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In the eyes of the beholder: Do adolescent girls and boys view school differently?

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Abstract

The study aimed to find the influence, if any, of higher secondary students' gender on psychosocial aspects of school environment as perceived by them. Disagreement among investigators makes it an animated area of research. Stratified random sampling was used for selecting a sample of 600 higher secondary students (300 girls; 300 boys) aged 16 to 19 years belonging to middle socio-economic status families of Kolkata. School Environment Inventory (Misra, 2002) was used to assess students' perception of school environment. Socio-Economic Status Scale (Meenakshi, 2004) was administered to ascertain the socio-economic status of students for controlling it. Computation of Mean, Standard Deviation and One-Way ANOVA comprised data analysis. Results indicated significant influence of participants' gender on some dimensions of perceived school environment. Descriptive statistics revealed that participating girls perceived school environment as more creatively stimulating, cognitively encouraging, accepting, controlling but less rejecting than boys did. Girls and boys did not differ significantly in perception of permissiveness at school. So, opinions of gender-groups must be sought and heeded to bring about beneficial changes in the school setting.

Keywords: Higher secondary students; Gender; Psychosocial aspects of school environment; Perception of school environment;

1. Introduction

Perhaps no other viewpoint has highlighted the influence of individual's gender on her or his perception as the Gender Schema Theory. According to this theory, individuals tend to view objects, activities, situations and individuals (including themselves) from the perspective of gender^[3]. Despite accepting the social learning oriented view of this theory, one cannot ignore the fact that the process of perception is heavily influenced by biological determinants. In order to untangle the roles of environment and biology in the process of perception, it is necessary to distinguish between gender and sex of individuals. The World Health Organization has defined gender as socially-constructed characteristics of women and men whereas sex refers to their biologically-determined ones; people are born female or male but learn to be girls and boys who grow into women and men; this learned behaviour makes up gender identity and determines gender roles^[43]. Even proponents of the biological viewpoint have conceded that environmental influencers are involved in giving rise to differences between females and males. For instance, a report opines that fundamental genetic and physiological differences in combination with environmental factors lead to behavioural and cognitive differences between females and males. According to the report, no single determinant is accountable for sex differences; several genetic, hormonal, physiological and experiential factors functioning at different times during development shape the phenotype of an individual. The report states that there is sex difference in perception of pain. It concludes by saying that research is required on the natural variations between and within the sexes in behaviour, cognition and perception with extensive probe of sex differences in brain structure and function^[42]. Having admitted the role of environmental factors in difference between females and males, the report has unfortunately stuck to its biological-slant. It has failed to recommend the investigation of gender difference in behaviour and cognition (including perception). Similar biological studies of difference between females and males in behaviour and cognition abound. However, incisive studies on the influence of gender on behaviour and cognition are needed to fill in gaps in knowledge.

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Behaviour is largely overt so one may logically assume that it is more amenable to gendering. But the mechanism or at least the quantum of influence of gender on the more covert cognitive processes such as perception requires thorough probe. Investigations on perception have mostly been conducted on children and adolescents. This is because it is illuminating to probe the impacts of evolving biology and socialization of the young on their process of perception.

Research literature is replete with investigations on perception of inanimate objects. These investigations generally report the dominant influence of biological differences between females and males on how and what they perceive [18, 19, 21, 25]. However, the influence of psychosocial variables could not be entirely ruled out [2, 27, 33, 37]. One reason for finding strong biologically-based differences between females and males in perception might plausibly be that gender-neutral objects rather than persons or interpersonal situations were used as stimuli in these investigations. When perception of persons or situations is studied, the stronger influence of gendering becomes clearer [7, 13, 30]. The relative maturity of adolescents (compared with children) in the physical and psychological domains [28] makes them more suitable as participants in investigations on perception of interpersonal situations like home and school. Perception of school milieu by adolescents needs to be studied in-depth to unravel whether biology and / or gender casts decisive influence. In the present context, study of perception of school seems more important than that of home environment as school exposes young persons to multiple and diverse agents of socialization [28].

The school environment – its infrastructure, facilities and most importantly its human resource leave deep imprint on each and every learner's mind. Milieus of schools appear to influence various psycho-social and educational variables of students [10, 11, 17, 28, 38, 41]. However, students' perceptions of their school environment tend to be ignored. Adults typically mould and evaluate school environments paying scarcely any attention to students' opinions in the matter. So students frequently find themselves in school milieus which seem tedious and repressive. Such milieus are unfavorable for their mental health and intellectual advancement. So it seems important to get the students' perspective while shaping school contexts [36]. Perceptions of students particularly those at higher secondary level are important as their cognitive and socio-emotional development make them more astute [15, 28]. The role of student-gender in her or his perception of school-environment needs to be examined in this context to gain deeper insight. Generally, investigations have reported significant gender difference in perception of school / classroom environment. Investigators [39] sampled 275 middle and high school students in the USA. Results revealed gender differences with regard to perception of barriers to participation in school programmes. A researcher [1] analysed data from nationally-representative Australian samples of approximately 8000 students (in school- years - five and 10) as well as 2600 teachers. Analysis indicated that differences in student- orientations to school context were associated with variables including gender. Investigators [26] probed the impact of students' perceptions on mathematics performance in South-African secondary schools. A questionnaire was administered to randomly selected sample of 124 secondary school students in South Africa. From analysis of the data, a hierarchy of components of students' perceptions of mathematics emerged. These included those related with school milieu such as teacher-support and quality of learning-materials offered. Findings implied that differences in

perceived contextual variables including motivation provided by mathematics teachers, mathematics teachers' teaching styles and quality of learning-materials provided might lead to differences in perceptions about mathematics. A significant difference emerged in the way mathematics was perceived by girls and boys emanating from gender difference in perception of variables related to school environ. Researchers [36] conducted a study on four teachers and 52 students who reported their perceptions of the classroom environment; and trained observers rated the 'actual' classroom environment. Analysis of perceived classroom environments that mould students' expectancies and values for science showed that girls' perceptions were particularly decisive. Perceptions of structure were related to their extrinsic-utility value and attainment-importance value of science; perceptions of relatedness affected their intrinsic-interest for science; and perceptions of classroom negativity were disadvantageous for their ability expectancies. Observed classroom environment characteristics also affected students' motivations, but this occurred indirectly through girls' own perceptions of the classroom environment. These relationships existed even after controlling the impacts of prior expectancies and values.

Some researchers have found that girls viewed their school / classroom environments more favourably than boys. Investigators [31] probed differences in boys' and girls' perceptions of their chemistry laboratory classroom environment. The sample comprised 312 boys and 185 girls in "Year 10" chemistry classes in Singapore. Significant differences were found between the boys' and girls' perceptions of their chemistry laboratory environment showing that girls perceived their learning environment more positively than boys. Researchers [8] collected data from 665 middle school science students in the USA. Results indicated that the variable that consistently influenced students' perception was their gender. Girls tended to perceive their learning environment more favourably than their male peers. Investigators [5] examined students' perceptions of the school environment. 1606 students were surveyed. Female students were found to have a greater likelihood than males of reporting positive ratings on their perceptions of academic expectations and overall sense of care at school. Researchers [32] sampled 378 eighth graders equally chosen based on gender from schools in Indonesia. Gender was found to significantly influence students' perceptions of their classroom environment. Girls perceived their classroom environments more positively than the boys. These findings are supported by those of Indian investigators [23, 29, 40]. Researchers [40] studied higher secondary students' perception of computer science learning environment at school. Random sampling technique was used to select a sample of 855 school students (497 boys; 358 girls) studying in higher secondary level. Results revealed that girls perceived computer science learning environment as more satisfactory than the boys did. Investigators [29] carried out a study on a stratified random sample of 500 higher secondary students (250 boy; 250 girls). School Environment Inventory [24] was used for data collection. Gender groups were found to differ significantly in perception of overall school environment and in its dimensions except dimensions of creative stimulation and control. Participant girls appeared to perceive school environment more favourably than their male counterparts. Researchers [23] conducted an investigation on a random sample of 200 higher secondary students (96 boys; 104 girls) in India. Significant difference emerged between male and female students in perception of their classroom climate.

Female students perceived their classroom climate more favourably than their male peers. This was probably because female students appeared more interested in learning. However, a few investigators based overseas [12, 16, 44] have reported more positive perception of school / classroom milieu by males. Researchers [16] conducted a study on classroom environment and teachers' interpersonal behaviour in science classes in Korea. The sample comprised 543 secondary students. Nature of classroom environment and teacher-behaviour were positively related with students' attitudes towards science. Boys perceived their learning environments and their teachers' interpersonal behaviour more favourably and reported more positive attitudes toward their science classes. An investigator [12] explored gender differences in students' perceptions of mathematics learning environment in high school. He concluded that male students had better perceptions of classroom environment and attitudes than female students. A researcher [44] investigated how senior secondary school students perceived their mathematics classroom-environments. A convenience sample of 2617 students was selected from schools in China. Gender-related differences in perception of classroom environment emerged. Girls in this study did not generally perceive their classroom learning environments more positively than boys. Boys tended to perceive more involvement and more opportunities to carry out inquiry-based activities than girls. It was opined that these gender differences might be due to gender differences in mathematics learning-styles. A minority of Indian researchers [6, 14] have, however, refuted the claim that student-gender significantly influences perception of school environment. Investigators [14] selected 400 underachieving science students (200 boys; 200 girls) of class IX from schools in India. School Environment Inventory [24] was administered for data collection. It was revealed that male and female underachievers in science did not differ significantly in perception of creative stimulation dimension of school environment. Researchers [6] chose a random sample of 240 higher secondary students (120 boys; 120 girls) from schools in a city in South India. Non-significant difference was found between participant boys' and girls' perceptions of teacher-effectiveness. Thus, scrutiny of prior researches reveals disagreement among investigators abroad on whether girls or boys perceive their school/classroom environments more favorably. At the same time, Indian researchers are yet to resolve the debate whether student-gender significantly influences their perception of school setting. Thus the present study aims to plug these lacunae and intends to shed more light so that the disagreements would be reconciled.

2. Research Objectives

To find the influence, if any, of higher secondary students' gender on psychosocial aspects of school environment as perceived by them.

3. Methodology

3.1 Hypotheses

1. There is influence of higher secondary students' gender on the extent of creative stimulation at school as perceived by them.
2. There is influence of higher secondary students' gender on the extent of cognitive encouragement at school as perceived by them.
3. There is influence of higher secondary students' gender on the extent of acceptance at school as perceived by them.
4. There is influence of higher secondary students' gender on

the extent of permissiveness at school as perceived by them.

5. There is influence of higher secondary students' gender on the extent of rejection at school as perceived by them.
6. There is influence of higher secondary students' gender on the extent of control at school as perceived by them.

3.2 Operational Definition

Perception of School Environment: Perception of school environment refers to the psycho-social climate of schools as perceived by pupils. It encompasses quality and quantity of cognitive, emotional and social support available to students in school through teacher-pupil interactions. It has the following dimensions [24]:

- i) Creative Stimulation: Extent of perceived teacher-behaviour to provide conditions and opportunities to stimulate student's creative thinking.
- ii) Cognitive Encouragement: Extent of perceived teacher-behaviour to stimulate students' cognitive development by encouraging actions/behaviours on the part of the latter.
- iii) Permissiveness: Extent of perceived school climate in which students are provided opportunities to express their views freely and act according to their desires with no interruption from teachers.
- iv) Acceptance - Extent of perception of teachers' unconditional love; teacher-recognition of students' rights to expression of feelings, uniqueness and autonomy.
- v) Rejection - Extent of perceived school climate in which teachers do not recognize students' rights to deviate, act freely and exercise autonomy.
- vi) Control: Extent of perceived autocratic environment of school in which several restrictions are imposed to discipline students [24].

3.3 Tools

The following standardized tools were used for data collection from participants:

- a) School Environment Inventory [24]: It was administered to assess students' perception of their school environment. It comprises 70 items covering six dimensions of school environment viz. creative stimulation, cognitive encouragement, acceptance, permissiveness, rejection and control. There are 20 items measuring creative stimulation; 10 items each assessing the rest of the dimensions. Response-options for each item are Always, Often, Sometimes, Very Rarely and Never - one of which the testee has to indicate. There is no time limit. It can be administered individually or in group. Maximum score to be obtained in Creative Stimulation is 80; maximum score to be obtained for the remaining dimensions are 40 each. Total score is not computed. Higher scores indicate greater perceived presence of creative stimulation, cognitive encouragement, acceptance, permissiveness, rejection and control. Split-Half reliability coefficients for the six dimensions range from 0.67 to 0.92. As for validity, inter-correlations between scores on pairs of dimensions range between -0.01 and 0.89. It was standardized on 102 girls and 100 boys studying in intermediate classes. Norms are in Stanines [24].
- b) Socio-Economic Status Scale [22]: The tool was used to measure the socio-economic status of adolescents. It comprises items spanning four areas viz. finance; property; education and social status. The scale has been standardized on a sample of 1127 (rural and urban) students of class VIII through XII. For 153 boys of class

XI in a senior secondary school, the test- retest reliability (with a time interval of 10 days) has been found out to be .82. As for validity, this tool has been administered on two samples (N₁ =37 & N₂ = 42) of pupils of a reputable public and an ordinary government school respectively. t-value of the difference between the samples was 9.29 (p<0.01 level). It manifests the discriminating power of the scales [22].

3.4 Sample

A stratified random sample comprising 600 higher secondary students (300 girls; 300 boys) aged 16 to 19 years belonging to middle socio-economic status families of Kolkata was

selected.

4. Procedure

Standardized tools were administered on participants for data collection. Of these, the socio- economic status scale was used for assessment and control of extraneous variable of participants’ socio-economic status. Data were collected from groups of about 20 students each at a time in schools. After data collection and scoring, mean and standard deviation were computed and One-Way ANOVA was conducted.

5. Results and Discussion

Table 1: Mean and Standard Deviation Values of Variables

N	VARIABLES											
	Creative Stimulation		Cognitive Encouragement		Acceptance		Permissiveness		Rejection		Control	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Boys (N=300)	48.21	11.11	27.04	6.34	24.18	6.5	21.21	5.83	20.16	5.6	24.32	5.26
Girls (N=300)	52.06	11.81	29.89	5.99	26.57	6.21	21.96	6.33	16.89	6	26.19	5.12

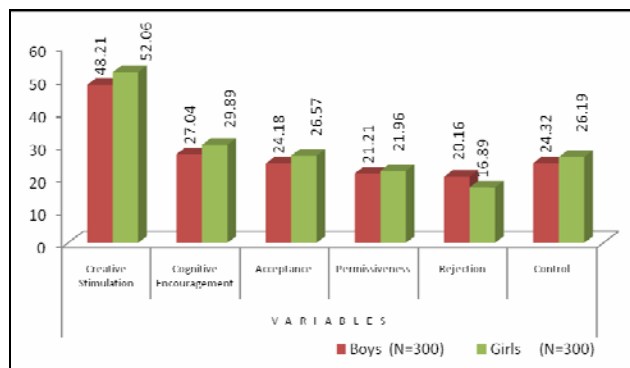


Fig 1: Mean values on dimensions of perceived school environment+

From observation of mean values on the dimensions of perceived school environment of participant higher secondary students (Table 1; Figure 1), it seems that participating girls perceive more of creative stimulation, cognitive encouragement, acceptance, control and less rejection in school than their male peers. Reason could be that girls are more interested in learning so they view school more favourably or their more positive perception of school makes them more eager learners [23, 36]. Girls appear to experience less rejection at school plausibly because they are socialized to be more docile than the boys hence tend not to expect as much freedom and autonomy in school as boys do [43]. Standard Deviation values are not very high indicating moderate homogeneity of variance. It shows that intra-group variability of scores on the variables is not high.

Table 2: Results of One-Way ANOVA: Influence of Students’ Gender on Dimensions of Perceived School Environment

Source of Variation	Sum of Squares	df	Mean Square	F
Dependent Variable: Creative Stimulation				
Gender	2223.375	1	2223.375	16.91**
Within Groups	78610.69	598	131.456	
Total	80834.065	599		
Dependent Variable: Cognitive Encouragement				
Gender	1218.375	1	1218.375	32**
Within Groups	22770.89	598	38.078	
Total	23989.265	599		
Dependent Variable: Acceptance				
Gender	856.815	1	856.815	21.19**
Within Groups	24184.303	598	40.442	
Total	25041.118	599		
Dependent Variable: Permissiveness				
Gender	84.375	1	84.375	2.28
Within Groups	22145.29	598	37.032	
Total	22229.665	599		
Dependent Variable: Rejection				
Gender	1607.207	1	1607.207	47.76**
Within Groups	20124.367	598	33.653	
Total	21731.573	599		
Dependent Variable: Control				
Gender	520.802	1	520.802	19.35**
Within Groups	16095.183	598	26.915	
Total	16615.985	599		

**p<.01

It appears from the results (Table 2) that F-value of 16.91 pertaining to influence of students- gender on their perceived creative stimulation at school is significant at .01 level of significance. So, the 1st hypothesis is supported. Thus gender seems to have significant influence on perceived creative stimulation at school for the sample of higher secondary students. This finding is not congruent with that of Kapri [14]. It is also evident that F-value of 32 regarding effect of pupils' gender on their perceived cognitive encouragement at school is highly significant at .01 level of significance. Therefore the 2nd hypothesis is supported. Gender seems to have significant influence on perceived cognitive encouragement at school for the participant post-secondary students. This outcome agrees with those of other researchers [5, 29, 31, 40]. Table 2 reveals that F-value of 21.19 apropos influence of student- gender on their perceived acceptance at school is highly significant at .01 level of significance. So the 3rd hypothesis is supported. Thus gender seems to have significant influence on perception of acceptance at school for the sampled plus-two level pupils. This finding concurs with those of other researchers [5, 29]. It is clear from the results that the F- value of 2.28 pertaining to effect of students' gender on their perceived permissiveness at school is non-significant at .05 level of significance. Thus the 4th hypothesis is rejected. Thus participating higher secondary pupils' gender does not seem to have significant influence on their perception of permissive milieu at school. This outcome is not in tandem with that of other investigators [29]. Reason for this outcome could be that girls and boys seem to find equal opportunities for self-expression in school. This is a healthy sign indicating lack of gender discrimination in schools at least in case of student self-expression. It appears that F- value of 47.76 regarding influence of student-gender on their perceived rejection at school is highly significant at .01 level of significance. So the 5th hypothesis is supported. Gender seems to significantly influence the extent of rejection perceived at school by the sampled senior secondary students. This finding is in tune with that of other researchers [29]. F-value of 19.35 (Table 2) apropos effect of pupil-gender on their perception of control at school is significant at .01 level of significance. Thus the 6th hypothesis is supported. Thus gender seems to have significant influence on perception of controlling environment at school for the participating plus-two stage students. This outcome does not resonate with that of other investigators [29]. In sum, the results appear to be in tandem with the propositions of the Gender Schema Theory; girls and boys perceive aspects of school environment differently as they view these through the lens of gender [3]. Since the present investigation studied the psychosocial milieu of the school so it seems that the gender differences in perception stem from gendered socialization that the participants had undergone [7, 13, 30, 42]. The present findings help resolve the disagreement among researchers in the field by clarifying that student-gender does indeed influence her or his perception of school milieu but the strength of the influence is dimension-specific. Besides, in the patrifocal Indian context, girls seem to view school environment more favourably plausibly because school and learning promise them opportunities to overcome gender-based subjugation. This is buttressed by an outcome of the present study that girls and boys find school almost equally permissive.

6. Conclusion

Results indicate that gender plays a powerful role in pupil-perceived stimulation of their originality, encouragement of

development of knowledge, unconditional affection from teachers, denial of autonomy and even importance of discipline at school. These findings are congruent with those of other investigators [1, 8, 26, 32, 39]. Evidently participating girls perceive more of creative stimulation, cognitive encouragement, acceptance, control and less rejection in school than their male peers. Therefore, suggestions from the boys must be sought regarding how to make school more creativity-stimulating, encouraging of knowledge- acquisition, friendly, tolerant of personal-liberty and disciplined. Only then the boys will be more interested in school.

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