Influence of School Environment on Mental Health of Students at Formal Operational Stage of Cognitive Development

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Abstract

School is the miniature form of society. It is the place where a child spends half of the day and influence of school environment on personality, character and general well-being of student can't be evaded. The functioning and management style of school affect the overall development of the child, especially at the formal operational stage of the cognitive development. To understand the importance of school environment it becomes crucial to decipher the influence of school environment on the mental health of students at formal operational stage. The purpose of the present investigation was to study the influence of different dimensions of school environment on the mental health of students across gender. The sample comprised 200 students of formal operational stage selected from the district of Rohtak in the state of Haryana. School Education Inventory by Mishra (1989) and Mental Health Battery (MHB-ss) by Singh & Gupta (2000) were administered to ascertain the influence of school environment and mental health of students of formal operational stage. Descriptive statistics was used to analyse the data. The analysis revealed that creative stimulation (CRS), acceptance (ACC) and control (CON) positively influence the mental health whereas permissiveness (PER) affects the mental health of students of formal operational stage in negative direction.

Introduction

Formal operational period is the fourth and final period of cognitive development in Piaget's theory. According to Piaget, it is during adolescence that cognitive development reaches its

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fullest potential—formal operational thought. Two major changes occur at this stage: Adolescents gradually develop the ability to use hypothetic-deductive reasoning, and they extend their logical thinking to concepts that are abstract (no longer solely to materials that are concrete and tangible). In this stage, the individual moves beyond formal experiences and begin to think abstractly, reason logically and draw conclusions from the information available as well as apply all these processes to hypothetical situations. The need for concrete examples is no longer necessary because abstract thinking can be used instead. In this stage, adolescents are also able to view themselves in the future and can picture that the ideal life they would like to pursue. Some theorists believe the formal operational stage can be divided into two sub-categories: early formal operational and late formal operation thought. Early formal operational thoughts may be just fantasies, but as adolescents advance to late formal operational thought, the life experiences, they have encountered, changes those fantasy thoughts to realistic thoughts (Broughton, 1983). Growing physically and mentally, at a fast speed at this stage, many factors like home environment, peer group, school environment, mental health and many others play crucial role in overall development of the child. So, it becomes important for teachers, parents, and other influential people in adolescents' lives to understand these different stages to be able to provide the appropriate environment at home and school for the development of good mental health. Without the apt mental health, adolescents are unable to lead the life happily and are unable to gain enough knowledge and experience to advance to the next developmental stage.

The environment of school shares an influential space in child's life. Next-to family, the school is the most important experience in the process of child development. When the child enters the school arena; he or she is presented with new opportunities in terms of socialisation and cognitive development. These opportunities are provided in different measures in different schools and may have direct impact on the cognitive and affective behaviours of the students. Schools could perfect the good person and at the same be creating a good society (Dewey, 1999).

The National School Climate Council (2007) defines school climate as "norms, values, and expectations that support people feeling socially, emotionally and physically safe" (p.4). School climate is a product of the interpersonal relationships among

students, families, teachers, support staff, and administrators. Positive school climate is fostered through a shared vision of respect and engagement across the educational system. Emphasis is also placed on the collective sense of safety and care for the school's physical environment. A related concept is school culture, which refers to the "unwritten rules and expectations" among the school staff (Gruenert, 2008). A good school climate has been found to predict not only superior academic achievement but also positive behaviour and high self-esteem (Hoge et al., 1990). A poor school climate, by contrast, has been reported to relate to pupils' stress and even psychopathology (Havlínová & Schneidrová, 1995; Kuperminc et al., 1997). Furthermore, a positive classroom climate facilitates pupils' learning and adjustment (Cheng, 1994; Baker et al., 1998), while a poor classroom climate is associated with psychological problems (Russel & Russel, 1996; Mooij, 1999).

In present scenario, due to manifold changes in various aspects of our civilisation such as population explosion, advancement in science and technology, knowledge expansion, urbanisation, mobilisation, IT revolution and influence of Western culture, the society has become highly dynamic. Modernisation process is accompanied with manifold problems, anxieties and worries to human life, adversely affecting the core human values such as honesty, sincerity, morality and humanity and as such there is a great transition in human society. In this age of increasing urbanisation and technology, man has lost his identity and has become a part of social machine (Dagar & Dull, 1994). But adolescents must learn how to cope with psychological stress, handle peer pressure, deal with their emotions, resolve conflicts, build bridges with friends, family and school, develop self-confidence, safeguard themselves from high pressure marketing strategies, particularly of the alcohol industry, as well as cope with other stresses like academic competition and a hankering for material gains and these all necessitate having good mental health (Malhotra & Gupta, 2014).

Mental health lies at the heart of adolescent's social, professional and personal development; yet formative years are particularly exposed to mental health problems. But it is the education which plays a paramount role in building the foundation of the mental health and well-being of students at formal operational stage of cognitive development. Mental health is defined by WHO as a state of well-being in which every individual realises his or her

own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community (WHO, 2010, p. 19). Mental health is perceived as a positive source contributing to asset development individually, socially, and economically (WHO, 2004). Bhatia (1982) considers mental health as the ability to balance feelings, desires, ambitions and ideals in one's daily living. It means the ability to face and accept the realities of life. Better mental health outcomes in adolescents are characterised by greater adaptation in family, society, and school environment, improved quality of life (USDHHS, 1999).

Schools are interactive social systems. During the last decades the climate in schools and classrooms has been an important focus of investigation. The quality of education and school life in general is important for children's adjustment (Ouston et al., 1980). Differences in achievements as well as pupil behaviour can be explained by school factors such as scholarly atmosphere and ethical and moral values being practised, teachers' behaviour and responsibilities given to children. Awareness of the importance of educational environment has increased. Moreover, in recent years, efforts have been directed at creating healthy environments in general, including promoting health and mental well-being of students at schools (Weare, 2000a, b).As the aim of education is to provide healthy personality for individuals, the role of mental health is of utmost importance in formal education. Various studies have been carried out in different parts of the world to identify factors that impact on students, mental health since poor mental health has been recognised as the leading cause of suicidal behaviour, a sense of helplessness (Kay, Li, Xiao, Nokkaew & Park, 2009) and lower academic achievements (Puskar & Bernardo, 2007). According to previous studies, factors that influence mental health are demographic backgrounds such as age and gender (Yen, Hsu, Liu, Huang, Ko, Yen & Cheng, 2006), personality traits (Goodwin & Friedman, 2006) and loneliness (Wang, Yuen & Slaney, 2009).

Review of Related Literature

Adolescence is a time when many of the substantive and persistent mental disorders including major depressive disorders, panic disorder, bipolar disorder, substance abuse, eating disorders, and schizophrenia first appear (American Psychiatric Association, 2000; Kirby, 2002). Mental health problems are common among

children and adolescents; approximately 25percent of children experience a mental health disorder annually, and 40 percent of adolescents meet lifetime diagnostic criteria for multiple mental health disorders (Merikangas et al., 2010; Sturgeon & Orley, 2005; Juyal (2003)). Mental health promotion activities, such as mental health literacy programmes, may help to promote positive mental health, de-stigmatise mental illness, enhance early identification of mental disorders in young people, and encourage help-seeking behaviours (Pinfold, Stuart, Thornicroft, & Arboleda-Flórez, 2005; Santor et al., 2009).

School is the second home for a student and teacher. Every aspect of school affects the mental health of a child. Schools have an important function in nurturing children's social emotional development as well as their academic and cognitive development. As children grow older, the school becomes the main setting for promoting mental health. Sturm (2000) examined children's perceived support from teachers and highlighted the importance of the teacher-child relationship by reporting that teachers have an incredible task of instructing children and helping them grow and develop. Kasinath (2003) found that mental health has a significant determinant effect on academic achievement in all the school subjects. A school, by building coping and social skills, and by creating a positive, safe environment that fosters a sense of inclusion, identity and connectedness among students, results in improved adjustment to school, enhanced competence, self-esteem, increased control and problem-solving skills, improved school achievement, and decreases loneliness, learning problems, bullying, aggression, depression and anxiety (Jané-Llopis, Barry, Hosman, & Patel, 2005; Jané-Llopis, 2005). As children grow older and have the ability to make choices and spend more time away from their parents' supervision, they meet new challenges and face more peer pressure to engage in the risk-taking behaviours mentioned above, including sexual activity, all of which can result from and contribute to poor mental health. Building social and emotional skills is important to maintaining mental health in students in middle and high school, so programmes that address these new challenges often combine elements of both promotion and prevention to reduce the risk factors for poor mental health in adolescence (WHO, 2004). Since very little work has been done considering the formal operational stage, the present study was undertaken.

Rationale of the Study

The rise in mental health issues in adolescents is a growing concern in the school and for the community counsellors, and educators. Research has revealed an increasing incidence of depression and other mental health issues among youth (U.S. Department of Health and Human Services, 1999). School, an important developmental environment for children, is known to have an impact on children's psycho-social development (Ouston et al., 1980) and mental health (Kasen et al., 1990). School and mental health are interrelated with each other as both influence the cognitive development of the child. This paper elucidates children's emotional and behavioural problems in the school environment by studying adolescents' development of mental health and investigates the consequences of different dimensions of school environment affecting children's mental health. However, there is a dearth of studies which try to study the effect of school environment on mental health of students at formal operational stage. So, the present investigation visualised a need to study the influence of school environment on mental health of students at formal operational stage of cognitive development.

Objectives

Amidst the understanding of the importance of school environment, it becomes essential to make out whether the school environment really influences the mental health of the adolescents. The objectives of the study were:

1. To study the different dimensions of school environment of students at formal operational stage of cognitive development.
2. To study the difference in different dimensions of school environment viz, creative stimulation (CRS), cognitive encouragement (COE), acceptance (ACC), permissiveness (PER), rejection (REJ) and control (CON) of students on the basis of gender at formal operational stage of cognitive development.
3. To study the mental health of students at formal operational stage of cognitive development.
4. To study the difference in mental health viz. emotional stability (ES), overall adjustment (OA), autonomy (AY), security-insecurity (SI), self concept (SC) and intelligence (IG) of students on the basis of gender at formal operational stage of cognitive development.
5. To study the influence of school environment on mental health of students at formal operational stage of cognitive development.

Hypotheses

1. There is no difference in different dimensions of school environment viz, creative stimulation (CRS), cognitive encouragement (COE), acceptance (ACC), permissiveness (PER), rejection (REJ) and control (CON) of students on the basis of gender at formal operational stage of cognitive development.
2. There is no difference in mental health viz. emotional stability (ES), overall adjustment (OA), autonomy (AY), security-insecurity (SI), self concept (SC) and intelligence (IG) of students on the basis of gender at formal operational stage of cognitive development.
3. There is no influence of school environment on mental health of students at formal operational stage of cognitive development.

Method

The study employed a descriptive survey method; the details are given as under:

Sample

The sample comprised of 200 students (100 boys and 100 girls) from the district of Rohtak. Five schools were selected from the district Rohtak by convenient sampling method. Further, from each school 40 students were identified based on random sampling. Among these students there were an equal number of boys and girls studying at formal operational stage of cognitive development. The students were selected from Classes IX and X.

Tools Used

- School Environment Inventory by Mishra (1989): The SEI is an instrument designed to measure the psycho social climate of schools as perceived by the pupils. It provides a measure of the quality and quantity of cognitive, emotional and social support that has been available to the students during their school life in terms of teacher-pupil interactions.SEI has six dimensions of the school:
  - Creative stimulation (CRS): It refers to "teacher's activities to provide conditions and opportunities to stimulate creative thinking."
  - Cognitive encouragement (COE): It implies "teacher's behaviour to stimulate cognitive development of student by encouraging his/ her actions or behaviours."

- – Permissiveness (PER): It indicates a school climate in which students are provided opportunities to express their views freely and act according to their desires with no interruption from teachers."
- – Acceptance (ACC): It implies "a measure of teacher's unconditional love, recognising that students have the right to express feelings, to uniqueness and to be autonomous individuals. Teachers accept the feelings of students in a non threatening manner."
- – Rejection (REJ): It refers to "a school climate in which teachers do not accord recognition to student's right to deviate, act freely and be autonomous person."
- – Control (CON): It indicates "autocratic atmosphere of school in which several restrictions are imposed on the students to discipline them."
- *Mental Health Battery (MHB-ss) by Singh & Gupta (2000):* The MHB intends to assess the status of mental health of persons in the age range of 13 to 22 yrs. The battery has 130 items, divided into six parts viz.:
  - – Part I: Emotional Stability (ES) contains 15 items;
  - – Part II: Overall Adjustment (OA) contains 40 items;
  - – Part III: Autonomy (AY) contains 15 items;
  - – Part IV: Security-Insecurity (SI) contains 15 items;
  - – Part V: Self-Concept (SC) contains 15 items;
  - – Part VI: Intelligence (IG) contains 30 items.

The scoring of MHB comprise of two sections – Section A and Section B. For Section-A, item nos. I to IV of preliminary information is given weightage to determine socio economic status of the examinee and for Section- B if the response is in accordance with scoring key, then a score of + 1 is given, and a score of zero ifs not given accordingly.

Data Analysis

The data collected through school environment inventory and mental health battery were analysed employing inferential statistics. To identify the school environment of students of formal operational stage, manual of SEI was used, whereas to find the mental health of students' formal operational stage, the manual of MHB was referred. To compare the school environment and mental health of students of formal operational stage, t-test was used and

to study the influence of school environment on mental health regression analysis was done.

Results

The data were analysed in the light of hypothesis designed for the study and findings has been encapsulated in the following heads for better comprehensibility of the readers.

Difference in School Environment of Students by Gender

For understanding the difference in school environment of students on the basis of gender, mean, SD and t-value were calculated for every dimension (Table 1). Results showed that girls perceived school environment significantly better than boys, particularly on the dimensions of CRS, ACC and CON.

Table 1
Comparison of Dimensions of School Environment of Students

Sr. No.	Variables	Gender	N	Mean	SD	t-value	Remarks
1.	CRS	Boys	100	51.96	4.56	8.83	P<.01
		Girls	100	57.72	4.66		
2.	COE	Boys	100	36.96	5.36	0.36	P>.01
		Girls	100	37.23	5.09		
3.	ACC	Boys	100	31.82	2.09	14.61	P<.01
		Girls	100	38.98	4.43		
4.	PER	Boys	100	21.92	2.04	2.54	P<.01
		Girls	100	22.66	2.08		
5.	REJ	Boys	100	13.74	2.17	1.17	P>.01
		Girls	100	13.44	1.33		
6.	CON	Boys	100	32.65	4.53	2.22	P<.01
		Girls	100	34.14	4.93		

Mental Health of Students at Formal Operational Stage of Cognitive Development

For understanding the mental health of students at formal operational stage of cognitive development the mean total score and overall MHB was calculated and it has been presented in Table 2.

Table 2

Mean Scores of Students on Dimensions of MHB

SN	Dimensions	Desired Mean Scores	Actual Mean Score	Inference
1.	Emotional Stability (ES)	10.71	9.47	Low
2.	Over all Adjustment (OA)	28.55	30.63	Above Average
3.	Autonomy (AY)	10.71	10.78	Average
4.	Security-Insecurity (SI)	10.71	9.64	Low
5.	Self-Concept (SC)	10.71	10.88	Average
6.	Intelligence (IG)	21.41	21.99	Average
Total	Mental Health	92.8	92.78	Average

Table 2 depicts that the students of formal operational stage have an average mental health in total. Further, the students of formal operational stage,showed average mental health for the three dimensions viz. AY, SC and IG, and above average in OA but low in ES and SI.

Comparison of Mental Health of Students by Gender

The means and standard deviations of mental health scores by gender were calculated and the difference was tested using t test (Table 3). In all of the six dimensions i.e. ES, OA, AY, SI, SC and IG

Table 3

Comparison of different Dimensions of Mental Health Battery by Gender

Dimensions	Gender	N	Mean	SD	t-value	Remarks
Emotional Stability (ES)	Boys	100	9.85	1.06	5.31	P<.01
	Girls	100	9.09	0.96		
Over all Adjustment (OA)	Boys	100	31.65	1.66	10.8	P<.01
	Girls	100	29.6	0.92		
Autonomy (AY)	Boys	100	11.19	0.84	16.09	P<.01
	Girls	100	9.16	0.95		
Security-Insecurity (SI)	Boys	100	9.94	0.66	4.96	P<.01
	Girls	100	9.35	0.99		
Self-Concept (SC)	Boys	100	11.5	0.92	9.79	P<.01
	Girls	100	10.26	0.87		
Intelligence(IG)	Boys	100	23	1.19	8.89	P<.01
	Girls		20.97	1.95		

boys were found to have better mental health. Thus, it can be said that gender acts as one of the significant variable of differentiation on MHB.

Another way of analysis given by MHB is overall MHB score. The mean of overall MHB was calculated for male and female students and it was found that there was significant difference in the mean scores of male and female students of formal operational stage as reflected in Table 4

Table 4

Comparison of Overall Mental Health by Gender

Gender	N	Mean	SD	t- Value	Remarks
Boys	100	97.13	2.54	22.83	P<.01
Girls	100	88.43	2.584		

Influence of School Environment on Mental Health

For studying the influence of school environment on mental health, regression analysis was carried out where all the six dimensions of school environment were taken as predictive or independent variables and mental health was dependent variable. Tables 5 and 6 contain the results.

Table 5

Means and SDs on Mental Health Battery and School Environment Inventory

Variables	Mean	SD	N
Mental Health	92.78	5.12	200
Creative Stimulation(CRS)	54.74	5.49	200
Cognitive Encouragement (COE)	37.09	5.18	200
Acceptance (ACC)	35.4	4.98	200
Permissiveness (PER)	22.29	2.09	200
Rejection (REJ)	13.59	1.80	200
Control (CON)	33.39	4.78	200

Table 5 depicts the mean and Standard Deviation of Mental Health and different dimensions of school environment viz. CRS, COE, ACC, PER, REJ and CON.

Table 6

Correlations between Mental Health and Dimensions of School Environment

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.728a	.530	.516	3.568

a. Predictors: (Constant), CON, COE, REJ, ACC, PER, CRS

Table 6 shows the multiple linear regression model summary and overall fit statistics. We find that adjusted R^2 of our model is 0.516 with the $R^2 = 0.530$. This means that the linear regression model with the independent variables i.e. creative stimulation (CRS), cognitive encouragement (COE), acceptance (ACC), permissiveness (PER), rejection (REJ) and control (CON) is 53 per cent of variance of the mental health.

Table 7

Regression Analysis of Various Dimensions of School Environment

Model		Unstandardised Coefficients		Standardised Coefficients	T	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	61.503	4.142		14.848	.000	53.333	69.673
	CRS	.301	.051	.323	5.948	.000	.201	.401
	COE	.035	.050	.035	.698	.486	-.064	.134
	ACC	.553	.056	.538	9.957	.000	.444	.663
	PER	-.370	.127	-.151	-2.916	.004	-.621	-.120
	REJ	.022	.143	.008	.155	.877	-.259	.304
	CON	.055	.054	.052	1.017	.310	-.052	.162

As there were multiple independent variables in the analysis, the Beta weights show the relative importance of each independent variable in standardised terms. It is revealed from the Table 7 that variable CRS and ACC of school environment have positive relationship whereas variable PER have negative relationship with mental health of students and also account for the mental health of students. Out of these three variables, ACC have B weights of .538 highest among the three, which means it is relatively of higher importance in explaining the mental health of students in comparison to other two. Thereafter, it is CRS and PER with B weights .323 and .151which explains their relative importance in explaining the mental health of students. It is revealed that

creative stimulation, acceptance and control positively influence the mental health whereas permissiveness affects the mental health of students of formal operational stage in negative direction. Thus, we can conclude that the dimensions of school environment affect the mental health of students of formal operational stage.

Discussion

An educational institute should not be just confined to teaching and learning but should be considered as a place where consciousness is aroused and illumined; soul is purified and strengthened. It is the place where the seeds of discipline, devotion and commitment are planted and fostered with deliberate efforts. The school has been identified as a vehicle of "direct instruction" (Pekausky, 1998), it is a social institution, in which is embedded rich norms, customs and ways of thinking of which the teacher is the conveyer. The schools are expected to create such environment where good mental health can cultivate. This study was aimed to explore the influence of school environment on the mental health of students at formal operational stage of cognitive development. The analysis revealed that creative stimulation (CRS), acceptance (ACC) and control (CON) positively influence the mental health whereas permissiveness (PER) affects the mental health of students of formal operational stage in negative direction. The results of the present study are in cohesion with that problems in school may cause mental health problems (Fletcher, Bonell, & Hargreaves, 2008, p. 218) and a positive school climate promotes achievement and good mental health (Maddox& Prinz, 2003, p. 32).

The study shows that school environment is of paramount importance in the development of mental development. Overall, providing creative stimulation, and accepting a child with a certain amount of control on the part of teacher is much more likely to promote internal self- control and mental health. Rejecting is not an effective antidote in the development of mental health. A good mental health involves a number of internal processes that are best developed through warm, caring teachers with clear and consistent expectations, emphasis on the reinforcement of positive behaviour. It is also suggested that future research studies be conducted considering school's locality, management style, self-efficacy and ethos with mutual values and norms to study the relationship of school environment and mental health of students at formal operational stage of cognitive development.

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