given within the tools itself for making response. The validity and reliability of the tools were established by appropriate methods.

Achievement in Mathematics test was developed under the guidance of the expert. Blooms Taxonomy was used for developing the items. This test is for the secondary school students. The items in Achievement in Mathematics test are indicative for the Achievement in Mathematics in class room.

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Statistical Analysis of Data

1) Correlation Analysis

The details of correlation for the total sample and subsample based on gen community and occupation of father were studied with correlation analysis, along with de of test of significance of correlation between Perception of Power structure and Achiever in Mathematics and the 0.05 level of confidence interval for the total sample and subsam are given below in the table 1.

Table 1-Details of relationship between Perception of Power Structure and Achieve in Mathematics of Secondary School Student's

Sample	N	r	Significance Value(2-tailed)	Upper Limit	Lower Limit	Shared Variar
Total	366	-0.005	0.920	0.097	-0.107	0.00
Male	138	0.189	0.026	0.350	0.028	3.57
Female	228	-0.089	0.181	0.400	-0.218	0.792
SC&ST	59	-0.080	0.545	0.174	-0.334	0.64
OBC	37	-0.051	0.763	0.270	-0.372	0.2
General	270	0.026	0.674	0.145	-0.093	0.0
Government Job	169	0.166	0.031	0.313	0.019	2.75
Private Job	197	-0.108	0.130	0.030	-0.246	1.166

The relation between Perception of Power Structure in the class-roo Achievement in Mathematics was not significant at 0.005 level, for total sample as wel the sub-samples based on the gender, community and fathers occupation.The correl obtained for the total sample and all the sub-samples, except sub-samples &Government Job are negative. The percentage of overlap ranges from 0.003 to 3.572. these findings it can be concluded that there exist no significant relationship betwee variables Perception of Power Structure and Achievement in Mathematicsof Seco Students for the total sample as well as for the selected sub-samples.

The correlation analysis shows that, the relationship between Perception of Structure and Achievement in Mathematics are not significantly correlated, except fo and wards of government employees. For majority of the groups, were these varia correlated including total sample was found to be negligibly correlated, with no sig One thing to be noted here is that, most of the correlations are negative that m

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[illegible] are significantly correlated there exist an inverse relationship between the Perception of Power Structure and Achievement in Mathematics, this indicates the necessity for maintaining a democratic environment in the institutions, to make improvement in the Achievement in Mathematics. As a further step the investigator continued the analysis with test of significance of differences in correlation between Perception of Power Structure and Achievement in Mathematics.

COMPARISION OF CORRELATION OBTAINED FOR COMPARABLE SUB-SAMPLES

The correlation obtained for the comparable sub samples based on gender, community, occupation of father were compared to check whether there is any significant relationship between correlation obtained for Male, Female, SC-ST, OBC and General, wards of Government and Private employees. The critical ratio obtained was checked with table value to ensure whether the differences obtained were significant.

Table 2-Significance of differences in*r's* between Perception of secondary school student's about the power Structure in the class room and Achievement in Mathematics for male and female student's

SL.No.	Sample	N	r	C.R
1	Male	138	0.189	2.58
2	Female	228	-0.089	

The obtained critical ratio for male and female student's is more than 1.96. It shows that the difference between the correlations obtained between 'Perception of Power Structure in class room' and 'Achievement in Mathematics' for male and female secondary school student's is significant at 0.05 level. Hence it can be concluded that gender has an important role in determining this relationship.

Table 3-Significance of differences in *r's* between Perception of secondary school student's about the Power Structure in the class room and Achievement in Mathematics for SC-ST and OBC student's

SL.No.	Sample	N	r	C.R
1	SC-ST	59	-0.080	-0.13
2	OBC	37	-0.051	

The obtained critical ratio for SC-ST and OBC student's is less than 1.96. It sh
that the difference between the correlations obtained between 'Perception of Power Struc
in class room' and 'Achievement in Mathematics' for SC-ST and OBC secondary sc
student's is notsignificant at 0.05 level. Hence it can be concluded that community ha
important role in determining this relationship.

**Table 4-Significance of differences in $r's$ between Perception of secondary sc
student's about the Power Structure in the class room and Achievemer
Mathematics for OBC and General student's**

SL.No.	Sample	N	r	C.I
1	OBC	37	-0.051	-0.4
2	Gen	270	0.026	

The obtained critical ratio for OBC and General student's is less than 1.96. It s
that the difference between the correlations obtained between 'Perception of Power Stru
in class room' and 'Achievement in Mathematics' for OBC and General secondary s
student's is not significant at 0.05 level. Hence it can be concluded that community ha
important role in determining this relationship.

**Table 5-Significance of differences in$r's$ between Perception of secondary s
student's about the Power structure in the class room and Achieveme
Mathematics for SC-ST and General student's**

SL.No.	Sample	N	r	C
1	SC-ST	59	-0.080	-0.
2	Gen	270	0.026	

The obtained critical ratio for SC-ST and GENERAL student's is less than 1.9
shows that the difference between the correlations obtained between 'Perception of Po
Structure in class room' and 'Achievement in Mathematics' for SC-ST and Ge
secondary school student's is not significant at 0.05 level. Hence it can be conclude
community has no important role in determining this relationship.

**Table 6-Significance of differences in $r's$ between Perception of secondary s
student's about the Power Structure in the class room and Achievem
Mathematics for wards of government employee and private employee**

SL.No.	Sample	N	r	C.I
1	Wards of Govt. Employee	169	0.166	
2	Wards of Private Employee	197	-0.108	2.6

The obtained critical ratio for male and female student's is more than 1.96. It shows that the difference between the correlations obtained between 'Perception of Power Structure in class room' and 'Achievement in Mathematics' for government ward and private ward secondary school student's is significant at 0.05 level. Hence it can be concluded that father occupation has an important role in determining this relationship.

Conclusion

The study revealed that there is significant difference between 'Perception of Power structure in class room' and 'Achievement in Mathematics' for male and female secondary school students. So different training programmes should be given to both the male and female students, so as to enhance the achievement level of both male and female.

The study revealed that there is significant difference between 'Perception of Power Structure in class room' and 'Achievement in Mathematics' for wards of government employee's and wards of private employee's. So different training and awareness programmes should be given to both the government and private wards respectively.

The study revealed that there is no significant difference in Perception of Power Structure in class room for SC-ST, OBC and General Students. So in future the variables (such as socio-economic status, human rights etc.) which can affect the above relation should be taken into consideration.

The teachers should be given appropriate training, so that they can be accountable for their duty, which in turn will enhance the teaching-learning process in a cohesive manner.

The rights of the students should be given priority, so that a student centric class is formed, which will help in national development and leadership quality.

The students whose parents are working in private sector has a negative correlation between Perception of Power structure in class room and Achievement in Mathematics. This may be because the existence of power structure is more apparent in private sector than in government sector, since the parents perceive and experience the powers structure in workplace, there are chances that it will flow to their family through the authoritarian style of approach of the parents towards their family members. So parents working in private sectors should be given special orientation course regarding the relation between Perception of Power structure & Achievement in Mathematics, so that they can improve democratic interaction and decision making in their family which may in turn benefit their children.

There was negative correlation for the female students it means that Power struc more explicitly present in the Girls school, so administration should take special c nullifying the influence of Power structure on the female students. This may be done th administrative reforms, academic reorganization, change in the approach towards issues.

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